CITY OF IONIA

CITY COUNCIL
SPECIAL MEETING AGENDA
6:30 PM, Tuesday, April 28, 2026
IONIA CITY HALL - COUNCIL CHAMBERS

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

I. Approval of Agenda

II. Public Comments – Section 3.02 of the City Council's Rules of Order and Conduct for City Council Meetings provides opportunity for the public to address Council during the Public Comment section identified on the agenda. Your opportunity to speak occurs after you have been recognized by the Mayor. When addressing Council please state your name and address. Comments are limited to 5 minutes unless additional time (up to 10 minutes) is granted by the Mayor.

III. Public Hearings and Associated Action

1. Public Hearing to receive comments on Resolution 2026-08, a resolution adopting a final project planning document for water system improvements and designating an authorized project representative
   Action Required – Decision to approve or reject Resolution 2026-08
2. Public Hearing to receive comments on Resolution 2026-09, a resolution adopting a final project planning document for wastewater system improvements and designating an authorized project representative
   Action Required – Decision to approve or reject Resolution 2026-09

IV. Communications

V. City Manager's Report

VI. Good of the Order/ City Councilmember Comments

VII. Adjournment

CITY OF IONIA

STAFF REPORT FOR COUNCIL AGENDA ITEM

Agenda Item: III.1

TO: Mayor Milewski and Councilmembers

FROM: Precia Garland, City Manager

DATE: April 28, 2026

RE: Public Hearing to receive comments on Resolution 2026-08, a resolution adopting a final project planning document for water system improvements and designating an authorized project representative

Background:

With assistance from engineering firm Prein & Newhof, an application to the Drinking Water State Revolving Fund (DWSRF) low interest loan program has been prepared. The estimated cost of implementing the proposed DWSRF Project Planning Document is $15,059,000. Year 1 (FY2027) of the DWSRF Project Planning Document will cost an estimated $11,648,000. Tyler DeNooyer from Prein & Newhof is present at today's meeting to provide a brief summary of the project application.

The purpose of the proposed water system improvements is to provide a more reliable and safe water distribution system. Project construction will involve replacement of approximately 15,500 feet of water main and appurtenances on Jefferson Street, Jackson Street, Adams Street, Railroad Street, Webber Street, Cyrus Street, and W Main Street. Approximately 30 lead/galvanized water services will also be replaced within the project areas. Lastly, the security system at the City's drinking water wells will be upgraded and integrated with the City's Supervisory Control and Data Acquisition (SCADA) system.

Based on preliminary scoring, it is anticipated the City may qualify for a low-interest loan at 2.75% interest. Unfortunately, parameters were changed with this round of the program, removing the City's previous status as "overburdened" and the opportunity for a portion of the project to be approved as a grant. As previously noted, Prein & Newhof estimates the FY2027 project cost at $11,648,000, with an annual debt retirement of $575,320 per year, assuming a 30-year amortization and 2.75% interest rate.

As part of its compilation process, the City of Ionia is required to advertise and then conduct a public hearing for the purpose of receiving input on the draft Project Planning Document. Notice of tonight's public hearing was published in the *Daily News* and also posted on the City of Ionia website. Authorization to submit the DWSRF application, following any potential modification based on public input would be provided through adoption of Resolution 2026-08.

Requested Action / Motion:

Following the public hearing to gather input, it is requested the Ionia City Council consider a motion to approve Resolution 2026-08, which would authorize submission of a Drinking Water State Revolving Fund application for the City of Ionia FY2027 Water Services Replacement Project.

Motion By: **Seconded By:**

Roll Call Vote:	Lee	___	Winters	___
	Cook	___	Patrick	___
	Millard	___	Waterman	___
	Starr	___	Cowling	___
		Milewski	___	



Drinking Water State Revolving Fund
Clean Water State Revolving Fund
Project Planning Documents – Fiscal Year 2027

City of Ionia Council Meeting
April 28, 2026

Prein&Newhof

Introduction

1. Sign In Sheet
2. PDAP Grant Overview
3. Infrastructure Inventory Summary
4. Existing System Needs
5. SRF Program Overview
6. USDA-RD Program Overview
7. Overburdened Communities
8. FY2027 Recommended Projects
9. Project Financing, Cost to Users
10. Anticipated Social/Environmental Impacts and Mitigation
11. Next Steps



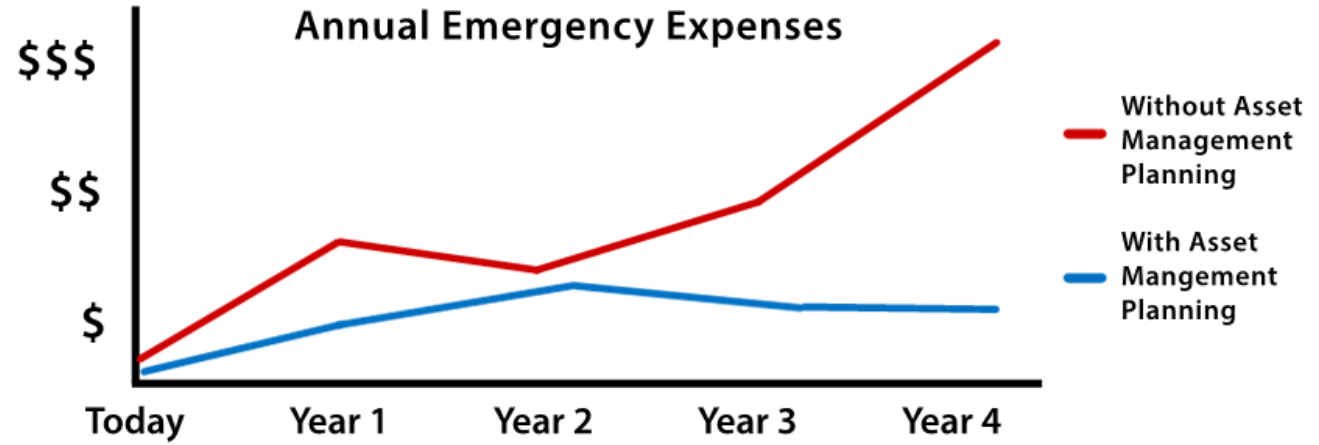
PDAP Grant Overview

- Michigan Infrastructure Office Technical Assistance Center (MIO TAC) Predevelopment Accelerator Program (PDAP)
- $60,000 Grant ($10,000 match):
  - *DWSRF Project Planning Document Development*
  - *CWSRF Project Planning Document Development*
  - *USDA Rural Development Funding Application*
  - *Asset Management Planning*
    - *Wastewater Collection System Asset Management Plan*
    - *Drinking Water Asset Management Plan*
    - *Capital Improvement Plan Development*
    - *Water/Sewer Rate Study*



Why Are We Doing This?

Asset Management Plans Developed in 2026 for Drinking Water and Wastewater Systems

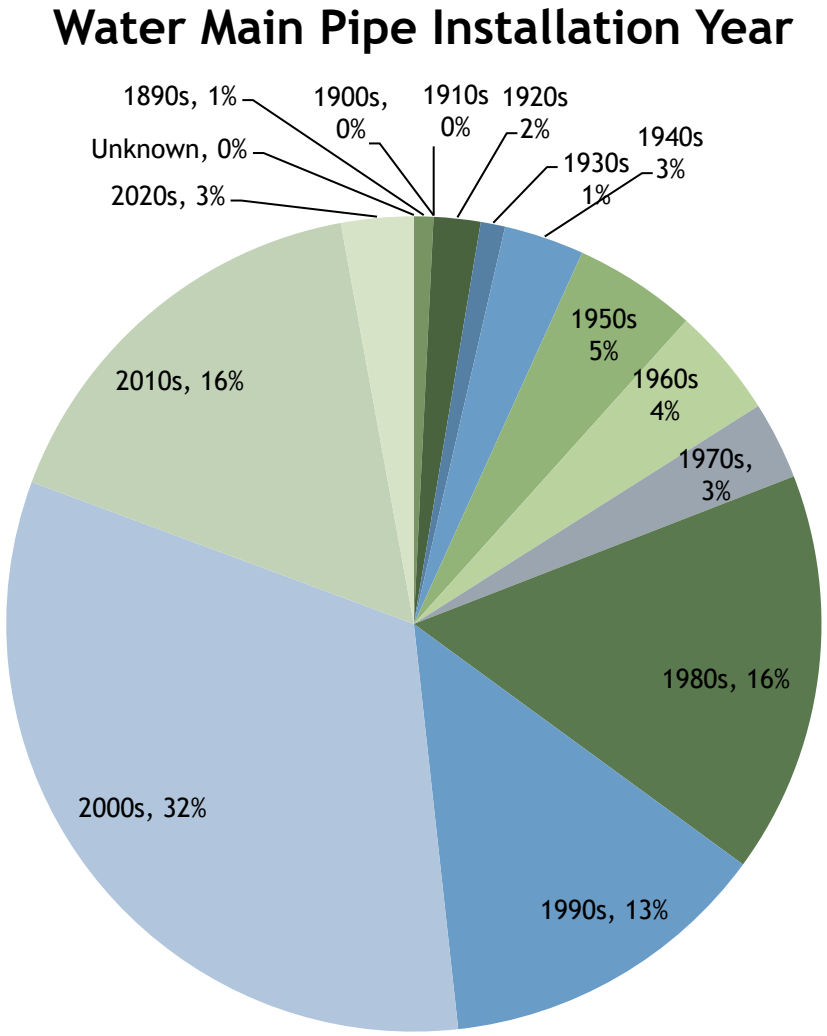


Prevent Emergency Responses Before They Happen

Developed a 6-year Capital Improvement Plan based on prioritized needs combined with roadway recommendations

Water Infrastructure Inventory Summary

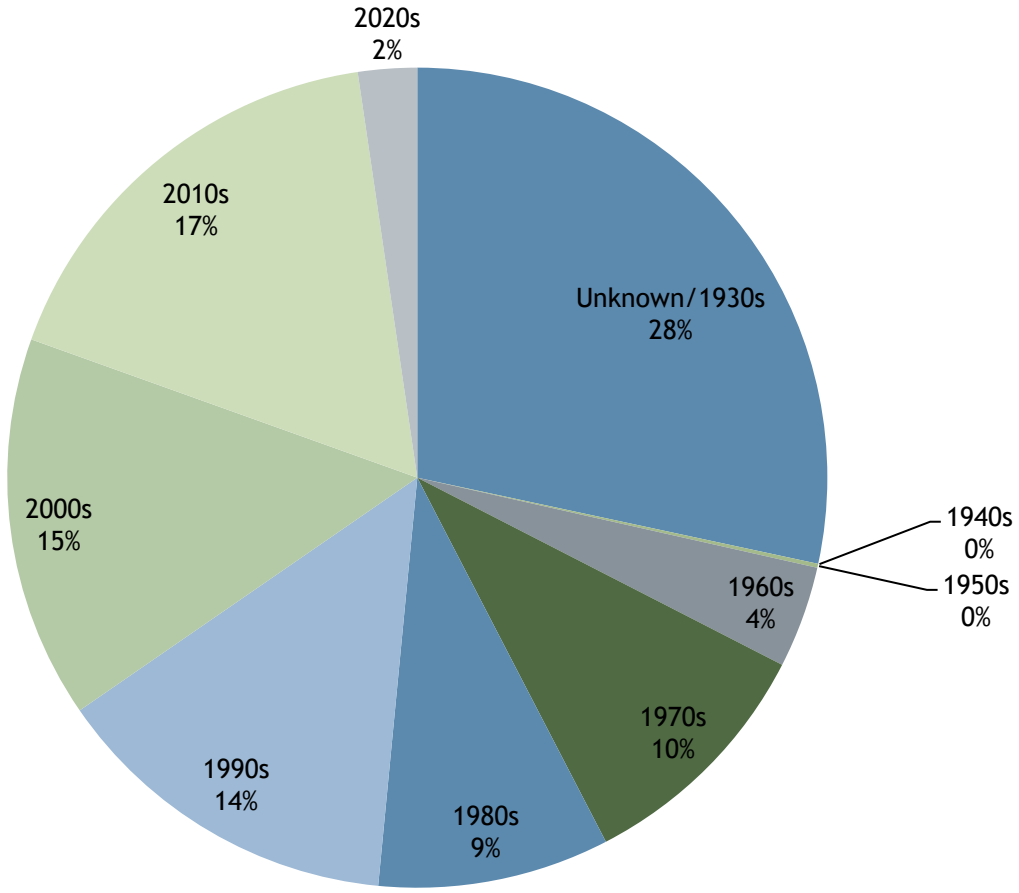
- 9 production wells
- 1 booster station
- 5 storage tanks
- 67.4 Miles of Distribution Pipe
  - Pipe Installed Prior to 1950 - 7%
  - Cast Iron Water Main – 11%
- FY26 Lead Service Line Replacements:
  - Starting Fall 2026
  - Approximately 450 lead service replacements



Wastewater Infrastructure Inventory Summary

- Treatment plant managed by Ionia Regional Utilities Authority (IRUA)
- 5 pump stations
- 51.7 miles of Wastewater Collection Pipe
  - Pipe Installed Prior to 1950 (or unknown) - 29%
  - Force Main – 2.1%
- PACP Inspection of Aging Sanitary Systems:
  - Approximately 34% of collection system has been CCTV inspected since 2007
    - 5% of the system in the last two years
    - Structural deficiencies witnessed (cracks, breaks, holes, sags, joint defects, etc.)

Wastewater Collection Pipe Installation Year



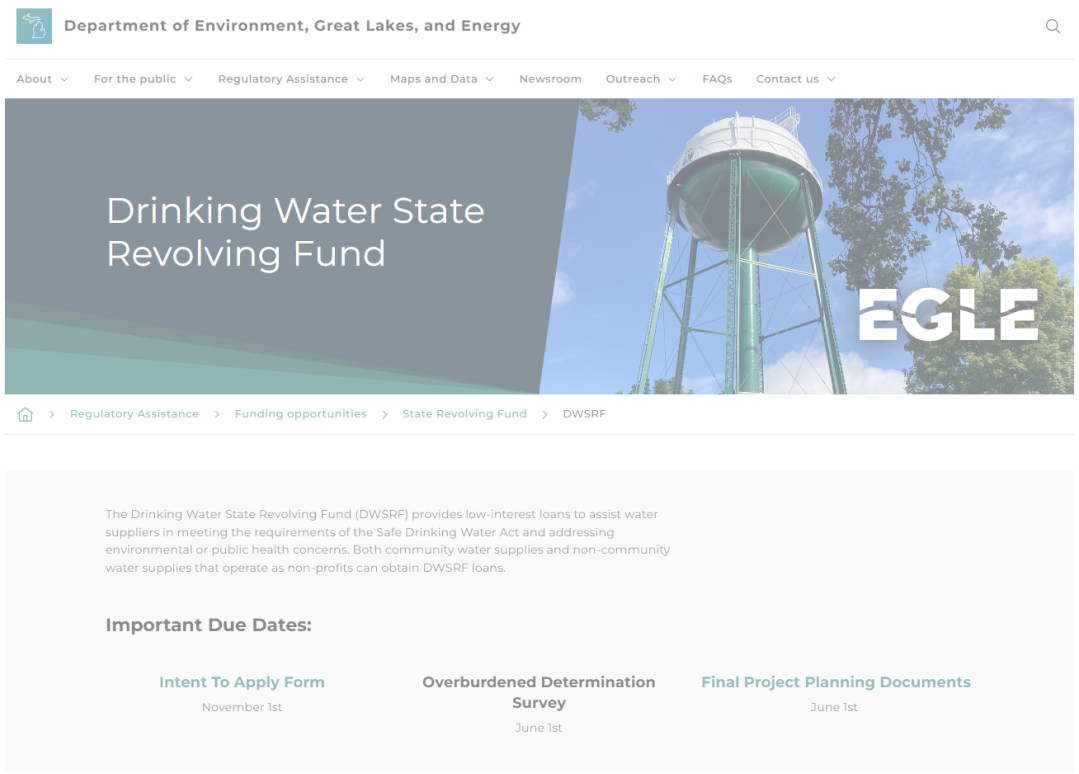
Existing System Needs

- Wastewater Collection System Needs
  - Approximately 10,700 feet of older, clay, structurally deteriorating gravity sewer requires replacement (8 to 18-inch)
- Water Distribution System Needs
  - Approximately 15,500 feet of older, structurally deteriorating, cast iron water main requires replacement (8 to 16-inch)
  - Approximately 28 lead/galvanized service lines require replacement
  - Wellhouse security system requires upgrades and integration with SCADA system
  - Cyrus Street Storage Tank requires rehabilitation



SRF Program Overview

- **D**rinking **W**ater **S**tate **R**evolving **F**und (DWSRF)
- **C**lean **W**ater **S**tate **R**evolving **F**und (CWSRF)
- Low interest loan program
- FY27: 2.75%, 30 year loan
- Project Planning Documents
- Public Meeting has been noticed for >15 days
- Project Planning Documents available for public to review; written comments solicited
- Today's discussion will be summarized, and public comment addressed in final PPD to be submitted by May 1, 2026

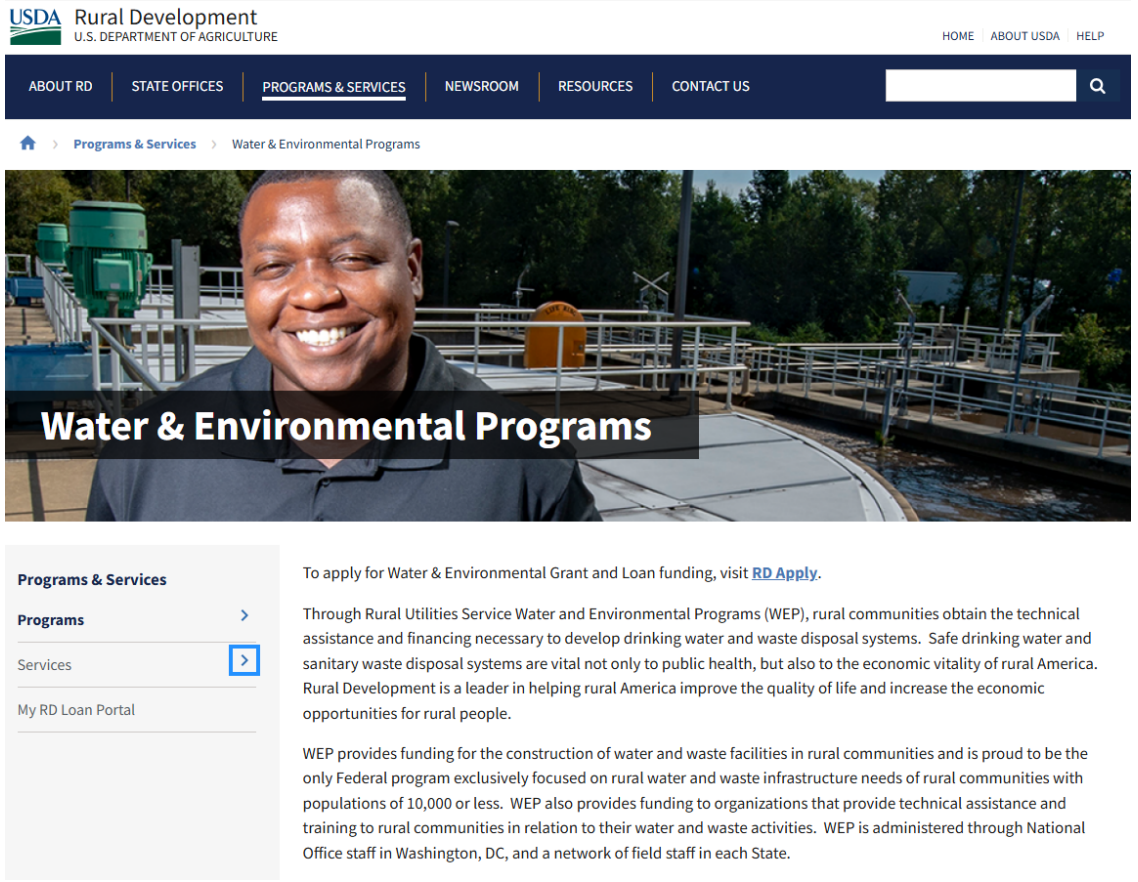


- **COMPETITIVE:**

  Demand far exceeds available funding

USDA-RD Program Overview

- **U**nited **S**tates **D**epartment of **A**griculture – **R**ural **D**evelopment
- Low interest loan program
- Rolling application process, anticipated application by June 12
- ~3.75%, up to 40 year loan
- City applying as contingency plan for funding water/sewer projects if funding isn't received from either CWSRF or DWSRF

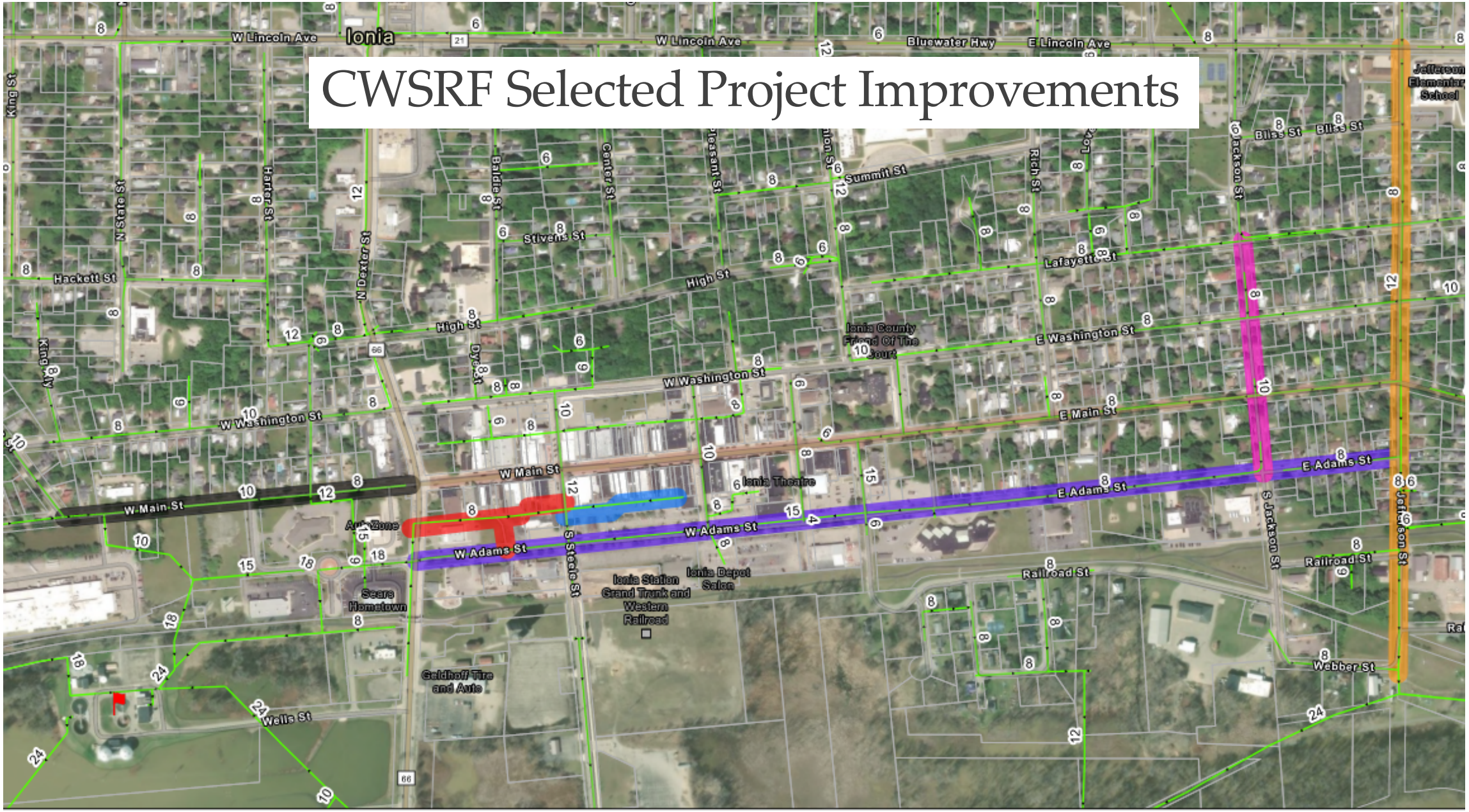


Overburdened Communities

- New Definitions – no longer “disadvantaged”
- The City of Ionia is NOT expected to qualify as overburdened



CWSRF Selected Project Improvements



SCALE: 1" = 400 '

LEGEND

WWTP
Sanitary Gravity Main
Ionia County Tax Parcels
Project 1: Adams Street
Project 2: Jackson Street
Project 3: Jefferson Street
Project 4: Adams Street Alley (Eastern Extents)
Project 5: Adams Street Alley (Western Extents)
Project 6: W. Main Street

CITY OF IONIA
IONIA COUNTY, MICHIGAN
SELECTED IMPROVEMENTS
FIGURE 2
Prein&Newhof

DWSRF Selected Project Improvements



SCALE: 1" = 400'

CITY OF IONIA
IONIA COUNTY, IONIA
SELECTED IMPROVEMENTS
FIGURE 2

Prein&Newhof

Cost Summary

		DWSRF			CWSRF		
	Project Name	Water System Est.	DWSRF Eligible	Non-Eligible	Total Estimate	CWSRF Eligible	Non-Eligible
FY27	Adams Street	$ 5,221,000	$ 4,102,000	$ 1,119,000	$ 5,591,000	$ 4,472,000	$ 1,119,000
FY27	Jefferson Street	$ 3,683,000	$ 3,328,000	$ 355,000	$ 3,177,000	$ 3,177,000	$ -
FY27	Jackson Street	$ 3,834,000	$ 3,500,000	$ 334,000	$ 1,024,000	$ 889,000	$ 135,000
FY27	Railroad Street WM	$ 264,000	$ 264,000	$ -			
FY27	Webber Street WM	$ 440,000	$ 396,000	$ 44,000			
FY27	Well Site Security	$ 58,000	$ 58,000	$ -			
FY27	Adams Street Alley (E)				$ 499,000	$ 499,000	$ -
FY27	Adams Street Alley(W)				$ 355,000	$ 355,000	$ -
Future	W. Main Street	$ 2,575,000	$ 2,360,000	$ 215,000	$ 1,858,000	$ 1,642,000	$ 216,000
Future	Cyrus Street & Tank	$ 1,161,000	$ 1,051,000	$ 110,000			
		$ 17,236,000	**$ 15,059,000**	**$ 2,177,000**	**$ 12,504,000**	**$ 11,034,000**	**$ 1,254,000**

Total DWSRF Eligible FY27 **$ 11,648,000**

$ **17,570,000** Full FY27 Project Estimates

Total CWSRF Eligible FY27 **$ 9,392,000**

Project Financing, Cost to Users

- Estimated FY2027 Project Cost: $17,570,000
- DWSRF loan assumed at 2.75% for 30 years ($575,230 annual payment)
- CWSRF loan assumed at 2.75% for 30 years ($463,818 annual payment)
- City of Ionia system has 4,096 Residential Equivalent Units (REUs)
- City of Ionia is planning to increase water rates by approximately $24.00 per REU per quarter to pay for the work
- City of Ionia is planning to increase wastewater rates by approximately $17.00 per REU per quarter to pay for the work

Anticipated Social/Environmental Impacts and Mitigation

Beneficial Impacts:

- Job creation, open market competitive bid process
- Compliance with EGLE Lead and Copper Rule
- Better protection of water quality

Temporary Adverse Impacts:

- Construction noise
- Traffic Disruption
- Water Service Disruption

Overall Impacts:

- No anticipated effect on air quality, wild or scenic rivers, wetlands, or floodplains
- Coordination with local agencies to minimize any historical, archaeological, cultural, or recreational area disturbances that will occur

Mitigation:

- Construction Contract will require: maintenance of local traffic, limited work hours, all necessary construction permitting

Next Steps

- Remember to fill out Sign In Sheet
- Public Comment Period/Q&A (ends tonight)
- We will document and address specific concerns from today and include them in PPD
- We will address written comments received during public notice period
- After closing the public comment period, the City of Ionia will pass a resolution to formally adopt the project planning documents and the selected alternatives
- We make final edits to PPD; submit CWSRF and DWSRF PPD to EGLE by May 1, 2026, and USDA-RD application by June 12, 2026.
- EGLE's Draft Project Priority Lists anticipated to be published in August, 2026 (finalized in October)



Questions?

Tyler DeNooyer, P.E.
tdenooyer@preinnewhof.com
616-364-8491

CITY OF IONIA
NOTICE OF PUBLIC HEARING

Drinking Water State Revolving Fund (DWSRF) and
Clean Water State Revolving Fund (CWSRF) –
Project Planning Document

The City of Ionia will conduct a public hearing on April 28, 2026 at 6:30 PM, in the Council Chambers located at 114 North Kidd Street, Ionia, Michigan 48846, for the purpose of receiving comments from interested persons on proposed improvements and upgrades to its Water Distribution System and Wastewater Collection System. To finance these projects, the City will be applying for FY27 funding from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) CWSRF and DWSRF programs, in addition to applying for funding from the United States Department of Agriculture (USDA) Rural Development Program.

The purpose of the proposed water system improvements is to provide a more reliable and safe water distribution system. Project construction will involve replacement of approximately 15,500 feet of water main and appurtenances on Jefferson Street, Jackson Street, Adams Street, Railroad Street, Webber Street, Cyrus Street, and W Main Street. Approximately 30 lead/galvanized water services will be also be replaced within the project areas. Lastly, the security system at the City's drinking water wells will be upgraded and integrated with the City's Supervisory Control and Data Acquisition (SCADA) system.

The purpose of the proposed wastewater collection system improvements is to provide a more reliable and resilient wastewater collection system, replace aging and structurally deficient sewer infrastructure, reduce stormwater infiltration and inflow, and provide accessibility for operation and maintenance. Project construction will involve replacement of approximately 10,700 feet of sanitary sewer and appurtenances on Jefferson Street, Jackson Street, Adams Street, and in alleys between Adams Street and W Main Street.

Impacts of the proposed projects include those typical of utility and roadway construction, and temporary disruptions such as noise, dust, and traffic congestion caused by construction activities. The benefits to the water distribution system will be a more reliable system for City customers with fewer water main breaks, increased available fire flow, and lower potential for lead exposure through reduction of lead and galvanized service lines to customers' homes. The benefits to the wastewater system will be a more reliable and resilient wastewater collection system for City customers, replacement of failing sewers, and reduced risk of wastewater backups into adjacent buildings and the environment.

The estimated cost of implementing the proposed DWSRF Project Planning Document is $15,059,000. Year 1 (FY2027) of the DWSRF Project Planning Document will cost an estimated $11,648,000. The City is planning to increase water rates by approximately $24.00 per Residential Equivalent Unit (REU) per quarter, assuming no loan forgiveness or grant funding, to pay for the work.

The estimated cost of implementing the proposed CWSRF Project Planning Document is $11,034,000. Year 1 (FY2027) of the CWSRF Project Planning Document will cost an estimated $9,392,000. The City is planning to increase sewer rates by approximately $17.00 per Residential

Equivalent Unit (REU) per quarter, assuming no loan forgiveness or grant funding, to pay for the work.

Copies of both the DWSRF and CWSRF Project Planning Documents detailing the proposed projects are available for inspection at the following location:

City Clerk's Office
Ionia City Hall
114 North Kidd Street
Ionia, MI 48846

Electronic copies of the DWSRF Project Planning Documents can also be downloaded at https://bit.ly/IoniaDWSRF2027.

Electronic copies of the CWSRF Project Planning Documents can also be downloaded at https://bit.ly/IoniaCWSRF2027.

Written comments received before the hearing record is closed on April 28, 2026, will receive responses in the final project planning documents. Written comments should be sent to the City Clerk's Office at 114 North Kidd Street, PO Box 496, Ionia, Michigan 48846.

The City of Ionia complies with the "Americans with Disabilities Act." If auxiliary aids or services are required at a public meeting for individuals with disabilities, please contact Jonathan Bowman, City Clerk, at least three (3) business days prior to any such meeting.

_____

Jonathan T. Bowman, City Clerk
Ionia City Hall
114 North Kidd Street
Ionia, Michigan 48846
Telephone No: (616) 527-4170

CITY OF IONIA
COUNTY OF IONIA, MICHIGAN
CITY COUNCIL

A RESOLUTION ADOPTING A FINAL PROJECT PLANNING DOCUMENT FOR WATER SYSTEM IMPROVEMENTS AND DESIGNATING AN AUTHORIZED PROJECT REPRESENTATIVE

The following Resolution was offered for adoption by City Councilmember _____ and was supported by City Councilmember _____:

WHEREAS, the City of Ionia recognizes the need to make improvements to its existing water distribution system; and

WHEREAS, the City of Ionia authorized Prein&Newhof to prepare a Project Planning Document, which recommends the replacement of existing water mains and appurtenances, replacement of existing lead/galvanized water services, and improvements to the wellfield security system in the City of Ionia; and

WHEREAS, said Project Planning Document was presented at a Public Hearing on April 28, 2026 at 6:30 P.M. and all public comments have been considered and addressed;

NOW, THEREFORE, BE IT RESOLVED, that the City of Ionia formally adopts said Project Planning Document and agrees to implement the selected FY 2027 projects based on the selected alternatives for those projects.

BE IT FURTHER RESOLVED, that the City Manager, a position currently held by Precia Garland, is designated as the authorized representative for all activities associated with the project referenced above, including the submittal of said Project Planning Document as the first step in applying to the State of Michigan for a Drinking Water State Revolving Fund Loan to assist in the implementation of the selected alternative.

AYES:

NAYS:

ABSTAIN:

ABSENT:

RESOLUTION 2026-08 DECLARED ADOPTED

_____
Jonathan T. Bowman, City Clerk
Ionia City Hall
114 North Kidd Street
Ionia, Michigan 48846
Telephone No: (616) 527-4170

CERTIFICATION

I hereby certify that the foregoing is a true and complete copy of a Resolution adopted by the City Council of the City of Ionia, Ionia County, Michigan at a special meeting held on April 28, 2026, at 6:30 PM and that the public notices of said meeting were given pursuant to Act No. 267 of the Michigan Public Acts of 1976, including in the case of a special or rescheduled meeting notice of publication or posting at least eighteen (18) hours prior to the time set for the meeting.

_____
Jonathan T. Bowman, City Clerk
Ionia City Hall
114 North Kidd Street
Ionia, Michigan 48846
Telephone No: (616) 527-4170

Project Planning Document

City of Ionia FY 2027
Drinking Water Project Planning Document

DRAFT

Prepared for

City of Ionia

April 2026

2260308

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Appendix C Overburdened Worksheet
Appendix D Water Asset Management Plan
Appendix E Wellhead Protection Program
Appendix F Project Cost Estimates
Appendix G Present Worth Analysis
Appendix H National Wetland Inventory Map
Appendix I FEMA Flood Hazards Map
Appendix J Topography Map
Appendix K Known Contamination Sites Map
Appendix L Annual Cost Summary

1 INTRODUCTION

This Project Planning Document is prepared on behalf of the City of Ionia, Ionia County, Michigan, for the purpose of obtaining a Drinking Water State Revolving Fund (DWSRF) loan from the State of Michigan for the construction of improvements to the City of Ionia's water system. The applicant is the City of Ionia (hereinafter the "City").

The City owns and operates a public water supply consisting of 9 active wells, 5 storage tanks, and 1 pump station, which serves approximately 35.3 square miles and is supplied through a water distribution network consisting of over 67 miles of watermain (see Figure 1).

The City has been in the process of identifying and replacing all lead/galvanized or potential lead/galvanized services in the City water system for the past several years. The City is continuing to physically verify water services throughout the City that are suspected to contain lead or galvanized materials. Material verifications inside the building and on the public and private sides of the curb stops are anticipated to be largely completed by the end of the spring in 2026. The City plans to replace all known lead/galvanized services by 2037 to be in compliance with current State of Michigan and federal requirements. The City has prioritized replacing all known lead/galvanized service lines within the water system in FY26 using DWSRF funding. To prioritize dig-once efforts, the known lead/galvanized service lines that fall within the presented projects of this Project Planning Document are proposed to be withheld from the FY26 project and replaced when the selected improvements to the water distribution system take place.

The City completed a Water Reliability Study (Appendix A) in 2023. As required by Michigan's Safe Drinking Water Act, the act calls for a 20-year projection of water demands and an evaluation of each of the system components on a five-year interval.

The City updated its Water Asset Management Plan (WAMP) for its drinking water system in 2026 to evaluate the condition and needs, to develop a system for prioritizing repairs and rehabilitation of the system, and make recommendations for funding the needs identified. Some areas of the water distribution system were built in the late 1800's or early 1900's and are in need of replacement. As a part of the WAMP, the City also developed a Capital Improvement Plan (CIP) for its water system.

The purpose of the Project Planning Document (PPD) is to determine the needs for the 20-year period, conduct alternatives analysis, estimate project costs, conduct environmental evaluations, and include the public in the planning process. This PPD is prepared on behalf of the City of Ionia in Ionia County, Michigan for the purpose of obtaining a DWSRF loan from the State of Michigan

Department of Environment, Great Lakes, and Energy (EGLE) for the construction of improvements to the City of Ionia water system. The proposed improvements will help make infrastructure more efficient and reduce the chance of impacting water service by failing water assets. Projects are specifically to replace and improve existing aging infrastructure that has high potential for failure, provide adequate maximum day flow within the distribution system, remove potentially harmful lead/galvanized water service materials from the system, and/or improve source water security. None of the projects or projected 20-year needs include projects to extend water utilities to new areas in or outside of the City of Ionia.

2 BACKGROUND

2.1 Study Area

The study area comprises the service area of the City of Ionia. The proposed projects will improve the reliability of the water distribution system in the service area. Figure 1 shows the study area, and the existing water distribution system, wells, and water tanks. Figure 2 shows the project areas of the selected water system improvements. According to the U.S. Census Bureau, the City has a total area of 5.48 square miles, of which 5.35 square miles is land and 0.13 square miles is water. Ionia is between Michigan's capital, Lansing, and its second largest city, Grand Rapids.

2.1.1 Land Use

The City's existing land use is diverse with significant residential areas and some commercial, industrial and public recreation areas as shown on the Zoning Map (Appendix B). This map is made publicly available on the City's website and it was updated October 2025. The City is mostly built out with a general sprawl from the central business district outward with general business and medium or low-density housing. The western extents of town are largely zoned for the Fair District and State of Michigan Prisons, and the eastern extents are largely zoned for the Technology Innovation Business District. Future land use is expected not to change significantly or be similar to existing land use in most cases. There are no major projected changes in the land use of the study area that would significantly impact water demand beyond the current average day and maximum day demands.

2.1.2 Population Data

The City of Ionia is the largest city in Ionia County, Michigan. The city contains two major highways, M-21 and M-66. The population of the city at the time of the 2020 United States (U.S.) Census was estimated to be 13,378. This population counts the incarcerated population within the city which is estimated to be 6,742 at the time of the census. Additional details about the population of the City and its projections can be found in Table 1.

The median household income in City of Muskegon $63,978 according to data provided on the EGLE State Revolving Fund website, which is taken from the United States Census Bureau. The property taxable value per capita is listed as $11,344.

2.2 Overburdened Communities

Refer to overburdened worksheet, included in Appendix C. Based on the preliminary determination, the City of Ionia does not meet the classification of significantly overburdened or overburdened status.

2.3 Water Demand

The City of Ionia distributes drinking water to residents with the service area. The entire system is supplied by nine production wells on the north side of the City. Historic water demand and a summary of water usage by demographics are provided in the City of Ionia's 2023 Water Reliability Study (Appendix A).

Water system demands were projected through year 2042 based on historic data from the 2023 Water Reliability Study and the population growth expected in the City. Historic water meter data was supplied by the City of Ionia Water System during the 2023 Water Reliability Study for evaluation and projection of future demands. The data includes monthly water use reports from 2012 through 2021. Average day demand represents water use for the year and maximum day demand is the highest daily use for the year. More detailed tables can be found within the 2023 Water Reliability Study (Appendix A).

The average day demand for the City of Ionia was approximately 1.61 MGD in 2021. The maximum day demand, the highest daily use for the year, is estimated to be 2.87 MGD in 2021. The projected average and maximum day demand is projected to increase by 2042 with the

projected average day demand to be 1.87 MGD and the projected maximum day demand to be 3.69 MGD.

The City tracks unbilled water by comparing volume of water pumped to volume of water sold. The unbilled water loss calculated from 2012 through 2021 with an average of 8.2 percent. This was below the City's goal of 10 percent for non-revenue water. Unbilled water is tracked to ensure the City is receiving the appropriate revenue for system maintenance and improvement.

2.4 Existing System

2.4.1 Water Supply

Nine total production well supply the City's water distribution system. There are two wells allocated for each the low-pressure district and the middle pressure district within the City's system and five wells allocated for the highest-pressure district. The wells in the high-pressure district can supply the middle or low-pressure district through any of the City's seven pressure-reducing valves.

The City of Ionia water system serves approximately 4,096 Residential Equivalent Units (REU) currently. The city has a total of 3,235 active water services. The current was system inventory shows the composition of the City's water services ranging from 5/8-inch to 10-inch water services. Over 50 percent of the City's daily water demand is split between the Department of Corrections on the western extents of town and the Ventra Ionia Main commercial setting on the eastern extents of town.

A full summary and analysis of the City of Ionia water system is available in the City of Ionia 2023 Water Reliability Study, included in Appendix A.

2.4.2 Water Treatment

Raw water that is pumped from the groundwater wells is treated with chlorine gas and fluorine before entering the distribution system. The City uses chlorine gas to disinfect the water supply and adds fluorine for dental health.

2.4.3 Water Distribution Mains

The City has a total of 67 miles of water distribution mains with majority of them being ductile iron. Over 80% of the water distribution system in the City has been

installed/replaced in the since 1980. The oldest portions of the water distribution system, comprising approximately 5% of the system, are over 100 years old. Additional information on the water system and a breakdown of its material composition, age, and size can be found in the City of Ionia 2023 Water Reliability Study, included in Appendix A as well as the Water Asset Management Plan in Appendix D.

2.4.4 Water Storage Facilities

The existing system has three elevated tanks and two ground storage tanks in the City distribution system. As a part of the 2023 Water Reliability Study, included in Appendix A, the City determined that there is no current need for additional storage. Based on a calculated need of storage for potential emergencies, fire flow, etc., the City and has an excess of storage of nearly double the capacity to maintain the City's demands.

2.4.5 Water Service Lines

Due to the changes to Michigan's Lead and Copper Rule in 2018 the City completed a Complete Distribution System Materials Inventory (CDSMI) as required and is in the process completing full verification of all services with unknown materials suspected to be lead/galvanized. Based on the City's current water system inventory, the City has 439 water services that have been verified to contain lead/galvanized materials. 115 services are unknown but suspected to contain lead. The City is continuing to verify unknown services with the goal to have the entire water system inventory verified or extrapolated (assumed) by the end of spring, 2026. Based on previous service verification trends, the City is anticipating having approximately 450 lead/galvanized water services requiring partial or full replacement. The replacement process will begin Fall 2026 with FY26 DWSRF project funding. The proposed projects within this PPD will replace the remaining lead/galvanized services with non-lead materials that are within the proposed project boundary.

2.4.6 Booster Station

The Swartz Court booster station was constructed in 2000 to fill the Tuttle Street tank. There are three pumps each with a permit capacity of 760 gpm, and a station bypass. A fixed generator provides auxiliary power of 1,500 gpm. Based on permitted capacity, the station has a total capacity of 3.28 mgd and a firm capacity of 2.19 mgd. All three pumps were overhauled in 2012.

2.4.7 Meters

The City has been making efforts to replace outdated and aging meters when possible and plan to replace outdated meters that are encountered during the FY26 Lead Service Line Replacement Project.

Within the FY 2027 DWSRF project scoring criteria, 5 points can be earned when "*Applicant has implemented water conservation efforts*." The scoring guidance states that "*water conservation efforts may includes, but are not limited to, ordinances that… promote water efficiency and conservation practices. Water efficiency includes water loss reduction and prevention measures, installing water meters to previously unmetered areas, and/or adding leak detection equipment to existing meters.* The City's has created a new policy to install meters to all previously unmetered municipal properties (i.e. Parks, Facilities, etc.) in order to more accurately determine their total unbilled water loss within the City and better isolate the areas where leaks are occurring.

Since the new policy was enacted, the City has installed meters on water services serving municipal properties in the following locations within the past couple years:

- Robinson Park - 710 Forest St
- Hale Park - 562 Division St
- Perry Park - 401 N Jackson
- Trailhead Park - M66 and Adams St
- Ionia Fairgrounds North restrooms - 317 S. Dexter
- Dog Park - Steele St.

The implementation of metering previously unmetered public properties has led to lowering the City's percentage of unaccounted/unmetered water from its 2012-2021 average (8.4%) to 7% in 2025. The unmetered water quantity excludes the water used for flushing hydrants and tanks. The result is that the City can better account for water loss and determine a more accurate baseline for pursing water conservation in an effort to reduce water loss within the water system.

2.4.8 Standby Power

The City has standby/auxiliary power for all nine of its wells in the form of generators. Additional information regarding the breakdown and details of the system can be found in the 2023 Water System Reliability Study in Appendix A.

2.4.9 Water Source Protection

The City has a Wellhead Protection Program (WHPP) in place to protect against contamination of the source water for their nine wells. The City received approval on their updated WHPP approved by EGLE in March of 2026. The 2026 WHPP is included in Appendix E. The City currently has an outdated security system that monitors the nine wellhouse sites within the City. This system requires downloading of physical footage from each of the wellhouse sites individually in order to monitor and review the footage. Within the FY 2027 project scoring criteria, 7 points can be earned when "*Project includes resiliency and/or DWSRF eligible security measures."* More information on this form of source protection can be found in Section 2.6.7 and 3.2.7.

2.5 Summary of Project Needs

2.5.1 Standards Compliance and Reliability

The City of Ionia water system is currently in compliance with all drinking water standards and has the capacity to serve the affected area. However, the water service replacements are needed to meet the requirements of the State of Michigan Lead and Copper Rule.

2.5.2 Orders of Enforcement Action

The City of Ionia does not have any orders of enforcement actions at this time.

2.5.3 Drinking Water Quality Problems

Overall, the City's problems within the drinking water system fall into one or several of the following categories:

- Structurally deteriorating and aging mains remaining in service from the 1890s to 1950s
- Water main size restrictions for water distribution to the outer extents of town.
- Lead/galvanized water service lines requiring replacement.
- Insufficient looping, and undersized dead end water mains.

The proposed project is required to provide reliable potable water, free of lead, to the residents of the City of Ionia in the affected areas. The City is proposing to replace

approximately 11,475 feet of water distribution system and 141 water service connections using DWSRF FY2027 funding. The City is undergoing final verification and beginning to replace all known Lead/galvanized water services within the City's system. Within the City the are currently 438 water services that are known to be lead/galvanized and require replacement with an estimated 450 total once material verifications are completed. Within the proposed project extents laid out within this project planning document there are 28 known lead/galvanized water services and 35 suspected lead/galvanized water services.

2.6 Projected Needs for the Next 20 Years

The City's water distribution system has various projected needs over the 20-year planning period. The water system needs were determined through asset management practices. Through this process this City has also developed and updated its CIP for both drinking water and clean water systems as the City is in the process of developing a Clean Water State Revolving Fund (CWSRF) Project plan. Projects one through six are being proposed for fiscal year 2027 funding and projects seven and eight are being proposed for future years.

2.6.1 Project No. 1: Adams Street

The water main from M-66 to S. Jackson Street on Adams Street is a 6-inch water main with the majority of it installed in 1929 and the westernmost portion installed in 1957. This water main serves a combination of the southern half of downtown Ionia commercial properties and several residences along the eastern extents. This section of water main is aging and to maintain the City's goal of increasing the resiliency of its water distribution system, it is proposed to be replaced in kind with a new 8-inch water main.

This 6-inch water main has 5 known lead/galvanized water service connections on it and 12 service connections that are unknown and suspected to contain lead/galvanized material.

Within the project area there are two lateral water mains that are beyond their useful life and have a break history. The section of water main on Ellis Alley between E. Main Street and E. Adams Street is a 6-inch water main from 1956 and the section of water main through an alley from W. Adams Street to Main Street between Depot Street and Steele Street is a 5-inch water main from 1929. These water mains are both

under a 12-foot wide paved alley and do not directly serve any properties with drinking water. The water main under Ellis Alley has broken in the past. These water mains are not necessary for looping purposes within the system and should be abandoned to reduce the total footage of water main within the system and reduce the risk of water main breaks.

2.6.2 Project No. 2: Jackson Street

The water main from M-21 to E Adams along Jackson Street ranges from 8-inch to 12-inch with majority of the infrastructure installed from 1929 to 1934 and some sections in 1956. All crossing streets that intersect with this section of water main (except for E Adams) have been replaced in the past 20 years. The proposed project will replace all existing water system infrastructure in kind along Jackson Street from M-21 to E Adams Street including hydrants, valves, and public side water service connections and connect to all existing connections of the water distribution system.

As a part of the proposed improvements, a pressure reducing valve (Jackson Street at Lafayette Street Northwest corner) will be replaced. This critical valve connects the City's middle pressure district to their low-pressure district.

The water main on Jackson Street between E Washington Street and E Main Street, installed in 1934, is a 10-inch water main that ties into existing 12-inch water mains on either end. The 10-inch water main needs to be upsized to a 12-inch water main to improve water system transmission in this area. The size increase will allow the City to more reliably provide adequate water supply to their second largest daily consumer of water on the eastern extents of the water distribution system which utilizes approximately 25 percent of City's daily water usage.

The 16-inch water main that passes through Perry Park to the pressure reducing valve near the Jackson Street and Lafayette Street intersection is a 1950s water main with insufficient access for City Department of Public Works (DPW) staff for maintenance and in case of an emergency. This critical, aging transmission main should be replaced and rerouted through the northern extents of Jackson Street, west along M-21, and across M-21 to reconnect to the existing 16-inch transmission main in Hale Park. This

relocation would provide the City improved access to the main and replace a critical transmission main at or near its useful life.

There are two water mains on Jackson Street between Lafayette Street and E Washington Street. One is a 10-inch that was installed in 1934, and the other is a 12-inch transmission main that was installed in 1956. Both redundant mains are aging and deteriorating water system infrastructure that requires replacement. The dual parallel water mains should be replaced with a single 12-inch water main, including reconnecting all water services to it from both mains. The result will maintain necessary capacity and transmission within the system while reducing redundant aging infrastructure.

There are 6 known lead/galvanized water service connections on the existing water main and 10 service connections that are unknown and suspected to contain lead/galvanized material. As a part of the proposed project, lead/galvanized private side connections will be replaced as needed.

2.6.3 Project No. 3: Jefferson Street

The water main from M-21 to Webber Street along Jefferson Street consists of 6-inch water mains with majority of the infrastructure installed in 1929 and some sections in 1956. All crossing streets that intersect with this section of water main have been replaced in the past 20 years (except for Railroad street, see 2.6.4). A project is needed to replace all existing water system infrastructure in kind along Jefferson Street from M-21 to E Adams Street including hydrants, valves, and public side water service connections and connect to all existing connections of the water distribution system.

The section of roadway from Lafayette Street to E Washington Street contains parallel 6-inch water mains. The eastern water main is in the City's middle-pressure district, and the western water main is in the City's low-pressure district. A project is needed to replace the water mains and increase the diameter of both mains to the City's minimum standard size (8-inch). Both mains are necessary to maintain water transmission throughout the distribution system and maintain connection between each water system pressure district through normally closed valves.

There are 8 known lead/galvanized water service connections on the existing water main and 13 service connections that are unknown and suspected to contain lead/galvanized material. As a part of the proposed project these water service connections will be replaced as needed.

2.6.4 Project No. 4: Railroad Street

The section of Railroad Street between S. Jackson Street and S. Jefferson Street currently has a 1.5-inch dead end water main that serves the four properties adjacent to the road. The 1.5-inch water main is suspected to be lead/galvanized due to it being installed in 1934 and is not a part of a looped system. A project is needed to replace the aging 1.5-inch water main with a 12-inch water main that is fully looped between the 12-inch mains on S Jackson Street and S Jefferson Street. The loop is needed to provide redundancy to the city's water transmission system on the southern portion of the city while also providing the services along the water main clean and safe drinking water by reducing potential lead exposure and improving water quality through looping. The city previously stubbed out a 12-inch water main lead on the west end of Railroad Street (in 2003) and the eastern end of Railroad Street (in 1995) in anticipation of completing a water main loop along Railroad Street.

2.6.5 Project No. 5: Webber Street

The section of Webber Street that spans between S. Jackson Street and S. Jefferson Street currently has an undersized 4-inch water main installed in 1946 that serves 6 properties as well as loops the S. Jackson Street and S. Jefferson Street water mains. This aging water main is undersized and needs to be replaced with an 8-inch water main to provide sufficient available fire flow.

There is 1 known lead/galvanized water service connection on the existing water main. As a part of the proposed project, any other lead/galvanized water service connections will be replaced as needed.

2.6.6 Project No. 6: Wellhouse Security Sites

The current security system for the City's nine production wells is aging and antiquated. It is not up to date with the security measures installed at the wastewater

treatment plant and storage facilities that are currently integrated with the City's SCADA (Supervisory Control and Data Acquisition) system. The current security system for the nine Well Sites consists of security cameras that require downloads onto a hard drive of the security footage and external viewing from remote locations is infeasible. The current security system only records when motion is detected and cannot be viewed live. A project is needed to replace the antiquated, aging security system at the 9 production wells and connect the system to the City's SCADA to allow for remote viewing and faster emergency response time.

2.6.7 Project No. 7: W. Main Street

The section of W. Main Street from M-66 to Yeomans Street is a part of the main transmission pathway for both the water distribution and sanitary collection systems. This section of W. Main has parallel 8-inch water mains and a 16-inch water main that crosses through. The 16-inch water main serves the entire population south of the river. The 8-inch water mains within the northern side of the roadway was installed in the 1950s and operates on the City's low-pressure network. The other parallel 8-inch water main operates on the high-pressure system and is located within the center of the roadway and directly over the existing gravity sanitary sewer. A project is needed to replace the aging 8-inch and 16-inch water mains within the project area to increase system reliability and reduce the risk of water main breaks.

The project area has 7 known lead/galvanized water service connections that require replacement.

2.6.8 Project No. 8: Cyrus Street

The section of water main from the Cyrus Street Storage Tank to the intersection of W. Fargo Street is 12-inch water main that was installed in 1929. This section of main is one of the primary suppliers for the western extents of the middle pressure district. This portion of Cyrus Street also has a 16-inch transmission main that was installed in 1982 on the opposite side of the roadway, but that water main is still working within its usable life and does not require replacement. The interior of the Cyrus Street Storage Tank requires renovations as well. Rehabilitation of the interior of the storage tank includes power washing the interior surfaces, repairing any deficiencies in surface

materials, and painting interior piping materials. A project is needed to replace the aging and critical 12-inch water main to increase system reliability and reduce the risk of water main breaks.

3 ANALYSIS OF ALTERNATIVES

3.1 Identification of Potential Alternatives

3.1.1 Optimum Performance of Existing Facilities

The City has maintained efforts to ensure that the system operates optimally, optimization efforts would not solve the aging and deteriorating infrastructure that comprises the proposed areas of the distribution system. There is no viable option to optimize the performance of the aging water mains and lead/galvanized water services. Replacement is the only option that will maintain the level of service expected. Furthermore, the antiquated security system technology monitoring the well houses cannot be improved without replacement with current technology. Therefore, the optimizing performance alternative was not considered further.

3.1.2 Regionalization

The City of Ionia is already part of a regional system and shares a water system with Berlin, Easton, and Ionia Townships. The system is operated by the City of Ionia. There are no regionalization alternatives for the distribution system.

3.2 Identification of Principal Alternatives

3.2.1 Project No. 1: Adams Street

3.2.1.1 No Action

The No Action alternative is not a viable alternative because of multiple factors. The known lead/galvanized services on Adams Street are required by EGLE to be replaced by 2041. Furthermore, the water main is 70 to 97 years old and working beyond its expected design life and has a history of multiple breaks. Lastly, the section of water main on Ellis Alley needs to be abandoned as it has reached the end of its useful life and has a history of breaks. Therefore, the No Action alternative was not considered further.

3.2.1.2 Replacement

The proposed project will replace the existing 6-inch water main and appurtenances in kind along Adams Street from M-66 to the intersection of S. Jackson Street. All existing water services will be replaced and reconnected. An additional 5 private side lead/galvanized services will be replaced. The water main on Ellis Alley and W. Main Street downtown alley will both be abandoned and not replaced due to redundancy. There are no viable alternatives.

3.2.2 Project No. 2: Jackson Street

3.2.2.1 No Action

The No Action alternative is not a viable alternative because of multiple factors. For the known lead/galvanized services on Jackson Street there remains EGLE requirement that all lead service lines must be replaced by 2041. For the aging water main, this main is 70 to 97 years old and working beyond its suitable design life and has a history of breaks occurring. Therefore, the No Action alternative was not considered further.

3.2.2.2 Replacement

The proposed project will replace the existing 8-inch to 12-inch water main, pressure reducing valve, and appurtenances along Adams street from M-66 to the intersection of S. Jackson Street. The 16-inch water main within Perry Park will be replaced in Jackson Street and in M-21. All existing water services will be replaced and reconnected. An additional 6 private side lead/galvanized services will be replaced. There are no viable alternatives.

3.2.3 Project No. 3: Jefferson Street

3.2.3.1 No Action

The No Action alternative is not a viable alternative because of multiple factors. For the known lead/galvanized services on Jefferson Street there remains EGLE requirement that all lead service lines must be replaced by 2041. For the aging water main; this main is 70 to 97 years old and working beyond its suitable design life. Therefore, the No Action alternative was not considered further.

3.2.3.2 Replacement

The proposed project will replace the existing 6-inch water main with 8-inch water main and appurtenances along Jefferson from M-66 to the intersection of S. Jackson Street. All existing water services will be replaced and reconnected. An additional 8 lead/galvanized services will be replaced. There are no viable alternatives.

3.2.4 Project No. 4: Railroad Street

3.2.4.1 No Action

The No Action alternative is not a viable alternative because of multiple factors. The current 1.5-inch main that serves parcels on Railroad Street, constructed in 1934, has an unknown/suspected lead material. This main is 92 years old and working beyond its suitable design life. Therefore, the No Action alternative was not considered further.

3.2.4.2 Replacement

The proposed project will replace the existing 1.5-inch water main and appurtenances along Railroad street from S. Jackson Street to S. Jefferson Street. All existing water services will be replaced and reconnected. There are no viable alternatives.

3.2.5 Project No. 5: Webber Street

3.2.5.1 No Action

The No Action alternative is not a viable alternative because of multiple factors. The current 4-inch main that serves the parcels on Webber Street, constructed in 1946, is aging and has a history of breaks. This main is 80 years old and working at its suitable design life. Therefore, the No Action Alternative was not considered further.

3.2.5.2 Replacement

The proposed project will replace the existing 4-inch water main and appurtenances along Webber Street from S. Jackson Street to S. Jefferson Street. All existing water services will be replaced and reconnected. There are no viable alternatives.

3.2.6 Project No. 6: Wellhouse Security Sites

3.2.6.1 No Action

The No Action alternative includes maintaining the current system of security measures which does not include live security measures. The security of the City's drinking water infrastructure from vandalism or public entrance is essential. Therefore, the No Action alternative was not considered further.

3.2.6.2 Replacement

The proposed project will add security cameras to each of the nine production wells for the City's water distribution system. The new security system will become integrated with the City's current SCADA (Supervisory Control and Data Acquisition) system that can be accessed remotely by authorized users and at any time from any location. The productions wells currently have fences but no live security measures. There are no viable alternatives.

3.2.7 Project No. 7: W. Main Street

3.2.7.1 No Action

The No Action alternative is not a viable alternative because of multiple factors. This section of W. Main has 1950s water main that is nearing its usable life as well as high importance water lines crossing the roadway towards the river. The No Action alternative was not considered further.

3.2.7.2 Replacement

The proposed project with replace the parallel 8-inch water mains and all appurtenances as well as the section of 16-inch water main that crosses W. Main street that serves Berlin Township. All existing water services will be replaced and reconnected. There are no viable alternatives.

3.2.8 Project No. 8: Cyrus Street

3.2.8.1 No Action

The No Action alternative is not a viable alternative because of multiple factors. The current 12-inch main in Cyrus Street, constructed in 1929, is aging and supplies a large

part of the water distribution system. This main nearing 100 years old and working beyond its suitable design life. Therefore, the No action Alternative was not considered further.

3.2.8.2 Replacement

The proposed project will replace the existing 12-inch water main and appurtenances along Cyrus Street from the Cyrus Street Storage Tank to West Fargo Street. All existing water services will be replaced and reconnected. The interior of the tank will be renovated to increase the Storage Tank's working life. There are no viable alternatives.

3.3 Pipe Material

3.3.1 Polyvinyl Chloride (PVC) Pipe / Polyethylene Pipe

PVC and Polyethylene pipe is manufactured from petroleum derivatives, chlorine gas, and vinyl chloride. PVC/Polyethylene is known to have a probable negative impact on the environment by their production. Not only is PVC/Polyethylene an environmental concern, these pipe materials are sensitive to other natural environmental impacts like ultraviolet light exposure, temperature, etc. According to UNIBELL, the nationally recognized authority on PVC/Polyethylene, the impact resistance of PVC/Polyethylene pipe is reduced by approximately 20 percent when exposed to ultraviolet light for extended periods of time. The installation of PVC/Polyethylene is sensitive to the type of materials used for bedding the pipe in the trench. The strength of PVC/Polyethylene comes from supporting the pipes from the centerline of the pipe and below. This requires close attention to proper compaction of the necessary granular pipe backfill. PVC/Polyethylene pipe has been known to deflect under static loads of the soil column to the point of bursting. Since PVC/Polyethylene is sensitive to installation compared to ductile iron, the cost associated with the installation of the material is generally more than ductile iron. However, polyethylene piping is generally regarded as cost effective. Another drawback to PVC/Polyethylene is its ability to allow hydrocarbons from contaminated soils or chemical spills to permeate the PVC/Polyethylene and possibly contaminate the drinking water. PVC/Polyethylene materials are more difficult to locate because current locating technologies rely on the magnetic properties of the pipe material. Locating PVC/Polyethylene pipe materials may require the installation of a magnetic tracing

wire that can be avoided in other construction activities. The tracer wire can also corrode over time making locating the pipe more difficult. This can have a negative impact on local residents, since locating the water main would require a greater amount of excavation. Due to the above concerns, PVC and Polyethylene pipe materials will not be further considered for the proposed projects for use as a water main.

3.3.2 Ductile Iron Pipe

Ductile iron pipe has been used in the construction of new water main since the late 1970's. According to the Ductile Iron Pipe Research Association, ductile iron pipe is thirteen times more impact resistant than similar pipe constructed of PVC/Polyethylene. Ductile iron pipe is ferrous and more easily located by current locating technologies. Ductile iron pipe allows more protection from hydrocarbon contamination and chemical spills. The cost of installing ductile iron pipe may be slightly less than PVC since ductile iron pipe is less dependent on the surrounding soils for its strength. The materials for manufacturing ductile iron pipe are more environmentally friendly than PVC pipe and Polyethylene pipe since it is made from recycled steel. There are numerous advantages of using ductile iron pipe over PVC/Polyethylene for water main; therefore, ductile iron pipe will be utilized in the construction of the proposed selected water main projects.

3.4 Method of Construction

3.4.1 Open Cut

Traditional open cut methods of excavation are used extensively in the West Michigan area for installation of most underground public utilities. Services will require digging up the water main which makes the open cut method very cost effective for the water main replacements up to the right-of-way line. Although the City of Ionia is an urban setting, the traffic volumes on many of the roads are not excessive enough to warrant the generally more expensive trenchless technologies currently used today. Open cut will be the primary method of construction within the right-of-way.

The Open Cut method of construction will not be used past the right-of-way line to minimize disturbance of private property.

3.4.2 Directional Drill

Directional drilling is the process of using a small, steer-able steel pipe that is guided under the soil to create a pilot hole. The pipe is guided by above-grade monitoring equipment that tracks the depth and location. Once the guided head reaches its location, the host pipe is attached and pulled back through the pilot hole.

Horizontal Directional Drilling (HDD) can be used to minimize disturbance to the ground surface and landscaping. To minimize disturbance to private property, horizontal directional drilling will be the required method of construction past the right-of-way line on private property.

3.4.3 Bore and Jack

Bore and Jack is a larger diameter pipe installation method that involves horizontal boring. A hole is drilled between sending and receiving pits without disturbing the ground surface. A bore machine simultaneously 'jacks' casing while rotating augers remove the soil back to the sending pit.

The bore and jack method of construction is much slower and more costly than traditional open cut methods. However, the bore and jack process can be effective when crossing under areas where surface disruption needs to be minimized. For example, bore and jack can be beneficial when crossing under railroads, heavily trafficked roads, and/or nearby other surface conditions that would be costly to restore. The only heavily traffic road where the bore and jack method would be considered within the project area is the Jackson Street 16-inch distribution water main (Project 2) where the water main crosses M-21 which was reconstructed in 2012. The remaining water mains within the project areas described are entirely located within residential neighborhoods and lower trafficked commercial areas. Therefore, the bore and jack method of construction will not be considered as a water main installation method for the remaining projects.

3.4.4 Pipe Burst

Pipe bursting is a trenchless method of pipe replacement where a new pipe of the same or larger diameter is pulled through the existing host pipe while "bursting" the deteriorating pipe. Two pits would need to be excavated on both ends of the pipe. A hydraulic machine

would then pull the new pipe back toward the receiving pit behind the bursting head, which breaks up the brittle host pipe to make space for the new one. Pipe bursting is often used to replace water services from the property line to inside the house with minimal disturbance to private property.

Pipe bursting requires the existing water services to be at the required depth throughout the stretch from the water main to the house. If the existing service is not in compliance anywhere along that distance, the new service will follow the old alignment and will likewise be out of compliance. There is no way to know if the old service is deep enough throughout the stretch of private side service without open cutting or potholing the services. Because the minimalization of surface impact is desired on the private properties, pipe bursting will not be considered in this application.

3.5 Analysis of Principal Alternatives

3.5.1 Monetary Evaluation

Detailed cost estimates for each alternative are included in Appendix F. The project plan requires a present worth analysis for each project and its alternatives. The present-worth analysis seeks to show a monetary comparison of costs for the viable alternatives and the direct impact to water users. Factors that are included in the analysis are:

- Capital Costs
- Capitalized Interest Costs
- Operation, Maintenance, and Replacement (OM&R) Costs
- Energy Cost Savings
- Salvage Value of Capital
- Discount Rate Set by the EPA

Several of the factors above are fixed known costs (Capital, Interest, and Salvage Value). Several other factors are variable and are estimated based on best available data (OM&R and Energy Cost Savings). Most of the projects include replacing existing infrastructure and will not have a major impact on existing OM&R costs. Nevertheless, it is anticipated that OM&R costs will be reduced overall with the proposed improvements by reducing the risk of water main and water service breaks. Appendix G shows the present worth analysis for each option

discussed. Only DWSRF eligible costs are included in the present worth analysis. The cost estimates include costs associated with engineering, construction, and mitigation cost if necessary.

3.5.2 Environmental Evaluation

3.5.2.1 Cultural and Historic Resources

If the project is determined by EGLE to be an equivalency project, the City will contact all the local tribal organizations and confirm there are no known cultural resources which may be impacted within the project areas. Additionally, the City is in the process of preparing to submit a section 106 application to the Michigan State Historic Preservation Office (SHPO). A historical evaluation will be performed by Orbis Environmental Consulting who is a State of Michigan approved consultant for this work as well. It is not anticipated that the construction will impact cultural and historic resources because the proposed projects involve the replacement of existing water services and distribution systems in previously developed areas.

3.5.2.2 Air Quality

There are no proposed project activities which will affect air quality.

3.5.2.3 Wetlands

There are no wetlands that exist within the proposed project areas (see map in Appendix H).

3.5.2.4 Great Lakes Shorelands, Coastal Zones, and Coastal Management Areas

There is no proposed project work which will affect these areas.

3.5.2.5 Floodplains

Although some of the street improvements being proposed are within Grand River floodplain areas, no cut or fill activities are proposed so there will be no impact to the floodplain. Projects 1, 3, and 5 are in the 100-year floodplain. Floodplains within the project area are shown in Appendix I.

3.5.2.6 Natural or Wild and Scenic Rivers

There is no proposed project work which will affect natural or Wild and Scenic Rivers.

3.5.2.7 Major Surface Waters

There is no proposed project work which will affect the Grand River or other major surface waters.

3.5.2.8 Topography

The elevation of the existing water system is lowest through the center surrounding the Grand River where it drops to approximately 630 feet above elevation. The norther portion of the service area reaches up to approximately 830 feet above sea level and the southern portion extending into Berlin, Ionia, and Orange Townships reaches up to approximately 810 feet above sea level. There are no proposed topographical changes in any of the proposed projects. A topographic map of the City can be seen in Appendix J

3.5.2.9 Geology

The bedrock below the service area consists of Red Beds of Jurassic Age and the Saginaw Formation of Pennsylvanian Age. The Saginaw Formation underlies the Red Beds and consists of sandstone and shale containing limestone, coal, and gypsum.

3.5.2.10 Soil Types

Local soils consist primarily of sand and loam, with the loam concentrated primarily near the Grand River. Minimal import or export of soils are anticipated for the proposed project.

3.5.2.11 Agricultural Resources

All the proposed improvements to the distribution system and water services will be within Ionia City's urban area and is not anticipated to impact any farmlands.

3.5.2.12 Fauna and Flora

The proposed project work is located within and directly adjacent to the existing road right-of-way in previously developed urban areas and is not anticipated to impact fauna or flora within the project areas. Although the Karner Blue *Plebejus samuelis* (Threatened) have the potential to be encountered, the primary threat to this species is a loss of habitat. Karner Blue larvae eat wild lupine only, which thrive in oak savannas, sand prairies, and pine barrens. Because replacing the water services will be contained to previously disturbed urban areas, the work is unlikely to affect the Karner Blue's habitat.

Although the habitats of the Indiana bat (endangered) and the Northern long-eared bat (threatened) have the potential to be encountered as they typically roost under bark or in crevices in trees, no tree removals or trimming are planned as part of the project. If tree removal or trimming is required, tree cutting will be limited to the time periods between October 1 and March 31, to protect young bats that are not able to fly. If tree cutting is required to be performed outside of this season, surveys of the trees will be performed to determine whether they are roost trees for the endangered Indiana bat or the threatened Northern long-eared bat prior to tree cutting. No other habitat impacts are anticipated.

3.5.2.13 Contaminated Sites

The City of Ionia has some past and present industries that have contaminated the soil and groundwater in various areas throughout the City. A map of the project areas in Appendix K highlight all the known contamination sites throughout the City that are proximate to the proposed project sites.

Potential contamination appears to be concentrated near the Adam Street project (Project 1). Contaminated areas will be reviewed in more detail during the design process of these projects. If contamination is suspected when soil borings are collected or during construction, groundwater samples will be taken to identify if contamination is present at the location. Pretreatment of dewatering or discharge into the sanitary sewer may be required depending on the situation. EGLE will be consulted so as to not cause the contamination to spread.

3.5.2.14 Navigable Waters

None of the proposed work is located in navigable waters under the jurisdiction of the United States Army Corps of Engineers (USACE).

4 SELECTED ALTERNATIVE

4.1 Description of the Selected Alternative

Figure 2 shows the selected drinking water system improvement locations within the City. The cost estimates are included in Appendix F. A summary of each selected alternative can be found in Table 2.

General scopes of work were developed in this project plan and are included in the project cost estimates to make a preliminary determination of project eligibility. Detailed scopes of work and bases of design were not developed as part of this planning document. Detailed bases of design, including existing and proposed water demands and capacities will be provided for projects when a funding source has been identified and when design engineering has been authorized.

4.1.1 Project No. 1: Adams Street – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 3,800 feet of water main and all appurtenances along Adams Street. The project extents are from M-66 to Jackson Street intersection. In addition, the existing water main that passes through Ellis Alley from E. Main Street to E. Adams Street and through the downtown pedestrian alley from W. Adams Street to W. Main Street will both be cut and capped at the existing E. Main Street 8-inch water main and the proposed replacement main in E. Adams Street. The project will also replace approximately 5 partial and full lead/galvanized services.

The estimated project cost is $5,221,000.

The estimated DWSRF eligible project cost is $4,102,000.

4.1.2 Project No. 2: Jackson Street – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 3,250 feet of water main and all appurtenances along Jackson Street from E. Adams Street to M-21. This includes upsizing the water main on Jackson Street between E. Washington Street and E. Main Street from a 10-inch to a 12-inch. The project will also replace approximately 6 partial and full lead/galvanized services.

The estimated project cost is $3,683,000.

The estimated DWSRF eligible project cost is $3,328,000.

4.1.3 Project No. 3: Jefferson Street – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 3,250 feet of water main and all appurtenances along Jefferson Street from Webber Street to M-21. The proposed project will upsize the water mains on Jefferson Street to 8-inch. The project will also replace approximately 8 partial and full lead/galvanized services.

The estimated project cost is $3,834,000

The estimated DWSRF eligible project cost is $3,500,000

4.1.4 Project No. 4: Railroad Street – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 500 feet of water main and all appurtenances along Railroad Street with a 12-inch looped water main from Jefferson Street to Jackson Street.

The estimated project cost is $264,000.

The estimated DWSRF eligible project cost is $264,000.

4.1.5 Project No. 5: Webber Street Water Main – FY2027

Design Parameters

Alternative No. 1. The existing section of 4-inch water main on Webber Street and the southernmost extent of S. Jackson Street will be replaced with 8-inch water main totaling approximately 575 feet.

The estimated project cost is $440,000.

The estimated DWSRF eligible project cost is $396,000.

4.1.6 Project No. 6: Wellhouse Security Sites – FY2027

Design Parameters

Alternative No. 1. The security cameras will be replaced with new security cameras located at each production well and integrated into the City's SCADA system so video footage can be accessed live remotely.

The estimated project cost is $58,000.

The estimated DWSRF eligible project cost is $58,000.

4.1.7 Project No. 7: W. Main Street - Future

Design Parameters

Alternative No. 1 The parallel 8-inch water mains and all appurtenances will be replaced as well as the 16-inch water main that crosses W. Main Street. A total of 3,010 feet of water main is proposed to be replaced.

The estimated project cost is $2,575,000

The estimated DWSRF eligible project cost is $2,360,000

4.1.8 Project No. 8: Cyrus - Future

Design Parameters

Alternative No. 1 has a proposed 950 feet of 12-inch water main within Cyrus Street from the Cyrus Street Storage Tank to W. Fargo Street intersections will be replaced

with all appurtenances. The interior of the tank will be refurbished to ensure the longevity and continued reliability of the storage tank.

The estimated project cost is $1,161,000

The estimated DWSRF eligible project cost is $1,051,000

4.2 Project Schedule

This table below is a schedule for Projects No. 1-6; the proposed water system improvements that are intended to be included as a part of the City's FY 2027 DWSRF Project. They would be funded under the fourth quarter of fiscal year 2027. The projects may be phased over multiple construction seasons.

DWSRF Project (4th Quarter 2027)
Proposed Project Schedule

Milestone	Date
Public Advertisement	April 13, 2026
Hold Public Hearing	April 28, 2026
Submit Final Project Plan to EGLE	June 1, 2026
Receive Approval of Project Plan	September 2026
Plans and Specifications Approved	May 2027
Receive Construction Permit	May 2027
Receive Construction Bids	June 2027
DWSRF Loan Closing	August 2027
Begin Construction	September 2027
Construction Completed	August 2030

Projects No. 7 and 8 are being planned as future projects with the exact schedule to be determined.

4.3 Cost Estimates

Appendix F contains the cost estimates for the proposed and future water system improvements. The project costs include construction costs and approximately 30% for construction contingencies, legal, administrative, and project engineering costs.

4.4 Implementability

Implementation of the proposed project is based on the assumption that the project will be

financed by a low-interest loan from the DWRF program. The City of Ionia has the necessary legal, institutional, financial, and managerial resources available to ensure the construction, operation and maintenance of the proposed facilities.

4.5 User Costs

Project planning document process requires the applicant to perform a Present Worth analysis of the various options. The Present Worth analysis (Appendix G) uses discount factors that reduce the annual expenses compared to what the annual bond payment would be. Appendix L contains the annual cost summary and provides the worst-case scenario where the proposed bond payment will not be reduced by any anticipated discounts related to salvage value, reduction in OM&R, energy savings, and principal forgiveness.

The City anticipates funding the FY2027 projects with an estimated $11,648,000 DWSRF loan. Assuming a 2.75% interest rate for a 30-year period, the expected annual debt service for the load will be approximately $575,320 per year. This translates to an annual cost of about $44.34 per REU or $3.70 per REU per month in the City based on total present worth.

In combination with the City's recent asset management planning efforts, the City has been working on financial plans to address needed capital improvement projects over the next several years. A more detailed rate analysis will be conducted if these projects are funded through the DWSRF program. The City is anticipating increasing water rates by approximately $24.00 per REU per quarter to pay for the work. Payments on DWRSF loans are expected to be covered through rate adjustments. Consideration will also be given to making sure rates are as affordable as possible.

4.6 Useful Life

The City intends to pay back the DWSRF loan on a 30-year amortization schedule. EGLE. The guidance requires that the loan terms must not exceed the useful life of the project. Projects 1 through 5 of the proposed projects include the installation of water main, appurtenances, and water service lines. The expected useful life for new water pipes is approximately 75 years. For these projects, the useful life far exceeds the length of the loan terms. For Project 6, the useful life of the security camera upgrades is 20 years. The weighted useful life of the FY2027 project is 74.7 years. Therefore, the weighted average useful life far exceeds the anticipated loan term of 30 years.

5 Evaluation of Public Health and Environmental Impacts

5.1 Direct, Indirect, and Cumulative Impacts

5.1.1 Social/Economic Impact

If DWSRF funding is received for the proposed projects, user rates will not require a burdensome change. See Present Worth Analysis in Appendix G for further details on user costs. As practicable, construction will be staged and scheduled so that residents have access to their home and business. The DWSRF program requires competitive bidding for projects exceeding $50,000. This will allow a larger number of contractors to bid on the projects compared to projects that would be solicited to a short list of contractors. Construction-related jobs may be created due to the amount of work anticipated to be completed in the next few years. In most cases, portions of existing roads will be replaced since the proposed water main may be located in segments of the road pavement. This reconstruction of existing roads would bring them into current standards of road construction and improve safety. The proposed projects will have a positive impact on the economics of the project area. Residents with services affected by high levels of lead are recommended to not utilize the water for drinking or food preparation/canning. Given the multiple impacts of lead on humans and other organisms, there is an atmosphere of fear which reduced the current quality of life in the area and is potentially affecting property values. The proposed installation of copper water services and connection to a reliable, safe potable water supply will significantly reduce the current social and economic impacts of the lead contamination.

5.1.2 Construction/Operational Impact

5.1.2.1 Natural and Man-made Features

The proposed water main installations will either follow the path of the existing water main or be directly adjacent to the location and within the road right-of-way. The locations of the existing water mains that are proposed to be replaced are in previously disturbed areas.

The proposed water service installations will either follow the path of the existing service or be directly adjacent to the existing service. The service paths are previously

disturbed space, and efforts will be taken during design and construction to minimize construction impacts wherever possible.

5.1.2.2 Contamination

Corridors have been reviewed, and it has been determined that contamination may be encountered within the project area (Appendix K). During project design, the areas of potential contamination will be reviewed in more detail. Where contamination is anticipated, procedures will be in place to properly dispose of contaminated material in accordance with state and local regulations.

5.1.3 Indirect Impacts

No long-term impacts to the environment are anticipated.

5.1.4 Other impacts

Once construction is completed, there are no anticipated permanent, detrimental impacts to the community.

6 MITIGATION

6.1 Short Term Construction Related Mitigation

Standard procedures used in the construction industry will be included in the construction contract documents to mitigate construction activities.

6.1.1 Traffic Disruption

All components of the project will be coordinated carefully with residences and businesses in the area, and construction methods will be selected to minimize disruptions.

Standard traffic and safety control devices such as barricades and lighted barrels will be in place if necessary to warn and protect residents during construction activities. Traffic control will likely be required on Michigan Department of Transportation (MDOT) owned roadways within the City. A Right-of-Way permit will be obtained from MDOT and the Contractor will be required to adhere to all traffic control requirements within the approved permit.

6.1.2 Dust and Noise

Dust control methods such as water and/or brine will be used to keep dust to a minimum. Haul roads and public roadways will be swept daily and maintained to assure residents access to the area. Construction equipment will be maintained in good condition to decrease noise.

6.1.3 Soil Erosion

Temporary and permanent soil erosion and sedimentation control measures such as straw bales, stormwater inlet silt sacks, and silt fence, will be part of the construction activities to prevent soil release and protect nearby streams and wetlands.

6.1.4 Water Service Disruption

During water main connections to the existing system, and construction of new water services and connection to home water systems, connection to the municipal system will be made as quickly as possible to minimize disruption.

6.1.5 Working in Floodplains

Although some of the water main and service replacements are within Grand River floodplain areas, no cut or fill activities are proposed so there will be no impact to the floodplain. Floodplains within the project area are shown in Appendix I.

6.1.6 Working in Wetlands

It is anticipated that none of the projects will impact any wetlands. A map of the proposed project areas and the wetlands within the area is shown in Appendix H.

6.1.7 Potential Loss of Wildlife / Habitat

The proposed project work is located within and directly adjacent to the existing road right-of-way in previously developed urban areas and is not anticipated to impact fauna or flora within the project areas. Although the Karner Blue *Plebejus samuelis* (Threatened) have the potential to be encountered, the primary threat to this species is a loss of habitat. Karner Blue larvae eat wild lupine only, which thrive in oak savannas, sand prairies, and pine barrens. Because replacing the water services will be contained to previously disturbed urban areas, the work is unlikely to affect the Karner Blue's habitat.

Although the habitats of the Indiana bat (endangered) and the Northern long-eared bat (threatened) have the potential to be encountered as they typically roost under bark or in crevices in trees, no tree removals or trimming are planned as part of the project. If tree removal or trimming is required, tree cutting will be limited to the time periods between October 1 and March 31, in order to protect young bats that are not able to fly. If tree cutting is required to be performed outside of this season, surveys of the trees will be performed in order to determine whether they are roost trees for the endangered Indiana bat or the threatened Northern long-eared bat prior to tree cutting. No other habitat impacts are anticipated.

6.2 Mitigation of Potential Long Term Impacts

General construction activities in the water system improvements will prohibit the disposal of soils in wetlands, floodplains, or other sensitive areas. Catch basins will be protected on the distribution system where earth changing activities will take place.

6.2.1 Permits

All Act 399 Community Water Supply Construction Permits will be obtained. It is not anticipated that permit applications will be required from EGLE for wetlands (Part 303), or inland lakes and streams (Part 301). An EGLE permit for construction within the 100-year floodplain (Part 31) will be submitted and permits obtained for Projects 1, 3, 5. Permit applications for soil erosion and sedimentation control (SESC) will be submitted and permits obtained from Ionia County Drain Commission.

6.2.2 Use of Natural Resources

As a result of the water main construction, natural resources such as gravel, sands, oil, and fuels will be utilized and consumed. To minimize the impact on the natural resources a number of mitigation techniques will be utilized during the construction.

Recycled materials like scrap iron will be used to make the ductile iron water main pipe. This will require less use of iron ore that is mined from the ground. The use of erosion control measures will be composed of recycled or natural products that do not use or use less synthetic materials made from oil.

6.2.3 Energy Use

The use of energy is inevitable in operating water wells, maintaining main infrastructure, and producing materials used for construction. Using recycled or natural eco-friendly products as part of the construction process will use less energy compared to using nonrenewable resources. The use of the recycled and/or eco-friendly products will not completely mitigate the use of all energy but it will offset a small percent.

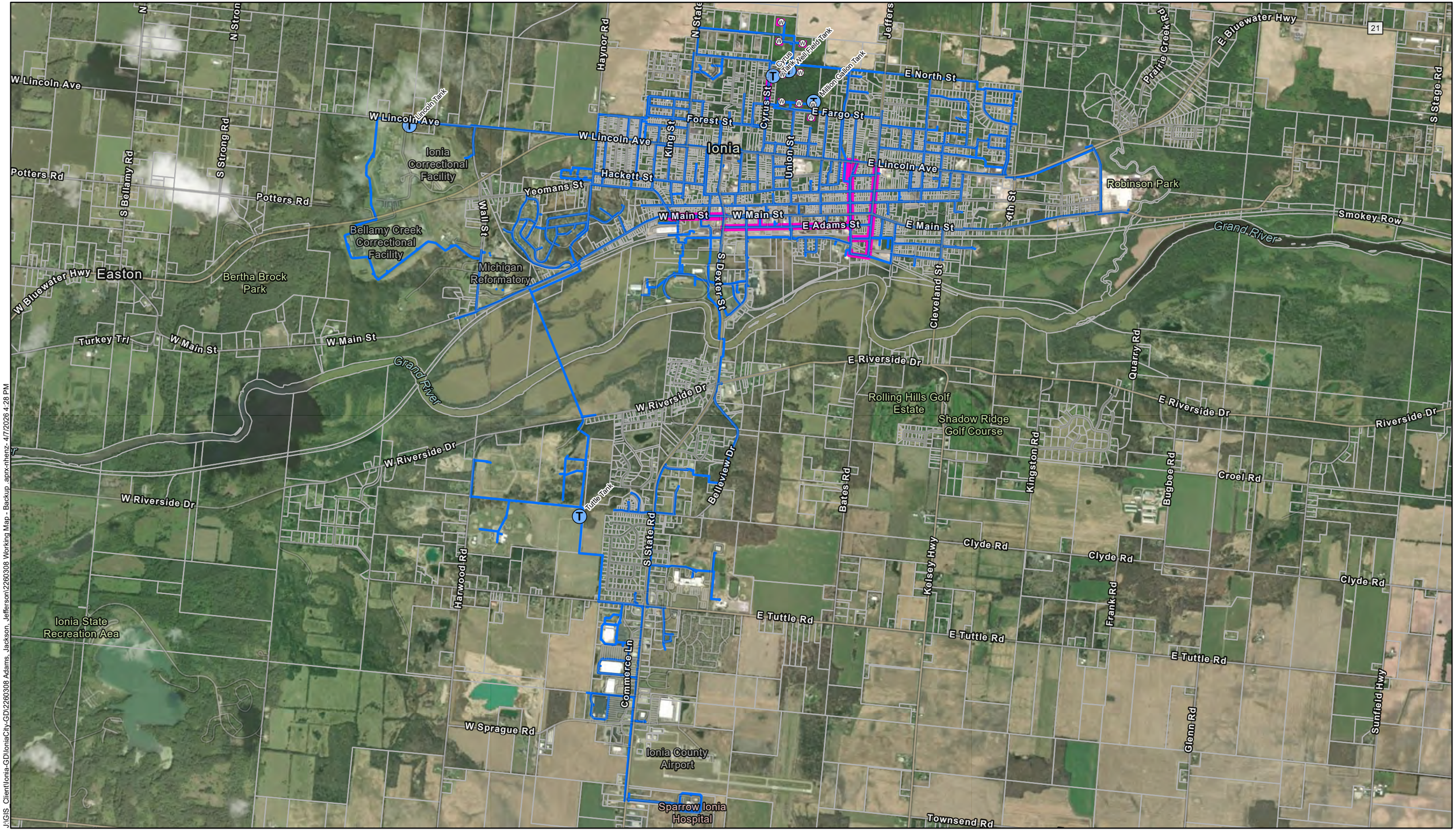
An additional benefit of the Project Plan is that the water main replacement projects may reduce water loss due to the replacement of potentially leaky, structurally deficient water mains throughout the City. This will result in reduced energy demand for pumping and treating the drinking water.

6.3 Mitigation of Indirect Impacts

There are no major projected changes in the land use of the study area that would significantly impact water demands beyond the average daily demand projections and maximum daily demand projections provided with the 2023 Water Reliability Study in Appendix A. All the projects are proposed in order to replace or improve existing water main and water service piping and well infrastructure. None of the proposed projects are located in areas where significant growth or land use changes are projected to occur. The community's ordinances can be found on their website. General rules are the same as EGLE permits require, such as storm water containment, and soil erosion and sedimentation control.

Figures

Figure 1 Existing Water System Map
Figure 2 Selected Improvements Map



SCALE: 1" = 2,500 '

LEGEND

- Water Main
- Wells
- Storage Tank
- DWSRF Project Extents
- Ionia County Tax Parcels

CITY OF IONIA

IONIA COUNTY, MICHIGAN

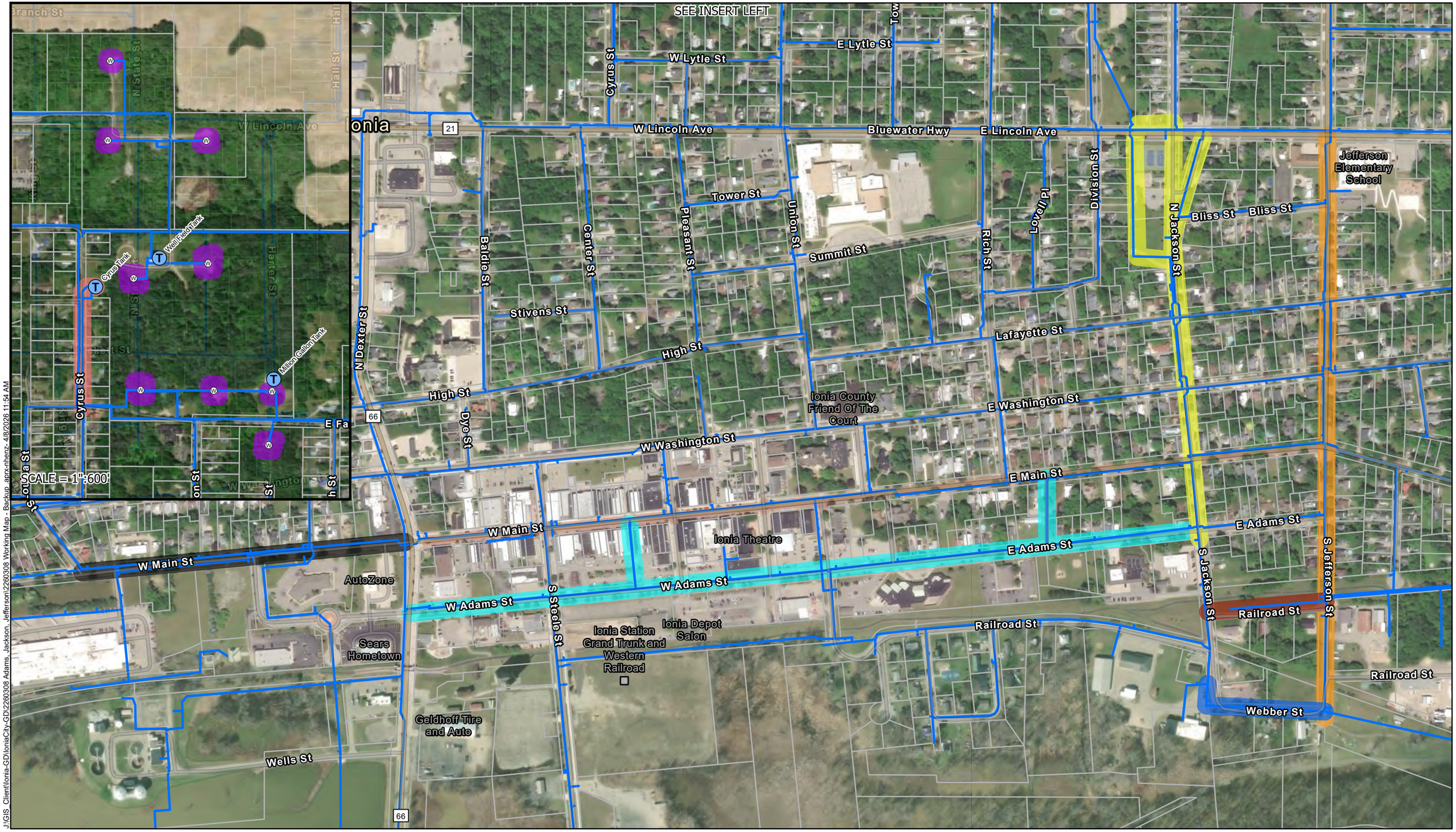
EXISTING WATER DISTRIBUTION SYSTEM

FIGURE 1

Prein&Newhof

2260308

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SCALE: 1" = 400 '

LEGEND

- Wells
- Storage Tank
- Water Main
- Ionia County Tax Parcels
- Project 1: Adams Street
- Project 2: Jackson Street
- Project 3: Jefferson Street
- Project 4: Railroad Street
- Project 5: Webber Street
- Project 6: Wellhouse Security Sites
- Project 7: W. Main Street
- Project 8: Cyrus Street

CITY OF IONIA

IONIA COUNTY, IONIA

SELECTED IMPROVEMENTS

FIGURE 2

Prein&Newhof

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Tables

Table 1 Historical and Projected Population
Table 2 Summary of Selected Alternatives

Table 1 - Historical and Projected Population

	Actual Census Figures			Forecasted Population					
Location	**2000**	**2010**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
City of Ionia*	6,172	6,132	6,582	6,658	6,734	6,810	6,886	6,962	7,038
Ionia County**	63,905	64,064	66,804	66,713	66,622	65,876	65,129	63,261	61,392

*Ionia City Population Projections through 2050 are from the City of Ionia's current Master Plan.

**Ionia County Population Projections through 2050 are from the Michigan Department of Technology, Management and Budget.

Table 2 - Summary of Selected Alternatives

Project #	Year	Project Title	Project Description	Summary of Project Need	Lead/Galvanized Service Replacements	DWSRF Eligible Cost Estimate	Total Project Cost Estimate
1.	FY27	Adams Street	The proposed project will replace approximately 3,900 feet of 8-inch water main and all appurtenances along Adams Street. The project extents are from M-66 to Jackson Street intersection. In addition, the existing water main that passes through Ellis Alley from E. Main Street to E. Adams Street and through the downtown pedestrian alley from W. Adams Street to W. Main Street will both be abandoned.	The aging water main from M-66 to S. Jackson Street on Adams Street is a 6-inch water main with majority of it installed in 1929 and the westernmost section installed in 1957. Within the project there are two lateral water mains that are beyond their working life and have a break history. The section of water main on Ellis Avenue between E. Main Street and E. Adams Street is a 6-inch water main from 1956 and the section of water main through an alley from W. Adams Street to Main Street between Depot Street and Steele Street is a 5-inch water main from 1929.	5	$ 4,102,000	$ 5,221,000
2.	FY27	Jackson Street	The proposed project will replace approximately 3,250 feet of 8-inch, 12-inch and 16-inch water main and all appurtenances along Jackson Street from E. Adams Street to M-21. This includes upsizing the water main on Jackson Street between E. Washington Street and E. Main Street from a 10-inch to a 12-inch to increase transmission to the eastern extent of the City where the second largest water user is located.	The aging water main from M-21 to E Adams along Jackson Street ranges from 8-inch to 12-inch with majority of the infrastructure installed from 1929 to 1934 and some sections in 1956.	6	$ 3,500,000	$ 3,834,000
3.	FY27	Jefferson Street	The proposed project will replace the 6-inch water main with approximately 3,250 feet of 8-inch water main and all appurtenances along Jefferson Street from Webber Street to M-21.	The aging water main from M-21 to Webber Street along Jefferson Street consists of 6-inch water mains with majority of the infrastructure installed in 1929 and some sections in 1956.	8	$ 3,328,000	$ 3,683,000
4.	FY27	Railroad Street	The proposed project will install approximately 500 feet of 12-inch water main and all appurtenances along Railroad Street to complete a 12-inch transmission loop between Jefferson Street and Jackson Street.	This existin dead-end 1.5-inch water main, installed in 1934, is suspected to be lead/galvanized and has reached the end of its useful life.	0	$ 264,000	$ 264,000
5.	FY27	Webber Street	The existing section of 4-inch water main on Webber Street and the southernmost extent of S. Jackson Street will be replaced with 8-inch water main totaling approximately 575 feet.	The section of Webber Street that spans between S. Jackson Street and S. Jefferson Street currently has an undersized 4-inch water main installed in 1946 that has reached the end of its useful life.	1	$ 396,000	$ 440,000
6.	FY27	Wellhouse Security Sites	The security system improvments at the nine wellhouses will include installing live security cameras that are integrated into the City's current SCADA system that monitors security measures and treatment facilities.	The current security system at the City's nine production wells has reached the end of its useful life and not up to date with the security measures implemented at the City's treatment and storage facilities. The security system needs to be integrated with the City's SCADA system to allow for live monitoring and quicker emergency response times.	0	$ 58,000	$ 58,000
7.	Future	W. Main Street	The proposed project will replace approximately 2.900 feet of parallel 8-inch water mains in addition to approximately 150 feet of 16-inch water main that crosses W. Main Street.	The section of W. Main Street from M-66 to Yeomans Street is a part of the main transmission pathway for both the water distribution and sanitary distribution network. The aging 8-inch and 16-inch water mains within the roadway have reached the end of their useful life.	7	$ 2,360,000	$ 2,575,000
8.	Future	Cyrus Street	The proposed project will replace approximately 950 feet of 12-inch water main within Cyrus Street from the Cyrus Street Storage Tank to W. Fargo Street intersections, including all appurtenances. The interior of the tank will be refurbished to ensure the longevity and continued reliability of the storage tank.	The aging 12-inch water main from the Cyrus Street Storage Tank to the intersection of W. Fargo Street was installed in 1929 and has reached the end of its useful life. This section of main is one of the primary suppliers for the western extents of the middle pressure district. Furthermore, the interior of the Cyrus Street Storage Tank requires rehabilitation to the surface and repainting.	0	$ 1,051,000	$ 1,161,000
					Total FY2027 Cost:	**$ 11,648,000**	**$ 13,500,000**
					Total Future Cost:	**$ 3,411,000**	**$ 3,736,000**

Note: The City has also applied for CWSRF funding for sanitary sewer replacement within project areas for projects 1, 2, 3, & 7. Sewer improvement costs are not included in the DWSRF eligible cost estimates or the total cost estimates shown above.

Appendix A

2023 City of Ionia Water Reliability Study

Water System Reliability Study and General Plan Update

WSSN #03370

Prepared for:

City of Ionia
Ionia County, Michigan

Project No. 221406
March 27, 2023

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Engineers | Architects | Scientists | Constructors

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Water System Reliability Study and General Plan Update

WSSN #03370

Prepared For:

City of Ionia
Ionia County, Michigan

Project No. 221406
March 27, 2023

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List of Abbreviations/Acronyms

ADD	average day demands
AWWA	American Water Works Association
City	City of Ionia, Michigan
CIP	Capital Improvements Plan
Dixon	Dixon Engineering Incorporated
EGLE	Michigan Department of Environment, Great Lakes, and Energy
ERP	Emergency Response Plan
gpm	gallons per minute
ISO	Insurance Services Office
MDD	maximum day demands
MG	million gallons
mgd	million gallons per day
MOR	monthly operating report
PHD	peak hourly demand
PRV	pressure reducing valves
psi	pounds per square inch
PVC	polyvinyl chloride
REU	residential equivalent unit
State	State of Michigan
VFD	variable frequency drives
WHPP	wellhead protection program

1.0 Executive Summary

The City of Ionia (City) owns and maintains a municipal water distribution system that supplies water to residents and businesses within the City, and to portions of Berlin, Easton, and Ionia Townships. A considerable component of the City's service population includes four correctional facilities located within the City boundary. The system is divided into three pressure districts, low, medium, and high. Two wells serve the low-pressure district, two wells serve the medium pressure district, and five wells serve the high-pressure district. A one million-gallon (MG) ground storage tank serves the low district, a 0.5 MG ground storage tank serves the medium district and three 0.5 MG elevated storage tanks service the high district. Fluoride and chlorine are injected at the wells for dental health and disinfection, respectively.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) requires that each public water supply complete a Reliability Study and update their General Plan every five years. This report was completed to fulfill these requirements for the City. This document provides a complete update to the reliability study completed in 2014.

As part of the report, the hydraulic model was calibrated using seven hydrant flow tests. The water system was analyzed using the calibrated hydraulic model to assess fire flow and pressure metrics as recommended by EGLE. These metrics give a general picture of the condition of the system.

Water use data was analyzed from the past 10 years to provide an update to the current and projected average day demands (ADD), maximum day demands (MDD), and peak hour demands (PHD). Historical demands have remained constant over the past decade. Projected water demands were updated based on population projections for the City. Table 1 presents the demand projections for the current water system, as well as the 5-year and 20-year planning intervals.

Table 1 – Water System Demand Projections

Year	Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
2022	1.78	3.51	5.27
2027	1.80	3.56	5.34
2042	1.87	3.69	5.54

The percentage of non-revenue water, or unbilled water, in the system was also evaluated. An average non-revenue water percentage of 8.2% was calculated for the City. A value of 10% non-revenue water is a typical goal for municipal water systems. The City exceeds the non-revenue water percentage goal for a typical system indicating it is a healthy water system. The City should continue the practices that have controlled non-revenue water for the system.

The production capacity of the water supply facilities was evaluated. EGLE generally requires that communities begin planning for an expansion of their supply system when the MDD exceeds 80% of the water system's firm supply capacity. Firm capacity is defined as the capacity of a process with the largest process unit out of service. The City's MDD will not exceed the recommended 80% capacity during the study period.

The water storage available to the system in comparison to the recommended water storage based on water demands was evaluated. This evaluation was performed assuming the 20-year projected demands for the water system and typical Insurance Services Office (ISO) fire protection requirements. The existing water storage available was determined to be satisfactory for the 20-year study period.

Pressures throughout the system remained above 35 pounds per square inch (psi) at all locations during normal operations, the minimum pressure during non-emergency conditions recommended by Ten States Standards. A target available fire flow of 1,000 gallons per minute (gpm) was chosen, based on ISO requirements and the City's input. Areas that did not meet this available fire flow goal were typically served by older, mains in the system or dead-end mains.

Several improvements to the water system were proposed in a Capital Improvements Plan (CIP) based on the results of the hydraulic modeling. Table 2 presents the estimated cost of these improvements, which are categorized as 5-year and 20-year projects. Section 10 of this report provides explanation of the improvements proposed in the CIP. The improvements will help to increase fire flow throughout the system and replace water mains that have exceeded their useful life.

Table 2 – CIP Opinions of Probable Project Cost

Improvement Category	Total Cost
5-Year Distribution Improvements	$2,807,000
20-Year Distribution Improvements	$7,363,000

2.0 Introduction

The City owns and operates a municipal water system which supplies water to the City's residents and businesses and portions of Berlin, Easton, and Ionia Townships. The City's largest users are four correctional facilities that the City has entered into contractual agreements to supply water. The system is divided into three pressure districts, low, medium, and high. Two wells serve the low-pressure district with a firm capacity of 0.72 million gallons per day (mgd), two wells serve the medium pressure district with a firm capacity of 0.72 mgd and five wells serve the high-pressure district with a firm capacity of 2.88 mgd. Firm capacity is determined with the largest unit out of service. Although wells primarily operate solely for their specific pressure district, supplemental water can by supplied to the lower pressure districts from the higher-pressure districts (high to low or medium and medium to low) through pressure reducing valves (PRV).

A one MG ground storage tank serves the low-pressure district, a 0.5 MG ground storage tank serves the medium pressure district, and three elevated 0.5 MG storage tanks serve the high-pressure district. Fluoride and chlorine are injected at the wells before the water is pumped to the distribution system.

The City retained Fishbeck to complete a Reliability Study and General Plan for the City's water system. A reliability study is required to comply with the Part 12 and Part 16 rules of the State of Michigan (State) Safe Drinking Water Act, P.A. 399. A Reliability Study is required every five years, focusing primarily on comparing firm water supply with present and projected future water demands. A General Plan is also required every five years to evaluate the hydraulic performance of the distribution system and the development of a 5-year and 20-year CIP.

One of the correctional facilities, Michigan Reformatory, closed in November 2022. Some of the incarcerated population was redistributed throughout the other facilities in the service area, but the overall population will decrease. Even though the incarcerated population within Ionia's system is anticipated to decrease, the City's population and water demands are expected to increase.

3.0 Historical Water Use

3.1 Water Demands

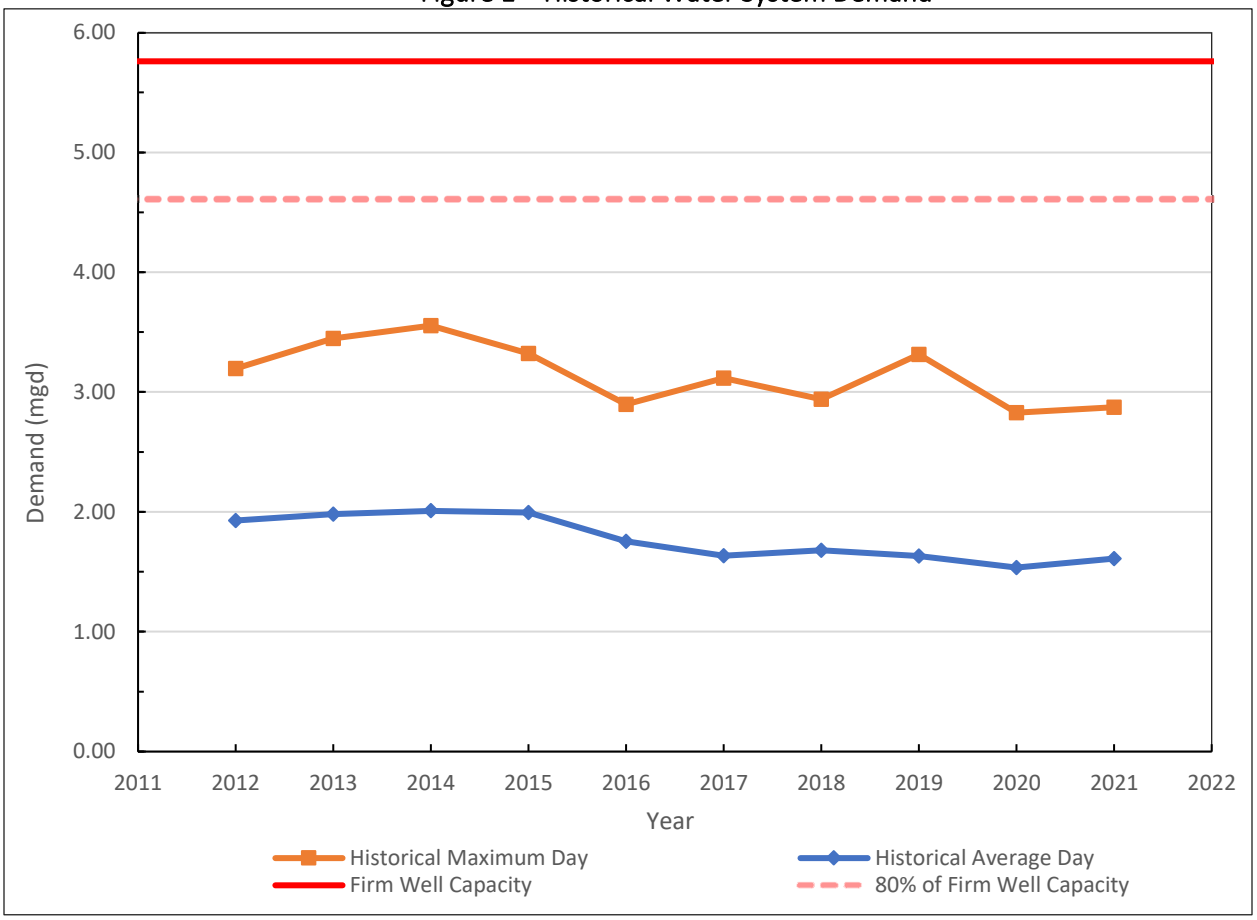
The City's monthly operating reports (MORs) were used to analyze historical water use for the time period, 2012 to 2021. The ADD is the average daily volume of water pumped to the system in one year. The MDD is the maximum amount of water pumped to the system in a single day, annually. The ADD and MDD were determined and calculated for years 2012 to 2021; the historical demands are shown in Table 3 and in Figure 1 where they are compared to the firm well capacity (5.76 mgd) and 80% of that capacity (4.6 mgd). Typically, EGLE recommends water systems begin planning for expansion when the MDD of the water system exceed 80% of the rated capacity of the system.

The ADD and the MDD have remained consistent for the past ten years. The City's historical MDD for the water system are well below 80% of the system firm well capacity.

Table 3 – Historical Water Demands (2012-2021)

Year	ADD (mgd)	MDD (mgd)	MDD:ADD Peaking Factor
2012	1.93	3.20	1.66
2013	1.98	3.45	1.74
2014	2.01	3.56	1.77
2015	2.00	3.32	1.67
2016	1.75	2.90	1.65
2017	1.63	3.12	1.91
2018	1.68	2.94	1.75
2019	1.63	3.32	2.03
2020	1.54	2.83	1.84
2021	1.61	2.87	1.78
Average	1.78	3.15	1.78
Maximum	2.01	3.56	2.03
Standard Deviation	0.18	0.26	0.12
95th Percentile	2.08	3.57	1.98

Figure 1 – Historical Water System Demand

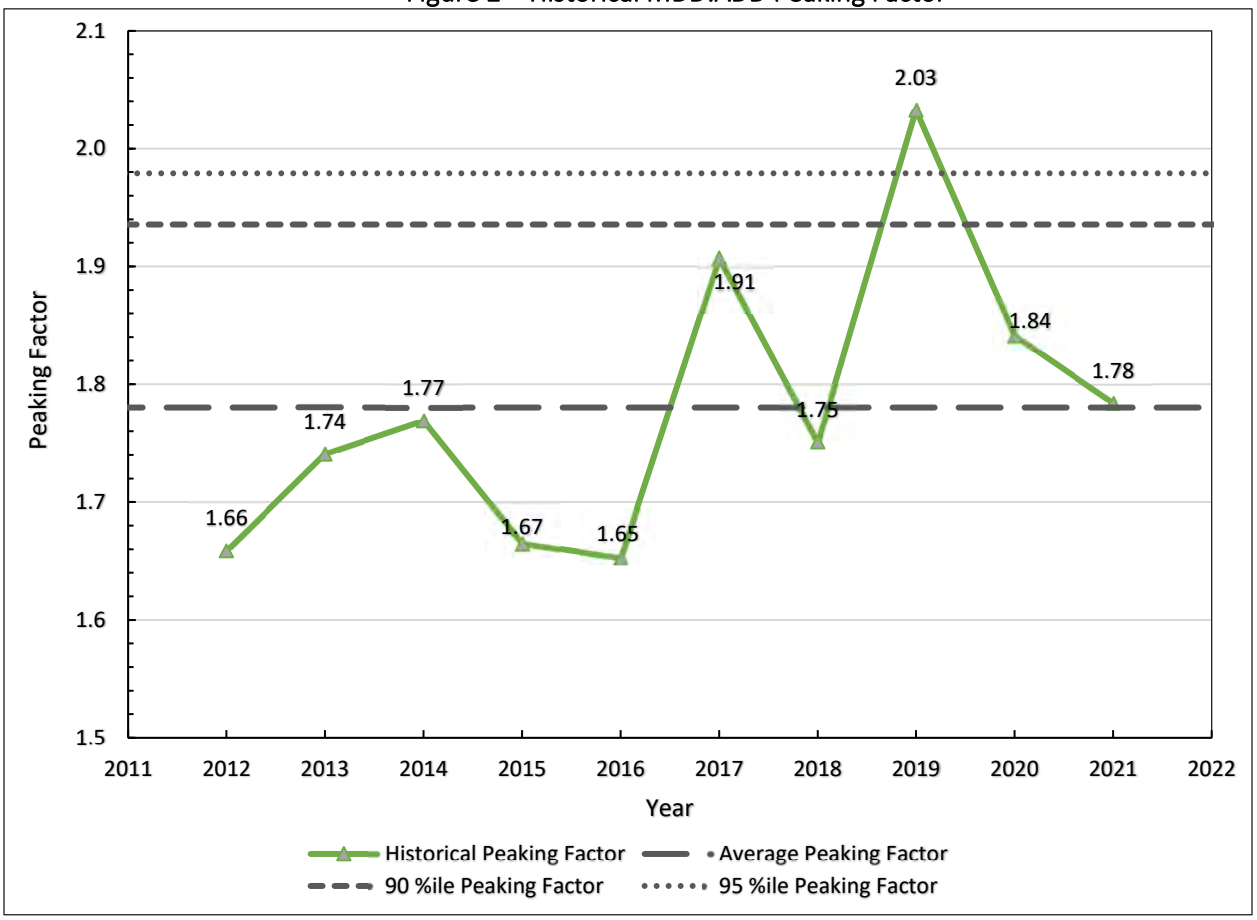


3.2 Peaking Factor

The peaking factor is determined by the ratio of MDD demands to the ADD. This value is used to show the variability in demands experienced by the water system. Figure 2 shows the MDD:ADD peaking factors observed over the last ten years.

The MDD:ADD peaking factor is a useful tool in developing MDD projections. Statistical analysis of the historical peaking factors was performed to determine the peaking factor applied to the projections. The starting point for peaking factor projections was set equal to the average of the data plus 1.65 standard deviations. Statistically, assuming a normal distribution of the data, this value will be greater than 95% of the future peaking factors based on the observed data. In other words, there is a 95% chance in a single year that the peaking factor for that year will fall below this projected peaking factor. This value equates to an MDD:ADD peaking factor of 1.98, which was used for the demand projections in this study.

Figure 2 – Historical MDD:ADD Peaking Factor



The PHD are not currently measured and recorded. For purposes of this study, a typical PHD:MDD peaking factor of 1.5 was used to estimate peak hour demands. The estimated peaking factor of 1.5 is typical for a municipal system.

3.3 Non-Revenue Water

Water distribution systems typically "lose" water due to unmetered usage, leaks, meter errors, firefighting, illegal water use, or other reasons. This lost water is referred to as non-revenue water. One metric that can help to indicate the health of a water system is the percentage of water supplied to the system that ends up unaccounted. In general, municipal water systems strive to reduce unaccounted water to less than 10% of total water use.

The City tracks water used for their hydrant flushing program which is an estimated 16 to 20 million gallons annually. Historical pumpage, billing data, and water for the hydrant flushing program were used to estimate the percentage of non-revenue water. The billing data and average water use for hydrant flushing was compared to the pumpage totals to determine the amount of non-revenue water and is summarized in Table 4. The City's non-revenue water percentage averaged out to 8.2% of water from 2012 to 2021.

Table 4 – Non-Revenue Water Volume

Year	Water Pumped (MG)	Metered Sales (MG)	Volume for Hydrant Flushing (MG)	Total Water Loss Volume (MG)	Unaccounted Water (%)
2012	705.2	604.2	18.0	100.0	11.6%
2013	724.9	643.1	18.0	81.8	8.8%
2014	733.5	634.1	18.0	99.4	11.1%
2015	728.2	656.4	18.0	71.8	7.4%
2016	639.8	587.4	18.0	52.4	5.4%
2017	598.2	520.9	18.0	77.3	9.9%
2018	613.0	545.0	18.0	68.0	8.2%
2019	595.2	538.7	18.0	56.5	6.5%
2020	560.5	493.7	18.0	66.8	8.7%
2021	587.8	543.7	18.0	44.1	4.4%
Average	648.5	576.7	18.0	71.8	8.2%
Maximum	733.5	656.4	18.0	100.0	11.6%
Minimum	560.5	493.7	18.0	44.1	4.7%

The City is below the non-revenue water goal for a municipal of 10% unaccounted water. The City should continue measures to reduce non-revenue water to maintain an unaccounted water percentage under 10%, such as, recording unmetered water usage like hydrant flushing and calibrating water meters for their largest users.

3.4 Top Water Users

Table 5 presents the largest water users in the water system for 2021. The total volume of water used by the largest users equates to approximately 63.6% of the total volume of water pumped throughout the distribution system. A little less than one third of the water is used by the Department of Corrections. The water usage by each correctional facility is broken down in Table 5. Another quarter of the water is used by Ventra Ionia Main which is an automobile parts manufacturer.

In the hydraulic model, these large user demands were applied to the nearest junction. The remaining demand for the water system was evenly distributed across the remaining junctions in the hydraulic model.

Table 5 – Summary of Largest Water Users

Rank	Customer	Service Location	Average Demand (gpm)	Percentage of 2021 Pumpage
1	Department of Corrections	Multiple Addresses	388.9	31.54%
	Michigan Reformatory	1342 W Main Street	146.2	11.8%
	Handlon Training Unit	1728 Bluewater Hwy	90.5	7.3%
	Bellamy Creek Correctional Facility	1727 Bluewater Hwy	83.5	6.8%
	Ionia Correctional Facility	1576 Bluewater Hwy	55.7	4.5%
	Bellamy Creek Dormitory	801 Wall Street	13.9	1.1%
2	Ventra Ionia Main	14 North Beardsley Road	309.0	25.06%
3	Ventra Ionia Paint	719 West Main Street	54.9	4.45%
4	Matcor Automotive	314 South Steel Street	7.6	0.62%
5	Sparrow Ionia Hospital	479 Lafayette Street	5.6	0.45%
6	Ionia County Jail	175 East Adams Street	4.5	0.37%
7	City of Ionia WWTP	720 Wells Street	3.8	0.31%
8	Ionia High School	250 East Tuttle Road	3.5	0.28%
9	Meijer Ionia	2770 South State Road	3.1	0.25%
10	Applebee's Ionia	3039 Commerce Lane	2.8	0.23%
		Total	783.7	63.56%

4.0 Water Demand Projections

4.1 Population Projections

The historical population data was obtained from the US Census Bureau and the projected population data from the West Michigan Regional Planning Commission. There was considerable growth in the City of Ionia's population from 1990 to 2000 which was caused by an agreement with the correctional facilities for the City to maintain and operate water supplies for the facilities. Five of the correctional facilities were located in adjacent Berlin and Easton Townships and a noticeable population decrease for the Townships can be seen in 2000. This resulted in a large portion of Ionia's water users being an incarcerated population. In 2020, there were 6,742 incarcerated people served by the City's water system. Additionally, the City has seen substantial commercial and residential growth associated with the extension of the City's water system south of the Grand River.

The City's population is anticipated to increase during the study period, but the City's water system is largely dictated by the agreements with the correctional facilities. One of the correctional facilities that currently houses 800 inmates closed in November 2022. Some of inmates will be redistributed to facilities within the City's service boundary, but it is assumed that the closure will decrease the population of incarcerated people served by the City's system. To remain conservative, the incarcerated population was assumed to remain constant from 2022 to 2042.

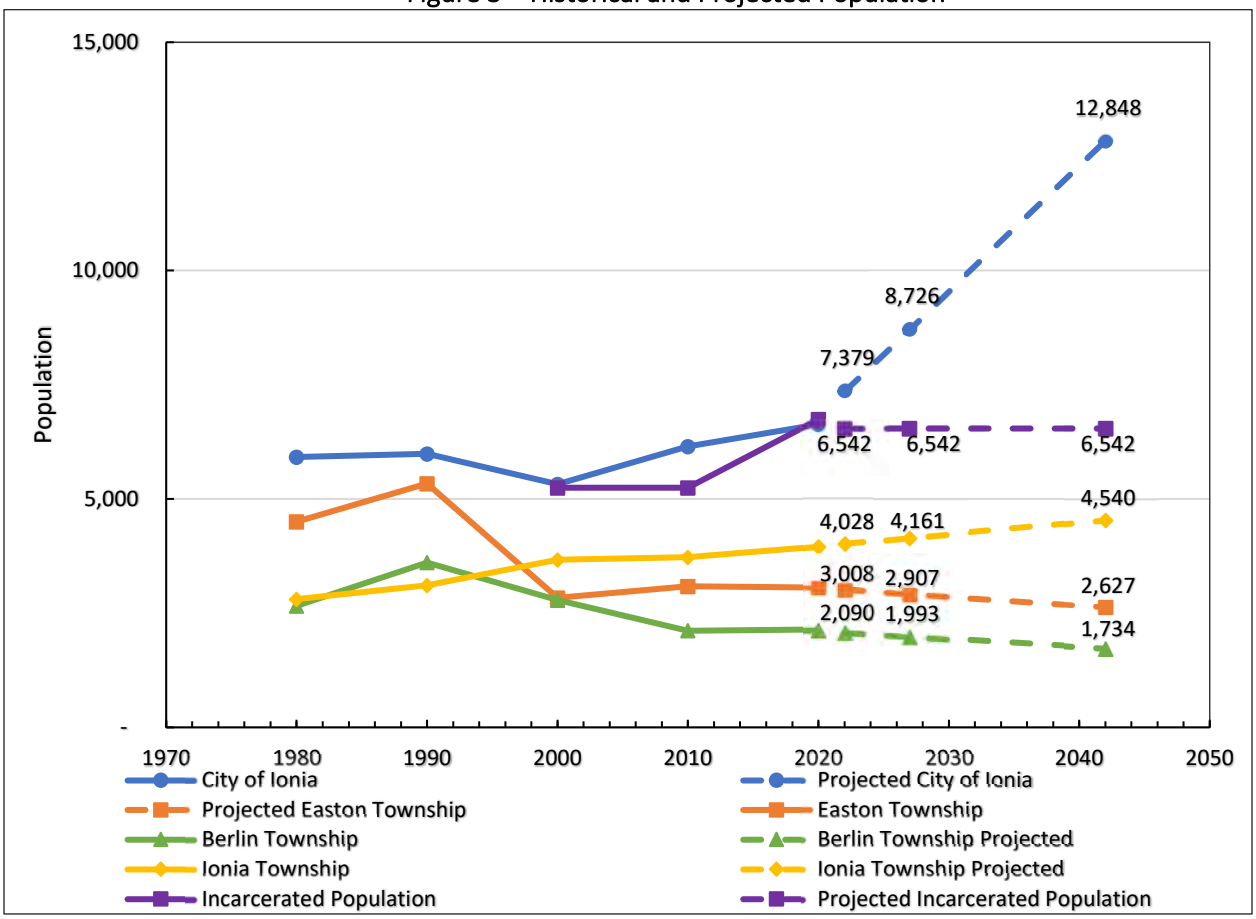
Table 6 and Figure 3 indicates the historical and projected population served by the City's water system through 2042.

Table 6 – Historical and Projected Populations for the City

Year	City of Ionia Population**	Berlin Township Population	Easton Township Population	Ionia Township Population	Incarcerated Population****
1980*	5,920	2,660	4,501	2,808	-
1990*	5,990	3,610	5,336	3,103	-
2000*	5,322	2,787	2,835	3,669	5,247
2010*	6,147	2,116	3,082	3,726	5,247
2020*	6,636	2,138	3,058	3,961	6,742
Projection 2022***	7,379	2,090	3,008	4,028	6,542
Projection 2027***	8,726	1,993	2,907	4,161	6,542
Projection 2042***	12,848	1,734	2,627	4,540	6,542

Data from the U.S. Census Bureau
Population does not include incarcerated persons
***Data from the West Michigan Regional Planning Commission*
****Assumes loss of 200 inmates in 2022 with prison closure*

Figure 3 – Historical and Projected Population



4.2 Estimated Demand Projections

To project future water demands, the starting point for the ADD, MDD, and the PHD projections were estimated. The starting point for the ADD was estimated using the average ADD from 2012 to 2021 of 1.78 mgd. The MDD was estimated by finding the standard deviation of the MDD:ADD peaking factor and adding 1.65 times the standard deviation of the dataset to the average peaking factor. A MDD:ADD peaking factor of 1.98. Statistically, this value is predicted to be greater than 95% of the probable future values based on the dataset, assuming it has a normal distribution. This value was then multiplied by the average ADD to get the starting point for the MDD, 3.51 mgd. The peak hour demand was estimated by multiplying the MDD of 3.51 mgd by 1.5 to get 5.27 mgd.

The City of Ionia's population has been increasing over the last ten years, yet the water use has remained relatively consistent. Similar trends have been observed across the region and nation as adoption of water efficiency measures, fixtures, and conservation practices have become more common. Because of this, applying per capita water use and population projections to estimate water demand projections is not recommended, as historical demands do not closely correlate to population changes. Additionally, one of the correctional facilities that closed in November 2022, slightly decreasing the incarcerated population served by the City. The population served by the water system is anticipated to increase during the 20-year study period. To account for population growth and be conservative based on past water usage, a 0.25% annual increase in water use was applied to the water demand projections.

To determine a projected change in the ADD each year, the starting ADD was multiplied by an annual change of 0.25%. The projected change in the ADD was then added to the starting ADD. This process was repeated for each following year, starting with the new estimated ADD.

Table 7 and Figure 4 indicate the historical datasets and projected water demands for both the ADD, MDD, and PHD through 2042.

Table 7 – Projected Water Demands Through 2042

Year	Projected ADD (mgd)	Projected MDD (mgd)	Projected PHD (mgd)
2022	1.78	3.51	5.27
2027	1.80	3.56	5.34
2042	1.87	3.69	5.54

Figure 4 – Projected Water Demands through 2042



The anticipated population growth will increase the City's future water demands. In 2042, the ADD uses 32% of the firm well capacity and the MDD uses 64% of the well capacity. The City's projected MDD will remain under EGLE's recommended 80% of the water system firm capacity.

5.0 Water Supply

5.1 Raw Water Supply

The City owns and operates nine wells with each well pumping to a specific pressure district. Table 8 outlines the permitted well capacities of the City's supply wells as well as their corresponding pressure districts. The wells in the low-pressure district can only serve that pressure district. The wells in the middle pressure district can supplement the water supply in the low-pressure district through pressure reducing valves, and high-pressure district via a booster pump station. The wells in the high-pressure district can supply both the low and middle pressure districts through pressure reducing valves.

Table 8 – Current Supply Well Pumping Capacity

Well	Pressure District	Year Installed	Permitted Well Capacity (gpm)	Permitted Well Capacity (mgd)
9A	Low	2015	700	1.01
10A	Low	2021	700	1.01
Total Low District Capacity			1,400	2.02
Firm Low District Capacity			700	1.01
5	Middle	1955	700	1.01
11A	Middle	1999	700	1.01
Total Middle District Capacity			1,400	2.02
Firm Middle District Capacity			700	1.01
12A	High	2020	600	0.86
13A	High	2008	600	0.86
14A	High	2004	700	1.01
15	High	1999	850	1.22
16A	High	2013	500	0.72
Total High District Capacity			3,250	4.67
Firm High District Capacity			2,400	3.45

An operational limit of 500 gpm is placed on each well by the City using variable frequency drives (VFDs). If additional capacity is needed, the City can use the VFDs to increase the speed of the well pumps and increase their output. A record of the monthly raw pump data is included in Appendix 1.

5.2 Water Treatment

Raw water pumped from the groundwater wells is treated with chlorine and fluorine before entering the distribution system. The chlorine gas is used for disinfection, while the fluoride is added for dental health.

5.3 Standby/Auxiliary Power

The City has three stationary generators and one portable generator for its nine wells. Wells 9A, 10, and 11 have a stationary 180 kW generator that can operate all three wells at a total capacity of 1,850 gpm. Wells 12 and 13 A have a stationary 155 kW generator that can operate both wells at a total capacity of 1,200 gpm. Wells 14A and 15 have a stationary generator that can operate both wells at a total capacity of 1,610 gpm. A power hookup for a 125-kW portable generator is available for Wells 5 and 16 with the capacity to operate one well at a capacity of 500 gpm.

The Swartz Court booster station has a generator with an automatic transfer switch panel and the City owns a portable 125 kW generator available at 772 Cyrus Street for operating the booster station during an emergency.

5.4 Source Water Protection

The City has a Wellhead Protection Program (WHPP) in place to protect against contamination of the source water for their nine wells, though it is an older WHPP and may need to be updated.

5.5 Water Shortage Response

The City has an Emergency Response Plan (ERP) that has been updated as of August 2022. This plan outlines critical contacts that may be needed in an emergency for public notification, contractors, or suppliers for equipment. Contact information is also included for critical water customers. A copy of the City's ERP is included in Appendix 2.

6.0 Water Storage

The City water system was evaluated to determine if it has adequate storage capacity. This analysis was based on emergency storage, fire protection and operational equalization volume. The existing system has three elevated tanks and two ground storage tanks in the City distribution system.

6.1 Storage Capacity

Information on the water storage tanks is presented in Table 9. The Fargo Street tank serves the low-pressure district with a capacity of 1 MG and was constructed in 1957. The Cyrus Street tank was built in 1934 with a capacity of 0.5 MG and serves the middle pressure district. These two ground storage tanks act similar to elevated tanks and serve their respective pressure districts by gravity.

The high-pressure district has three 0.5 MG elevated storage tanks. Two of the elevated tanks, Lincoln Avenue and Well Field, are located north of Grand River. The other elevated tank, Tuttle Road, is south of the Grand River. The Well Field tank was constructed in 1980 while the Lincoln Avenue and Tuttle Road tanks were both constructed in 1999.

Table 9 – Water Storage Tank Summary

Tank Name	Fargo Street	Cyrus Street	Well Field	Lincoln Avenue	Tuttle Road
Tank Location	142 East Fargo Street	761 Cyrus Street	400 Apple Tree Drive	1780 West Lincoln Avenue	566 West Tuttle Road
Tank Type	Ground	Ground	Elevated	Elevated	Elevated
Tank Construction	Steel	Concrete	Spheroid	Spheroid	Spheroid
Pressure District	Low	Middle	High	High	High
Installation Year	1957	1934	1980	1999	1999
Capacity (gal)	1,000,000	500,000	500,000	500,000	500,000
Total Head Range (ft)	39.5	25.5	37	37.5	37.5
Normal High-Water Level (ft)	38	24.4	36.5	37.4	37.4
Normal Low Water Level (ft)	11	17.5	30	25	25

6.2 Storage Condition Assessment

The three elevated tanks were last inspected by Dixon Engineering Incorporated (Dixon) in 2019. The Lincoln Avenue tank's exterior coating, dry interior coating, and wet interior coating were reported to be in fair condition and were last coated in 1999. It was recommended that the exterior overcoat, dry interior, and wet interior be repainted within one to two years. Modifications to the overflow discharge, replacement of the mud valve, and installation of a deflector bar over the end of fill pipe were also recommended.

The Well Field tank's exterior coating and dry interior coating were in fair condition while the wet interior coating was reported to be in poor condition. The exterior was last coated in 2006, while the wet interior and dry interior was painted in 1981. It was recommended that the exterior overcoat, dry interior, and wet interior be repainted within one to two years. Additionally, recommendations include modifications to the overflow pipe discharge, installation of a ladder extension, a rigging lug on the bowl, a frost-free pressure vacuum vent, a weather tight cover over the access tube air gap, a fall prevention device on the baseball ladder and a new wet interior ladder equipped with a fall prevention device.

The Tuttle Road tank's exterior coating, dry interior coating, and wet interior coating were reported to be in fair condition and were last coated in 1999. It was recommended that the exterior overcoat, dry interior, and wet interior by repainted within one to two years. Repairs to areas of missing or damaged grout, replace the screen at the overflow pipe discharge, installation of a weather tight neoprene seal over the access tube air gap, installation of a deflector bar, installation of a mechanical mixer and re-band the loose insulation on the fill pipe were recommended.

The Cyrus Street ground storage tank was inspected by Dixon in 2016. The tank's exterior is covered with brick and blocks, and it is recommended that the grout by repaired. Abrasive blast cleaning and filling the interior cracks with an epoxy repair system was also recommended. Regular cleanings and inspections once every five years were encouraged.

6.3 Storage Volume Assessment

The City provides water service to residential, commercial, and industrial customers. In addition to providing potable water for domestic use, providing adequate fire protection and emergency storage for the service area is important as well. ISO provides fire protection recommendations for various building types; the American Water Works Association (AWWA) also developed resources for determining requirements. Table 10 highlights the typical fire flow requirements for typical building classifications.

Table 10 – ISO Recommended Target Fire Flows

Classification	Recommended Fire Flow (@20 psi) (gpm)	Duration (hours)
Residential	1,500	2
Commercial	2,500	2
Industrial	3,000 - 3,500	3

One method to calculate the required storage volume for the city, accounts for emergency, fire protection, and equalization storage. The two largest of the three values is used to estimate the recommended storage. The projected 2042 ADD and MDD were used for the storage calculations. Equalization storage was calculated by multiplying the MDD by 25%. The fire flow was calculated based on a 3,500 gpm and a 3-hour duration, the recommended fire flow and duration for an industrial user. This is recommended to protect a large industrial facility as well as the correctional facilities within the City's boundary. An emergency storage volume equal to 50% of the ADD was used to determine the emergency storage requirements over an average 12-hour emergency. The emergency storage requirements of 50% was used in the recommended storage equation, as it is higher than the fire flow requirement.

A summary of the values used for the calculation and the calculated results are presented in Table 11. A copy of the full storage analysis calculations can be found in Appendix 3.

Table 11 – Recommended Storage Volume

Storage Requirement Metric	Volume (gallons)
Emergency (50% of ADD)	935,000
Fire Flow (3,500 gpm for 3 hours)	630,000
Equalization (25% of MDD)	922,500
Recommended Storage (based on calculation)	1,858,000
Existing Storage	3,000,000
Additional Storage Needed (Recommended - Existing)	0

The recommended storage for the City is 1,858,000 gallons. Based on the recommended storage analysis and available storage volume, the City has over the recommended water volume storage.

The required storage volume for the high-pressure district was also evaluated. The high-pressure district serves most of the large users in the system including the correctional facilities and about half of the total water users in the system. The recommended storage calculations were redone with the ADD and MDD for the high-pressure district. The recommended storage for the high-pressure district is 1,113,000 gallons. Based on these calculations, the district is over the recommended storage volume with 1,500,000 gallons.

7.0 Water Distribution System

The distribution system includes over 67 miles of water mains, primarily ductile iron.

7.1 System Connections

The current number of service connections in the water system by meter size is shown in Table 12.

Table 12 – Service Connections

Service Size	Number of Connections
5/8"	2,887
3/4"	36
1"	121
1 1/2"	14
2"	126
3"	9
4"	7
6"	17
8"	2
Unknown	16
Total Services	3,235

Table 13 summarizes the estimated Residential Equivalent Units (REU) for the City system. Each REU represents the water use for a single-family dwelling. For other types of customers, the REUs are estimated based on that customer's water use in comparison to a single-family unit.

Table 13 – System REUs

Service Size	Number of Connections	REU Meter Equivalent	REUs per Service Size
5/8"	2,887	1.0	2,887
3/4"	36	1.1	40
1"	121	1.4	169
1 1/2"	14	1.8	25
2"	126	2.9	365
3"	9	11.0	99
4"	7	14.0	98
6"	17	21.0	357
8"	2	28.0	56
10”	0	44.0	0
		Total Estimated REUs	4,096

7.2 Water Mains

The water distribution system map for the City is illustrated in Figures 5 to 8 following the report. Based on system data from the City and GIS mapping, there are more than 67 miles of water main in the City water distribution system. Figure 8 shows the general plan map of the City’s water system, including mains, hydrants, valves, storage tanks, and pumps. The water main sizes in the water system range from 4 to 20 inches. The lengths of water main are listed by diameter in Table 14 and are shown in Figure 6.

Table 14 – Main Lengths by Water Main Diameter

Diameter (inches)	Water Main Length (feet)	Percent of Water Main by Length
Unknown	1,544	0.44%
4-inch	3,380	0.95%
5-inch	763	0.22%
6-inch	77,870	21.98%
8-inch	110,439	31.18%
10-inch	14,450	4.08%
12-inch	83,966	23.70%
16-inch	57,272	16.16%
20-inch	4,567	1.29%
Total	354,251	100%

The City’s water main lengths are indicated by water main material in Table 15. The water main materials in the City system are shown in Figure 7. The majority of the system is ductile iron. A little over 10% of the system is cast iron and about 2% of the system is polyvinyl chloride (PVC).

Table 15 – Main Lengths by Water Main Material

Pipe Material	Water Main Length (feet)	Percent of Water Main by Length
Cast Iron	37,380	10.55%
Ductile Iron	309,977	87.50%
PVC	6,894	1.95%
Total	354,251	100%

The approximate years of installation for mains throughout the City System are listed by their corresponding length in Table 16 and shown graphically in Figure 8. Approximately 60% of the water system was installed in the last 30 years.

Table 16 – Main Lengths by Water Main Age

Approximate Year of Installation	Water Main Length (feet)	Percent of Water Main by Length
Unknown	20,098	5.67%
Pre-1900	2,690	0.76%
1920-1929	6,243	1.76%
1930-1939	3,008	0.85%
1940-1949	2,966	0.84%
1950-1959	18,385	5.19%
1960-1969	15,357	4.34%
1970-1979	10,813	3.05%
1980-1989	58,735	16.58%
1990-1999	47,204	13.33%
2000-2009	104,802	29.58%
2010-2019	60,142	16.97%
2020-2022	3,808	1.08%
Total	354,251	100%

7.3 Booster Pump Station

The Swartz Court booster station was constructed in 2000 to fill the Tuttle Street tank. There are three pumps each with a permit capacity of 760 gpm, and a station bypass. A fixed generator provides auxiliary power of 1,500 gpm. Based on permitted capacity, the station has a total capacity of 3.28 mgd and a firm capacity of 2.19 mgd. All three pumps were overhauled in 2012.

7.4 Pressure Reducing Valves

There is a total of seven pressure reducing valves located throughout the City. There are three PRVs between the high-pressure district and the low-pressure district, two PRVs between the high and middle pressure district and two PRV between the middle and low-pressure districts. Table 17 lists the location and maximum capacity for the PRVs throughout the system.

Table 17 – Pressure Reducing Valve Locations

Location	Pressure District	Maximum Capacity (gpm)
West Main Street at the Michigan Reformatory Entrance	High to Low	2,200
Riverside Drive at the entrance to Riverside Correctional Facility	High to Low	13,000
Kimball Alley at Main Street Northwest corner	High to Low	2,300
Skyview Drive at M21 Northeast corner	High to Middle	2,300
Harter Street at M21 Southwest corner	High to Middle	2,300
Jackson Street at Lafayette Street Northwest corner	Middle to Low	2,300
Lincoln Avenue at 1992 East Bluewater Highway	Middle to Low	2,300

8.0 Hydraulic Model

The water distribution system evaluation included calibrating the hydraulic model with hydrant flow testing data obtained in the field. The calibrated hydraulic model was used to predict system performance. The system's reliability in meeting projected water demands and fire flows at adequate pressures was assessed. Recommendations were provided for system improvements based on the hydraulic modeling analysis.

8.1 Hydrant Flow Testing

A hydrant flow test analysis was completed on the model to identify locations where the system could be significantly stressed to evaluate performance of the system. In choosing the hydrant flow test locations, the age, diameter, location, and material of the distribution mains in the system were considered. In total, seven flow tests were completed with five hydrants used in each test. For each test, one hydrant was flowed, while residual pressures were observed at the hydrants not flowing. A list of the hydrant flow test location used for the calibrations is included in Appendix 4.

8.2 Model Calibration Adjustments

System operational data was recorded during the flow tests, including tank levels and pump operation. This data was used to adjust settings for pumps and tanks in the hydraulic model during calibration. The Hazen Williams pipe friction C-factors were then adjusted over several iterations, so the hydraulic model output reflected field data. After, the model static and residual pressure outputs were within three psi for all the flow tests, except for one location for flow test A and flow test F. The model predicted lower pressures than those observed in the field indicating that the system was operating better than the model predicted. However, the calibration was considered to be largely successful. The model calibration data is included in Appendix 5. Due to errors with pressure loggers and data loss, some of the tests have a limited number of data points.

A Hazen Williams C-factor gives an indication of the condition of the pipe interior. As a reference, a C-factor of 130 is typically used for newly installed ductile iron pipe. A high C-factor indicates a good condition of the pipe. A C-factor of 50 or below indicates a pipe with deteriorating interior. The C-factors used in the calibrated model of the City is listed in Table 18.

Table 18 – Distribution of Friction Factors

Hazen-Williams C-Factor	Percent of Water Main by Length
< 60	3.28%
60-69	2.38%
70-79	4.52%
80-89	10.67%
90-99	15.43%
100-109	7.21%
110-119	10.33%
> 120	46.18%
Total	100.00%

Pipes in the model were grouped by material and age. It was assumed that mains with similar age and material would have similar C-factors. C-factors were then adjusted as described above to calibrate the model. A fairly large percentage of pipes were installed in the last 30 years. This resulted in almost half of the pipe having a C- factor greater than 120. Overall, the water mains in the system are in excellent condition.

9.0 Water Distribution System Evaluation

A detailed evaluation of the City's water distribution system was conducted as a part of the Water Reliability Study Update. The hydraulic model was used to evaluate the capability of the City's system to meet current and future system demands. Results from the hydraulic modeling were used to form the basis of recommendations for distribution system improvements.

9.1 2022 Demand with Current System Model Runs

9.1.1 Pressure Analysis

The calibrated model was run with the 2022 peak hour demand condition of 5.27 mgd to evaluate system pressures. In this scenario, it was assumed that Well 5 was in operation and the other eight wells were off. The initial levels in Lincoln Tank, Tuttle Tank, Well Field Tank, Cyrus Reservoir, and Million Gallon Reservoir were 24 feet, 23 feet, 28 feet, 15 feet and 31 feet, respectively. The Swartz Court Booster Station was assumed to not be in operation. Figure 9 illustrates the resulting pressure contours for the 2022 peak hour model run.

Pressures ranged from 39.9 to 69 psi in the low district, 56.6 to 97.5 psi in the middle district and 40.7 to 129.1 in the high district. Pressures below 35 psi are considered deficient, so the pressures predicted by the model are acceptable. The highest pressures in the high-pressure district occur where the water main crosses under the Grand River. Customers in the high-pressure district with pressures above 100 psi have individual pressure regulators to reduce pressure to desired levels. Areas with lower pressures were typically served by older, smaller mains in the system, or dead-end mains.

9.1.2 Available Fire Flow Analysis

Using the model, available fire flow was analyzed. The model calculates available fire flow by calculating the maximum flow rate that can be withdrawn from the system at any given node while maintaining a pressure of 20 psi at all other nodes in the model. For this study, an available fire flow goal of 1,000 gpm was chosen as the criteria to be evaluated for the model runs. Fire flows less than 1,000 gpm are considered deficient based on typical minimum recommendation for residential fire protection.

A fire flow analysis was completed for the system using the 2022 MDD of 3.51 mgd. In this scenario, it was assumed that Well 5 was operating and the other eight wells were off. The initial levels in Lincoln Tank, Tuttle Tank, Well Field Tank, Cyrus Reservoir, and Million Gallon Reservoir were 24 feet, 23 feet, 28 feet, 15 feet and 31 feet respectively. The Swartz Court Booster Station was assumed to not be in operation. Figure 10 illustrates the resulting available fire flow contours. The areas with deficient fire flow are typically served by smaller older mains in the system and dead-end mains. The Ionia Fairgrounds also is predicted to have deficient fire flow.

9.2 2027 Demand with Current System Model Runs

9.2.1 Pressure Analysis

The calibrated model was run with the 2027 peak hour demand condition of 5.34 mgd to evaluate the system wide pressures. In this scenario, it was assumed that Well 5 was operating and the other eight wells were off. The initial levels in Lincoln Tank, Tuttle Tank, Well Field Tank, Cyrus Reservoir, and Million Gallon Reservoir were 24 feet, 23 feet, 28 feet, 15 feet and 31 feet, respectively. The Swartz Court Booster Station was assumed to not be in operation. Figure 11 illustrates the resulting pressure contours for the 2027 peak hour model run.

Pressures ranged from 39.9 to 69 psi in the low district, 56.6 to 97.4 psi in the middle district and 40.7 to 129 in the high district. Pressures below 35 psi are considered deficient, so the pressures predicted by the model are acceptable. The highest pressures occur where the water main crosses under the Grand River. Customers in the high-pressure district with pressures above 100 psi have individual pressure regulators to reduce pressure to desired levels. Areas with lower pressures were typically served by older, smaller mains in the system, or dead-end mains.

9.2.2 Available Fire Flow Analysis

The available fire flow was performed using the projected 2027 maximum day demand of 3.56 mgd. In this scenario, it was assumed that Well 5 was operating and the other eight wells were off. The initial levels in Lincoln Tank, Tuttle Tank, Well Field Tank, Cyrus Reservoir, and Million Gallon Reservoir were 24 feet, 23 feet, 28 feet, 15 feet and 31 feet, respectively. The Swartz Court Booster Station is assumed to not be in operation. Figure 12 illustrates the resulting available fire flow contours. There are no additional deficient fire flow areas with the increased demands in 2027.

9.3 2042 Demand with Current System Model Runs

9.3.1 Pressure Analysis

The calibrated model was run with the 2042 peak hour demand condition of 5.54 mgd to evaluate the system wide pressures. In this scenario, it was assumed that Well 5 was operating and the other eight wells were off. The initial level in Lincoln Tank, Tuttle Tank, Well Field Tank, Cyrus Reservoir, and Million Gallon Reservoir were 24 feet, 23 feet, 28 feet, 15 feet and 31 feet, respectively. The Swartz Court Booster Station was assumed to not be in operation. Figure 13 illustrates the resulting pressure contours for the 2042 peak hour model run.

Pressures ranged from 39.8 to 65.6 psi in the low district, 56.6 to 95.1 psi in the middle district and 39.9 to 126.2 in the high district. Pressures below 35 psi are considered deficient, so the pressures predicted by the model are acceptable. The highest pressures occur where the water main crosses under the Grand River. Customers in the high-pressure district with pressures above 100 psi have individual pressure regulators to reduce pressure to desired levels. Areas with lower pressures were typically served by older, smaller mains in the system, or dead-end mains.

9.3.2 Available Fire Flow

The available fire flow was performed using the projected 2042 maximum day demand of 3.69 mgd. In this scenario, it was assumed that Well 5 was operating and the other eight wells were off. The initial levels in Lincoln Tank, Tuttle Tank, Well Field Tank, Cyrus Reservoir, and Million Gallon Reservoir were 24 feet, 23 feet, 28 feet, 15 feet and 31 feet. The Swartz Court Booster Station was assumed to not be in operation. Figure 14 illustrates the resulting available fire flow contours. There are no additional deficient fire flow areas with the increased demands in 2042.

10.0 Recommended Improvements

The deficient areas in the distribution system were analyzed using the hydraulic model to determine water main improvements that would satisfy both fire flow and pressure requirements with projected demands. There are also several areas where water main is recommended to be installed to close loops and eliminate dead ends. Looping the system helps improve fire flow demands and meet pressure requirements as well as increase the reliability and redundancy of the system. In Fishbeck's previously completed Water Asset Management Program for the City in 2017, a recommended 5-year and 20-year CIP was included. To remain consistent with the Water Asset Management Program, the same 5-year and 20-year improvements that have not yet been completed were moved forward to the new CIP.

Along with addressing deficient fire flow areas, the water main's expected service life was also considered when recommending improvements. The expected service life of each water main was estimated based on data analyzed in the AWWA report, "Buried No Longer." The report estimated service life of water mains by investigating utilities' experiences, extensive research, and professionals' experiences. The expected service life for cast iron main was estimated at 100 years and the ductile iron main was estimated at 80 years. The percentage of water mains in the City system that have already or will exceed their design life in the planning period are provided in Table 19.

Table 19 – Water Mains Beyond Expected Useful Life

		% of Mains Beyond Expected Useful Life		
Material	Expected Useful Life	Existing System	System in 5 Years	System in 20 Years
Cast iron	100 Years	1.43%	1.43%	2.30%
Ductile Iron	80 Years	0.33%	0.33%	0.71%
	Total	1.76%	1.76%	3.01%

To maintain a reliable and sustainable water system, water main should be replaced on a regular basis. The goal is to replace water main in the system before it reaches the end of its expected useful life. It is estimated that 1.76% of the City's water system is currently beyond its expected useful life; 3.01% of the system will be beyond its expected useful life within 20 years. The current CIP targets approximately 0.50% of the system being replaced each year to keep the City on a sustainable water replacement plan. The City has been proactive in water main replacement which has led to a healthy, reliable water system; it is recommended that this is continued into the future.

10.1 5-Year Distribution Improvements

The following are the recommended 5-year water distribution system improvements. These improvements were chosen as 0- to 5-year improvements based on age of the water main and hydraulic impact on the system. These improvements were considered a higher priority than the projects identified for the 6- to 20-year improvement period. The 5-year CIP replaces approximately 0.50% of the system per year. The location of each improvement is illustrated on Figure 15 and Table 20 includes a project description and estimated construction cost.

Table 20 – 5 Year Distribution Improvements

Project No.	Description/ Location	Diameter (in)	Completion Year	Length (ft)	Estimated Construction Cost
1	Replace 6" main on Hall St from Forest Sreet to M21	8	2023	770	$244,000
2	Replace 8" main along Union Street from High Street to Summit Street	8	2023	330	$84,000
3	Replace 8" main along Lincoln Avenue from Baldie to Center Street	8	2023	420	$107,000
4	Replace 6" main along Harrison Street from Mill Street to Cleveland Street	8	2023	1340	$340,000
5	Replace 12" main from Cyrus Tank to the intersection of West Fargo and Cyrus Street	12	2024	910	$304,000
6	Replace mains on east side of North Jackson Street from Layfette Street to Lincoln Avenue	12	2024	670	$224,000
7	Replace 6" main on Bayard Street from Mill Street to Cleveland Street	8	2025	1,400	$355,000
8	Replace 6" main on Kaiser Street from Fargo Street to Forest Street	8	2025	530	$135,000
9	Replace 10" and 12" main on Jackson Street from Adams Street to Lafayette Street	12	2026	980	$327,000
10	Replace 4" main on Webber Street from Jackson Street to Jefferson Street	8	2026	580	$147,000
11	Replace 6" main along Jefferson Street from Lincoln Avenue to Railroad Street	8	2027	2,130	$540,000
			5 Year Total	10,060	$2,807,000

Figure 16 shows the pressure contours with the 0 to 5-year improvements completed, and Figure 17 shows the fire flow contours available in the distribution system after the 5-year improvements. Pressures range from 38.2 to 130.2 psi after the 5-year CIP completion and the average available fire flow throughout the system increases to approximately 3,340 gpm.

10.2 20-Year Distribution Improvements

The following are the recommended 6- to 20-year water main improvements. The projects were phased over the years to approximately balance the annual project costs. The location of each improvement is illustrated on Figure 15 and listed in Table 21, along with the estimated costs of each improvement. The recommended 20-year CIP continues the replacement rate of 0.5% of the system per year over years 6 through 20.

Table 21 – 20 Year Distribution Improvements

Project No.	Description/Location	Diameter (in)	Completion Year	Length (ft)	Estimated Cost
12	Replace 6" main on Adams Street from Jackson Street to James Street	8	2028	1,750	$444,000
13	Replace 6" main along Adams Street from Hudson Street to Dexter Street	8	2029	1,870	$475,000
14	Replace 16" main from Well 11A west along West Fargo Street and down Louisa Street to Forest Street	16	2030	1,550	$579,000
15	Replace 4" main on Branch Street from King Street to Brooks Street	6	2030	340	$81,000
16	Replace cast iron mains on Ionia Fairgrounds	8	2031/2032	2,660	$675,000
17	Replace 16" main from intersection of Forest Street and Louisa Street along Forest Street and down Hall Street to Lincoln Avenue	16	2033	1,170	$437,000
18	Replace 10" and 12 " main on Forest Street from M-66 to Hall Street	12	2033	810	$271,000
19	Replace 6" main on Lawton Street from Forest Street north to dead end	8	2034	570	$145,000
20	Replace 6" main on Fargo Street from Roselawn Drive to Kaiser Street	8	2034	1,500	$381,000
21	Replace 6" main on Jones Street from Jefferson Street to Morse Street	8	2035	1,300	$330,000
22	Replace 6" main on Morse Street from Allen Street to Jones Street	8	2035	660	$168,000
23	Replace 6" main on Forest Street from Kaiser Street to M-66	8	2036	1,180	$300,000
24	Replace 8" main along Steele Street from Adams Street north to Main Street	12	2036	340	$114,000
25	Replace 6" main on Chapman Street from M-66 to Kaiser Street	8	2037	1,180	$300,000
26	Replace 6" main on King Street from Fargo Street to Branch Street	8	2037	790	$201,000
27	Replace 8" main along Main Street from Yeomans Street to Kimball Street	8	2038	1,000	$254,000
28	Replace 6" main along Crawford Street from Prospect Street to the end of Crawford Street	8	2038	1,050	$267,000
29	Replace mains from the Million Gallon Tank to Well 9A to Well 10, and Well 10 to Well 11A	16	2039	1,000	$374,000
30	Replace 6" main on Rich Street from Lincoln Avenue to Terrace Avenue	8	2039	740	$188,000
31	Replace 6" main on Ellis Alley	8	2040	300	$77,000

Project No.	Description/Location	Diameter (in)	Completion Year	Length (ft)	Estimated Cost
32	Replace 16" main in area between Jackson Street and Division Street from Lincoln Avenue to Lafayette Street	16	2040	1,000	$374,000
33	Replace 6" main along Prospect Street from Crawford Street to Melody Lane, north and south on Melody Lane and down along both Highland and Southview Drive	8	2041	2,250	$571,000
34	Replace 6" main off Main Street by Ventra Ionia Paint Facility	8	2042	1,075	$273,000
35	Replace 6" main connecting Lafayette Street and Washington Street west of Morse Street	8	2042	330	$84,000
			20 Year Total	26,415	$7,363,000

After the completion of these capital improvement projects, fire flows will be improved throughout the City and pressure will increase slightly as well. Figure 18 shows the pressure contours with the improvements completed, and Figure 19 shows the fire flow contours available in the distribution system after the improvements. Pressures range from 38.4 to 130.2 psi after the 20-year CIP completion and the average available fire flow increases to approximately 3,630.

10.3 Cost Estimates Summary

While the water main could be replaced on its own, other parts of the City's infrastructure continue to require periodic repair and replacement. Such pieces of infrastructure include roadway, curb and gutter, sanitary sewer, and storm sewers. The CIP tables and cost estimates do not include costs for these additional utilities in addition to the water main. These costs only include the cost of the water main, installation, and surface restoration above the water main. Projects should be coordinated with other utility and road projects wherever feasible to maximize the benefit for the investment. The cost differences for each size of water main result from the additional restoration cost dependent upon the road classification (residential, commercial, collector street, etc.) and the location of the water main (field, right-of-way, roadway, etc.). City budgetary constraints will dictate the actual priorities and timing of construction for projects.

The construction cost estimates presented in this report reflect December 2022 costs. These opinions of cost were prepared to determine approximate project costs. There are several factors that could cause the actual project costs to deviate from these estimates. These include the competitive bidding climate at the time the construction bids are received, inflation, and additions to or changes in the scope of the project that may occur during the design process. As the cost estimates are reflective of current 2022 costs, the City will need to update estimated costs prior to proceeding with any future work and make necessary adjustments to determine the bidding climate in the year the work is proposed to be completed. Inflationary adjustments were not made to the projected costs, so the City should anticipate costs to rise above the estimates provided in this study, especially for some of the 20-year CIP projects. The planning, engineering, and construction required to implement the recommended improvements could take from several months to many years. It is therefore recommended that the City begin planning and budgeting efforts as soon as practical.

Cyrus Tank
Well Field Tank
Million Gallon Tank
Lincoln Tank
Ionia Maximum Correctional Facilities
Handlon Michigan Training Unit
Sherwood Forest MHC
Bellamy Creek Correctional
Michigan Dormitory
Ionia Free Fairgrounds
Ionia
Prairie
South Ionia
Swartz Court Booster Station
Deerfield Correctional Facility
Riverside Correctional Facility
Tuttle Tank
Ionia County Airport
66
21

Well Callout Inset Map

Well 16A
Well 15
Well 14A
Well 12
Well 13A
Well 9
Well 11A
Well 5
Well 10

LEGEND

- Water Tank
- Well
- Booster Station
- Valve
- Vault
- Hydrants
- Water Main

Pressure Districts

- High
- Middle
- Low
- City of Ionia

NORTH

GENERAL PLAN
WATER SYSTEM MAP

FEET
0 1,250 2,500

DATA SOURCES: CITY OF IONIA GIS. STATE OF MICHIGAN OPEN DATA PORTAL.

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City of Ionia
Ionia County, Michigan
Water System Reliability Study and General Plan

CITY OF IONIA

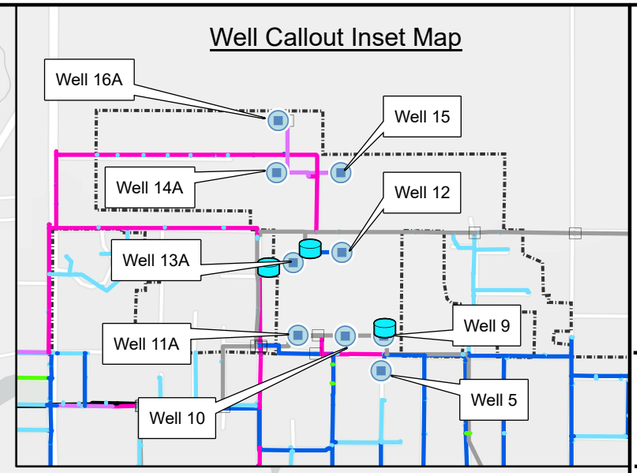
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FIGURE NO.
5

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Cyrus Tank
Well Field Tank
Million Gallon Tank
Lincoln Tank
Swartz Court Booster Station
Tuttle Tank
Ionia Maximum Correctional Facilities
Handlon Michigan Training Unit
Sherwood Forest MHC
Bellamy Creek Correctional
Michigan Dormitory
Ionia Free Fairgrounds
Deerfield Correctional Facility
Riverside Correctional Facility
Ionia
Prairie
South Ionia
Ionia County Airport
66
21

Well Callout Inset Map



LEGEND

- Water Tank
- Well
- B — Booster Station
- Vault

Water Main - Diameter

- 4"
- 5"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- City of Ionia

NORTH

GENERAL PLAN
WATER MAIN DIAMETERS

0 1,250 2,500 FEET

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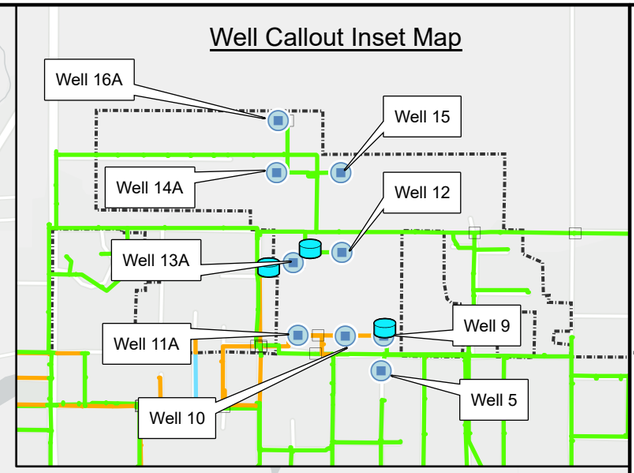
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FIGURE NO.
6

Cyrus Tank
Well Field Tank
Million Gallon Tank
Lincoln Tank
Swartz Court Booster Station
Tuttle Tank
Ionia Maximum Correctional Facilities
Handlon Michigan Training Unit
Sherwood Forest MHC
Bellamy Creek Correctional
Michigan Dormitory
Ionia Free Fairgrounds
Deerfield Correctional Facility
Riverside Correctional Facility
Ionia County Airport
Ionia
Prairie
South Ionia
66
21

Well Callout Inset Map



LEGEND

- Water Tank
- Well
- Booster Station
- Vault

Water Main - Material

- Cast Iron
- Ductile Iron
- PVC
- City of Ionia

NORTH

GENERAL PLAN
WATER MAIN MATERIALS

0 1,250 2,500 FEET

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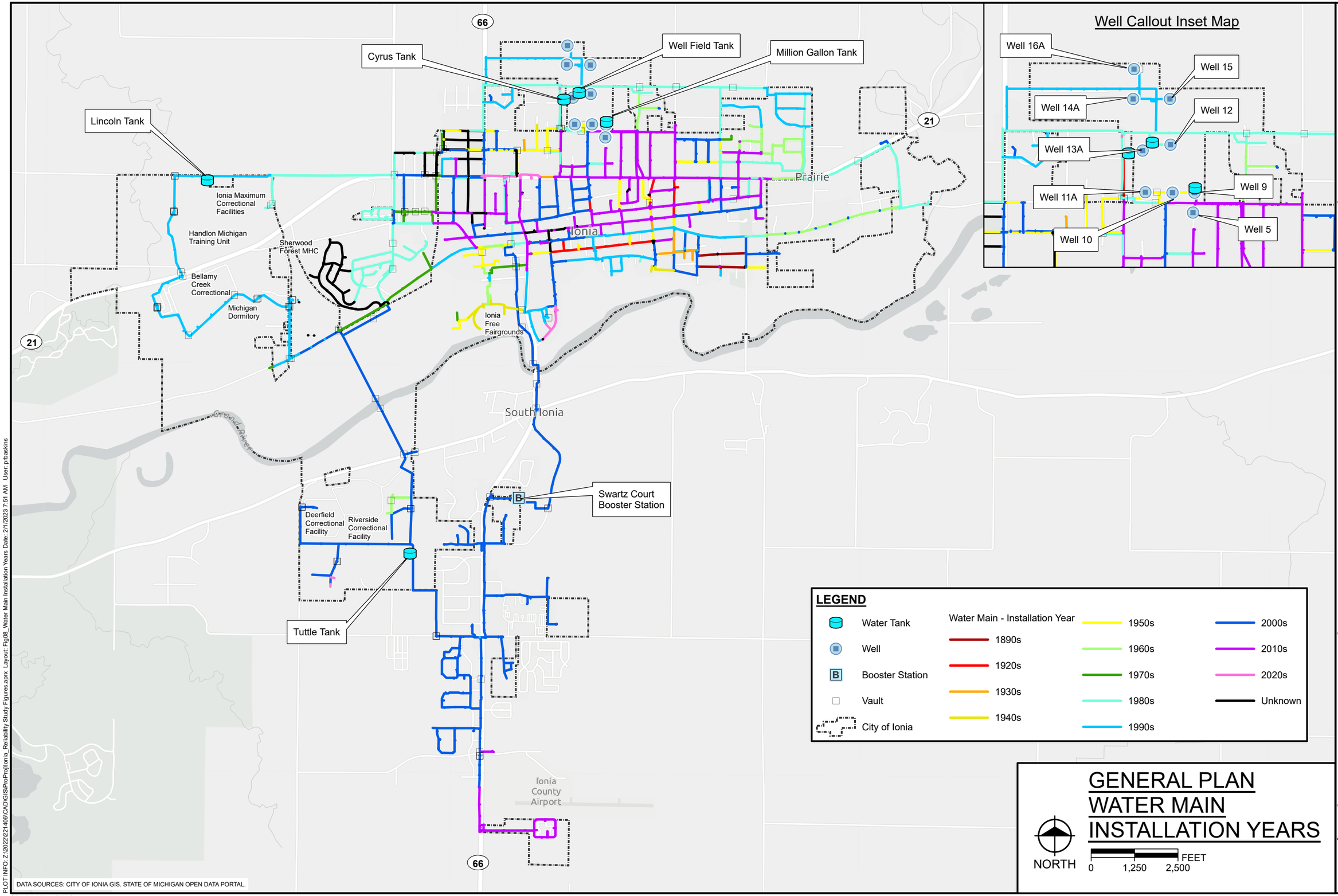
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FIGURE NO.
7



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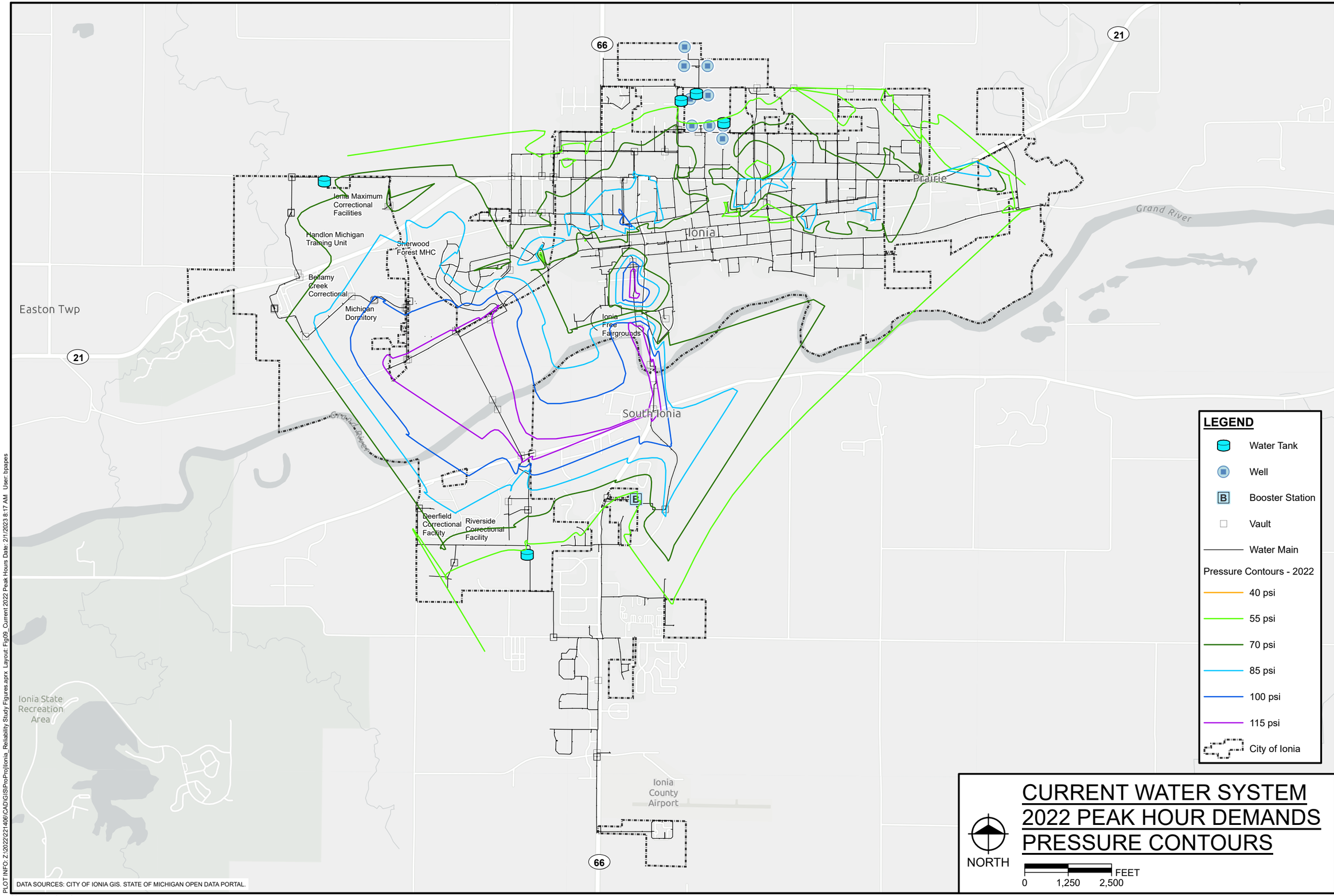
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Ionia County, Michigan
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CITY OF IONIA

PROJECT NO.
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FIGURE NO.
8



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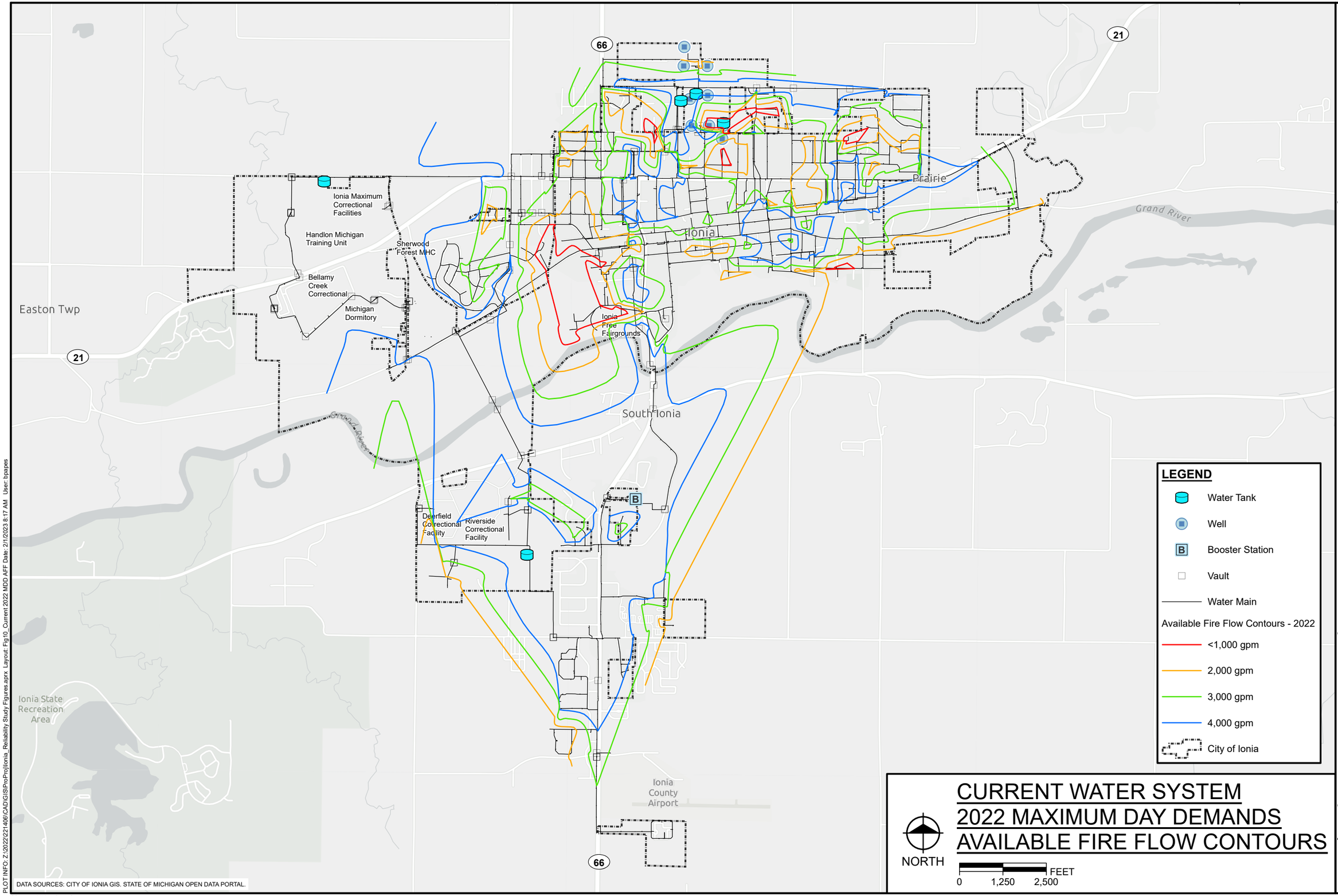
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Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

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FIGURE NO.
9



CURRENT WATER SYSTEM 2022 MAXIMUM DAY DEMANDS AVAILABLE FIRE FLOW CONTOURS

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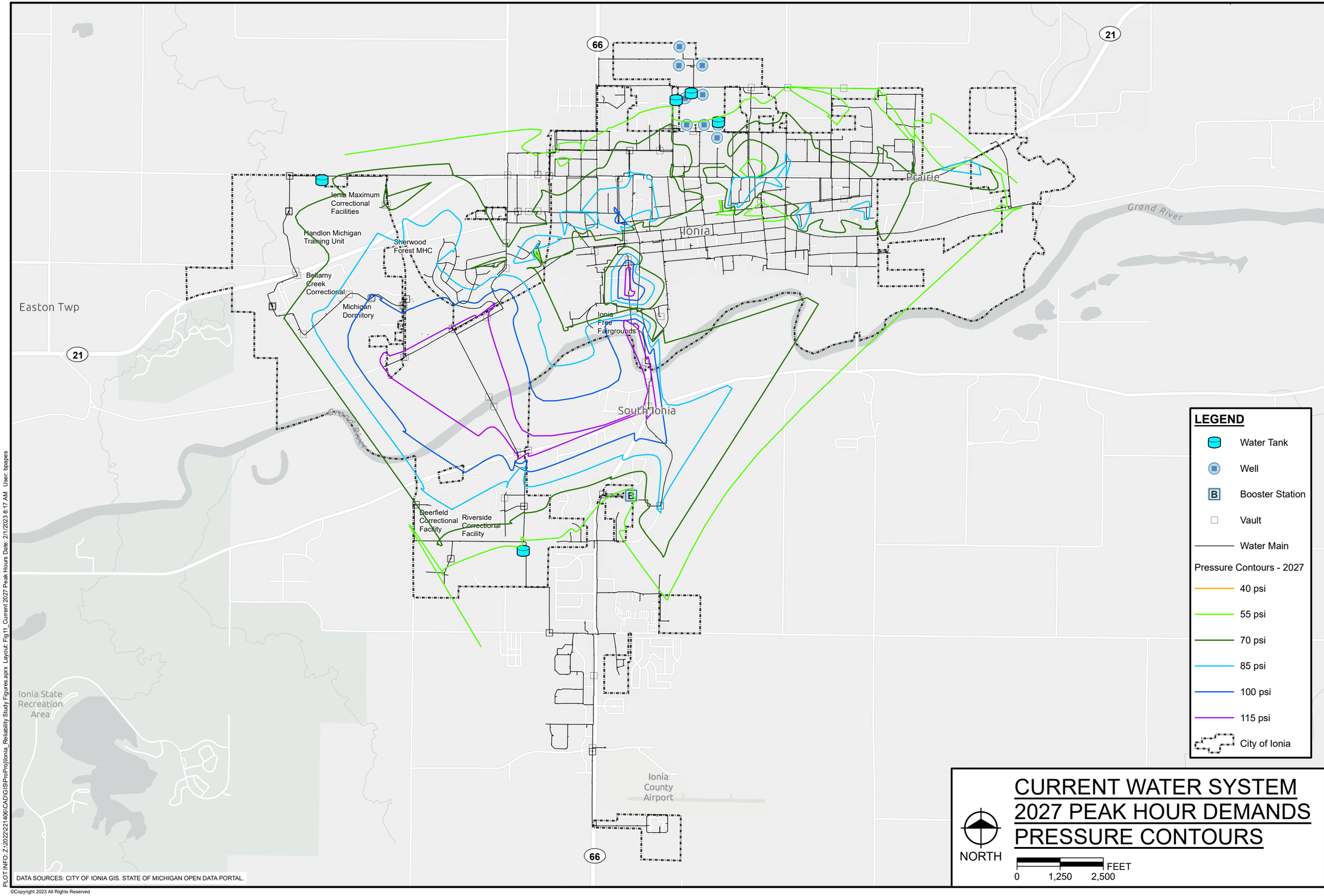
Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
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FIGURE NO.
10

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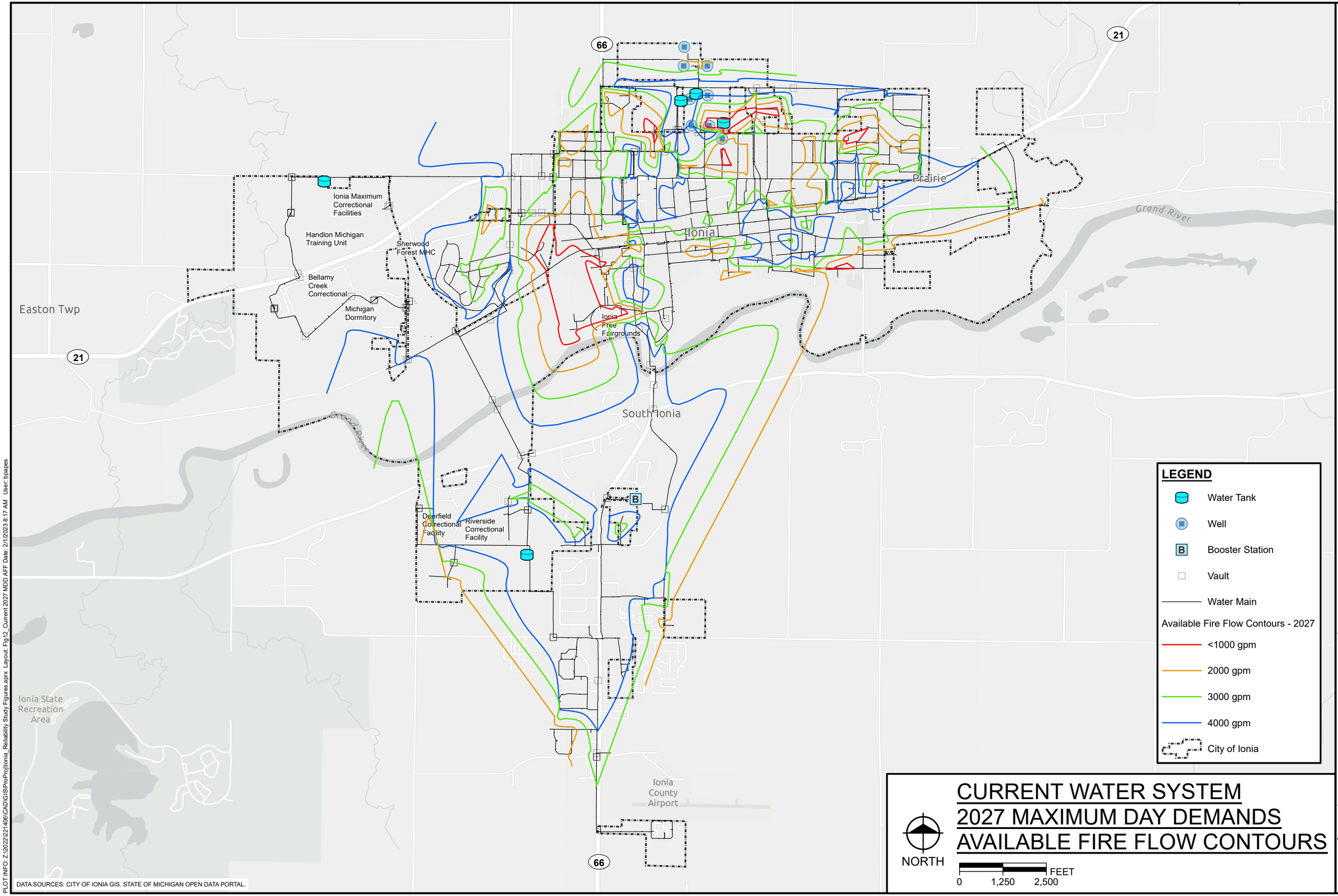
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Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
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FIGURE NO.
11



CURRENT WATER SYSTEM 2027 MAXIMUM DAY DEMANDS AVAILABLE FIRE FLOW CONTOURS

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City of Ionia
Ionia County, Michigan

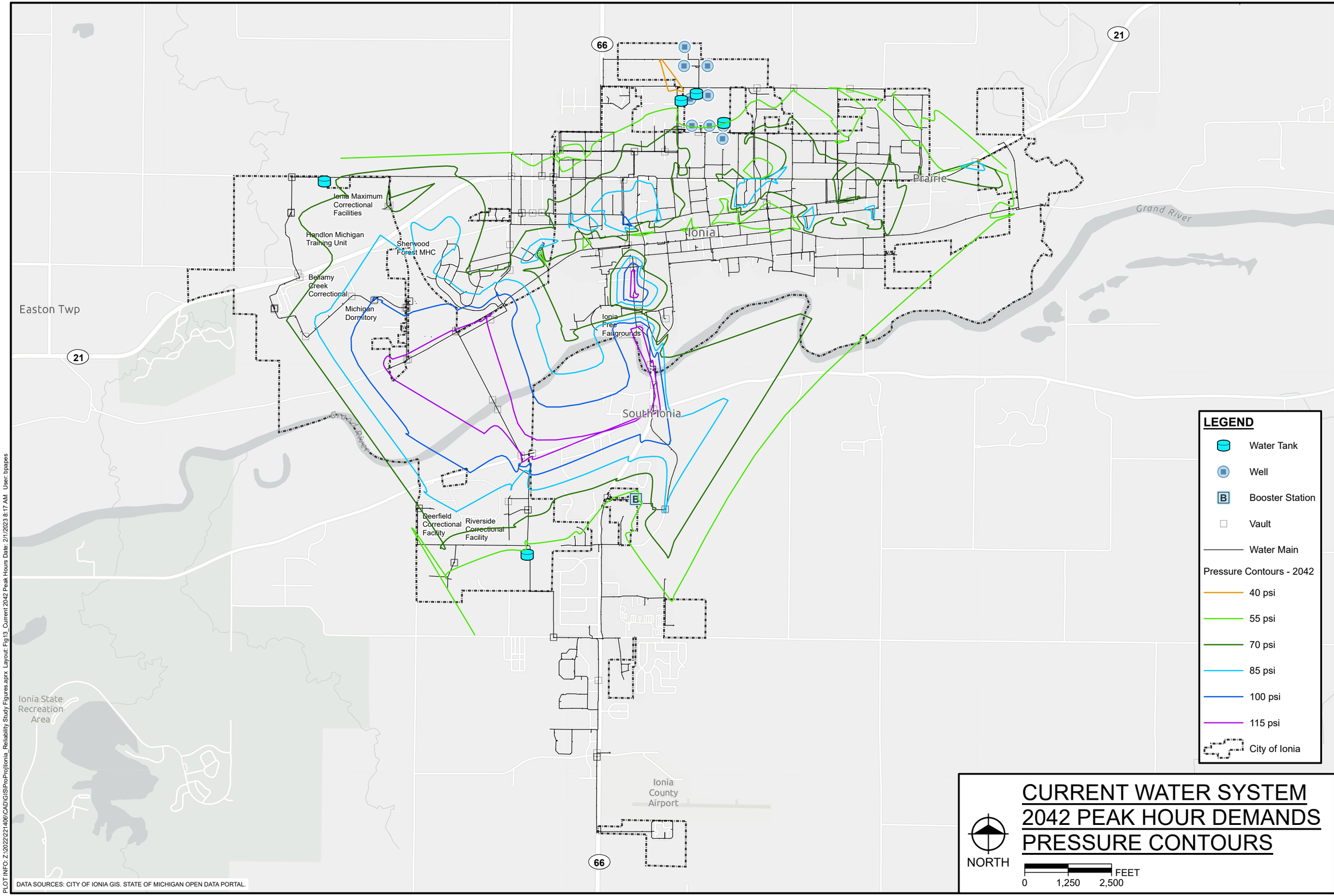
Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
12

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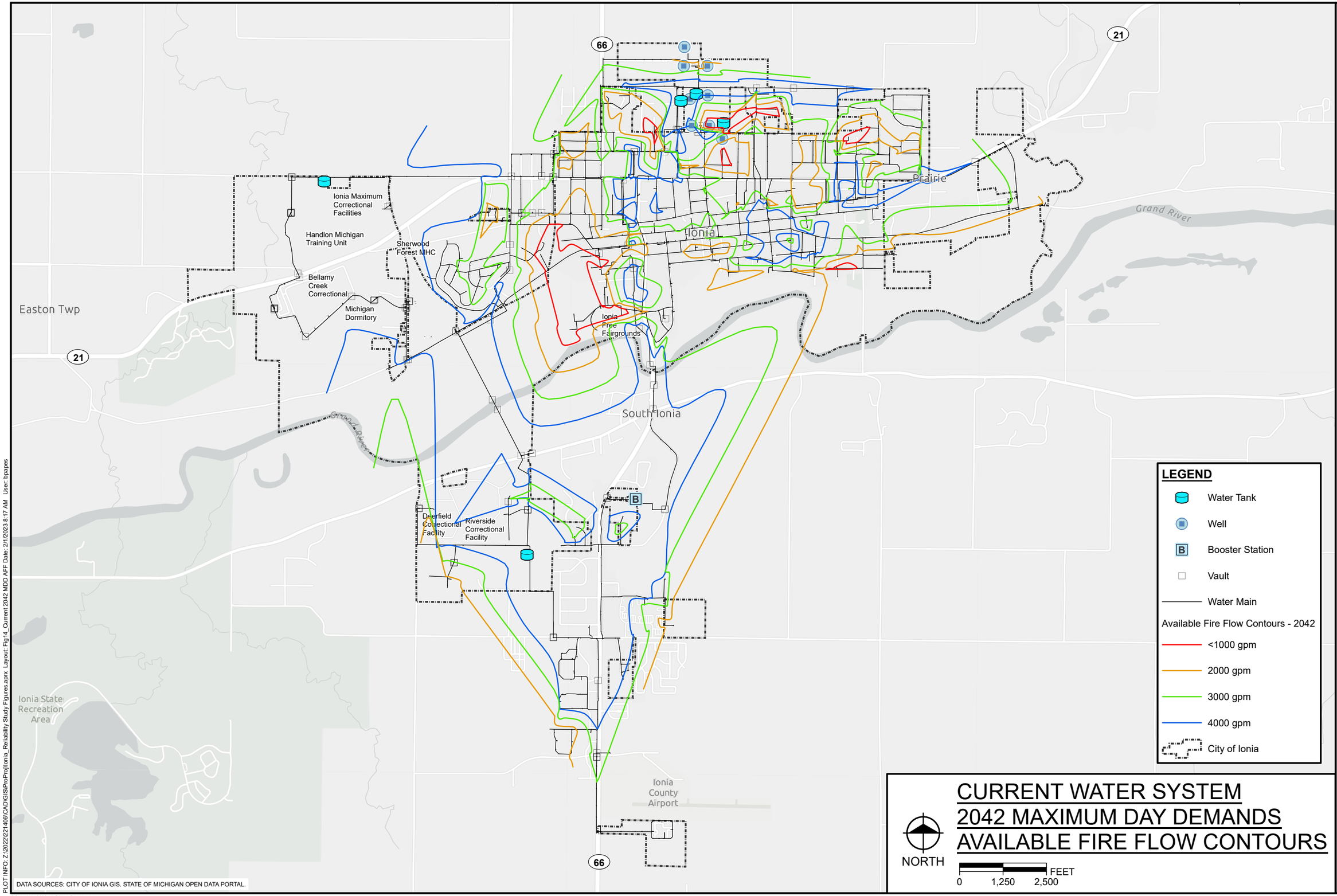
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Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
13



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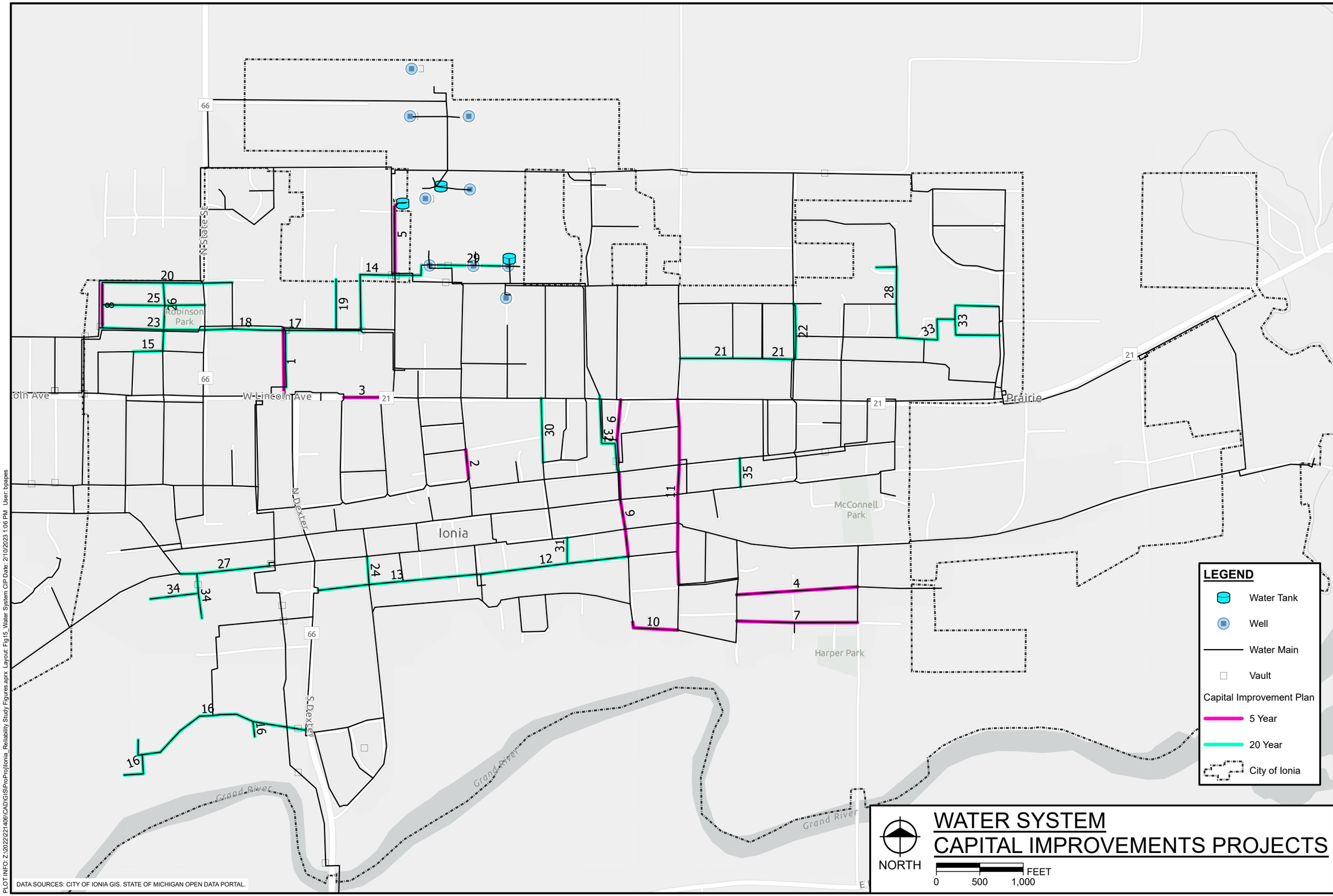
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Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
14



PLOT INFO: Z:\2022\221406\CAD\GIS\ProPro\Ionia_Reliability Study Figures.aprx Layout: Fig15_Water System CIP Date: 2/10/2023 1:06 PM User: bpapes

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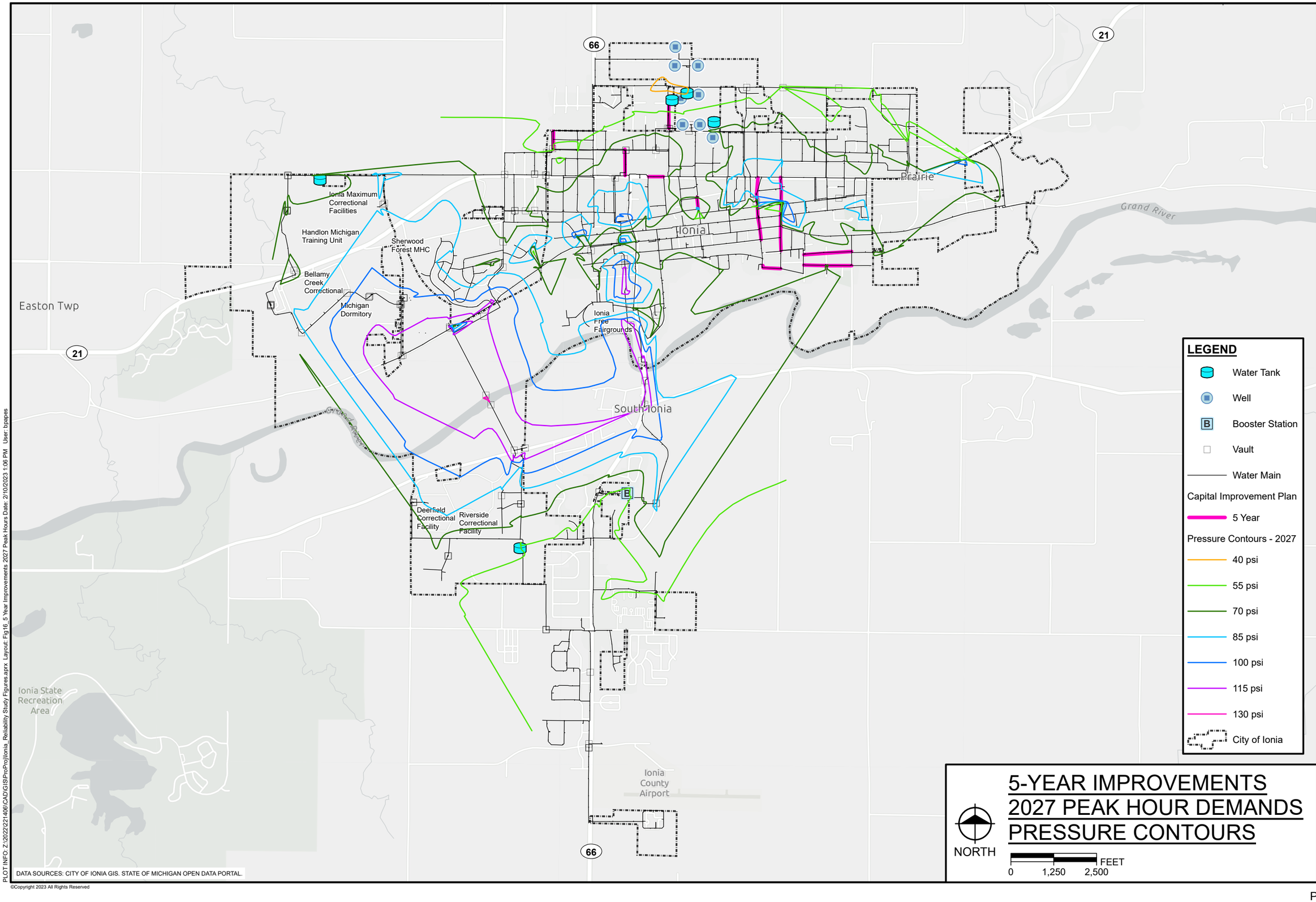
City of Ionia
Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
15



5-YEAR IMPROVEMENTS 2027 PEAK HOUR DEMANDS PRESSURE CONTOURS

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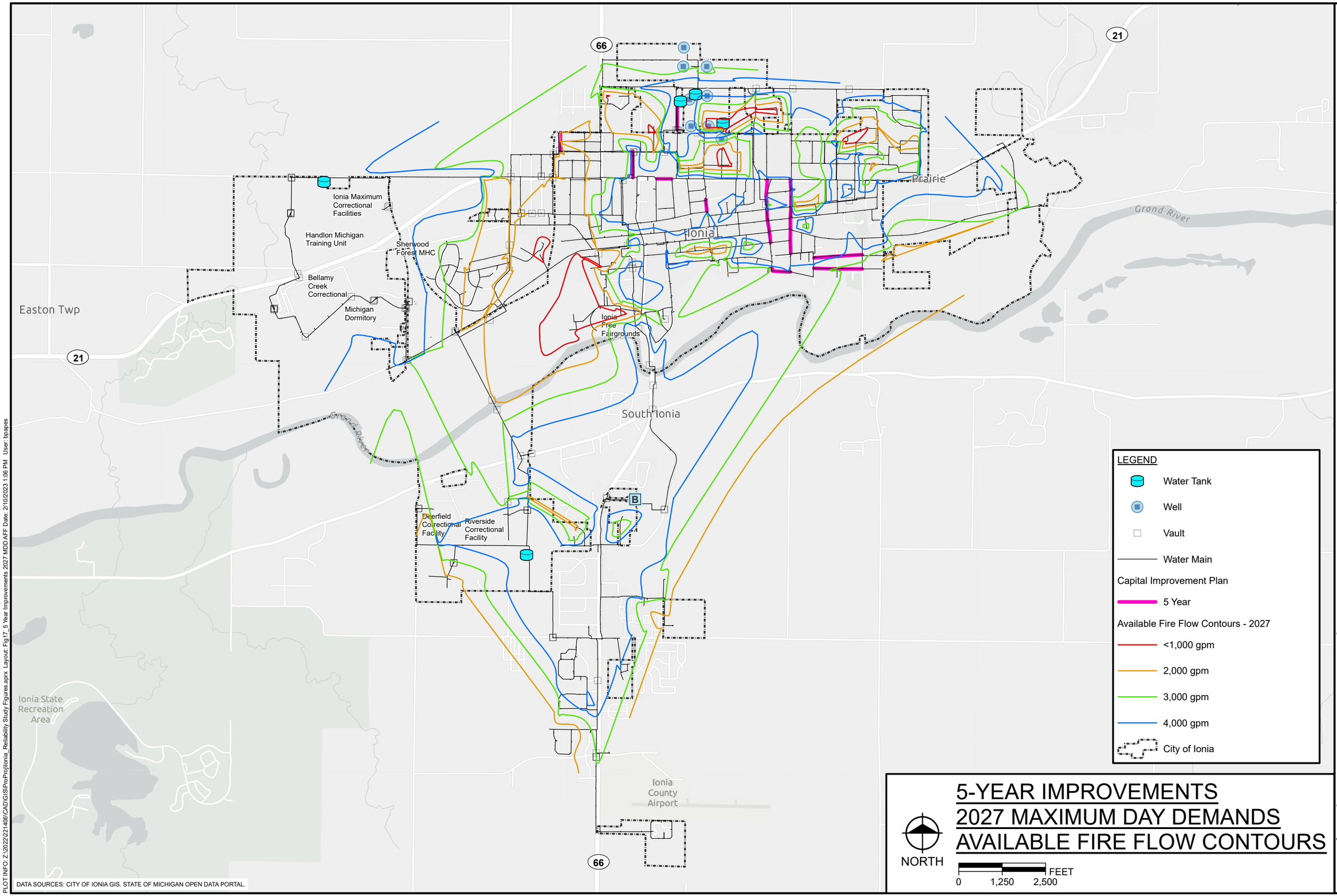
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Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
16



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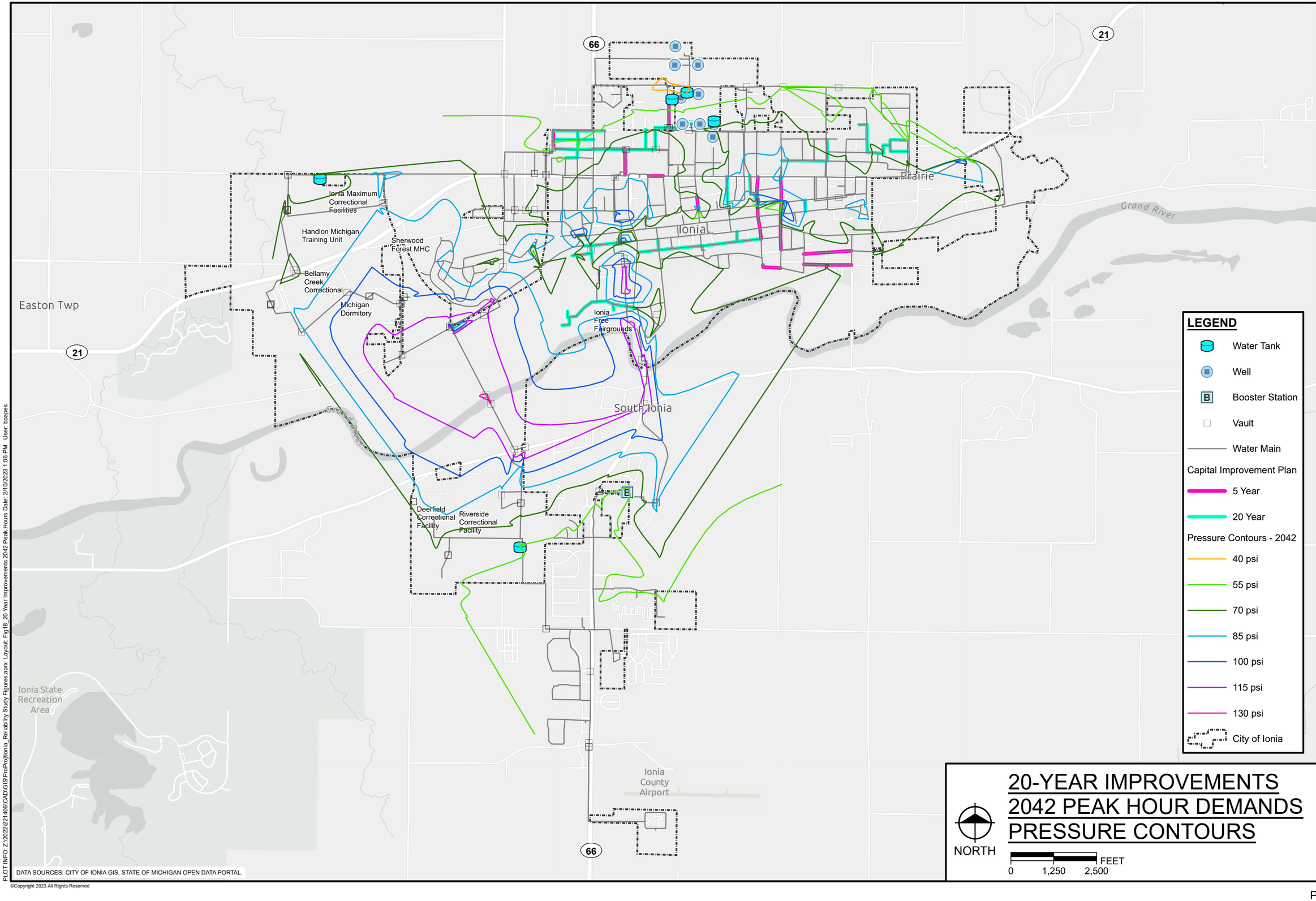
City of Ionia
Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
17



20-YEAR IMPROVEMENTS 2042 PEAK HOUR DEMANDS PRESSURE CONTOURS

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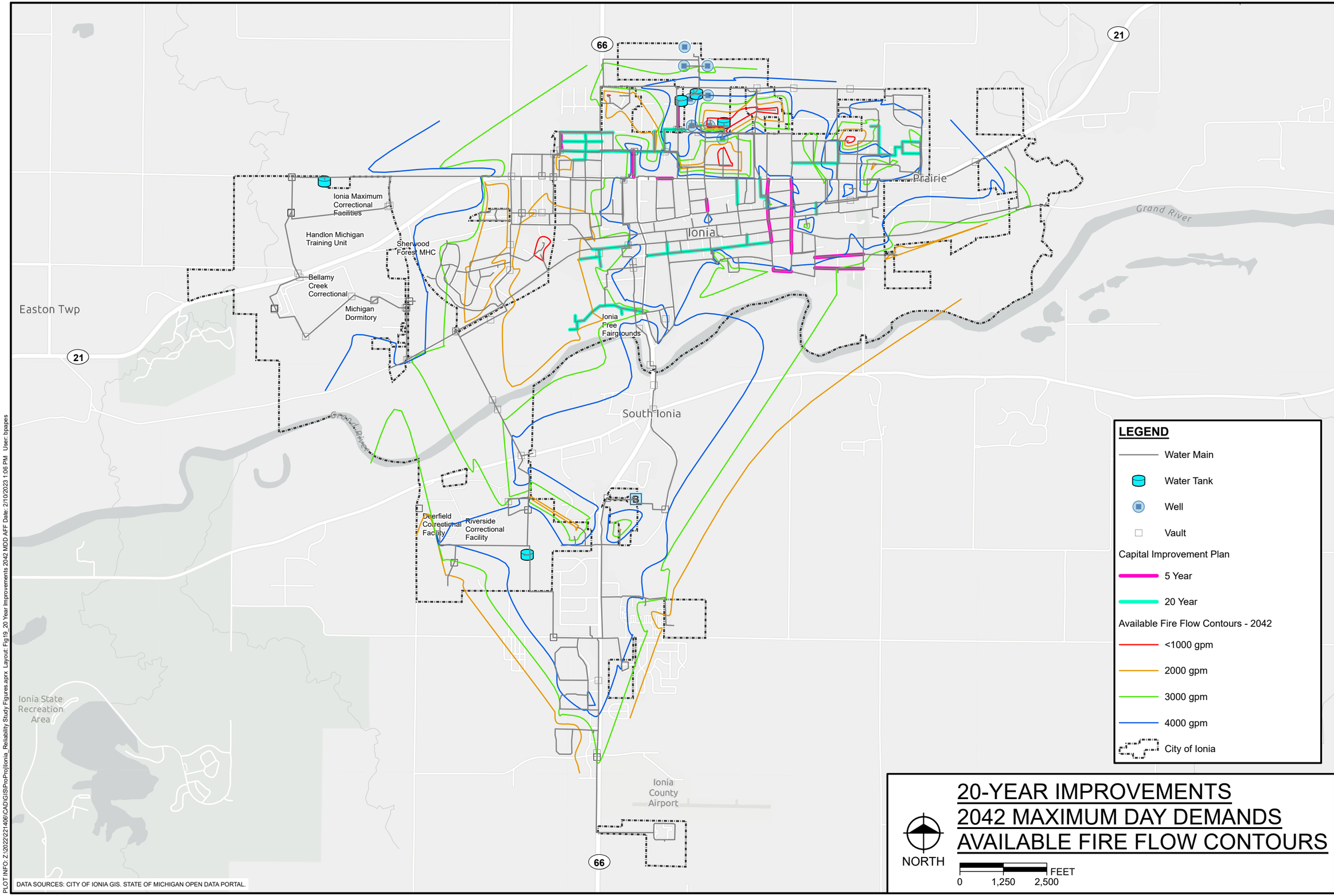
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Ionia County, Michigan

Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
18



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City of Ionia
Ionia County, Michigan
Water System Reliability Study and General Plan

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
19

Appendix 1

City of Ionia
Ionia Water System Reliability Study
Project No. 221406

	Month	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Annual Pumpage (mgd)	January	52.9	54.9	61.4	55.8	52.6	46.8	47.8	50.9	45.5	45.7
	February	50.4	50.2	53.3	52.6	49.3	42.4	41.8	44.1	41.2	41.5
	March	59.6	60.6	62.6	64.2	54.8	53.1	51.9	48.0	41.2	54.2
	April	58.4	64.4	71.5	67.6	60.2	52.2	51.4	56.5	36.2	45.9
	May	57.3	64.5	63.4	61.2	51.8	49.8	51.0	50.0	45.1	46.0
	June	63.2	55.1	64.4	60.2	55.4	54.5	50.7	49.6	49.5	51.2
	July	69.0	64.7	62.0	62.6	55.1	52.4	56.1	53.9	57.8	52.3
	August	62.2	65.6	61.5	64.6	56.8	52.4	54.9	53.4	54.5	52.1
	September	63.8	68.1	66.0	71.8	59.0	53.4	63.2	56.9	58.9	60.3
	October	62.7	66.6	60.2	60.1	53.4	50.2	51.1	47.2	46.8	52.7
	November	52.3	55.4	53.7	53.9	46.7	44.3	47.1	41.3	40.9	44.5
	December	53.4	54.8	53.5	53.6	44.7	46.7	46.0	43.4	42.9	41.4
	Total	705.2	724.9	733.5	728.2	639.8	598.2	613.0	595.2	560.5	587.8
	Average Day Demand (mgd)	1.93	1.98	2.01	2.00	1.75	1.63	1.68	1.63	1.54	1.61
	Maximum Day Demand (mgd)	3.20	3.45	3.56	3.32	2.90	3.12	2.94	3.32	2.83	2.87

Appendix 2

Date: ___8/4/2022_____

EMERGENCY RESPONSE PLAN

for the _____City of Ionia WSSN 03370_____water supply system

In case of emergency, contact the **Michigan Department of Environment, Great Lakes, and Energy** as soon as possible.
Considerations: Loss of pressure, inadequate quantities of water available, contamination

GENERAL

1. Personnel
List personnel available during emergency conditions. Include position, job duties, telephone number and whether available during strikes.

Joe Lafler, Utilities Director	**616-286-0512**
DPU on call Phone:	**517-526-1814**
Dennis Allen, certified operator	**616-902-2633**
Shannon Courter, certified operator	**616-489-0362**
Cullen Badder, certified operator	**616-902-2886**
Abe Butler, operator	**616-902-4524**
Jacob Trierweiler, operator	**616-902-6713**
Al Helmes, operator	**616-755-3051**

2. Miscellaneous
List other telephone numbers that may be needed during emergencies:

DPW on call Phone: 517-526-3734

a. **Michigan Department of Environment, Great Lakes, and Energy:**

District Engineer: Wood Chooi
Email: chooiw@michigan.gov
Ph. no: 616-430-7257

Environmental Quality Analyst: Jeremy Klein
Email: kleinj1@michigan.gov
Ph. no: 616-250-1053

Emergency Number: 1-800-292-4706

Fax: 616-356-0298

b. **Appropriate Municipal Officials: Precia Garland, City Manager 616-527-5776**

c. **Local Health Department: Ionia County Health Dept. 616-527-5341**

d. **Department of Agriculture: Kevin Halfmann**
Email: halfmannk@michigan.gov
Ph. no: 517-930-3092

e. **Police: 911 Local 616-527-4431**

f. **Fire Department: 911 Local 616-527-4431**

g. **Newspapers: Ionia Sentinel-Standard 616-527-2100**

h. **Radio/TV Stations: WION 616-527-9466**

i. **Nearby Water Utilities: Village of Muir 989-855-2144**

j **Nearby Laboratories: Ionia WWTP 616-523-0166**

3. Other Contractors
List telephone numbers of reputable contractors which may be needed during emergencies.

a. **Excavators: CL Excavating 616-527-9352**

b. **Well Drillers: Peerless Midwest Inc. 616-527-0050**

c. **Welders: Peerless Midwest Inc. 616-527-0050**

d. **Electricians: Clorwell Electric 616-374-0966**

e. **Plumbers: Wilsons Heating Cooling and Plumbing 616-527-0391**

f. **Other: n/a**

4. Suppliers
List telephone numbers of suppliers which may be needed during emergencies.

a. **Chemical Suppliers: Webb Chemical 231-733-2181**

b. **Pump Suppliers: Peerless Midwest Inc. 616-527-0050**

c. **Water Main Repair Materials Supplier EJIW 517-566-7211:**

d. **Other: n/a**

CRITICAL CUSTOMERS

1. List critical customers or users for whom the provision of a continuous supply of safe water is most urgent. Include name, telephone number and address.

Sparrow Ionia Hospital 616-527-4200
Michigan Dept. of Corrections 616-527-2500 616-527-6331 616-527-2510 616-527-3100
Ionia Public Schools 616-527-9280

2. Describe method to provide critical customers with a continuous supply of water.
Backup power at well sites

COMMUNICATIONS

1. Describe methods of communication available during power outages.
City owned radios and cell phones

2. Describe methods to provide customers or users with current information and recommended precautions to protect public health.
City website, local radio and local newspaper

PLANS & AGREEMENTS

1. General Layout. Attach the general layout (piping schematic) of the waterworks system or indicate the location of the General Plan as well as valve and hydrant records and any other information that would be helpful in fully describing the water system.
The water system mapping is located on the City GIS. There are 2 laptops as well as backed up at Ionia Public Safety. Paper copies are in vehicles on file.

2. Personnel Safety Plans. List relevant plans and indicate their locations. Examples may include evacuation plans, lock down procedures, location of personal protective equipment (PPE) and procedures for use, and location of Material Safety Data Sheets (MSDS). **Available at WWTP**

3. Water Sampling and Monitoring Plans. Describe monitoring to be conducted to identify potential public health threats. List plans and their locations. Examples include the Bacteriological Sample Siting Plan, sampling procedures for different types of contaminants, locations of sampling containers and procedures to obtain more, laboratories to analyze other contaminants, identify laboratories to contact (with phone numbers) to arrange for rapid sampling for volatile organic chemicals or other unknown compounds. **Available at WWTP 720 Wells St. Ionia MI 48846**

4.

5. Mutual aid agreements. Describe type and terms of agreements with other water supplies that may be implemented during an emergency. Attach or include location of agreements. Examples include sharing personnel and equipment, and loaning supplies. **Gentlemen agreements with neighboring communities (Muir, Lyons, Saranac, Pewamo, Fowler, and Sheridan) for manpower and equipment, and standby power.**

3. Emergency Supplies and Equipment Plans

a. Emergency equipment available. Identify and indicate location of equipment and vehicles that may be needed in an emergency. If the equipment is leased, rented, shared or otherwise not immediately available, describe the procedure for securing the equipment including contact information. **Peerless Midwest Inc. and CL Trucking located in Ionia MI**

b. Replacement equipment. Identify and indicate location of replacement equipment or parts that may be needed in an emergency. Describe how to secure replacements, if not on site, including contact information (or refer to Contacts section of this ERP). **Peerless Midwest Inc. and CL Trucking in Ionia MI**

c. First aid supplies and equipment. Include locations and contact information for securing additional supplies and equipment. **In each well house, vehicles, and Ionia Public Safety are medical first responders.**

Source.
Master Meter
Location(s) and Size(s)
At well houses 5-8", 11A-8", 9A-10", 10A-10", 12A-8", 13A-8", 14A-10", 15-8", 16A-10"

Groundwater Sources

Well Number	Diameter (inches)	Depth (feet)	Capacity (gpm)	Location	Treatment Type
5	10	103.2	500	705 Union St.	chlorine/fluoride
11A	12	113	700	705 Union St	chlorine/fluoride
9A	12	110.5	550	705 Union St	chlorine/fluoride
10A	12	113	600	705 Union St	chlorine/fluoride
12A	12	152	600	705 Union St	chlorine/fluoride
13A	12	170	600	705 Union St	chlorine/fluoride
14A	16	208	750	705 Union St	chlorine/fluoride
15	16	181	860	705 Union St	chlorine/fluoride
16A	16	186	500	705 Union St	chlorine/fluoride

Surface Water Sources

Pump Number	High or Low Service	Capacity (gpm)	Location
n/a			

1. Describe method to operate wells for groundwater sources, or pumps for surface water sources (manual or automatic) **Automatic, pressure transducers, and VFD's.**

2. Auxiliary power available:

   Type: **Stationary power and Portable Generator**

   Location: 705 Union St.

   Capacity:

   Describe how to activate and operate auxiliary power:

   If auxiliary power is leased, rented, shared or otherwise not immediately available on the property, describe the procedure for securing the equipment:

   Owner:**n/a**
   Contact name and telephone number:
   Type and terms of agreement:

TREATMENT

1. If treatment employed at wells, describe method to provide auxiliary power to chemical feed pumps. **Standby Generators with Auto transfer switches**

2. If centralized treatment employed (iron removal, zeolite softening, etc.):

a. Describe method to provide auxiliary power to high service pumps:n/a

3. Describe method to provide auxiliary power to chemical feed pumps **Standby Generators with Auto transfer switches**

b. Describe procedure to bypass treatment facility: **n/a**

4. If no treatment, describe method to provide emergency chlorination: **n/a**

5. If surface water treatment employed, describe method to provide auxiliary power. **n/a**

DISTRIBUTION

1. Storage

Tank Type	Capacity	Location
Ground	**1 MG**	**705 Union St.**
Ground	**0.5 MG**	**772 Cyrus St.**
Elevated	**0.5 MG**	**705 Union St.**
Elevated	**0.5 MG**	**1745 W. Lincoln Ave.**
Elevated	**0.5 MG**	**378 W Tuttle Rd.**

Describe procedure to bypass storage facility:

2. Pumping stations:

a. Identify location and capacity of pumps: **401 Swartz Ct. (3) 500 gpm and 772 Cyrus St. 600 gpm**

b. Describe method to provide auxiliary power to pumps: **Standby generator at 401 Swartz Ct. with ATS and City owned 125kw portable generator available at 772 Cyrus St..**

3. Describe any emergency interconnections with other water supplies. List contact persons, telephone numbers and procedures to secure water from and provide water to those other water supplies. n/a

4. List available licensed water haulers and sources of bottled water with phone numbers. **JH Oil Co. Grand Rapids MI Phone 616-534-2181**

ADDITIONAL INSTRUCTIONS

The Emergency Response Plan shall be located and distributed as necessary to assure effective use by all necessary waterworks personnel. **At WWTP in Directors office and employee breakroom.**

This plan shall be updated every year or as necessary (as changes occur in personnel, contact information, or other factors).

Name: Joe Lafler

Signature: Joseph Lafler

Title: Utilities director

Appendix 3

City of Ionia Water System Storage Volume Analysis
City of Ionia, Michigan
Water Reliability Study
Project 221406

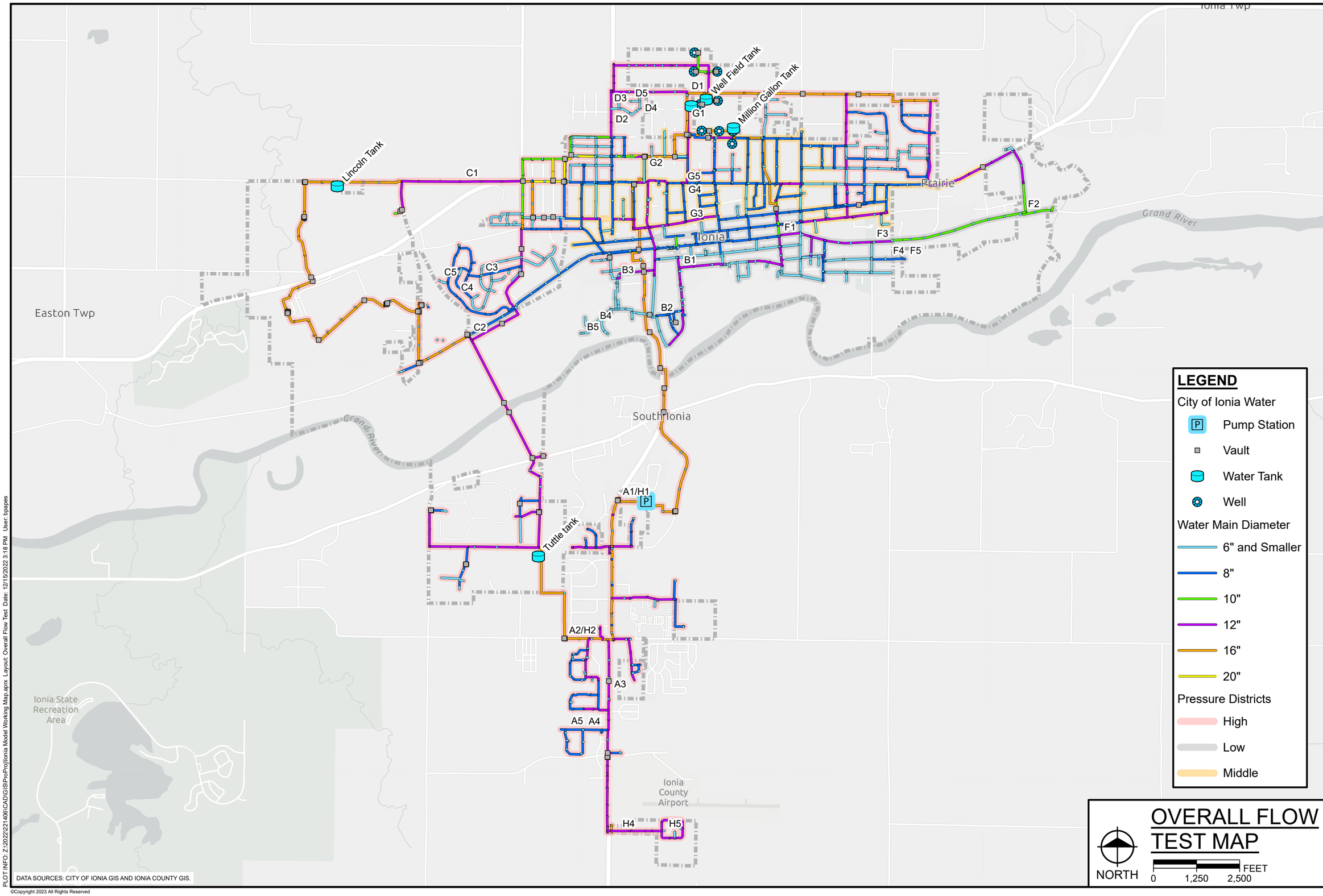
Year	Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)	Suggested Fire-Flow[1] (gpm)	Duration[1] (hours)	Average Day Demand per 10 States[2] (gallons)	25% of Maximum Day Demand[2,3] (gallons)	Lowest of Two EQ Calculations (gallons)	Fire Demand[4] (gallons)	Emergency Storage 50% of ADD (gallons)	Greater of Fire Demand or Emergency Storage (gallons)	Total Storage Needed (gallons)	Existing Storage Volume (gallons)	Recommended Additional Storage Vol. (gallons)
2022	1.78	3.51	5.27	1,500	2	1,780,000	877,500	878,000	180,000	890,000	890,000	1,768,000	3,000,000	0
2022	1.78	3.51	5.27	2,500	2	1,780,000	877,500	878,000	300,000	890,000	890,000	1,768,000	3,000,000	0
2022	1.78	3.51	5.27	3,500	3	1,780,000	877,500	878,000	630,000	890,000	890,000	1,768,000	3,000,000	0
2027	1.80	3.56	5.34	1,500	2	1,800,000	890,000	890,000	180,000	900,000	900,000	1,790,000	3,000,000	0
2027	1.80	3.56	5.34	2,500	2	1,800,000	890,000	890,000	300,000	900,000	900,000	1,790,000	3,000,000	0
2027	1.80	3.56	5.34	3,500	3	1,800,000	890,000	890,000	630,000	900,000	900,000	1,790,000	3,000,000	0
2042	1.87	3.69	5.54	1,500	2	1,870,000	922,500	923,000	180,000	935,000	935,000	1,858,000	3,000,000	0
2042	1.87	3.69	5.54	2,500	2	1,870,000	922,500	923,000	300,000	935,000	935,000	1,858,000	3,000,000	0
2042	1.87	3.69	5.54	3,500	3	1,870,000	922,500	923,000	630,000	935,000	935,000	1,858,000	3,000,000	0

Notes:

1. Fire demand and duration based on AWWA M-31 Manual recommendations. **A four-hour 3,500 gpm fire flow is the goal of City**.
2. Equalization volume was calculated using two different methods (the minimum determined EQ volume was used): 1 - Equal to ADD, 2 - Equal to 25% of MDD
3. Equalization volume = 25% of Maximum Day Demand
4. Fire demand is based on the suggested fire flow over the duration
5. Example calculation: (Year 2042 with a 3-hour 3,500 gpm desired fire flow)

Maximum Day Demand = 3.69 mgd = 2560 gpm (2042 projected maximum day demand)
Peak Hour Demand = 5.54 mgd = 3,840 gpm (2042 projected peak hour demand)
Equalization Volume = 25% * maximum day demand = 25% * 3.69 mgd = 922,500 gallons (lowest of 2 methods used to calculate equalization volume)
Fire Demand = Suggested Fire-Flow * Duration = 3,500 gpm * 3 hr * 60min/hr = 630,000 gallons
Emergency Storage (12 hr) = 50% of ADD = 0.5 * 1,870,000 = 935,000 gallons
Total Storage Needed = Emergency Storage + Equalization Volume = 923,000 + 935,000 = 1,858,000 gallons
Storage Volume Provided = total working volume of existing storage tanks = 3,000,000 gallons
Recommended Additional Storage Volume = Recommended Storage Volume - Existing Storage Volume = 1,858,000 - 3,000,000 = -1,142,000 gallon surplus = 0 gallons additional storage

Appendix 4



DATA SOURCES: CITY OF IONIA GIS AND IONIA COUNTY GIS.

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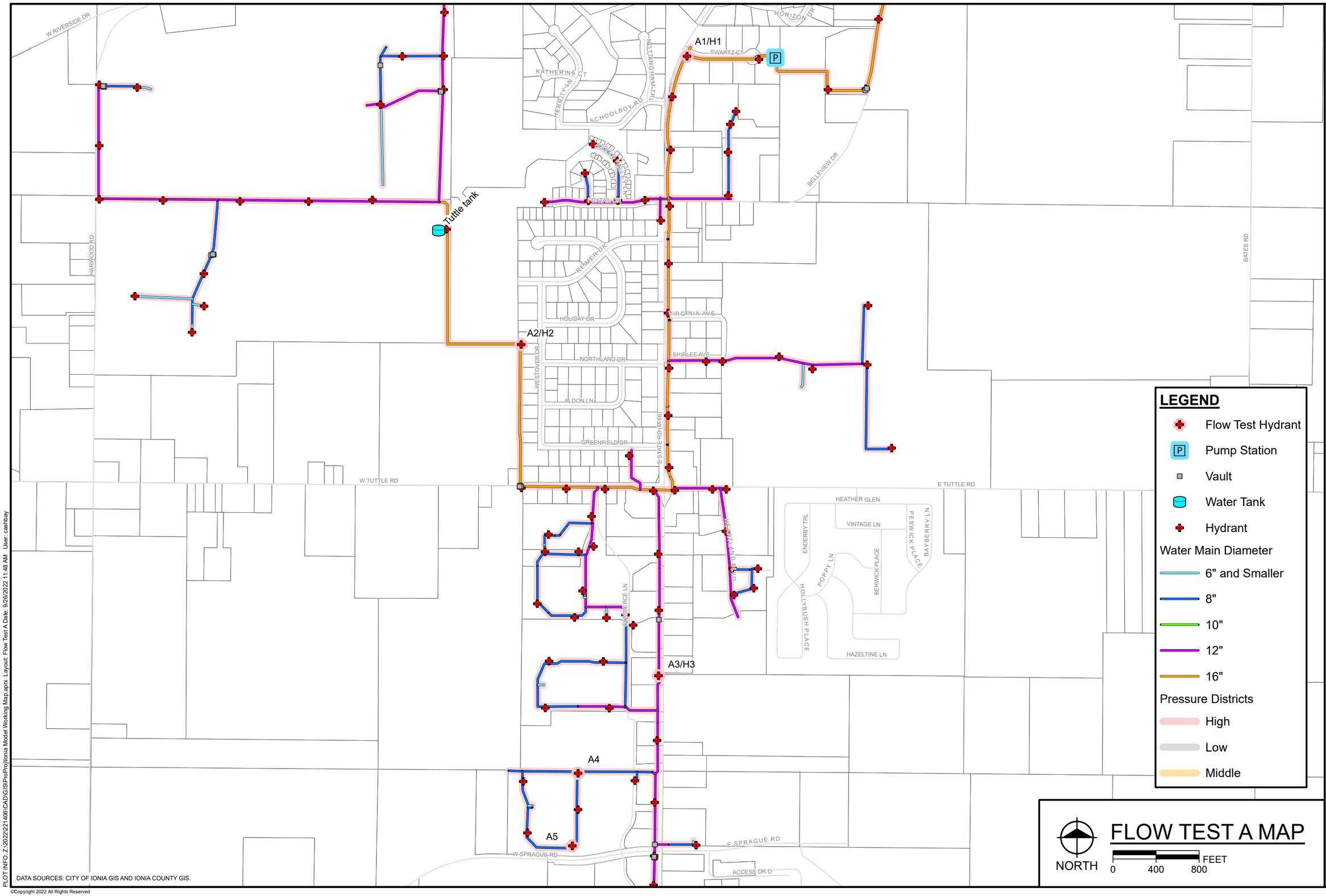
City of Ionia
Ionia County, Michigan
Water Reliability Study

CITY OF IONIA

OVERALL FLOW TEST MAP

PROJECT NO.
221406

FIGURE NO.
1



LEGEND

- Flow Test Hydrant
- Pump Station
- Vault
- Water Tank
- Hydrant

Water Main Diameter

- 6" and Smaller
- 8"
- 10"
- 12"
- 16"

Pressure Districts

- High
- Low
- Middle

NORTH

FLOW TEST A MAP

0 400 800 FEET

DATA SOURCES: CITY OF IONIA GIS AND IONIA COUNTY GIS.

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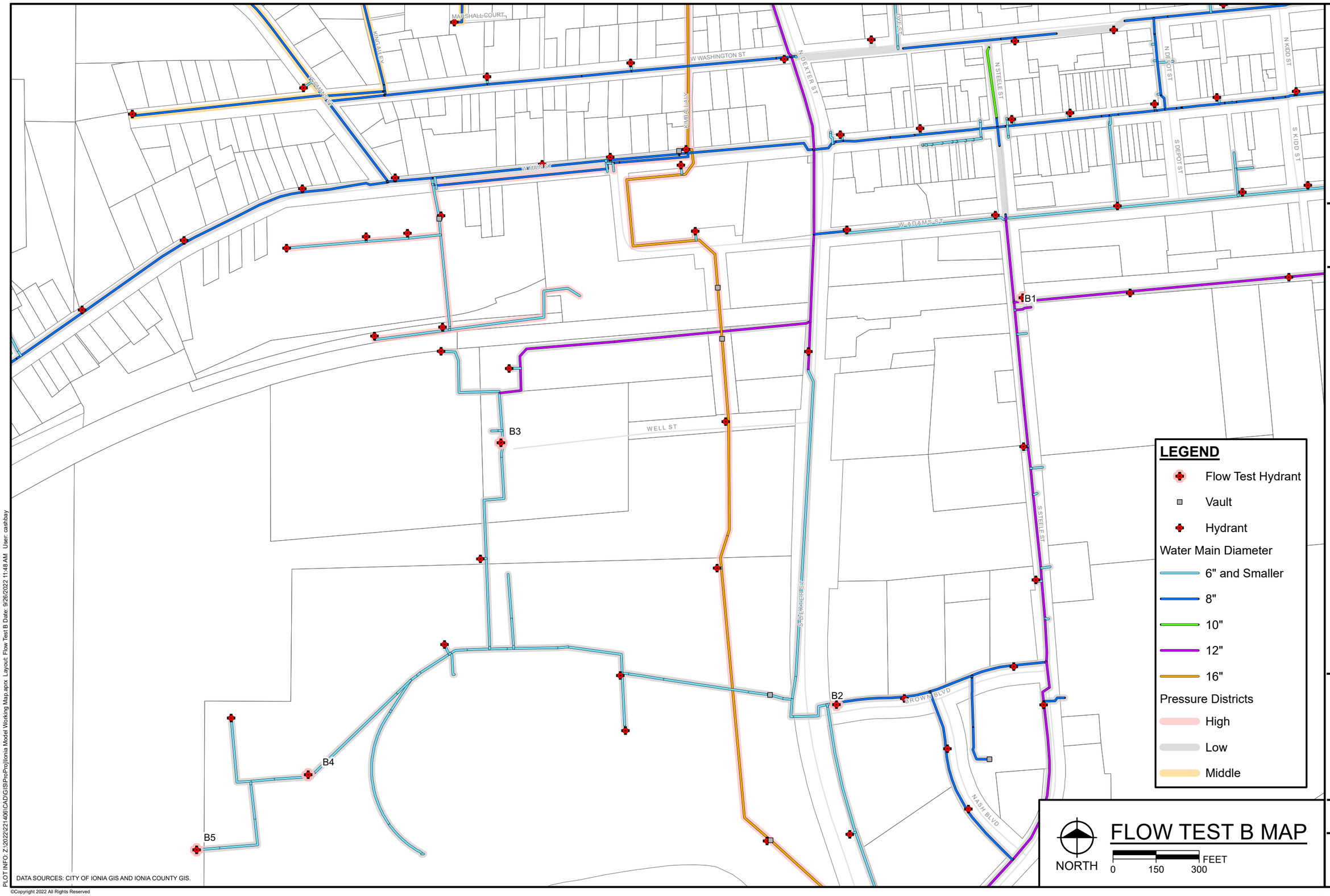
City of Ionia
Ionia County, Michigan

Water Reliability Study

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
2



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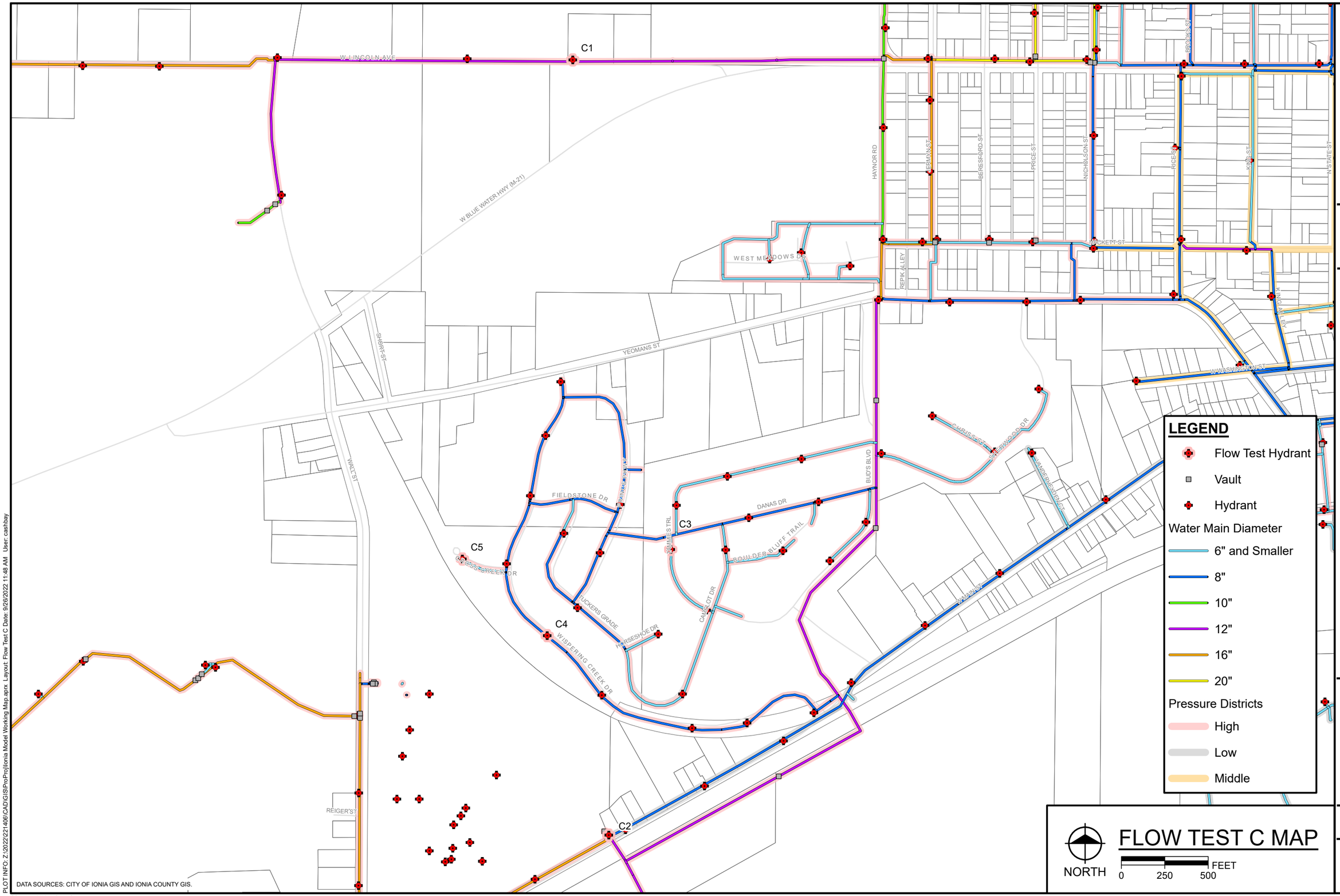
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City of Ionia
Ionia County, Michigan
Water Reliability Study

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
3



FLOW TEST C MAP

City of Ionia
Ionia County, Michigan

Water Reliability Study

fishbeck
Engineers | Architects | Scientists | Constructors

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CITY OF IONIA

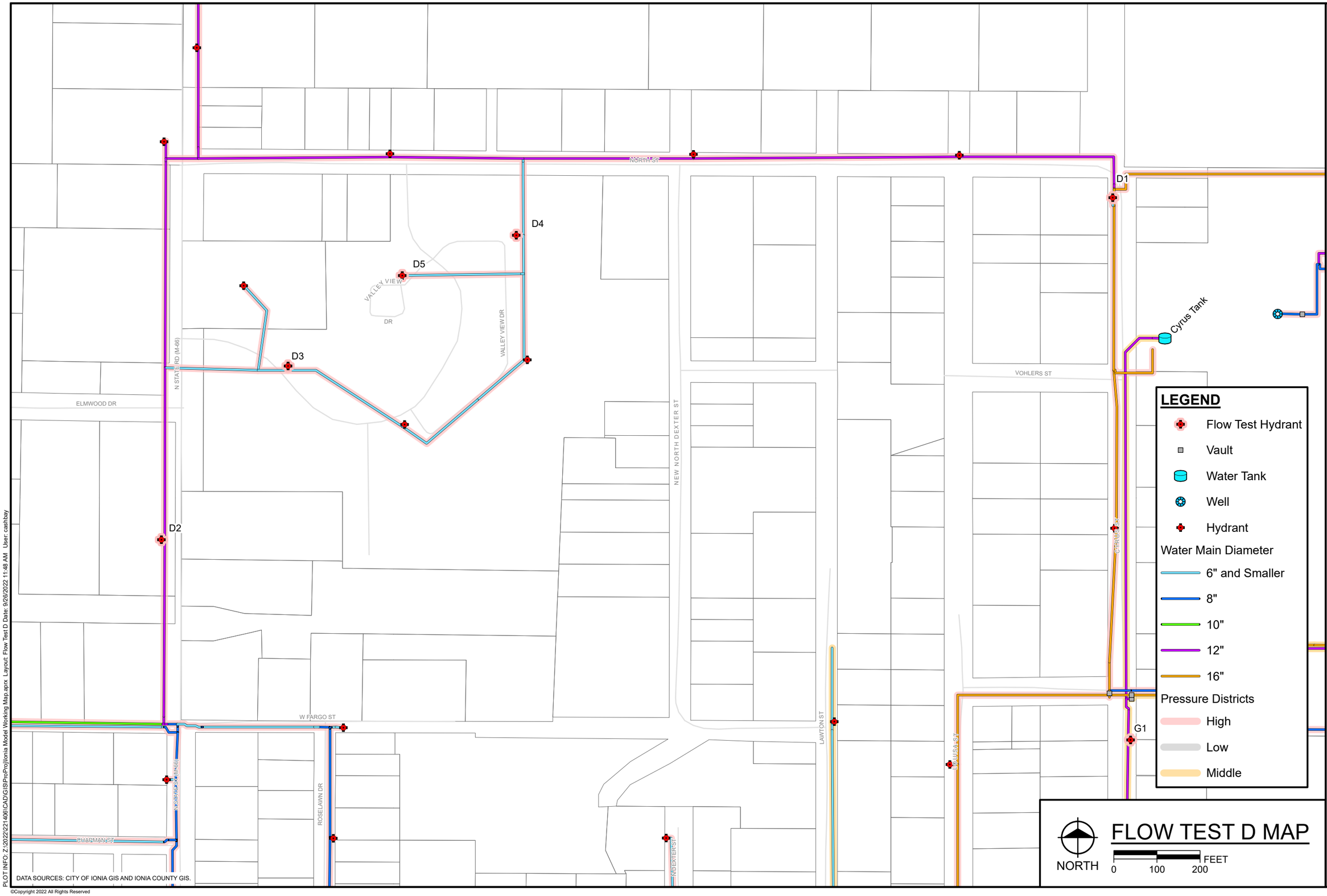
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221406

FIGURE NO.
4

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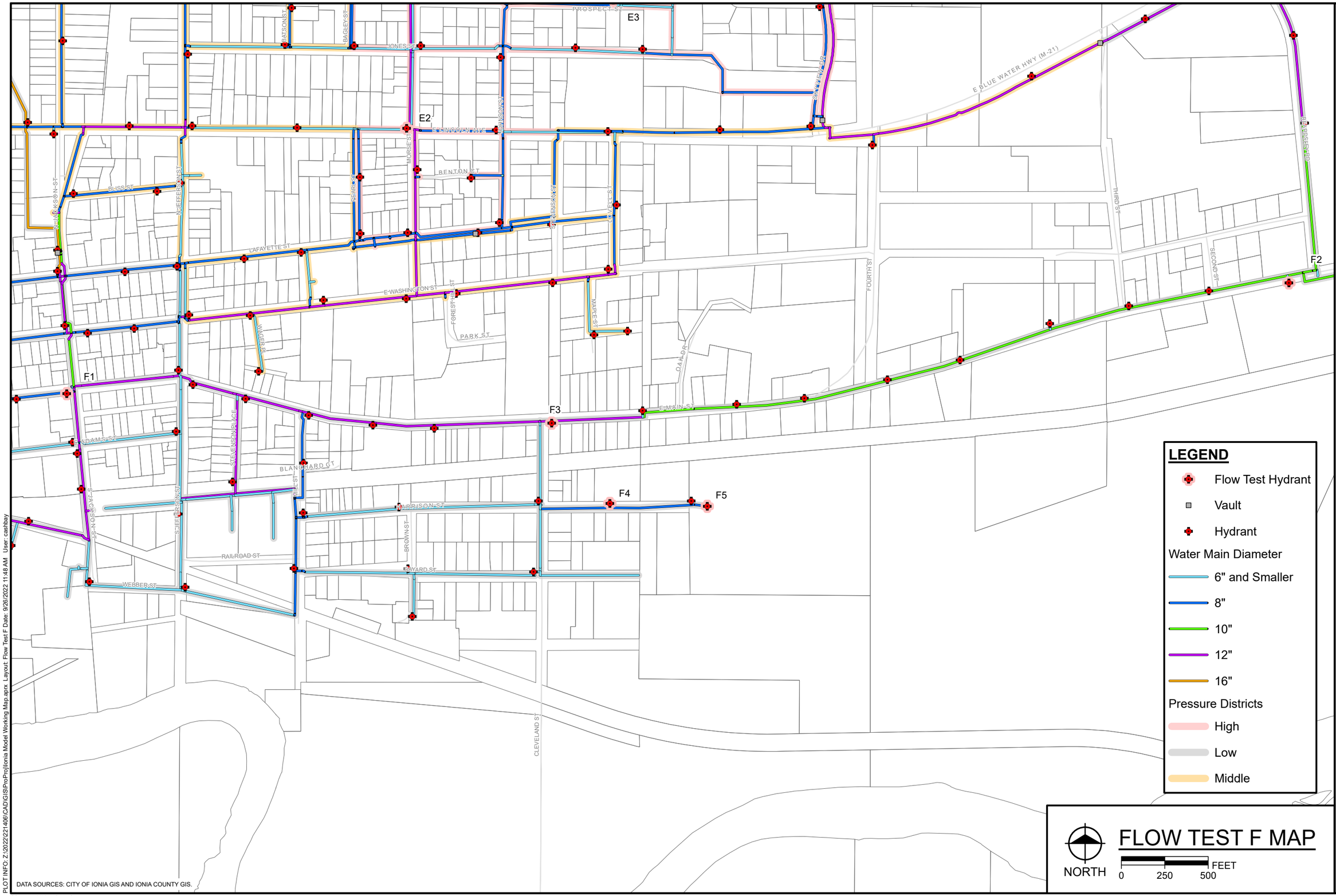
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City of Ionia
Ionia County, Michigan
Water Reliability Study

CITY OF IONIA

PROJECT NO.
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FIGURE NO.
5



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City of Ionia
Ionia County, Michigan

Water Reliability Study

CITY OF IONIA

PROJECT NO.
221406

FIGURE NO.
7

D2
G1
G2
G3
G4
G5
N STATE RD (M-66)
W FARGO ST
E FARGO ST
NEW NORTH DEXTER ST
LAWTON ST
LOUISA ST
CYRUS ST
CHARMAN ST
ROSELAWN DR
FOREST ST
BRANCH ST
HALL ST
W LYTLE ST
E LYTLE ST
RICH ST
W LINCOLN AVE
TOWER ST
SUMMIT ST
N STATE ST
HARTER ST
N DEXTER ST
BALDWIN ST
TAYLOR ST
HACKETT ST
STIVENS ST
YEOMANS CT
HIGH ST
DAVIS ST
AMPHITHEATER

LEGEND

- Flow Test Hydrant
- Vault
- Water Tank
- Well
- Hydrant

Water Main Diameter

- 6" and Smaller
- 8"
- 10"
- 12"
- 16"
- 20"

Pressure Districts

- High
- Low
- Middle

NORTH

FLOW TEST G MAP

0 150 300 FEET

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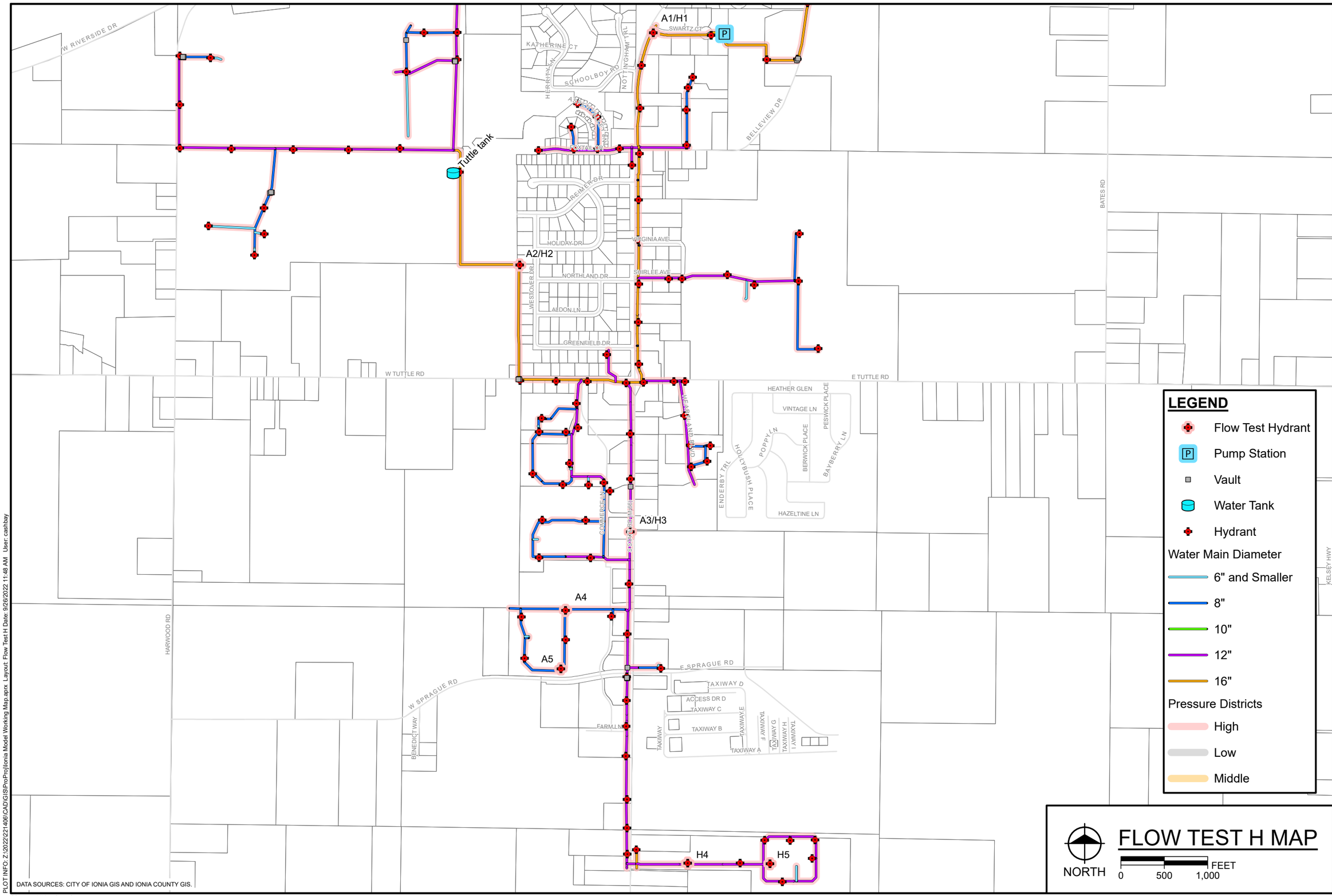
City of Ionia
Ionia County, Michigan

Water Reliability Study

CITY OF IONIA

PROJECT NO.
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FIGURE NO.
8



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City of Ionia
Ionia County, Michigan
Water Reliability Study

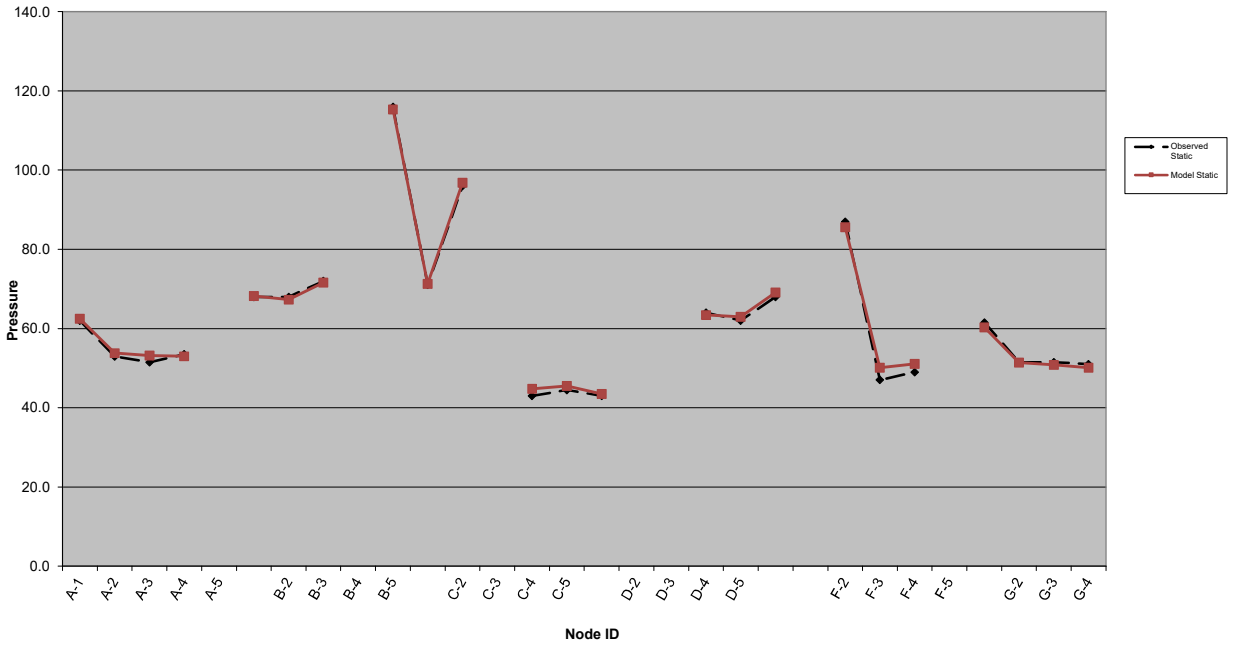
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PROJECT NO.
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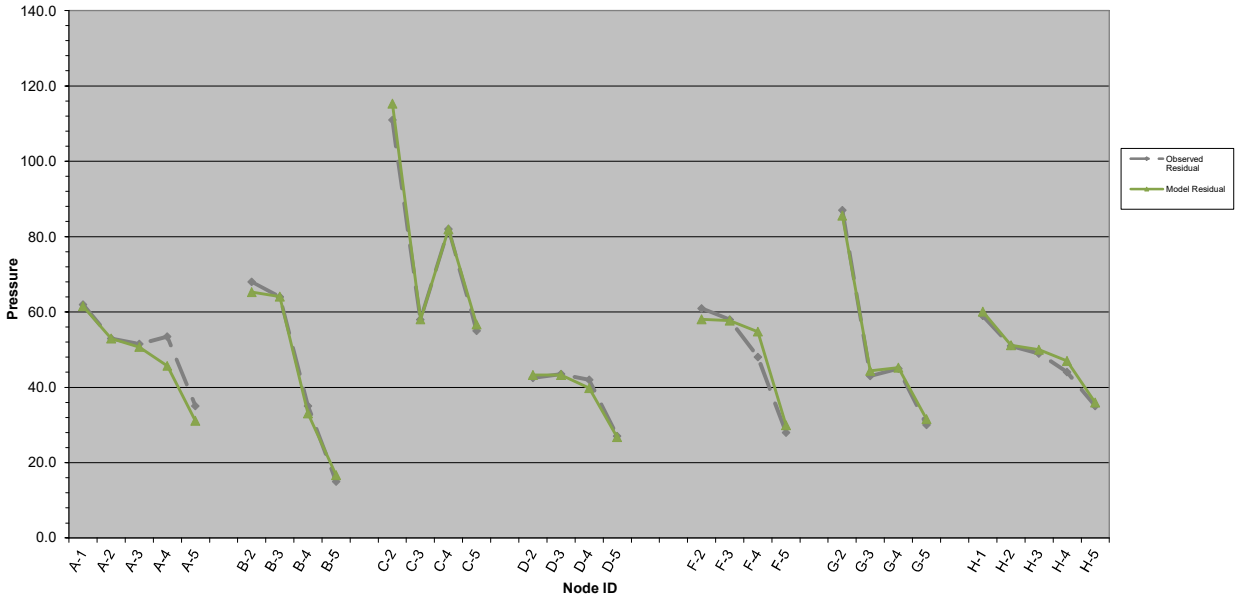
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Appendix 5

Ionia Water System Reliability Study
Calibration Summary - Static Pressure



Ionia Water System Reliability Study
Calibration Summary - Residual Pressure

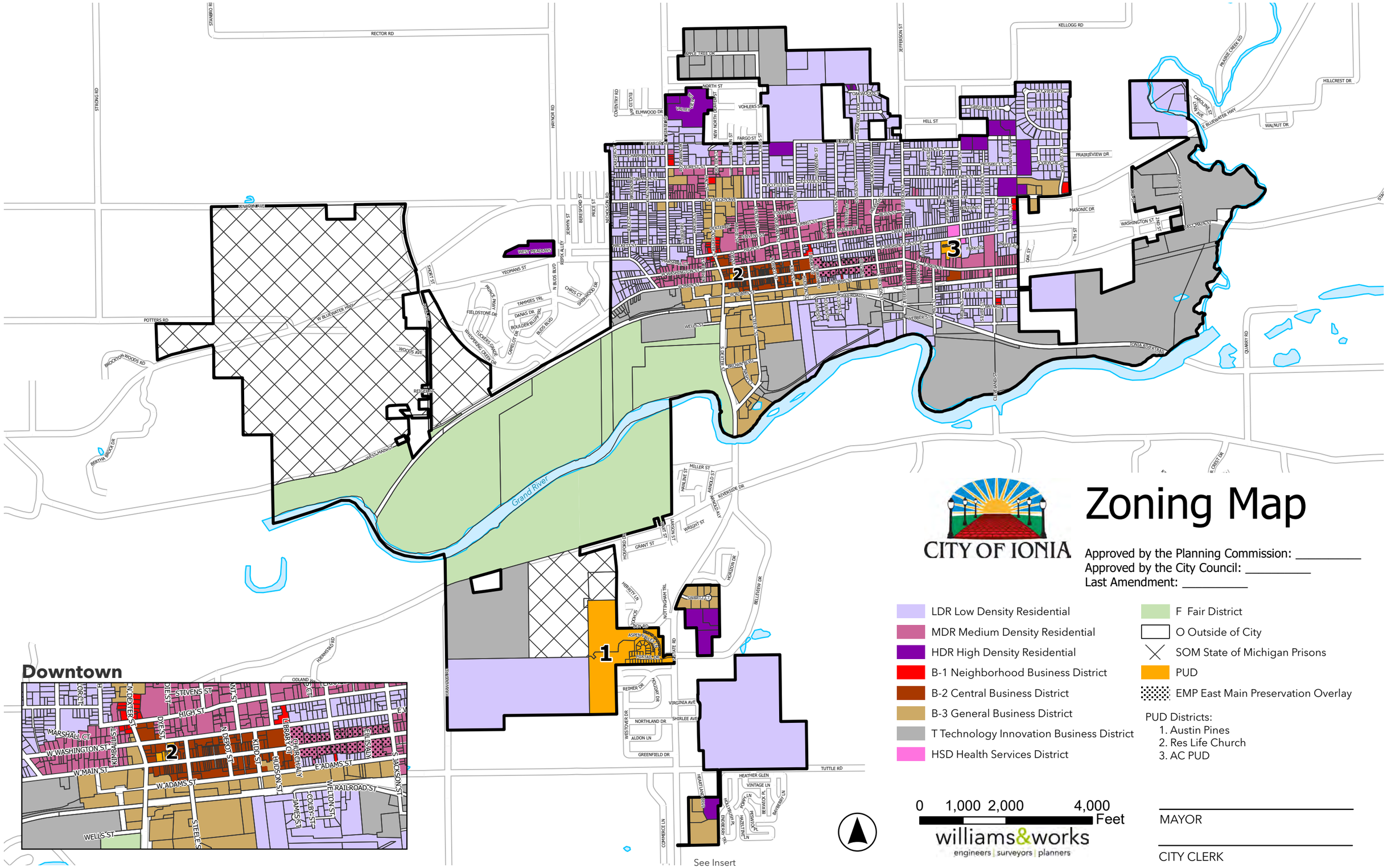


Ionia Water System Reliability Study
City of Ionia
Project 221406
Calibration Results

	Model Node ID	Field Observed Static Hyd Pressure (psi)	Adjusted Observed Residual Hyd Pressure (psi)	Field Observed Hyd Flow (gpm)	Trial 1 Model Static Pressure (PSI)	Trial 1 Static Pressure difference (PSI)	Trial 1 Model Residual Pressure (PSI)	Trial 1 Residual Pressure difference (PSI)	Trial 3 Model Static Pressure (PSI)	Trial 3 Static Pressure difference (PSI)	Trial 3 Model Residual Pressure (PSI)	Trial 3 Residual Pressure difference (PSI)
	A-1	62.0	62.0		62.50	-0.50	61.5	0.5	62.5	-0.5	61.5	0.5
	A-2	53.0	53.0		53.80	-0.80	52.9	0.1	53.8	-0.8	53.0	0.0
High	A-3	51.5	51.5		53.20	-1.70	50.6	0.9	53.2	-1.7	50.7	0.8
	A-4	53.5	53.5		53.00	0.50	46.3	7.2	53.0	0.5	45.7	7.8
	A-5	-	35.0	705			35.1	-0.1	-	-	31.1	3.9
	B-1	-	-		-	-	-	-	-	-	-	-
	B-2	68.0	68.0		70.70	-2.70	68.7	-0.7	68.2	-0.2	65.3	2.7
Low	B-3	68.0	64.0		69.80	-1.80	67.5	-3.5	67.3	0.7	64.1	-0.1
	B-4	72.0	35.0		74.10	-2.10	44.9	-9.9	71.6	0.4	33.1	1.9
	B-5	-	15.0	462	-	-	34.6	-19.6	-	-	16.7	-1.7
	C-1	-	-		-	-	-	-	-	-	-	-
	C-2	116.0	111.0		119.60	-3.60	120.1	-9.1	115.3	0.7	115.3	-4.3
High	C-3	71.0	58.0		74.50	-3.50	70.1	-12.1	71.3	-0.3	58.0	0.0
	C-4	96.0	82.0		101.30	-5.30	96.1	-14.1	96.8	-0.8	81.9	0.1
	C-5	-	55.0	885	-	-	82.3	-27.3	-	-	56.7	-1.7
	D-1	-	-		-	-	-	-	-	-	-	-
	D-2	43.0	42.5		46.00	-3.00	45.0	-2.5	44.8	-1.8	43.3	-0.8
High	D-3	44.5	43.5		46.20	-1.70	44.2	-0.7	45.5	-1	43.3	0.2
	D-4	43.0	42.0		44.10	-1.10	40.5	1.5	43.5	-0.5	39.8	2.2
	D-5	-	27.0	620	-	-	33.7	-6.7	-	-	26.8	0.2
	F-1	-	-		-	-	-	-	-	-	-	-
	F-2	64.0	61.0		62.20	1.80	59	2	63.4	0.6	58.1	2.9
Low	F-3	62.0	58.0		63.90	-1.90	60.7	-2.7	63.0	-1	57.7	0.3
	F-4	68.0	48.0		70.60	-2.60	62.1	-14.1	69.1	-1.1	54.8	-6.8
	F-5	-	28.0	631	-	-	62.1	-34.1	-	-	29.9	-1.9
	G-1	-	-		-	-	-	-	-	-	-	-
	G-2	87.0	87.0		85.00	2.00	85	2	85.6	1.4	85.6	1.4
Medium	G-3	47.0	43.0		50.70	-3.70	46	-3	50.1	-3.1	44.4	-1.4
	G-4	49.0	45.0		50.80	-1.80	46	-1	51.1	-2.1	45.2	-0.2
	G-5	-	30.0	653	-	-	45.8	-15.8	-	-	31.6	-1.6
	H-1	61.5	59.0		61.90	-0.40	61.5	-2.5	60.3	1.2	60.1	-1.1
	H-2	51.5	51.0		53.30	-1.80	53	-2	51.4	0.1	51.2	-0.2
High	H-3	51.5	49.0		52.70	-1.20	51.8	-2.8	50.8	0.7	50.0	-1.0
	H-4	51.0	44.0		52.00	-1.00	48.9	-4.9	50.1	0.9	47.0	-3.0
	H-5	-	35.0	706	-	-	46.6	-11.6	-	-	36.0	-1.0

Appendix B

Zoning Map



Zoning Map

CITY OF IONIA

Approved by the Planning Commission: _____
Approved by the City Council: _____
Last Amendment: _____

- LDR Low Density Residential
- MDR Medium Density Residential
- HDR High Density Residential
- B-1 Neighborhood Business District
- B-2 Central Business District
- B-3 General Business District
- T Technology Innovation Business District
- HSD Health Services District
- F Fair District
- O Outside of City
- SOM State of Michigan Prisons
- PUD
- EMP East Main Preservation Overlay

PUD Districts:
1. Austin Pines
2. Res Life Church
3. AC PUD

0 1,000 2,000 4,000 Feet

williams&works
engineers | surveyors | planners

_____
MAYOR

_____
CITY CLERK

Appendix C

Overburdened Worksheet

Finance Division
Overburdened Preliminary Determination for FY27 State Revolving Fund Projects

Applicant Information

Applicant: City of Ionia
ITA Tracking Number: 1030-0147
Project Name: Jefferson Street Water Main Replacement, Jackson Street Water Main Replacement, Adams Street Water Main Replacement
Funding Source: DWSRF
Regional System: ☑ Yes ☐ No

Contact Information

Name of Applicant Contact and Title	Nicholas Henz
Email	nhenz@preinnewhof.com
Phone Number	(630) 277-1927

Summary of Determination

Preliminary Determination	Not Overburdened
SRF Loan Minimum to Maintain or Gain Overburdened Status	$

The table above displays the preliminary results of the application. If the box displays a significantly overburdened determination than the applicant has a preliminary determination of significantly overburdened for FY27. If the box displays overburdened, whether by calculation or not, the applicant has a preliminary determination of overburdened for FY27.

The following pages break down the information that was submitted and used for the preliminary determination. When a final determination has been made, the applicant will be notified of the result.

Preliminary

City of Ionia Blended Community Worksheet

Municipality Name	Percent of Flow	MAHI	TVPC	MAHI Contribution	TVPC Contribution
Berlin township- Ionia County	4	$74,250.00	$63,853.00	$2,970.00	$2,554.00
Easton township- Ionia County	3	$76,418.00	$32,697.00	$2,293.00	$981.00
Ionia city	91	$63,978.00	$11,344.00	$58,220.00	$10,323.00
Ionia township- Ionia County	2	$60,189.00	$32,445.00	$1,204.00	$649.00
Flow Total	100			Blended MAHI	Blended TVPC
				$64,687.00	$14,507.00

Initial Overburdened Screening

MAHI Threshold Qualification	Does Not Qualify
Overburdened Determination Without Need for Calculation	Not Overburdened

For determinations made using anticipated debt (i.e., determinations where the change in loan amount will change the applicant status from overburdened to not or vice versa), a final determination will be made based upon the final loan amount after bids/project scope is finalized and not the anticipated amount provided on this form.

If this applicant has applied for overburdened or significantly overburdened status in prior fiscal years, the numbers in the survey (i.e., breakdown of municipalities and their flow amounts, annual payments on existing debt, total OM&R, and REUs) will be compared to check for discrepancies as most of these numbers should be similar year to year. EGLE will contact the applicant if inconsistencies are found, and the final determination may change if the original numbers need to be updated.

I **Nicholas Henz** on behalf of **City of Ionia** hereby certify that the information in this form is complete, true, and correct to the best of my knowledge.

☑ Yes

03/05/2026

Preliminary

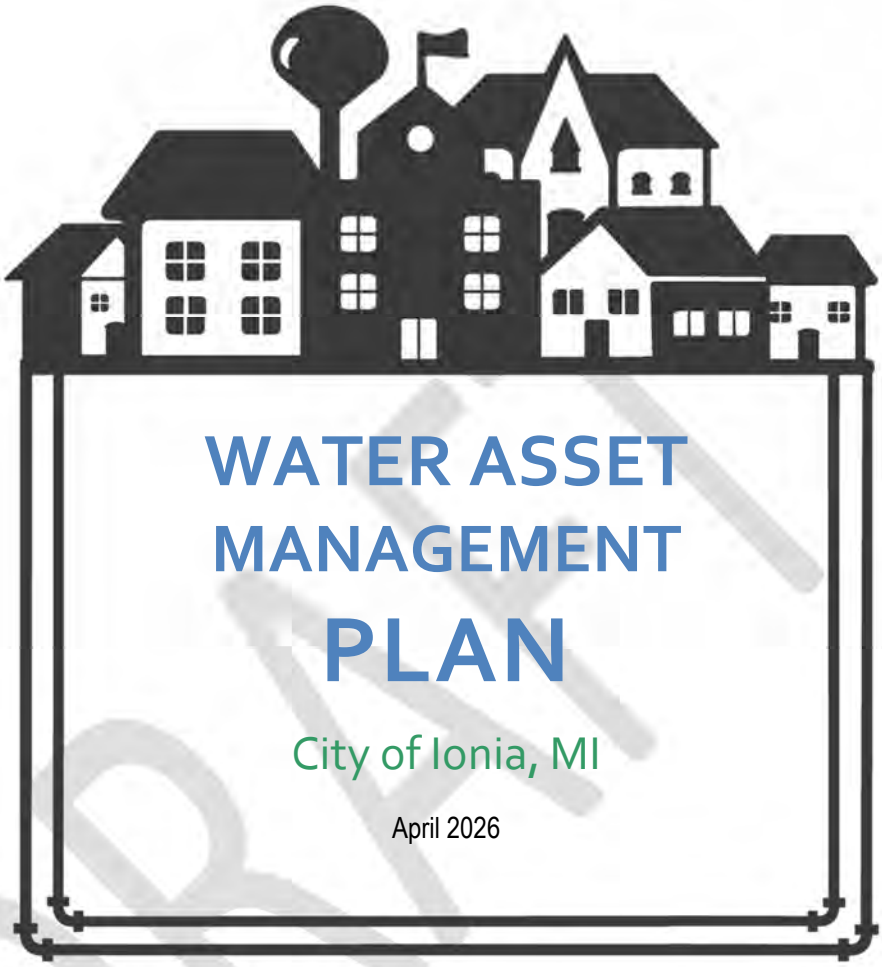
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This form and its contents are subject to the Freedom of Information Act and may be released to the public.

Preliminary

Appendix D

Water Asset Management Plan



WATER ASSET MANAGEMENT PLAN

City of Ionia, MI

April 2026

CITY OF IONIA

DRAFT

INTRODUCTION

About this Document

This document is our Water Asset Management Plan. It is a document which outlines how we will apply the principles of asset management to achieve the goals outlined in our Asset Management Plan.

The Asset Management Plan will be maintained through a joint effort of our staff and administration. We will update our program on a periodic basis to ensure its relevancy and effectiveness.

Our Commitment

Our community water system is a complex set of components that we operate and maintain in a way that provides us with clean and reliable drinking water. That system includes assets such as a water treatment plant which filters and purifies the water, tanks which provide storage, and a pipe network which distributes our water. As members of our community, each one of us helps pay for the operation, maintenance, and replacement of those system assets through our utility rates. In effect, we are all owners of the water system. As the system owners, we commit to proactively manage our system assets and make decisions based on long term lifecycle cost.

Asset Management Principles

All infrastructure deteriorates with age and requires proactive management to operate, maintain, repair, and eventually replace each physical component, or asset. This progression over time from routine operation and maintenance through repairs and eventual replacement is the asset's life cycle. Waiting to perform maintenance or make repairs can save money in the short term but may decrease the life cycle of an asset. On the other hand, replacing an asset before it fails may not take full advantage of the asset's value. It is this balance which puts the decisions for operations, maintenance, repair, and replacement actions at the heart of asset management.

Asset management is an evaluation of needed actions after considering the condition of an asset, the consequences of an asset failure, and the action alternatives available. The solution that provides lowest life cycle cost at the desired level of service is implemented.

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Part 6: CAPACITY 9

Part 7: OPERATIONS AND MAINTANENCE 10

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Part 9: FINANCIAL STRATEGY 14

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Appendix A - Maps

- **Map 1: Diameter**
- **Map 2: Year Installed**
- **Map 3: Pipe Material**
- **Map 4: Break History**
- **Map 5: Domestic Flow Rating**
- **Map 6: Probability of Failure**
- **Map 7: Consequence of Failure**
- **Map 8: Criticality**

Appendix B – Water Main Inventory and Statistics

Appendix C – Capital Improvement Plan

Prepared by

ENGINEER:
Prein&Newhof
[2260308]

FINANCIAL ADVISOR:
Bendzinski & Co.
MUNICIPAL FINANCE ADVISORS
A MICHIGAN FIRM, WORKING FOR MICHIGAN

PART 1: DEFINING OUR GOALS

What is our desired Level of Service?

Our mission is to provide clean potable water for our community by proactively managing our water source, treatment, storage, and distribution assets to meet our desired level of service goals.

Our community, as the system owners, must determine the level of service we want from our system. Many factors play into this determination including: compliance with regulations, public health, aesthetics, service reliability, stable rates, etc. To this end, we have established primary system goals in a separate document titled as our Asset Management Plan. This document, our Asset Management Program, identifies how we plan to meet our goals:

Goal 1: Meet Regulatory Requirements

We will have a minimum of two licensed water system operators in charge to provide staff coverage, quality control cross checking, and broadened institutional knowledge.

We will perform the required testing in-house by maintaining a laboratory testing space and through a third-party certified laboratory when needed to supplement in-house capabilities.

We will establish a cross-connection elimination program.

Goal 2: Minimize Service Interruptions

We will monitor and maintain all of our water supply, treatment, and distribution system assets such that there are no interruptions in system operation that are reasonably preventable.

We will maintain service crew levels to ensure continued operations and maintenance activities.

Goal 3: Minimize Public Safety Hazards

Water system assets that are significantly affected by environmental conditions (freezing, heating, corrosion) will be improved / replaced so as to minimize their failure vulnerability.

Our 24 hour emergency response services will be equipped and staffed to provide maximum 60 minute response times to main breaks and major equipment failures. We will strive to limit the duration of individual service interruptions to less than 6 hours whenever possible. Staff will be provided cell phones, pagers, and /or other contact mechanism to be notified when a response is required.

Goal 4: Provide Enhanced-Fire Protection in the Distribution System

Enhanced fire protection in accordance with American Water Work Association, AWWA, standards Manual M31 will be provided as noted for the following areas:

- Residential Areas: 1,500 gallons per minute for 2 hours
- Commercial Area: 2,500 gallons per minute for 2 hours
- Industrial Areas: 3,500 gallons per minute for 3 hours

Goal 5: Minimize Water Loss

We will implement a water efficiency program to track the actual lost water. Once water loss causes are identified and quantified, we will implement corrective measures such as main replacement and meter replacement to meet our water loss goal. The City is currently making efforts to meter previously unmetered services owned by the City to refine their annual water loss records.

We will continue to operate a water meter testing and replacement program. Maintaining meter records and developing a systematic plan to change out meters will help maintain accurate water billing and can provide a significant increase in system revenue. As part of this effort, we will evaluate meter technologies that relate to accuracy, labor efficiency and cost effectiveness. Meter replacement will be made with either new or refurbished meters with the goal of providing more accurate billings to our system owners and to help minimize revenue loss. The replacement schedule goals are 10 to 15 years for all meters unless meter reading indicates otherwise.

Goal 6: Identify and Replace Lead/Galvanized Water Services

We will continue to monitor pH of our water to assure a consistent water chemistry that minimizes the corrosion potential in the various water service materials.

We will see out the completion of our program to identify and locate the types of service lines in our system and continue with our logistical plan, timeline, and budget for replacing the lead and galvanized metal services within the public portions of system. Services will be replaced within the FY26 Lead Service Line Replacement Project or when road replacement projects or work on other assets impact the immediate area where lead/galvanized services are known to exist. Such projects are identified in our Capital Improvement Plan.

We will consider developing a public education program to encourage all members of our community to replace the private portion of those types of water lines within their homes/businesses.

Goal 7: Minimize Life Cycle Costs

We will implement asset condition tracking and criticality assessments to determine the optimum time for asset maintenance and/or replacement. Decisions will be made which strike a balance between maximizing the lifecycle use of all assets, the risk of failure of the assets, and the consequence of failure of the assets.

Goal 8: Partner Communities

We sell water to several neighboring communities. We have contracts with these communities and meet with them at least once per year to keep communications open regarding Operation and Maintenance Capital Improvement Plans, and Rate impacts.

PART 2: OUR INVENTORY

WHAT DO WE OWN?

Our System

Our water system includes nine total production wells that supply the City's water distribution system. The water taken in from the wells is treated using chlorine gas and fluorine before entering the City's five storage tanks and ultimately the City's distribution system. The City has approximately 67.5 miles of distribution pipe. Approximately eighty (80) percent of the City's distribution system has been replaced since 1980 with the oldest sections of the system dating back to before 1900 constructed with aging cast iron pipe. An updated breakdown of the water distribution system was conducted as a part of this assessment management plan and additional information can be obtained in Appendix B.

Cast iron pipe was the dominant choice for water construction in North America for many decades. Cast iron pipes are subject to internal corrosion (rusting) and can be prone to cracking. In more recent decades, ductile iron and plastic water pipes have become the standards in new water main construction. Water mains made from these newer materials are expected to outlast their cast iron predecessors and as time continues, there is more data being gathered regarding the potential failure modes of those materials.

An additional detailed summary of our water system assets is found in our 2023 Water Reliability Study as well as in a detailed asset inventory maintained by our Department of Public Works in a General Plan as required by the Safe Drinking Water Act.

A history on non-pipe assets is being developed and will be maintained by the Department of Public Works (DPW). A spreadsheet based list of non-pipe assets, which generally includes age, type of equipment, and condition is being developed.

Our Plan

We will keep our system inventory current by keeping records of water system construction with the use of our Geographic Information System (GIS). This system will include mapping of all water distribution system assets, inventory of non-pipe assets, and asset data pertinent to Operations, Maintenance, and Replacement.

Our Program

When the water system is altered, either by construction of new assets or rehabilitation/replacement of existing assets, we will maintain records of each water project in our GIS system.

Distribution System

We will maintain data on pipe materials, installation dates, sizes, and any other pertinent information which will assist with our asset management program. Pipe locations will be determined based on record drawing information.

Hydrants and valves locations will initially be identified using base aerial photography, historical records and field observations. As time and budget permit, we will utilize either handheld GPS or survey GPS to collect and refine locational data.

This current information on our system is shown on the following maps provided in Appendix A:

Map 1: Diameter
Map 2: Year Installed
Map 3: Pipe Material

Statistics on the breakdown of size, age, and material are shown in Appendix B.

Assets within our pumping stations will be tracked using spreadsheet based inventories that can be used to track conditions, schedule regular O&M activities and create financial projections for future replacement.

We will also collect locational data on water services for tap and curb box locations. Other data such as size, material, and installation date will also be documented in our GIS system as time and resources allow.

Water Supply

Our Water Filtration Plant and surface water intake locations(s) are identified in our GIS system.

Water Treatment and Water Storage

Our treatment/storage facility locations are identified in our GIS system. Assets within our pumping stations will be tracked using spreadsheet based inventories that can be used to track conditions, schedule regular O&M activities and create financial projections for future replacement.

Other Assets

The City of Ionia maintains an equipment pool for all equipment and other assets such as such as trucks, loaders, generators, and backhoes, but these are not specifically assets of the water system. The city administration and the Department of Public Works tracks informational data such as manufacture date, purchase price, maintenance budget, and warranty information.

PART 3: PROBABILITIES OF FAILURE

In What Condition Are Our assets?

Our System

To understand how long each of our assets may last, we must maintain an understanding of their condition and evaluate the potential probability for failure. We will consider functional failure of an asset to be the primary consideration for probability of Failure. However, physical failure of an asset must also be evaluated. Water pipes, valves, hydrants, and water services can be evaluated based on break history, evidence of corrosion, and age to determine their condition. Non-pipe assets such as, buildings, pumping stations, storage tanks, and treatment plant facilities and equipment will be inspected to determine their physical condition.

Our Plan

We will keep our condition assessments current by making recurring inspections and/or assessments of the assets at intervals frequent enough to document reasonably expected condition changes. These intervals will vary by asset type and expected asset life cycle. Once evaluation are completed, assets will be ranked based on the likelihood / risk of failure. All Probability of Failure ratings will be on a scale of 1-5 with 5 being the highest Probability of Failure.

Our Program

We will assess water pipe conditions on a regular basis based on break/repair records, break history, material, and age. All system data for the distribution network, including Probability of Failure ratings, will be maintained within a GIS database.

The following maps in Appendix A show information used to develop the probability of failure ratings.

Map 2: Year Installed
Map 4: Break History
Map 5: Domestic Flow Rating

The final probability of failure rating is based on the highest of these three ratings, which are shown on Map 6 in Appendix A.

We will strive to exercise hydrants on a three year rotation and valves on a five year rotation. Over time we will begin including data for these assets within a GIS database.

Water supply and treatment facilities, pumping stations, storage tanks, buildings, and water meter condition information will be kept up to date as part of routine operations.

Higher consequence of failure items may be inspected or assessed more frequently.

PART 4: CONSEQUENCE OF FAILURE

What happens with a failure?

Our System

It is important that we understand the severity of consequences that may occur if any asset in our system fails. Functional failure consequences can occur when pumps stop working, valves cannot be opened/closed, and when water mains become corroded (pipe capacity is lost). Physical failure consequences can occur when we have water main breaks or catastrophic equipment failures.

Our Plan

We will evaluate the Consequences of Failure of each asset, from both a functional and physical failure perspective. We will maintain redundancy on assets with a high Consequence of Failure. All Consequence of Failure ratings will be on a scale of 1-5 with 5 being the highest Consequence of Failure.

Our Program

It is important that we understand the severity of consequences that may occur if any asset in our system fails. Functional failure considerations include potential health risks, service interruption, and damage to connected assets. Physical failure considerations include damage to adjacent infrastructure, environmental damage, and property damage. Each of these factor will be considers separately and then compiled into a single Consequence of Failure (CoF) rating for each asset. The maximum value of the CoF of each pipe based on its diameter (scored 1-5) and its location (scored 1-5) determined the final CoF value.

Consequence of Failure (Location)		Consequence of Failure (Size)
Unacceptable Impacts	5	20-inch Pipes
Critical Impacts	4	16-inch Pipes
Significant Impacts	3	12-inch Pipes
Minor Impacts	2	10-inch Pipes
Redundant System or No Impacts	1	8-inch Pipes and Smaller

For the distribution system water mains, all data for the CoF factors will be maintained in the GIS database. For other assets, CoF factors are being developed using a spreadsheet based database.

Map 7 in Appendix A shows the current CoF ratings for pipe in our distribution system. We are in the process of developing CoF ratings for non-pipe assets as we develop our listing of non-pipe assets including treatment plant, storage, and pumping facilities.

PART 5: CRITICALITY

How do we prioritize?

Our System

We must prioritize the actions we need to take for our system to meet our Level of Service goals while managing our work loads, utility rates, and minimizing life cycle costs. Criticality is the product of as asset's Probability of Failure and Consequence of Failure. The Criticality of an asset should not be confused with its Consequence of Failure. Criticality, being the product of Probability and Consequence, is simply a measure of priority.

Our Plan

Criticality Ratings will be used to guide the priority of needed improvements and development of the Capital Improvement Plan. Criticality of assets within our system will be determined by multiplying each asset's Probability of Failure rating (1-5) by an asset's Consequence of Failure rating (1-5) to establish the Criticality Rating (1-25).

Our Program

The condition of the asset, and therefore its Probability of Failure, will change over time. Additionally, the Consequences related to failure may also change. We will review the criticality of our assets on a one-to-five-year frequency, depending on asset replacement, and make adjustments to account for these changes. As with all the components of the Asset Management program, the criticality analysis is an on-going process. We will keep our criticality assessments current after performing repairs, improvements, or inspections. When evaluating the criticality of an asset, we also consider redundancy as this can significantly reduce the Consequence of Failure of an individual asset. We will use our criticality assessments when establishing priorities regarding maintenance, repairs, and capital improvements.

Map 8 in Appendix A shows the current Criticality ratings for our distribution system.

PART 6: CAPACITY

Do we have enough, now and for the future?

Our System

Our system must meet water demands both now and into the future for both typical uses and, if we chose, fire protection. Over time, the flow demands will change with changes in property use and population. System analysis indicates we are currently meeting typical peak demands and that we need to make some improvement to meet our enhanced-fire protection goals. A detailed analysis of our system capacity is found in our 2023 Water System Reliability Study report.

Our Plan

Our General Plan outlining the capacity improvements which are needed to keep up with future flow projections, peak demands, and desired fire flow supply is maintained as part of our requirements under the Safe Drinking Water Act. Additional system analysis is found in our 2023 Water System Reliability Study report.

Our Program

We will update our General Plan and Water System Reliability Study report in accordance with current regulations. The evaluations will include review of the distribution system, source and treatment system and storage requirements under maximum day demands and desired fire flow.

We will monitor water use for consistency with the water system's General Plan. As water uses change and connections are added or changed, the system demands will be monitored. If significant changes in system flow occur, the General Plan and Reliability Study will be updated to account for these changes.

System improvement needs identified in the Water Reliability Study will be integrated into the most recent Capital Improvement Plan.

PART 7: OPERATIONS AND MAINTANENCE

Keeping up with routine work

Our System

Certain portions of our system need routine/on-going service to continue functioning. Our system Operations and Maintenance (O&M) demands are relatively stable and we will manage the system to maintain that stability. We plan to consider use of spreadsheet based or Computerized Operations Maintenance and Management tools to maintain asset inventories and schedule regular O&M activities in the future as resources allow.

Our Plan

We have established the following O&M goals:

1. Maintain staffing and equipment levels such that routine O&M activities can be accomplished by in-house staff while minimizing overtime.

2. Utilize in-house staff to verify proper function of all system assets such as equipment, valves, and hydrants.

3. Outside consultants/contractors will be utilized when specialized technical or equipment capabilities are required.

Our Program

Staffing and Equipment

We will monitor crew workloads and production rates to establish general workload goals for our crews. This will include periodic review of crew size, methods, and equipment in an effort to maximize staff efficiency and effectiveness. Equipment ownership vs rental will be evaluated based on an annual cost of service basis. Staffing levels will be adjusted based on normalized workload projections and workload goals to meet utilization goals.

Water System Flushing

We strive to flush one third of all hydrants annually. A detailed flushing plan will be maintained by the Department of Public Works.

We strive to exercise each system valve every 5 years.

Valves or hydrants requiring repairs will be identified and scheduled for repair within three months of being identified or as soon as seasonal weather allows.

Data relative to hydrant flushing and valve exercising may be added to our GIS database over time.

Pumping Facilities, Storage Tanks and Treatment Facilities

We will continue operating these facilities and perform maintenance in accordance with site specific operations and maintenance plans for each of these assets. Maintenance activities may eventually be tracked with GIS compatible spreadsheets or commercial software packages.

Supporting Assets

We plan to renew our maintenance equipment and other supporting assets on a scheduled replacement cycle. This will allow us to keep reliable equipment in service for operating and maintaining the system to achieve our level of service goals.

Water System Management

We will monitor the break history of the water mains and record the date and locations of such breaks using the GIS system. We will track maintenance activities to identify assets requiring higher than expected maintenance levels.

We will perform O&M activities to extend the useful life of these assets until complete rehabilitation or replacement of the asset is more cost effective. We will use our software systems to manage this data and keep our planned activities up to date. We will maintain regularly scheduled O&M activities, plan/schedule appropriate replacements, and coordinate activities with work on other assets that share common space (i.e. within the same road right-of-way)

PART 8: CAPITAL IMPROVEMENTS

Continuing system renewal

Our System

A Water System Capital Improvement Plan (CIP) for our water system has been prepared and is based on our most recent Water Reliability Study (WRS) and as well as ROF and COF ratings developed under asset management.

Our Plan

Our Water System CIP incorporates the recommendations of the WRS as well as other priorities developed under asset management. The order and timing of projects will be guided by the Criticality Ratings developed during the asset evaluation process. Project timing will also be driven by availability of outside funding sources such as loans and grants, and other infrastructure projects that are planned in the same areas. Capital Improvement Plans are reviewed on an annual basis. The Capital Improvement Plan for 2026 through 2031 is included in Appendix C.

Our Program

Planning for capital improvements is a continual management process. The Capital Improvement Plan shows our foreseeable project priorities based on the information we have available now. Capital Improvement Plans will be adjusted annually and will consider the following influences:

- Outside funding sources (grants and loans) may become available for certain types of projects from time to time. When this happens, we will reprioritize to make best use of available funds.
- Adjustment of asset condition assessments.
- Changes in economic conditions such as costs of materials, labor, and financing.
- Coordination with road work and other utility work may require adjustments in timing of water system improvements. Roadway conditions can dramatically change with severe weather seasons. Where utility projects require excavation below streets, coordinating utility and road projects is essential to achieve the lowest life cycle cost. As roadway conditions change and paving plans are revised, the water system plans will be adjusted.

We will keep the Capital Improvement Plan up to date by taking the following steps periodically:

- Adjust the cost estimates for capital projects based on current market pricing
- Reconsider capital improvements priorities based on any updated criticality assessments
- Reconsider implementation years for upcoming capital projects to coordinate with changing conditions of roads and other utilities
- Adjust our financial forecast based on number of users, current rates, and cash balances

- Adjust the utility rates according to these changed conditions, to stay consistent with established long term financial strategy.
- We will make miscellaneous system repairs which are small enough to be accomplished without engineered project plans or project specific budgeting on an as-needed basis. We will continue budgeting for such repairs based on prior year expenses and known system repair needs. When making decisions on system repairs, we will consider the criticality assessments as well as planned rehabilitation and replacement projects. We will perform proactive repairs with in-house staff and equipment as to the ability of staff and the available resources. Proactive repairs outside the available staff resources or abilities will be contracted out.
- We will fully rehabilitate or replace pipes, hydrants, elevated storage tanks, pumping equipment and treatment plant equipment when doing so would provide the lowest life cycle cost. Such projects are identified in our Capital Improvement Plan.

PART 9: FINANCIAL STRATEGY

Rate planning and stability

Our System

All system costs are funded through our water system billings.

Our Plan

We intend to maintain a life cycle forecast of anticipated costs, income from rates, and cash balances. We will use this forecast to establish sustainable and stable utility rates. This in turn helps our residential, business, and industrial owners in their individual, long-term financial planning.

We intend to fund system O&M on a cash basis through the rate structure and intend to maintain minimum cash balance equal to approximately 6 months of standard O&M. This will also allow us to cash fund emergency repairs and minor unanticipated asset replacements.

We intend to also cash fund planned system repairs and replacements if that can be accomplished with a stable rate structure and appropriate cash balances. Significant expenditures may be bond financed to stabilize rate impacts and maintain reasonable cash balances.

Our Program

We will maintain a life cycle forecast of anticipated costs, income from rates, and cash balances. The early years of the forecast are tabulated from our Capital Improvement Plan cost estimates while the later years of the forecast are projected from the system inventory and life cycle data. We will use this forecast to establish sustainable and stable utility rates.

We will fund system operations and maintenance on a cash basis through the rate structure and will maintain a minimum cash balance as set by the system goals.

We will also cash fund planned system repairs and replacements if that can be accomplished with a stable rate structure and cash balances not exceeding our base cash balance by a factor of 2.5. Significant expenditures may be bond financed to stabilize rate impacts and maintain reasonable cash balances. We will maintain and update our CIP plan annually to confirm rates and cash balances are acceptable.

We will also implement standard, annual rate changes that, at a minimum, parallel inflation so as to foster a stable rate structure.

To keep the financial strategy on track with changing conditions, we plan to make the following updates periodically:

- Update all spending and income projections
- Adjust or reaffirm the long term financial strategy
- Review user rates.

SUMMARY

Our Asset Management Plan outlines how we will achieve our Asset Management goals. It may be adjusted from time to time based as new/improved tools, software, and evaluation techniques are developed. Regardless of those changes, we will incorporate Asset Management into our everyday activities, including implementation of system improvements and our system master planning. The Water Reliability Study identifies the major system needs and our CIP identifies planned projects over the next 20 years. By proactively managing our water system, we will be able to achieve our Desired Level of Service for the lowest possible long term cost.

Our non-pipe inventory and risk evaluations will be prepared during the first half of 2026. This plan and our CIP will also be refined and reviewed with the City of Ionia Commission during the first half of 2026.

Appendix A – Maps

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Lincoln Tank
Cyrus Tank
Well Field Tank
Million Gallon Tank
Tuttle Tank
W Lincoln Ave
E Lincoln Ave
Ionia
N State St
N Dexter St
N Jefferson St
Jefferson Rd
W Main St
E Main St
4th St
Cleveland St
Robinson Park
Grand River
Prairie Creek
E Riverside Dr
Tibbets Creek
Ionia County Airport
Kelsey Hwy
66
21

SEE INSERT TO RIGHT

SCALE: 1" = 3000'

SCALE: 1" = 1,500 '

LEGEND

Water Main Diameter
- 4-inch or Less
- 5-inch
- 6-inch
- 8-inch
- 10-inch
- 12-inch
- 16-inch
- 20-inch
- Wells
- Storage Tank
- Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN

MAP 1: DIAMETER

MARCH 30, 2026

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Lincoln Tank
Cyrus Tank
Well Field Tank
Million Gallon Tank
Tuttle Tank
W Lincoln Ave
E Lincoln Ave
Ionia
N State St
N Dexter St
N Jefferson St
Jefferson Rd
W Main St
E Main St
4th St
Cleveland St
Robinson Park
Grand River
Prairie Creek
E Riverside Dr
Tibbets Creek
Ionia County Airport
Kelsey Hwy
66
21

SEE INSERT TO RIGHT

SCALE: 1" = 3000'

SCALE: 1" = 1,500 '

Water Main Installation Year
- 1890's
- 1920's - 1930's
- 1940's - 1950's
- 1960's - 1970's
- 1980's - 1990's
- 2000's - Present

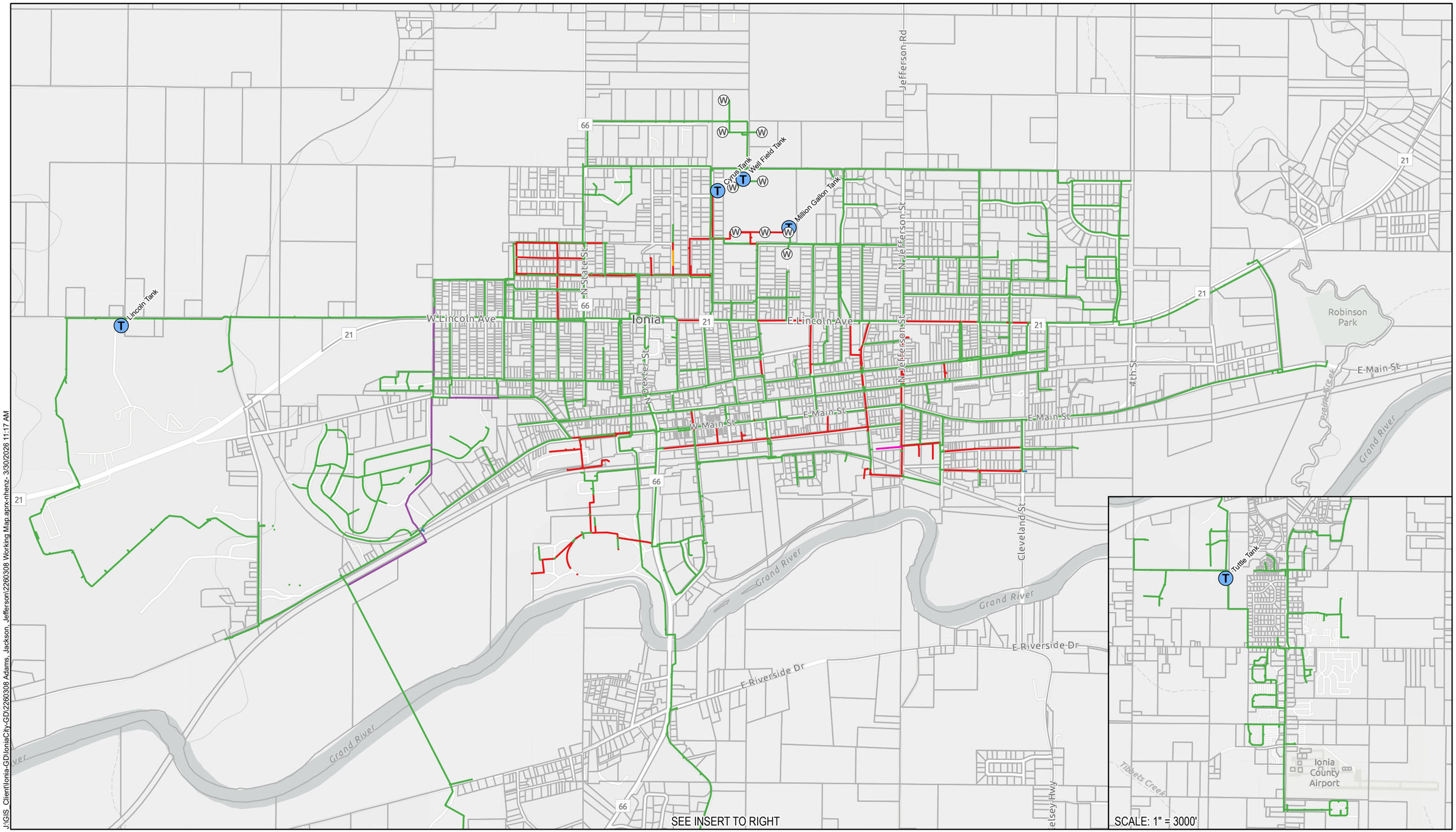
LEGEND
- Storage Tank
- Wells
- Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN

MAP 2: YEAR INSTALLED

MARCH 30, 2026

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SCALE: 1" = 1,500 '

LEGEND

Water Main Material
- Cast Iron
- Ductile Iron
- Copper
- Plastic
- Galvanized
- Transite

- Storage Tank
- Wells
- Ionia County Tax Parcels

CITY OF IONIA

IONIA COUNTY, MICHIGAN

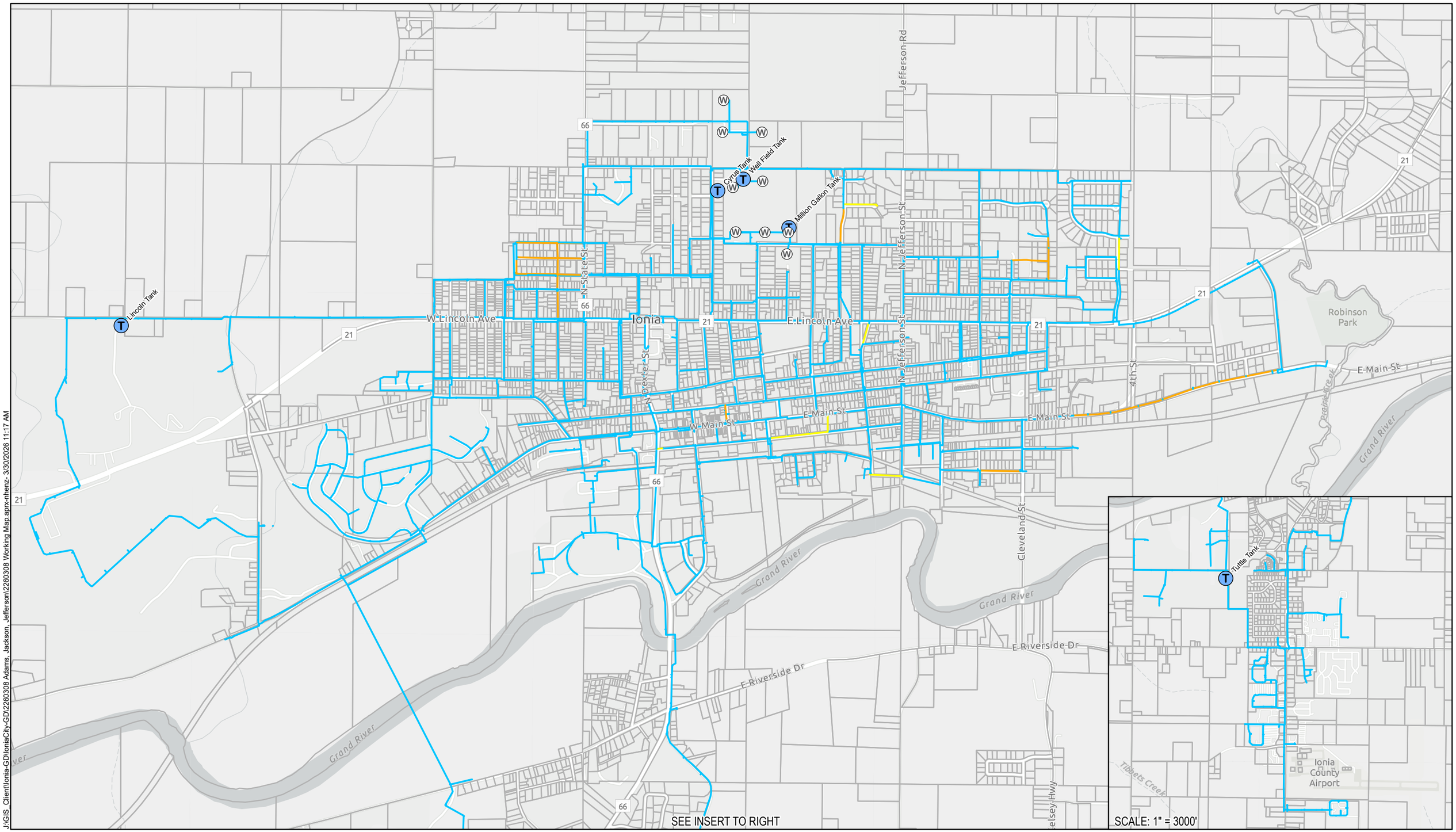
WATER ASSET MANAGEMENT PLAN

MAP 3: MATERIAL

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LEGEND

Water Main (Break History)
- 1
- 3
- 4

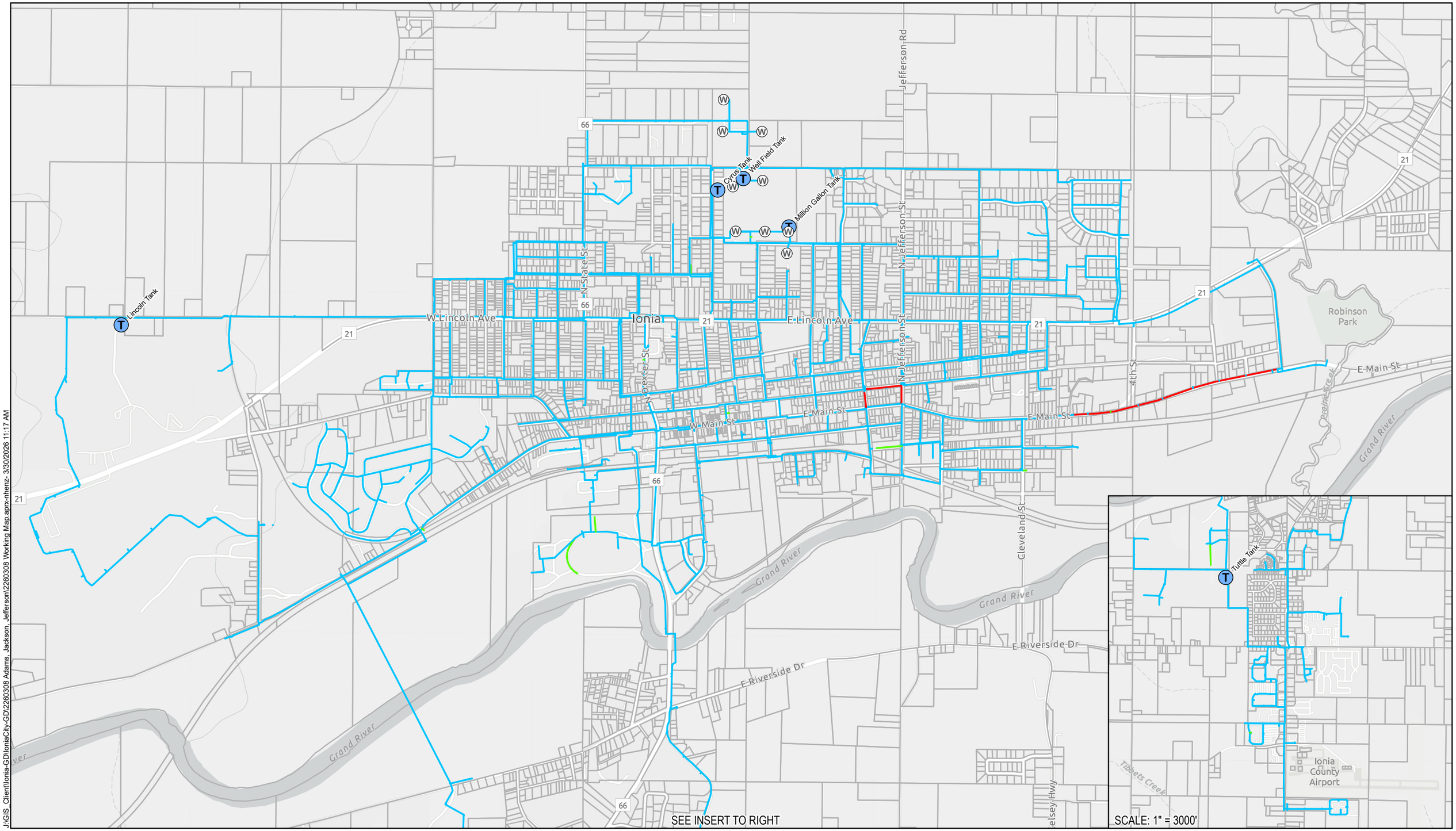
- Wells
- Storage Tank
- Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN

MAP 4: WATERMAIN BREAK HISTORY

MARCH 30, 2026

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SCALE: 1" = 1,500 '

LEGEND

Water Main (Domestic Flow Rating)
- 1
- 2
- 5

- Wells
- Storage Tank
- Ionia County Tax Parcels

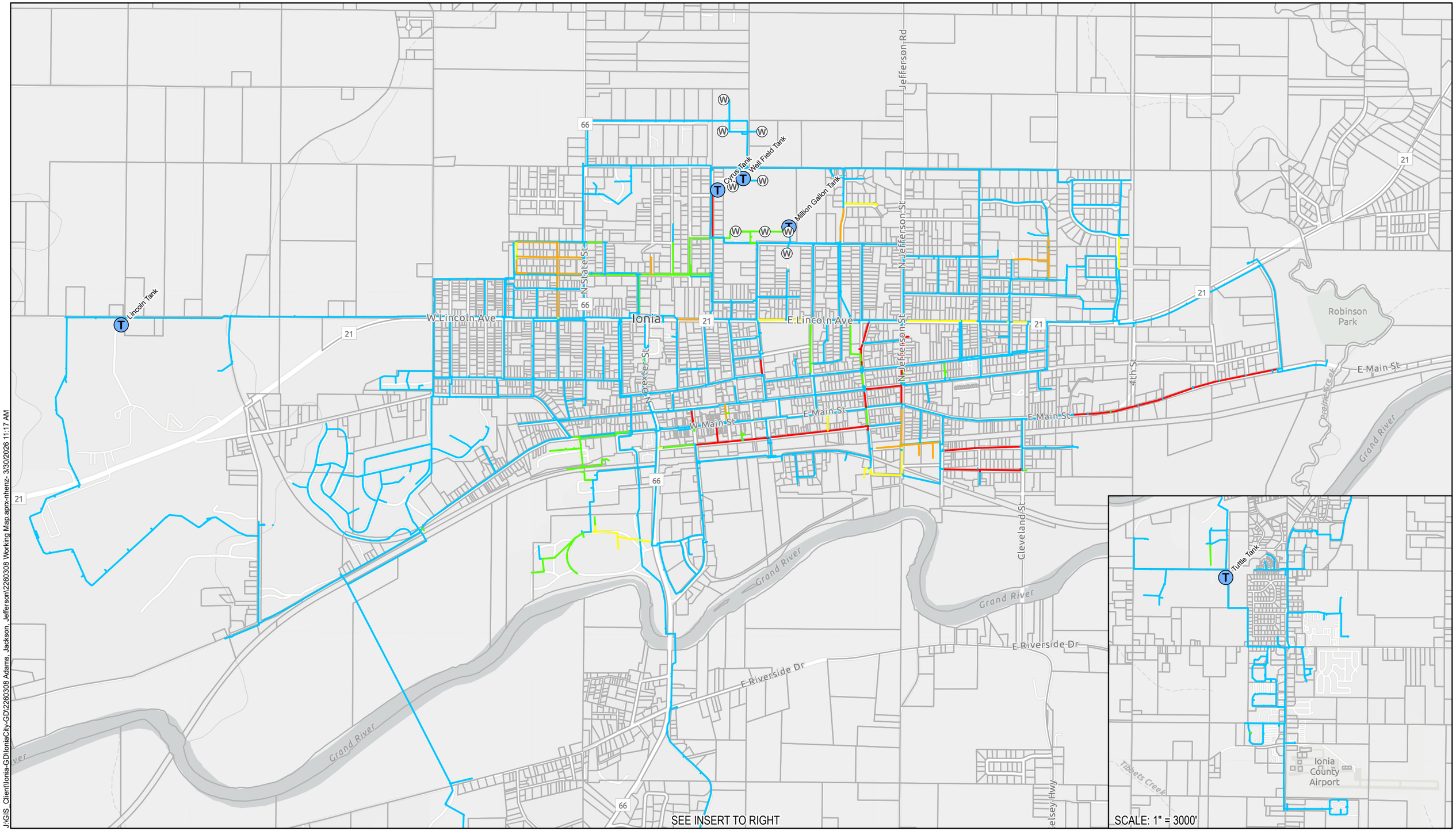
CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN

MAP 5: WATERMAIN DOMESTIC FLOW RATING

MARCH 30, 2026

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LEGEND

Water Main (POF)
1
2
3
4
5

Wells
Storage Tank
Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN

MAP 6: PROBABILITY OF FAILURE

MARCH 30, 2026

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Lincoln Tank
Cyrus Tank
Well Field Tank
Million Gallon Tank
Tuttle Tank
W Lincoln Ave
E Lincoln Ave
Ionia
N State St
N Dexter St
N Jefferson St
Jefferson Rd
W Main St
E Main St
4th St
Cleveland St
E Riverside Dr
Grand River
Prairie Creek
Tibbets Creek
Robinson Park
Ionia County Airport
Kelsey Hwy
66
21

SEE INSERT TO RIGHT

SCALE: 1" = 3000'

SCALE: 1" = 1,500 '

LEGEND

Water Main (COF)
1
2
3
4
5

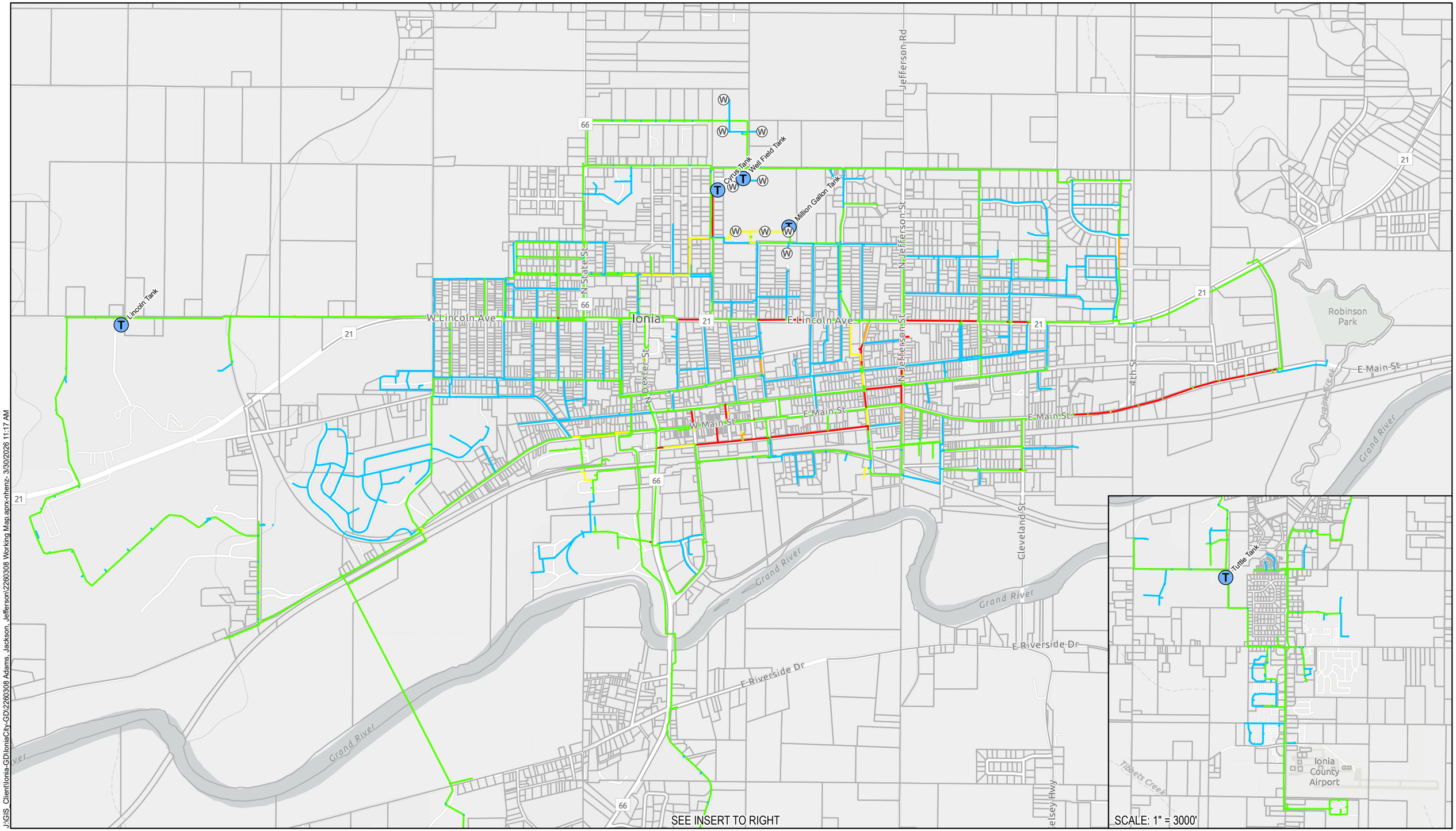
Wells
Storage Tank
Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN

MAP 7: CONSEQUENCE OF FAILURE

MARCH 30, 2026

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LEGEND

Water Main (Criticality)
- 1
- 2
- 3
- 4
- 5

- Wells
- Storage Tank
- Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN

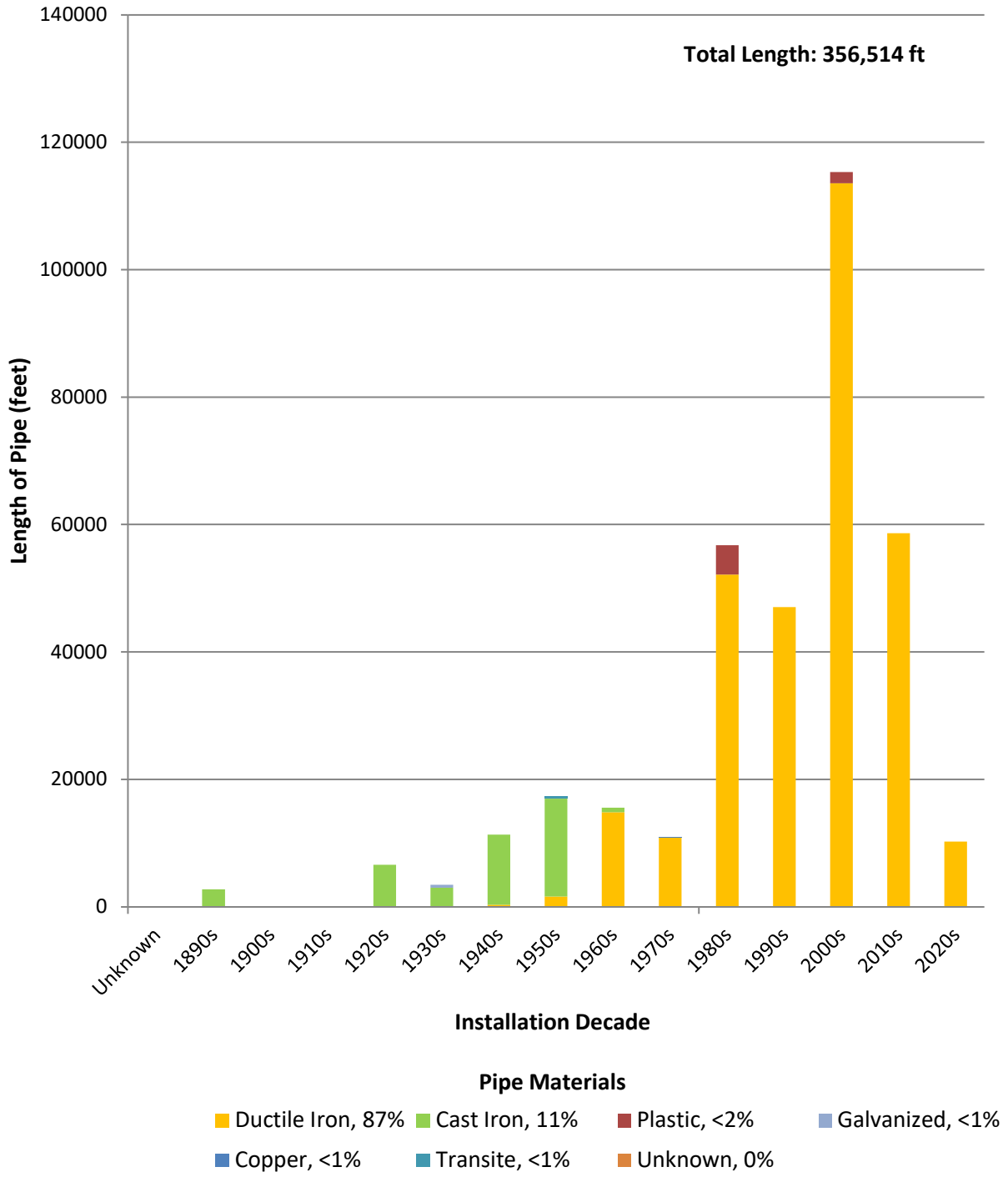
MAP 8: WATERMAIN CRITICALITY

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Appendix B – Inventory and Statistics

Water Main Inventory Summary



The graph above is a good overall representation of the pipe year and pipe material breakdown. Majority of the pipe installation years and pipe materials have been verified with record plan drawings or field verification with the remaining being populated using City institutional knowledge. Further work on improving the accuracy of the asset inventory in the GIS is recommended.

Includes publicly owned water main pipe. Does not include water services.

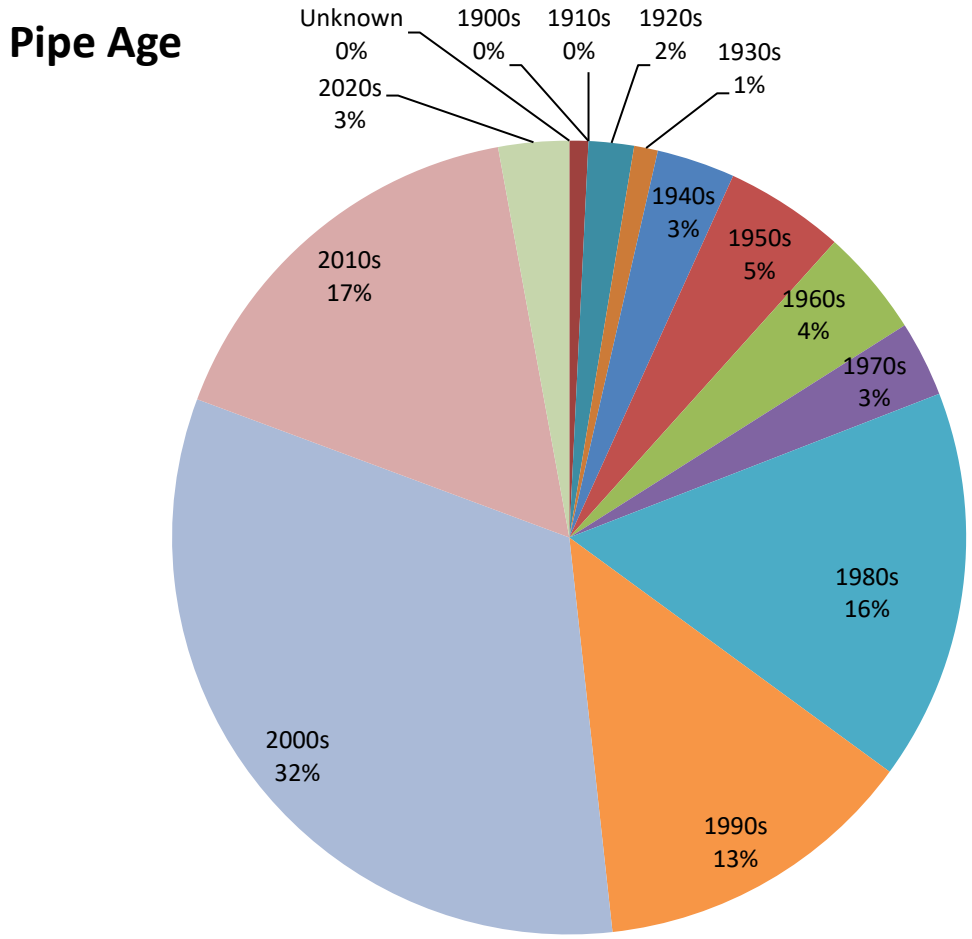


Table 1. Water Main Sizes

Diameter (in)	Length (ft)	Length (mi)	Percent of Total (%)
1	253	0.05	0.1%
1.5	510	0.10	0.1%
2	1,515	0.29	0.4%
3	301	0.06	0.1%
4	3,068	0.58	0.9%
5	763	0.14	0.2%
6	72,744	13.78	20.4%
8	116,073	21.98	32.6%
10	14,476	2.74	4.1%
12	84,403	15.99	23.7%
16	57,264	10.85	16.1%
20	4,567	0.87	1.3%
Total	355,937	67.4	100.0%

Table 2. Water Main Age

Install Year	Length (ft)	Length (mi)	Percent of Total (%)
Unknown	0	0.0	0.0%
1890s	2,746	0.5	0.8%
1900s	0	0.0	0.0%
1910s	0	0.0	0.0%
1920s	6,602	1.3	1.9%
1930s	3,444	0.7	1.0%
1940s	11,320	2.1	3.2%
1950s	17,348	3.3	4.9%
1960s	15,554	2.9	4.4%
1970s	10,978	2.1	3.1%
1980s	56,736	10.7	15.9%
1990s	47,052	8.9	13.2%
2000s	115,322	21.8	32.4%
2010s	58,614	11.1	16.5%
2020s	10,222	1.9	2.9%
Total	355,937	67.4	100.0%

Table 3. Water Main Material

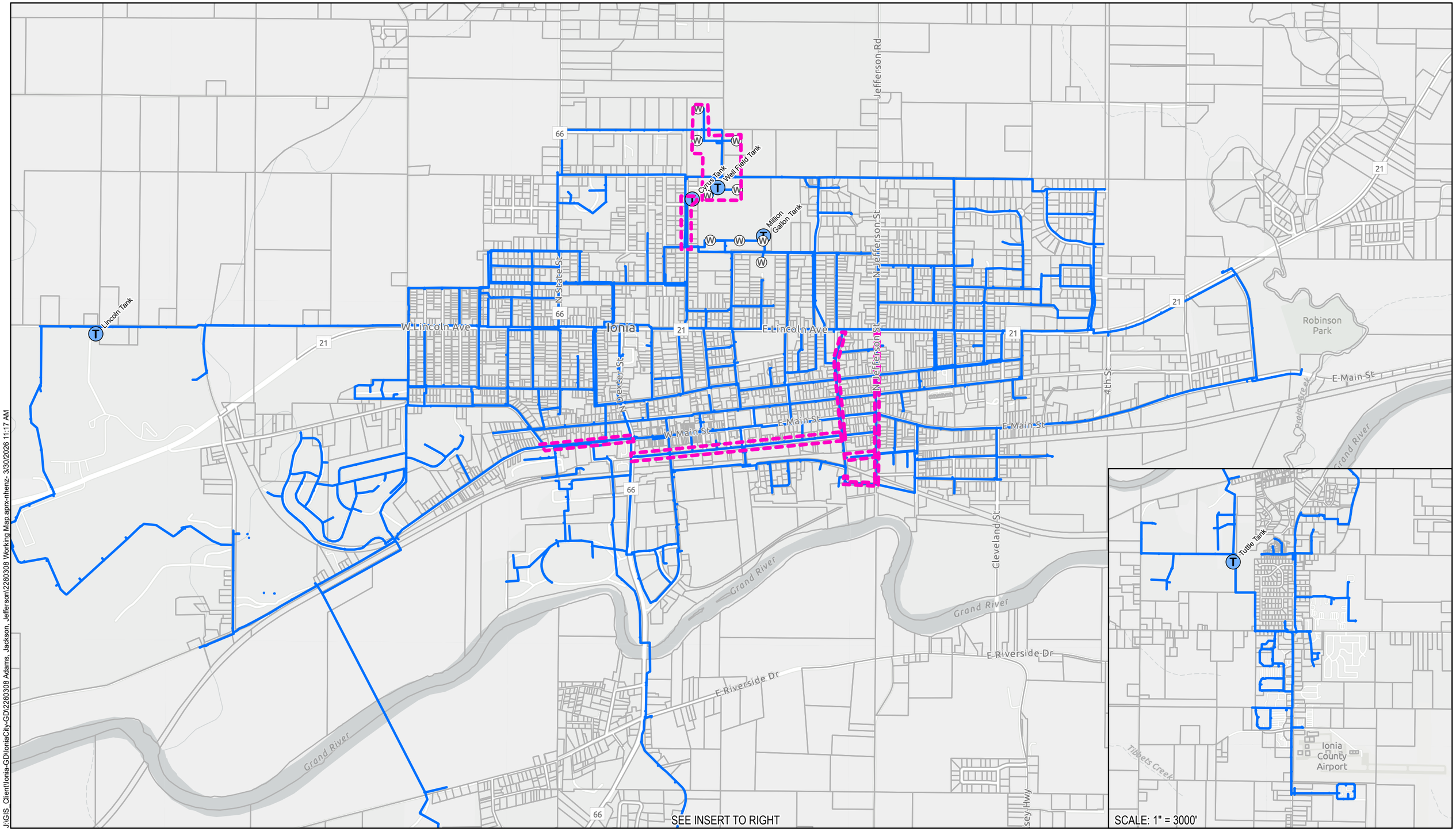
Material	Length (ft)	Length (mi)	Percent of Total (%)
Ductile Iron	309,286	58.6	86.9%
Cast Iron	39,448	7.5	11.1%
Plastic	6,349	1.2	1.8%
Copper	49	0.0	0.01%
Transite	295	0.1	0.08%
Galvanized	510	0.1	0.14%
Unknown	0	0.0	0.0%
Total	355,937	67.4	100.0%

Appendix C – Capital Improvement Plan

City of Ionia Water System

Future Costs
(not including annual operations and maintenance)

Year	Recurring Costs	NON-Water-Pipe Assets Capital Improvements	Watermain Capital Improvements	Description of Major Items	Total
2026		3,000,000		FY26 Lead Service Line Replacements	3,000,000
2027			265,000	Replace Large Water Meters	265,000
2028			30,000	Well Site Security Improvements	30,000
2028		3,500,000	3,000,000	Adams Street Water Main / Sewer Improvements	6,500,000
2029			200,000	Cyrus Street Water Main and Storage Tank	200,000
2029		500,000	2,500,000	Jackson Street Water Main / Sewer Improvements	3,000,000
2029			400,000	Webber Street Water Main	400,000
2029			150,000	Replace Standby Generator at Wells 12A/13A	150,000
2030		1,400,000	2,600,000	Jefferson Street Water Main / Sewer Improvements	4,000,000
2030			400,000	Railroad Street Water Main	400,000
2030			300,000	Ionia Well Field Exploration	300,000
2031		1,000,000	1,000,000	W. Main Street Water/Sewer System Improvements	2,000,000
					-
					-
					-
					-
					-
					-
					-



SCALE: 1" = 1,500 '

LEGEND

Water Capital Improvement Plan Areas
- 5-Year
- Watermain

- Wells
- Storage Tank
- Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER ASSET MANAGEMENT PLAN
CAPITAL IMPROVEMENT PLAN
MARCH 30, 2026
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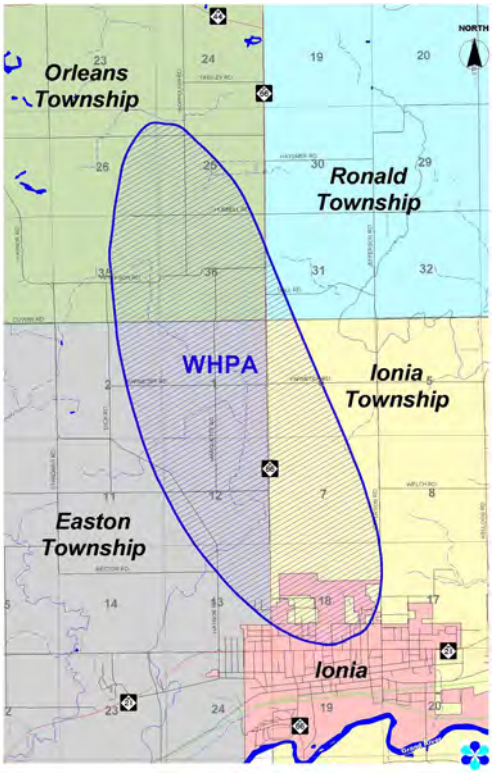
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Appendix E

Wellhead Protection Program

SOURCE WATER PROTECTION PROGRAM
CITY OF IONIA, MICHIGAN

MARCH 2026



PEERLESS MIDWEST INC.
An Employee Owned Company

Indiana - Michigan - Illinois - Colorado

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Source Water Protection Program
The City of Ionia, Michigan

March 2026

1.0 INTRODUCTION

The 1986 Amendments to the Safe Drinking Water Act require communities to establish Source Water Protection Programs (SWPP) to protect their groundwater supplies. Community groundwater suppliers are encouraged to delineate the Wellhead Protection Area (WHPA) for their production wells, identify all contaminant sources within the WHPA, conduct public education activities, and develop a management plan for the WHPA. The WHPA is defined as the land surface and subsurface area surrounding a wellfield through which water, or contaminants, can enter the ground and move toward the wellfield within a specified period of time. Unlike many SWPPs around the country, Michigan's SWPP is voluntary. The City of Ionia has proactively chosen to protect its water supply by implementing a SWPP. Michigan's SWPP includes the following primary elements:

1) **WHPA Delineation**
2) **Roles & Responsibilities (Local Planning Team)**
3) **Contaminant Source Inventory**
4) **WHPA Management**
5) **Contingency Plans**
6) **Plan for New Wells**
7) **Public Education & Participation**

The City of Ionia completed their original WHPA delineation in 2000, and subsequent management plan in 2001. Upon approval of this SWPP Update, copies will be made available at the following locations in Ionia:

- Ionia Public Library, 126 E Main St.
- Ionia City Hall, 114 N Kidd St.

1.1 Location

Ionia, Michigan is located in central Ionia County approximately 30 miles northwest of Lansing, Michigan and 30 miles east of Grand Rapids, Michigan. The City of Ionia is located at the intersection of State Route M-21 and State Route M-66. The Grand River flows from east to west through the City directly south of the downtown area.

The town first began in 1831 when settlers led by Samuel Dexter came here from New York and began a settlement on the Grand River. As the community grew, it was platted in 1841 and incorporated as a village in 1865. It eventually organized into a city in 1873. Today, Ionia is the largest of the cities in the county and has a diverse economy, including auto parts manufacturing, metal fabrication and playing host each July/August to the Ionia County Free Fair, located at the fairgrounds on the Grand River. There are also many small businesses. The Michigan Department of Corrections is the largest employer in Ionia with three (3) prisons in the Ionia area. The downtown area is particularly noted for the preservation of its Victorian style, turn-of-the-century architecture [MultiMag, 1997].

The Ionia Public Utilities Department serves a population of approximately 12,249 people with potable water. Ionia has one (1) wellfield containing nine (9) sand and gravel wells (Wells 5A, 9A, 10A, 11A, 12A, 13A, 14A, 15, and 16A). The wellfield is located in the north-central portion of the City in Section 18, T7N, R6W (Figure 1). Geologic well logs for the City's wells are provided in Appendix A.

2.0 WHPA DELINEATION

Delineating the WHPA is the first step toward completion of the SWPP. The WHPA for the City of Ionia was delineated using computer modeling in 2000. The WHPA delineation report, completed by Peerless-Midwest in June 2000, and the resulting WHPA was approved by the former Michigan Department of Environmental Quality (MDEQ) in October 2000. The WHPA delineation was again approved for this 2026 update. Both the 2000 and 2026 MDEQ/ Michigan Department of Environment of Great Lakes and Energy (EGLE) approval letters are provided in Appendix B. This section summarizes the June 2000 WHPA Delineation report (see the full-report for WHPA modeling details and descriptions).

2.1 Glacial Geology

The City of Ionia lies in the southern-most edge of the North-central Lower Peninsula of Michigan. Coarse-grained, sandy outwash and glaciofluvial sediments deposited by the Lake Michigan and Saginaw Lobes characterize the area (Rheaume, S.J., 1991). Surface water drains toward the Grand River. The Grand River served as a glacial sluiceway where large quantities of glacial meltwater escaped from ice margins during the Wisconsinan Stage of glaciation, ranging from 10,000 to 24,000 years ago. Glacial outwash is composed of sand and gravel that is deposited and stratified as glacial ice melted. The melting ice produced broad plains of braided stream channels (Ashley, Shaw, and Smith, 1985). This outwash is consistently present as a sand and gravel unit throughout Ionia County. It serves as the main aquifer for the area. Clayey glacial till sequences typically overly the sand and gravel outwash deposits. The City's production wells are developed in the sand and gravel aquifer.

2.2 Bedrock Geology

The Ionia area lies in the south-central portion of the Michigan Basin. Glacial deposits overlie Pennsylvanian age sandstones and shales of the Grand River and Saginaw formations. Driller's logs from the area show depths to bedrock from 130 to 240 feet below the surface, and indicate that these sedimentary rocks are a source of groundwater for the area. In general, the bedrock in the area dips towards the northeast and can occur at depths of over 200 feet below the surface. The

clay, shale, sand, and gypsum of the Jurassic aged Red Beds formation can be found in bedrock topographic highs of the area, but are not a source of groundwater (Swanson, 1970).

2.3 Local Hydrostratigraphic Units

Well logs from residential, business, and municipal wells throughout the Ionia area were collected as part of the 2001 SWPP development. The information shows that one (1) main water-bearing formation exists in the Ionia area: a sand and gravel aquifer. Locally, the study area has a thick layer of clay till, usually a minimum of fifty feet, often greater than one hundred feet. The till layer is occasionally overlain by sand and gravel outwash near the surface. In addition, the till sequence sometimes has unsaturated outwash units and thin lenses of sand and gravel within it. The clay, sand and gravel mixture acts as an aquitard and provides some protection from the downward migration of potential contaminants into the underling aquifer. However, at some locations in the area, including the wellfield, the water levels in the sand and gravel aquifer are below the clay unit or the clay unit is not present, resulting in unconfined aquifer conditions. The aquifer appears to range from confined to unconfined conditions throughout the study area depending on the continuous nature of the overlying clay till. The City's wells and many other wells in the vicinity are completed in the sand and gravel aquifer. The main aquifer of focus for this study is the sand and gravel aquifer north of the Grand River occurring at elevations between 750 and 640 feet above mean sea level (AMSL). Wells that tap sand and gravel within the river valley and south of the river appear to be developed within a separate, deeper, artesian aquifer (occurring at elevations between 570 to 540 feet AMSL). Regionally and upgradient of the City's wells, groundwater flows from north-northwest to south-southeast in the sand and gravel aquifer.

2.4 Aquifer Hydraulic Properties

Several aquifer performance tests have been conducted at the City of Ionia's Wellfield. Average hydraulic conductivities from the tests range from 183 to 397 feet per day (assuming aquifer thicknesses of 50 to 60 feet) with storativities ranging from 0.2 to 0.01. Peerless-Midwest, Inc. conducted the most recent test at Well 16 in February 2000. The results of this 72-hour aquifer performance test showed an average transmissivity of 12,141 ft^2/day (221 ft/day hydraulic conductivity based on a thickness of 55 feet) and a storativity of 0.01. The average hydraulic conductivity from all of the previous aquifer tests was calculated to be approximately 275 ft/day

using an aquifer thickness of 50 to 60 feet. The final modeled hydraulic conductivity of the aquifer in the model was set at 260 ft/day.

2.5 Production Wells and Pumping Rates

Ionia has one (1) wellfield containing nine (9) sand and gravel wells. Well logs of the production wells are presented in Appendix A. The City provided historic pumping rates for 1997, 1998, 1999, and 2000. The total daily average groundwater withdrawal from the wellfield at that time was approximately 2.6 million gallons per day (MGD). Per MDEQ recommendations, the average daily total from the peak month over the 3-year period was used as input to the model. Due to anticipated growth, the total daily withdrawal from Ionia's Wellfield was modeled at a rate of 5.21 MGD or 696,890 ft^3/day, which is more than twice the actual daily average from this time period.

The current (2022-2024) usage of the wells was reviewed as part of this update to evaluate the applicability of the 2000 WHPA delineation. Table 1 reflects the current wells and/or previously associated well utilized in the 2000 WHPA delineation, if applicable and their usage. Additional details are available in Appendix B.

TABLE 1 Well Construction and Usage Details

Well	Diameter (in)	Depth (ft)	Screened Interval (ft)	Year Drilled	Modeled Pumping Rate[1] (ft^3/day)	Current Usage (ft^3/day)[2]	Percentage of Modeled Rate
Well 5A (5)	12	100	80-100	2023	696,890.20	217,840.7	31.26
Well 9A (9)	16	110	95-110	2015			
Well 10A (10)	12	105	90-105	2021			
Well 11A	12	107	77.10-107	1957			
Well 12A (12)	12	150	137-150	2020			
Well 13A (13)	16	171	161-171	2008			
Well 14A (14)	16	193	193-208	2004			
Well 15	16	180	142-149 170-180	1999			
Well 16A (16)	16	184	174-184	2013			

[1] Average Day of the Peak Month.

[2] Average Day Over 3 Years.

The current usage rates were calculated from the average monthly rate between 2022 and 2024. These values ranged from 46.75 million gallons (MG) per month to 48.43 MG per month. These values are significantly below (31.26% usage) the 2000 modeled rates. As such, the WHPA was not redelineated as part of this SWPP update.

2.6 WHPA Delineation Results

A two-dimensional, analytic, groundwater flow model was selected for the original delineation study (WinFlow). The model was calibrated to measured static groundwater levels in order to reproduce the regional flow pattern. Visual inspection and comparison of the measured potentiometric surface map and the modeled potentiometric surface map demonstrate that the model reproduced the regional flow pattern. The modeled groundwater levels also statistically match the measured water levels with a high degree of accuracy. Approximately 4% of the overall model response was due to error in computed head values.

The 1, 5, and 10 year time of travel (TOT) capture areas were delineated using numerical particle tracking. This was accomplished by tracing the movement of individual fluid particles through the groundwater flow system. Fluid particles may represent molecules of water or dissolved contaminants. The time-dependant capture zones are calculated for water only. Times of travel for contaminants may vary depending on the type of contaminant and physical, chemical or biological reactions that may occur in the aquifer. The reverse particle tracking option was used for the model. In this method, particles are started initially at the pumping well and their movement is tracked backwards in time.

Results of this study indicate the ten (10) year (3,650 days) time of travel (TOT) capture area for the City of Ionia's Wellfield is approximately 27,500 feet in length at its longest point and is approximately 9,500 feet wide at its widest point (Figure 2). The wellhead capture areas extend to the north-northwest from the wellfield. The ten (10) year wellhead capture area is approximately 4,779 acres (7.47 square miles) in area. The one (1), five (5), and ten (10) year captures areas are shown in detail on Figure 2 overlaid on USGS Topographic Maps. The State of Michigan requires management of the ten-year TOT capture area in order to minimize the threat of groundwater contamination.

3.0 ROLES & RESPONSIBILITIES

This element is designed to identify individuals responsible for development and implementation of the City's SWPP. The establishment of roles and responsibilities frequently requires the building of partnerships within the community and the participation and cooperation of many individuals or groups. Together, this team can determine how to tailor a source water protection program to meet the needs of the community. The dynamic aspect of source water protection emphasizes the importance of a team approach. The team can provide consistency in the program and ensure its continuance over time. [EGLE, 2024]. A local planning team (LPT) was established to help guide the present and future activities of the City of Ionia's SWPP. The following individuals representing City and County government, schools, adjacent municipalities, and citizens were involved with the SWPP LPT:

- **Joe Lafler –** Ionia City D.P.U. Director and CWO (Main SWPP contact)
- **Precia Garland**- Ionia City Manager
- **Jonathan Bowman**- Ionia City Assistant City Manager
- **Chris Hyzer –** Ionia City Finance Director
- **Lyndon Randall –** Village of Lyons DPW Superintendent
- **Corland McDiarmid-** Ionia City Department of Public Safety
- **Mike Avery-** Ionia Public Schools Facilities, Grounds, and Transportation Director
- **Mark Novak-** Ionia County Health Department
- **Geoff Petersen-** Ionia City Public Works Director

Ionia City Utilities Director/CWO (Joe Lafler): The City Utilities Director, who is also the City's Certified Water Operator (CWO), has direct daily interaction with the water system and infrastructure. The Utilities Director is also the designated SWPP Coordinator and thus responsible for timely updates of the SWPP. As the CWO, this representative is one of the most in-tune with the status and function of the system, and their input in updating the SWPP is monumental to producing an accurate and cohesive plan. They will also be responsible for updating the SWPP every six years or as the need arises.

Ionia City Manager (Precia Garland): The Ionia City Manager is responsible for assisting with implementing and coordinating municipal/ governmental related amendments to the SWPP. A copy of the complete SWPP report is available at their office.

Ionia City Assistant Manager (Jonathan Bowman): The Ionia City Assistant Manager, as the title suggests, works directly with and supports the City Manager. The Assistant Manager acts in a similar role as the City Manager by also facilitating governmental implementation and support of the SWPP, but brings their own ideas and suggestions to the team.

Ionia City Finance Director (Chris Hyzer): The City Finance Director is also a member of City Government, but works directly with the City's funds. This includes expenditures for the water utility. By incorporating the Finance Director into the LPT, potential updates to the SWPP that may be financially taxing (including but not limited to public education and outreach, obtaining property for future well fields, and SWPP management strategies) can be immediately discussed and considered.

Village of Lyons DPW Superintendent (Lyndon Randall): The Village of Lyons is located approximately 6 miles east of the City of Ionia. Although not located within the WHPA, having an adjacent municipality familiar with the WHPA is beneficial for many reasons, including emergency backup water or assistance with an emergency spill response.

City of Ionia Department of Public Safety (Corland McDiarmid): The City of Ionia Department of Public Safety would be one of the first responders to an accident within the WHPA. Their knowledge of and appropriate response to an accidental environmental spill or release could help prevent significant contamination to groundwater.

Ioinia Public Schools Facility, Grounds, and Transportation Director (Mike Avery): Boyce Elementary School is located within the WHPA. The Facility and Grounds Director would be responsible for cleaning up and reporting any spills that may potentially impact the aquifer. Their involvement in the LPT may prompt a more thorough and quick response, as well as the forethought to alert the SWPP Coordinator and potentially the Ionia County Health Department if necessary. They would also have the opportunity to combine grounds maintenance and interacting

with students, allowing for potential good groundwater steward learning opportunities on a daily and real-life basis.

Several miles of bus transportation routes are also located within the WHPA. Involvement of the Transportation Director of the LPT would be beneficial in the case of an accident or a spill to have the forethought to contact the SWPP Coordinator and possibly the Ionia County Health Department, if necessary.

Ionia County Health Department (Mark Novak): A large portion of the City's WHPA is located outside city limits. The Ionia County Health Department can assist the Townships and residents within them in preventing contamination to the aquifer. By implementing zoning ordinances, regular inspections of properties within the county, and providing educational material for residents, farmers, and businesses, the health department can help protect the City's drinking water source for years to come.

Ionia City Public Works Director (Geoff Petersen): The City Public Works Department's primary focus is maintaining and repairing city-owned streets. They also are responsible for maintaining parks, trails, and public open spaces, seasonal decorations, and general assistance with other departments. Similar to the Utilities Department, the Public Works Department is very "hands on" in the community on a daily basis, and is in a position to be both a good groundwater steward and also alert the Utilities Department of any observed actual or potential threats to groundwater.

A team meeting was held on March 26, 2026 to help guide and implement SWPP activities. The public notice, sign-in sheet, and meeting agenda are available as Appendix C. Most of the current LPT will continue to serve on the LPT for the foreseeable future to help guide SWPP updates and amendments. The LPT members have agreed to meet at least once every year hereafter (or more often, if warranted) to review and help guide SWPP updates and amendments.

4.0 CONTAMINANT SOURCE INVENTORY

Michigan's SWPP requires the identification of sources of contamination within the WHPA. As a minimum, known and potential sites of environmental contamination should be included on a contaminant inventory list. Known sites of environmental contamination may include leaking underground storage tanks, Superfund (NPL) sites, Michigan Part 201 sites of Act 451 (sites of environmental contamination), oil and gas contamination sites, and others. Potential sites may include underground and aboveground storage tanks, hazardous waste generators and others.

The goal of the contaminant source inventory is to identify existing and potential sources of contamination within the WHPA, which might represent a "threat" to the public water supply system (PWSS). A comprehensive knowledge of these "threats" is essential in the development and implementation of effective management and public education strategies within the local source water protection program.

Land use associated with agricultural operations, commercial facilities, manufacturing and industrial facilities, institutional facilities, and utility companies may also be considered potential sources of contamination. Abandoned wells left improperly sealed provide a direct conduit into the ground water system through which contaminants may migrate and should be considered as potential sources of contamination. [EGLE, 2024]

4.1 Land Use

Land use surveys within the WHPA can help determine the potential types of contaminants that may be present. Non-point source (NPS) pollution, unlike pollution from industrial and commercial sites, comes from many different sources. NPS pollution is caused by precipitation moving over and infiltrating into the ground. As the runoff moves, it picks up and mobilizes natural and synthetic pollutants, transporting them into lakes, rivers, wetlands, coastal waters, and our underground sources of drinking water (groundwater). NPS pollution is not typically isolated to one facility or site, but is generally the combined affect of numerous sites or large areas. The groundwater pollutants typically include:

- Excess fertilizers and pesticides from agricultural and residential areas;
- Oil, grease, and other chemicals from urban runoff and energy production;
- Salt from irrigation practices and road/highway deicing;
- Acid drainage from abandoned mines;
- Organic wastes from livestock, pets, and faulty septic systems;

Specific chemical contaminants that may occur from NPS pollution typically include: Nitrates, Bacteria, Salts, Oil & Grease, pesticides, and changes in pH. Certain land uses may also be considered "good" or beneficial to the underground aquifers. The beneficial land uses include:

- Wetlands, Prairies, Forests;
- Nature parks and/or preserves;
- Other mainly undeveloped or unused lands.

These types of land uses can actually purify surface water before it reaches aquifers or streams. In particular, wetlands can act as large contaminant "sponges" filtering out chemicals and/or bacteria before they reach the groundwater. Other open areas also filter and remove harmful agricultural chemicals, excess sediment, and bacteria. One example of open/undeveloped land is filter strips or conservation buffers along cultivated agricultural land. Conservation buffers slow water runoff, trap sediment, trap fertilizers, pesticides, pathogens, and other chemicals.

4.1.1 Results of Land Use Study

Figure 3 shows generalized land use/land cover data with National Land Cover Database (NCLD) information. As shown on Figure 3, the majority of the land use within the 10-Year WHPA is agricultural, wetland, or forest land. Land uses were divided into four (4) categories:

1. Wetland – Undeveloped, generally, low lying areas. Areas typically exhibited saturated or partially saturated surface soils, and/or open water.
2. Agricultural – Area used primarily for agricultural purposes (cultivated fields, grazing, orchards, etc.).

3. Developed – Includes residential, commercial, and industrial areas. Area used for sale of goods or services, miscellaneous sales, manufacturing facilities and or heavy commercial facilities, or dominated by residential homes and properties. Can include subdivisions or stretches of roadway dominated by residential dwellings.
4. Forest – Areas include deciduous, evergreen, or mixed forested areas.

The majority of the WHPA is used for non-commercial, non-industrial purposes. Note that some overlapping may exist between land use designations, such as dwellings located within agricultural areas or minor commercial facilities within residential areas. NPS pollution from agricultural activities is a significant concern within the City's WHPA, since the largest portion of the WHPA is classified as agricultural. However, a significant portion of the total WHPA is undeveloped open space and/or wetland area, which would help reduce agricultural pollution before the contaminants enter the groundwater.

4.2 Contaminant Source Inventory

Michigan's Wellhead Protection Rule requires the identification of contamination sources within the WHPA. As a minimum, known and potential sites of environmental contamination should be included on a contaminant inventory list. Known sites of environmental contamination may include leaking underground storage tanks (LUSTs), Superfund (NPL) sites, Michigan Part 201 sites of Act 451 (sites of environmental contamination), and oil and gas contamination sites. Potential sites for contamination include registered underground storage tanks (USTs), hazardous waste generators and ground water discharges (NPDES permit holders) (EGLE, 2024). These types of sites are typically listed on state and federal databases. Other sites may also have the potential to be a contaminant source, if the chemicals associated with the sites are improperly handled, stored, or discarded. For example, auto repair shops, which may not be listed on federal and state databases, have the potential to result in contamination of the groundwater if used oil, antifreeze, brake fluid, etc. is mishandled or improperly discarded. Potential contamination sources range from septic tanks, dry cleaners and underground gasoline storage tanks to landfills, urban runoff and pesticides applied on farm fields.

The sites were categorized as low, medium, or high risk based mainly on the criteria listed in Appendix D (Oregon DEQ, 1996). In general, the risk factors are defined as the following:

- LOW RISK = Unlikely to cause environmental damage to the soil or groundwater, unless a catastrophic event would occur. However, the potential for damage exists due to the type of operation, likely chemicals used or observed, or other practices that may occur at the site.
- MEDIUM RISK = The potential for environmental damage is greater due to the quantities of chemicals, type of operation, or type of storage apparently observed at the site. Environmental damage may occur from the mishandling, improper storage or use of chemicals that may be present at the site.
- HIGH RISK = Facility or site is more likely to cause environmental damage based on type of operation, likely chemicals stored, or even proximity to wellfield. Practices or types of operations apparently observed at the site are historically known to be sites of environmental damage at similar facilities. Best management practices or change in operation should likely be instituted to prevent an accidental release.

The facilities overall aesthetic appearance was also taken into account. As an example, an agricultural property with ASTs was generally considered medium or moderate risk, however, an agricultural property with ASTs and several 55-gallon drums and small containers of liquid scattered across the property was considered high risk. However, it is important to note that all portions of the WHPA were not inspected and no facility or site inspections were performed. The risk associated with the sites was based on appearance only and is speculative. As such, the results may change if further information becomes available during potential future inspections or interviews. Appendix D lists potential sources of contamination that were identified both during the "windshield survey" or inspection of the WHPA and from a national and state-wide database search.

4.2.1 Windshield Survey

The windshield survey was performed on May 1, 2025 by traveling through the WHPA on public roadways with maps and inventory forms. For each location (address), the land use activity category and apparent activities present at that location were identified, along with other information such as map location, potential chemicals present, etc.

As shown in Appendix D, 39 unregulated sites were identified within the 10-Year WHPA with a potential to contaminate the groundwater. Five (5) of these sites have been added since the 2001 management plan. Figure 4 shows the locations of all 39 sites identified by corresponding Map ID Number with the table in Appendix D.

4.2.2 Federal & State Database Search

A comprehensive database search was conducted by Environmental Data Resources, Inc. (EDR) on April 30, 2025. The regulated PCSs include environmental spills, a former gas station and a former auto service station. The table in Appendix D provides a summary of the regulated PCSs. Figure 4 shows the locations of the possible regulated sources of contamination keyed to the Map ID listed in Appendix D. Additionally, a reduced copy of the EDR Report is available in Appendix D.

As shown in Appendix D, 12 regulated sites were identified within the 10-Year WHPA with a potential to contaminate the groundwater. Five (5) of these sites have been added since the 2001 management plan. Figure 4 shows the locations of all 12 sites identified by corresponding Map ID Number with the table in Appendix D.

The majority of all the potential sources were identified as ASTs without secondary containment. Secondary containment can contain accidental spills and releases that may occur and is considered a best management practice (BMP) for ASTs. However, secondary containment for ASTs is not required by law in Michigan unless the AST contains more than 1,100 gallons. It is important to note that the contents and integrity of containers and ASTs/USTs were not inspected or observed. They may or may not contain chemical substances.

4.3 WHPA Flyers & Surveys

A flyer describing SWPP activities and a survey of potential environmental concerns was sent out with the 2025 annual Consumer Confidence Report (CCR). A copy of the flyer/survey is included in Appendix E. Property owners within the WHPA and outside Ionia city limits were also mailed

the flyer/ survey. A list of these property owners is provided in Appendix E. The front portion of the flyer describes the City's SWPP activities and shows a map of the 10-year WHPA. The back depicts the environmental survey portion of the flyer. Seven (7) general environmental questions were asked of residents. Abandoned wells were highlighted, since the City plans to aggressively pursue the proper closure of abandoned wells within the WHPA.

4.4 Conclusions & Updates

A contaminant source inventory has a number of benefits to a community. It identifies the potential sources of contamination and land uses that could threaten the groundwater so that a community can take appropriate action to manage those sources before their wells become contaminated. By knowing where potential contamination sources are located, it can be used by a community in the event of a contamination incident to focus the investigation and direct mitigation and management efforts. Further, it can be a valuable tool for siting new wells. A contaminant source inventory also provides an opportunity to educate the public and local officials, about groundwater protection. Educating the public by involving them in the protection effort benefits the community through increased public awareness, involvement in environmental issues, and increased communication between the local government and the citizens of the community.

The City of Ionia's Contaminant Source Inventory (CSI) portion of its SWPP will provide these benefits. However, efforts must be continued to update and amend the CSI. The SWPP LPT and the City have agreed to update the CSI annually during their LPT meetings. Efforts will also be made to persuade property owners to change potentially harmful environmental practices.

5.0 WHPA MANAGEMENT

The goal of the management plan is to specify how actual and potential sources of contamination in a WHPA will be managed in order to prevent them from reaching the aquifer. Each community may custom design a plan and select the control measures which are most appropriate for their plan. Management approaches may involve a variety of activities including facility inspections, land-use regulations, operational policies, best management practices, public information, and education. To help communities attain this goal, wellhead protection areas are considered as special management areas by many supporting organizations. The state, for example, will give special attention to facilities and properties within a wellhead protection area when conducting underground storage tank inspections, granting ground water discharge permits or inspecting hazardous waste sites. [EGLE, 2024].

Management strategies selected for implementation should be feasible options that help protect the drinking water from the specific potential contaminants within the WHPA. Management strategies may be either regulatory or non-regulatory in nature. Some examples of regulatory management options are:

- Zoning ordinances;
- Source or use prohibition;
- Design or operating standards; and
- Site plan reviews.

Some examples of non-regulatory management options include:

- Facility inspections and best management practice implementation;
- Public education;
- Groundwater monitoring;
- Reduction of salt usage and dust inhibitors on roadways;
- Land acquisition or set-asides; and
- Household hazardous waste collection.

5.1 Selected Management Options

A thorough review of management options was performed by the LPT. Since Ionia and many surrounding Townships are not zoned communities, public education was selected to represent the majority of management activities. The comprehensive public education activities chosen by the LPT are detailed in Section 8.0 of this report. In addition, flyer/surveys were mailed or distributed to residents and businesses with the WHPA. The flyer/surveys discussed the importance of source water protection, included a map of the WHPA, and contained an environmental survey portion which residents were encouraged to fill out and return to the City. The flyers/surveys are discussed in detail in Section 4.3 and a copy of the flyer/survey is included in Appendix E. Table 2 outlines the management options chosen by the LPT and expected implementation dates:

TABLE 2 SWPP Management Activities & Implementation Dates

Management Activity	Implementation Date(s)
Extensive Public Education (see Section 8.0)	Updated 2026
Promote Household Hazardous Waste Collection	Ongoing
Survey/Letter to WHPA Residents/Businesses	April 2001 & Summer 2025
Environmental Permits Checklist	Renewed Spring 2026
Facility Inspections – Promote BMPs	Renewed Spring 2026
Incorporate SWPP into Master Plan	2002 & 2025
WHPA Road Signs	2001 (still active)
Ordinances/ Sanitary Codes	Updated 2026
Source Water Assessment	Spring 2025

Household Hazardous Waste Collections

The importance of properly disposing of household hazardous waste has been a topic of previous public education material and will continue to be in the future. As previously mentioned, household hazardous waste collection contact information for Ionia County was included on the SWPP flyer/surveys to (at a minimum) every resident and business within the WHPA in Summer 2025. The City hosts City Clean-Up days twice a year, where residents can dispose of household hazardous waste as well.

Environmental Permits Checklist

An environmental permits checklist, based on the MDEQ form, was implemented through the City and County Building Departments in 2002 for new facilities. A copy of the new (2022) EGLE environmental permit checklist, as well as one for Ionia County Health Department, are provided in Appendix F. Persons applying for building permits within the City's WHPA will be asked to complete the environmental permits checklist and return it to the building department prior to construction. The checklist will be sent to the City's Public Utilities Department for review. Once the Building and Utility Departments have reviewed the checklist, the permit holder may then be contacted to ensure proper environmental regulations are followed and best management practices are encouraged at the new facility. To date, no environmental permits have been sent to the City's Public Utilities Department. However, the SWPP Coordinator will reach out to the building department and verify/ reinforce that these permits are being requested of new builds within the WHPA going forward.

Facility Inspections – Promote BMPs

Environmental inspections of new and existing facilities were originally implemented in 2002. Best management practices (BMPs) will be promoted during the inspections. High risk facilities identified in the contaminant source investigation will be contacted for permission to inspect the premises. If the owner/operator grants permission, the facility will be inspected for potential contaminant sources and substandard environmental practices. The owner/operator will be given a list of options that could be instituted at the facility to improve environmental conditions. The options will be voluntarily instituted by the owner/operator. If the owner/operator refuses facility inspections, information on BMPs and other environmental improvements will be mailed to the facility. To date, no records that any facility inspections have been conducted were able to be located. As part of this update, the SWPP Coordinator will reach out to the identified facilities to gauge interest and conduct inspections at interested facilities.

Incorporate City of Ionia's SWPP into County Land Use Master Plan

The City of Ionia updated their Master Plan in November 2025. The updated Master Plan references the City of Ionia as a Type I Community Water Supply, servicing the City of Ionia as well as parts of Berlin, Easton, and Ionia Townships. It also references the 2002 Wellhead Protection Plan as an

effort to help protect the City's drinking water supply. A map of the City's Type I wells is provided as well. Relevant pages of the Master Plan are provided in Appendix G.

The City will continue to urge Ionia County officials to continue to incorporate support of the City's SWPP in the County's Master Plan for development and growth. Since the majority of the City's WHPA is located outside of the Ionia City limits, it is necessary for county and township governments to support the implementation of certain aspects of the City's SWPP. As an example, landfills or heavy chemical manufacturing may not be a desirable business entity within a WHPA. By supporting the City of Ionia's SWPP, county and township officials may consider WHPAs when identifying locations for future developments.

Another important step towards this support has been accomplished under the SWPP by obtaining Township Resolutions from all four (4) townships within the WHPA supporting the City's efforts. Copies of the resolutions from Easton, Ionia, Orleans, and Ronald Townships as well as a resolution from the City of Ionia are included in Appendix G.

WHPA Road Signs

A total of 16 WHPA road signs have been placed throughout the WHPA. Examples of all five types of signs are provided in Appendix G ("Orleans Township", "Ronald Township", "Ionia Township", "Easton Township", and "Public Utilities City Wellfield" in red lettering). The signs inform persons they are entering a "**DRINKING WATER PROTECTION AREA**" for the City of Ionia. The City of Ionia Public Utilities Department phone number is listed as an informational contact and 911 is listed as an emergency contact (see Section 6 for emergency situation plans). The signs will help educate and notify the public of the existence of the WHPA.

The need to replace these signs due to age was discussed as part of this update. It was suggested to the City that the current road signs delineating the WHPA be removed, and instead a general "**DRINKING WATER PROTECTION COMMUNITY**" signs be placed at the 4 major entrances/ gateway signs to the City (eastbound and westbound on M-21 and northbound and southbound on M-66). Several communities have converted to this option, given the security risk of delineating the WHPA with signage. The City is receptive to moving the signs rather than simply replacing the current ones, and will be evaluated for feasibility in the near future.

Ordinances/ Sanitary Codes

The City of Ionia has adopted a general water ordinance. The code is quite extensive and includes topics such as establishment of a municipal water system, water connections, cross-connection prevention, and water well restrictions. Code 1040.18 addresses mandatory connection for any property or structure that has City water "available". Installation of private water wells is prohibited where City water is available. Properties with private wells that become no longer operable/ repairable must connect to City water. Code 1040.21 addresses specific parcels that are known to have groundwater contamination and thus are not allowed to have water wells installed for any reason. A copy of the ordinance is provided in Appendix G.

Ionia County Health Department has also adopted a sanitary code. Section 4 of the code addresses groundwater, wells, and water supplies. The code regulates well drilling and sealing, location and setbacks of wells, improperly constructed wells, and permits, among other topics. A copy of Section 4 of the code ordinance is provided in Appendix G.

Source Water Assessments

In February 2025, EGLE conducted Source Water Assessments (SWAs) on each of the City's Community water supply wells. These assessments consider geologic sensitivity, well construction, groundwater quality, and potential contamination sources. The score is expressed both quantitatively as a points system, expressed as a Source Water Assessment Score (SWAS) and qualitatively (very low, low, moderately low, moderate, moderately high, high, very high) expressed as a Susceptibility Determination. Copies of the assessments are provided in Appendix G. Table 3 shows the scores for each well.

TABLE 3 Source Water Assessment Determinations

Well	Source Water Assessment Score	Susceptibility Determination
Well 5A (5)	185	Moderately High
Well 9A (9)	209	Moderate
Well 10A (10)	224	Moderately High
Well 11A	171	Moderate
Well 12A (12)	101	Moderate
Well 13A (13)	160	Moderately Low
Well 14A (14)	115	Moderately Low
Well 15	115	Moderately Low
Well 16A (16)	144	Moderate

6.0 CONTINGENCY PLAN

The goal of a contingency plan is the immediate and long-term protection of the wellfield by identification of personnel, testing equipment, procedures, and materials that can be used for the rapid correction or mitigation of environmental accidents, which might constitute a water supply emergency. A contingency plan includes response protocol, notification procedures and methods of containment. Accidents, which might directly impact the wells, need to be addressed with methods for isolating portions of the wellfield and/or providing water from an alternative source.

A water supply emergency may range in severity from a short-term power outage to the effects of a widespread natural disaster. For the purposes of source water protection, the most probable threat to a PWSS requiring an emergency response will be from a hazardous substance spill within the wellhead protection area. Such a spill may occur at a fixed location involving the handling or storage of chemicals or in association with a transportation related accident.

A comprehensive knowledge of the PWSS controls is critical in the case of a water supply emergency. Essential information such as the location of the WHPA, wells, distribution system, and isolating valves is critical to any emergency response situation [EGLE, 2024]. The City of Ionia updated its Water Supply System Contingency Plan in May 2025. The plan is provided in Appendix H and includes the following information:

- Water Well & Auxiliary Power Information
- Chemical Treatment Information
- Distribution Information
- Personnel Inventory (names and phone numbers)
- Contractors Available During an Emergency (names and phone numbers)
- Other Agency Names and Phone Numbers (MDEQ, Health Dept., etc.)
- Critical Users List (names, phone numbers, locations)
- Means of Public Notifications

Copies of the plan will be available at the following locations:

- Ionia County Health Department, 175 E Adams St.
- Ionia City Hall, 114 N Kidd St.
- Ionia Department of Public Safety, 239 E Adams St.
- Ionia Waste Water Treatment Plant, 720 Wells St.

Any older copies of the contingency plan should be discarded once the new copies are distributed.

The City of Ionia has completed the GIS mapping of its water supply distribution system, which would be available during an emergency. Hard copy blueprints of the system, including critical isolating valves, are located in the Director's office and three (3) field vehicles. A representative of the City's Public Utilities Department is available during all emergency situations via on-call phone (7 days a week – 24 hours a day). An Emergency Notification Report Form will be completed by a Public Utilities Department representative for every emergency spill within the WHPA. The form, based on the MDEQ example form is provided in Appendix H.

Training of Ionia County Central Dispatch personnel is ongoing. The importance of WHP and groundwater was emphasized, as well as procedures to follow in the event of a spill or other environmental emergency within the WHPA. Central dispatch personnel have been directed to call Joe Lafler, Utilities Director or the department's 24-hour phone in the event of an environmental emergency. Further, maps of the WHPA were given to city and county fire and police personnel for reference in the event of an environmental emergency in 2001.

Hazardous materials are routinely transported and used within the WHPA. State Route M-66 is a primary north-south highway through the county and several facilities that store or use hazardous materials were identified during the Contaminant Source Inventory within the WHPA. Both the county/township and city fire departments have contracts with Young's Environmental (Grand Rapids) for the proper clean-up of hazardous materials spills. The local fire departments have been directed to contain the spills until Young's Environmental arrives within one hour. Young's Environmental was sent a map of the City of Ionia's WHPA for reference in 2001.

Alternative water supplies will be available from within the system, by wellfield management, or from outside the system. If only specific wells are contaminated or threatened, the affected well(s) would be shut down and the City's other wells would be used. Water use restrictions may also be instituted, if needed. Public notification procedures would be implemented for water use restrictions. The "Plan for New Wells" may also be rapidly instituted to find alternate locations for water supply wells depending on the severity of the situation in the event several wells were affected.

Water from outside the system would be used as a last resort. The City of Ionia and the Village of Muir have reached an agreement to share water resources during an emergency situation. Water would be transported via potable water tank trucks (National Guard and/or local private company) from the Village of Muir to centralized locations throughout the City for distribution to the public. During an emergency situation of this magnitude, all or most of the City's wells would be non-operational.

7.0 PLAN FOR NEW WELLS

Another step towards completing a successful SWPP in Michigan is to establish a plan for new wells. Water supply expansion, due to increases in water use, will necessitate the need to develop new wells for the City of Ionia in the future. The existing wellfield currently utilizes nine (9) wells with possible plans for a tenth well in the future. Although water quality and quantity are considered good to excellent at this site, a different locality for new wells would be beneficial to the City for the following reasons:

1) The new wellfield would not be susceptible to the same potential and known sources of contamination as the existing wellfield.
2) The new wellfield would increase total capacity of the City's public water supply system.
3) The new wellfield, particularly if located within a different aquifer, would diminish potential groundwater mining activities that may or may not occur at the existing wellfield in the future (i.e. increased cone of depression and lowering of the water table due to pumpage exceeding or nearing aquifer recharge in the area).
4) The existing wellfield may be nearing its' sustainable yield. New wells would allow for increased production for the total system without harming the existing wellfield's aquifer.

However, new wells located in a different location may also have disadvantages. Foremost, the quality and quantity of groundwater may be inadequate or too expensive to treat in other locations. Remote well locations may require substantial capital improvements, including long stretches of water mains and potential booster stations to tap into the existing system. These factors, including potential sources of contamination and political factors, such as existing locations of municipal owned lands, must be considered when identifying likely areas for new wells. This section of the City of Ionia's Source Water Protection Plan, will focus on potential new well locations for water supply expansion and decentralization.

Where water supply expansion, increases in water use, or susceptibility of existing wells warrants future development of production facilities, a mechanism should be provided to incorporate the new facilities into the local SWPP. Systems that undergo expansion with the construction of new wells are strongly encouraged to adopt the source water protection concept. This is done because

WHPA delineation is easier (and less costly) at the time of construction, source water protection can be used to evaluate the availability of the groundwater resource at a site, and source water protection helps ensure that ground water resource development is occurring in an area which is not subject to contamination. A water supply assessment of the existing wellfield and possible sites for new wells should result in a better understanding of the existing ground water availability, the ability of the public water supply system to meet present demands for water, and the potential ability for new sites to meet this demand [EGLE, 2024].

7.1 Current Water Supply Assessment

7.1.1 Production Capacity Limitations

The City of Ionia's existing wellfield currently produces an average of approximately 1.6 million gallons per day (MGD). Individually, the wells have the capacity to produce over 6.5 MGD. However, this does not take into account interference effects from other wells and potential groundwater mining effects that may occur in the future. Well logs of the existing wells are provided in Appendix A.

General drawdown scenarios investigated with the WHPA delineation model indicate that a "water mining" condition may occur at the existing wellfield site with continued expansion and increased production in the same aquifer area. By increasing the total pumping represented with the WHPA model to 10.4 MGD, water levels in the wellfield fall near or below the screens of most of the wells. While the current City production hasn't increased since the previous WHPA delineation, in the extended future (10 to 20 years or more, depending on growth rates and climate) demand will likely outpace the physical aquifer capacity of the existing wellfield. An alternative location for new wells may be needed to increase the capacity of the City's public water supply system.

7.1.2 Environmental Limitations

Although the City's public groundwater supply is of good quality, sources of contamination could adversely affect the wellfield in the future. As shown in the CSI portion of the SWPP, some existing sources and many potential sources of contamination exist within the City's WHPA. Therefore, the wellfield is effectively "at risk" for contamination. Since, all of the City's wells are located within the same general wellfield area, the entire wellfield could be contaminated by an environmental disaster, leaving the City with no alternative water supply wells (information regarding emergency procedures for contamination and other disasters are described in the Contingency Plan portion of the SWPP – Section 6.0; Appendix H). By locating additional new wells in other areas within the current aquifer, the City would still have production capabilities in the event of a disaster of this type.

7.2 Evaluation of Potential Sites

7.2.1 Deep Sandstone Bedrock Aquifer – South Ionia

A potential location for new wells is at the Tuttle Road Water Tank Site and the Swartz Court Booster Station Site in south Ionia (Figure 5). At these sites, a deep sandstone bedrock well is an option. The deep sandstone bedrock aquifer would likely be tapped at the Tuttle Road Water Tank site and the Swartz Court Booster Station site in South Ionia (Figure 5). The sandstone aquifer is present at approximately 300 feet AMSL or 500 feet below the ground surface in the South Ionia area. The sandstone aquifer is grayish-white in color with specific capacities of 1.3 to 3.3 gpm/ft drawdown. However, the depth of the well would likely allow a well capacity ranging from 300 to 600 gpm, with a deep pump setting. The reported water quality is generally good and is comparable to water quality from the existing wellfield (K-Mart well sampling results). Susceptibility to contamination would be low to very low considering the thick sequences of clay and shale that lie above the aquifer in the area. These two proposed well locations would also be located very near existing water mains, allowing for minimal engineering and construction efforts to hook into the existing system.

7.2.2 Intermediate Sand and Gravel Aquifer – West Prison Sites

A potential well field located west of the City near the prison facilities would be completed in the same intermediate sand and gravel aquifer as the City's existing wells (Figure 5) at the prison sites west of the City (I-Max facility and the Bellamy Creek facility). The intermediate sand and gravel aquifer is the same aquifer tapped by the existing City wells. However, the water quality may be inferior to the existing wellfield due to reported higher levels of iron at these locations, which may require treatment. Susceptibility to contamination would likely be approximately the same as the existing wellfield, which is low to moderate. The wellhead protection area for these wells would likely extend to the north-northwest, much the same as the existing WHPA. These well locations would also be located near existing water mains, allowing for minimal engineering and construction efforts to hook into the existing system.

7.2.3 Deep Sand Aquifer – Grand River Valley Sites

A potential well field completed in the deep, confined sand and gravel aquifer present near the Michigan Reformatory Prison site on Wall Street is another option (Figure 5). The aquifer is present at approximately 500 feet AMSL or 100 feet below the ground surface in the river valley area. No water quality information is available. Susceptibility to contamination would be low considering the thick sequence of clay (approximately 80 to 100 feet thick) that lies above the aquifer in the area. This well location would also be located near existing water mains, allowing for minimal engineering and construction efforts to connect to the existing system.

7.3 Plan for New Wells Conclusions

In conclusion, new well sites would benefit the City's production capacity and limit the consequences of contamination to the existing wellfield. Since all of the City's wells are located within the same wellfield, the possibility of a catastrophic event, such as gross contamination, damaging all of the wells is greater. All three aquifer areas identified for possible new wells should be evaluated when the plan for new wells is initiated. Included with the hydrogeologic investigation, at that time, will be a draft WHPA delineation and a preliminary contaminant source inventory for the sites to help identify potential contaminant threats in the area.

8.0 PUBLIC EDUCATION & PARTICIPATION

The goal of this element is to actively involve and educate people who live and conduct business in the wellhead protection area in the development and implementation of the program. Local source water protection programs must ensure that public participation takes place by incorporating processes for involvement in each of the program elements. To generate interest and initiate participation, communities have focused on public education, information, and participation. Involving the public is one of the most important elements to a successful program. Source water protection cannot be completed without establishing strong partnerships and cooperation throughout the community. [EGLE, 2024]

Several public education and participation efforts have been accomplished and further efforts will continue in the near future. Table 4 lists the different activities and expected implementation dates.

TABLE 4 Public Education Activities & Implementation Dates

Activity	Implementation Date(s)
City of Ionia's Website	2026
City of Ionia's Facebook Page/ Social Media	2025 (ongoing)
Survey/Letter to WHPA Residents/Businesses	April 2001 (ongoing)
Nature Trail SWPP Posters	Spring 2002
Groundwater Week & Other Public Events	May 2002 (ongoing)
Public Meetings	May 2001 & May 2002
City of Ionia's Quarterly Newsletter	2025 (ongoing)
WHPA Road Signs	2001 (ongoing)

City of Ionia's Website

The City of Ionia's website at www.cityofionia.org/200/Public-Utilities continues to serve as a public education outlet for SWPP activities. Information regarding the City's Source Water Protection and Source Water Assessment is provided, as well as several public education/ groundwater protection flyers. The City will maintain the website and continue to add new information as is available.

City of Ionia's Facebook Page/ Social Media

The City of Ionia's Facebook Page serves as a public education outlet for SWPP activities, as well as emergency notifications. It is anticipated that a post will be made regarding the SWPP every six months, including maps and links to other sites where users can get additional information on source water protection and environmental activities.

Survey/Letter to WHPA Residents/Businesses

As previously mentioned and described in detail in Section 4.3, in Summer 2025, a flyer describing SWPP activities and a survey of potential environmental concerns was mailed to all residents and facilities within the City's 10-Year WHPA, as well as property owners outside city limits within the WHPA. A copy of the flyer/survey is included in Appendix E. The front portion of the flyer describes the City's SWPP activities and shows a map of the 10-year WHPA. The back depicts the environmental survey portion of the flyer.

Nature Trail SWPP Posters

As part of the SWPP plan development in 2001, informational posters were displayed at a local school nature trail/groundwater education outdoor classroom describing the City's SWPP efforts and groundwater education. The nature trail is a project spearheaded by the local Natural Resource Conservation Service (NRCS) office and the Ionia County Groundwater Stewardship. One of the main topics of the nature trail is groundwater, along with prairies, wetlands, and trees. The main trail billboard has two (2) full color posters with a map of the City's WHPA and descriptions and other figures describing the importance of source water protection. Boyce Elementary School, where the nature trail is located, is within the City's WHPA.

Groundwater Week & Other Public Events

The city hosts the famous "Ionia Free Fair" annually in July. The utility department is interested in having a booth at the fair to promote groundwater protection. Giveaways and information regarding the importance of groundwater and the City's SWPP will be discussed and distributed at the booth. The presence of the booth will be discussed at the LPT this summer prior to the fair.

Public Meetings

The City Council meetings are held on the first Wednesday of every month at the City Hall-Council Chambers. This meeting is open to the public. While not specifically designed to help educate the public about the City's SWPP, citizens are able to come and raise concerns and ask questions regarding the WHPA/SWPP.

WHPA Road Signs

As previously discussed in Section 5.1, a total of 16 WHPA road signs have been placed throughout the WHPA. Examples of all five types of signs are provided in Appendix G. The City of Ionia Public Utilities Department phone number is listed as an informational contact and 911 is listed as an emergency contact (see Section 6.0 for emergency situation plans). The signs will help educate and notify the public of the existence of the WHPA. It was suggested to the City that the current road signs delineating the WHPA be removed, and instead a general "**DRINKING WATER PROTECTION COMMUNITY**" signs be placed at the 4 major entrances/ gateway signs to the City. The City is receptive to moving the signs rather than simply replacing the current ones, and will be evaluated for feasibility in the near future.

9.0 CONCLUSIONS, UPDATES, & PLAN CONTINUANCE

The City of Ionia, Michigan has proactively chosen to protect its water supply by instituting and completing a comprehensive SWPP. The education and participation of the public is a primary component of the City's SWPP. Educating the public by involving them in the protection effort benefits the community through increased public awareness, involvement in environmental issues, and increased communication between the local government and the citizens of the community.

However, efforts must be continued to update and amend the SWPP in the future as new and modified information becomes available. The SWPP LPT and the City have agreed to update the CSI portion of the SWPP annually. Further, the City will attempt to inspect several high-risk sites identified in the CSI during this time period. Efforts will also be made to persuade property owners to change potentially harmful environmental practices. Several public education efforts are underway, which will increase community awareness, such as: information on the City's website; educational information on the City's quarterly newsletter; information on the City's Facebook page/ social media; informational billboards at a local school nature trail/groundwater education outdoor classroom describing the City's SWPP efforts and groundwater education. Further, sixteen (16) road signs have been placed on public roadways, which state that one is entering a WHPA and lists contact phone numbers for emergencies and further information. An environmental permits checklist, based on the MDEQ/EGLE form, is also being instituted through the City and County Building Departments for new facilities.

10.0 LIMITATIONS

These results and conclusions were based on the best available information at the time of this report using generally accepted practices of the profession, undertaking similar studies at the same time and under the same types of conditions. It is important to note that not every portion of the WHPA could be examined during the windshield survey, nor were any facility/site inspections performed. Observations were made from public roadways only. The risk associated with the sites was based on appearance only. Some revisions may and will be necessary should further data become available and/or conditions change. Peerless-Midwest's observations and opinions must not be considered as fact, but only as opinion based on our professional judgment concerning the significance of the information gathered during the course of this project. As such, no warranty and/or guarantee is expressed or implied.

PEERLESS-MIDWEST, INC.

Katelynn Shail

Katelynn Shail, P.G.
Manager of Hydrogeological Services

11.0 REFERENCES

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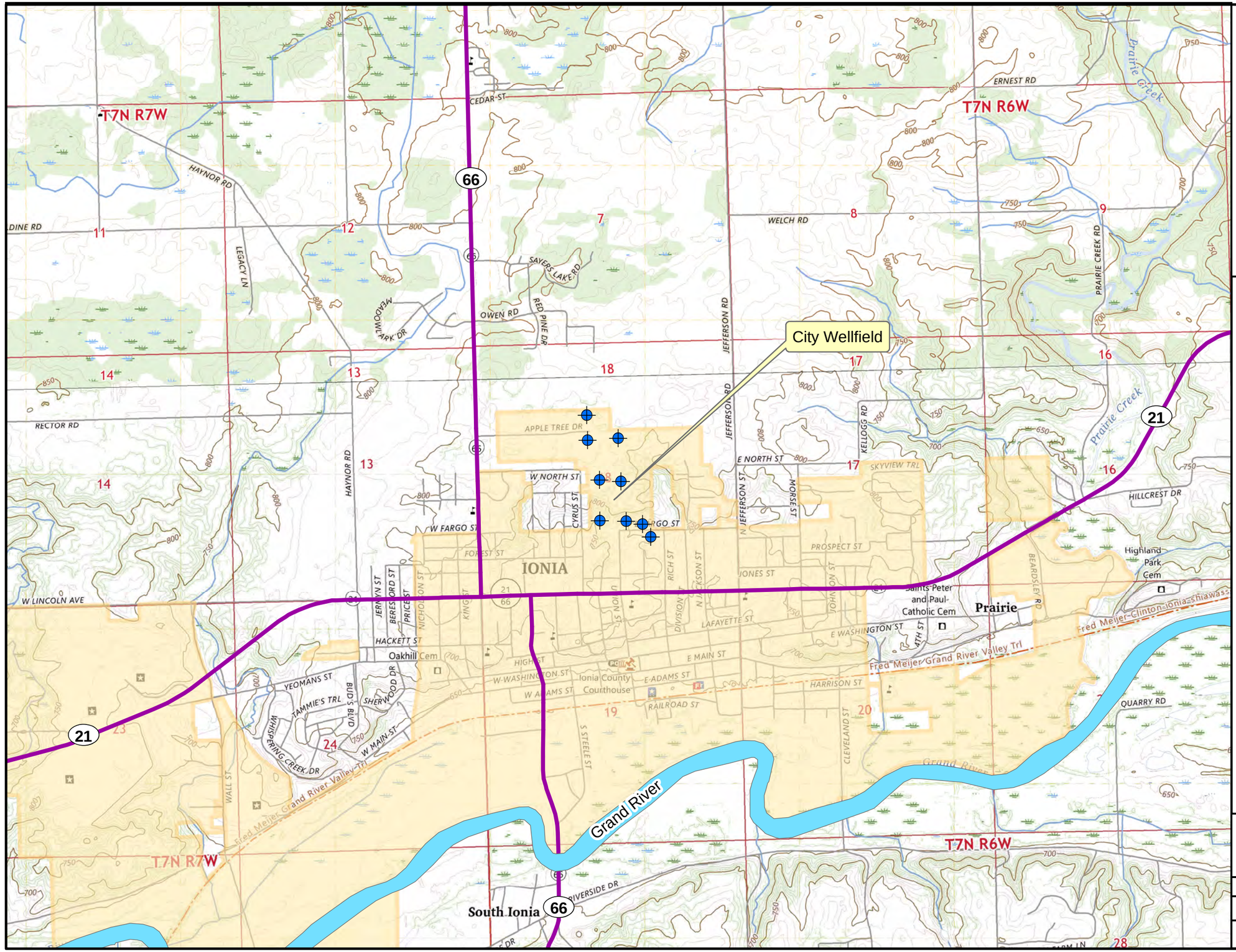
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FIGURES





MAP FEATURES

- Production Wells
- River
- State Highway
- City Limit

N

1:24,000

2,000 1,000 0 2,000

Feet

SITE LOCATION MAP

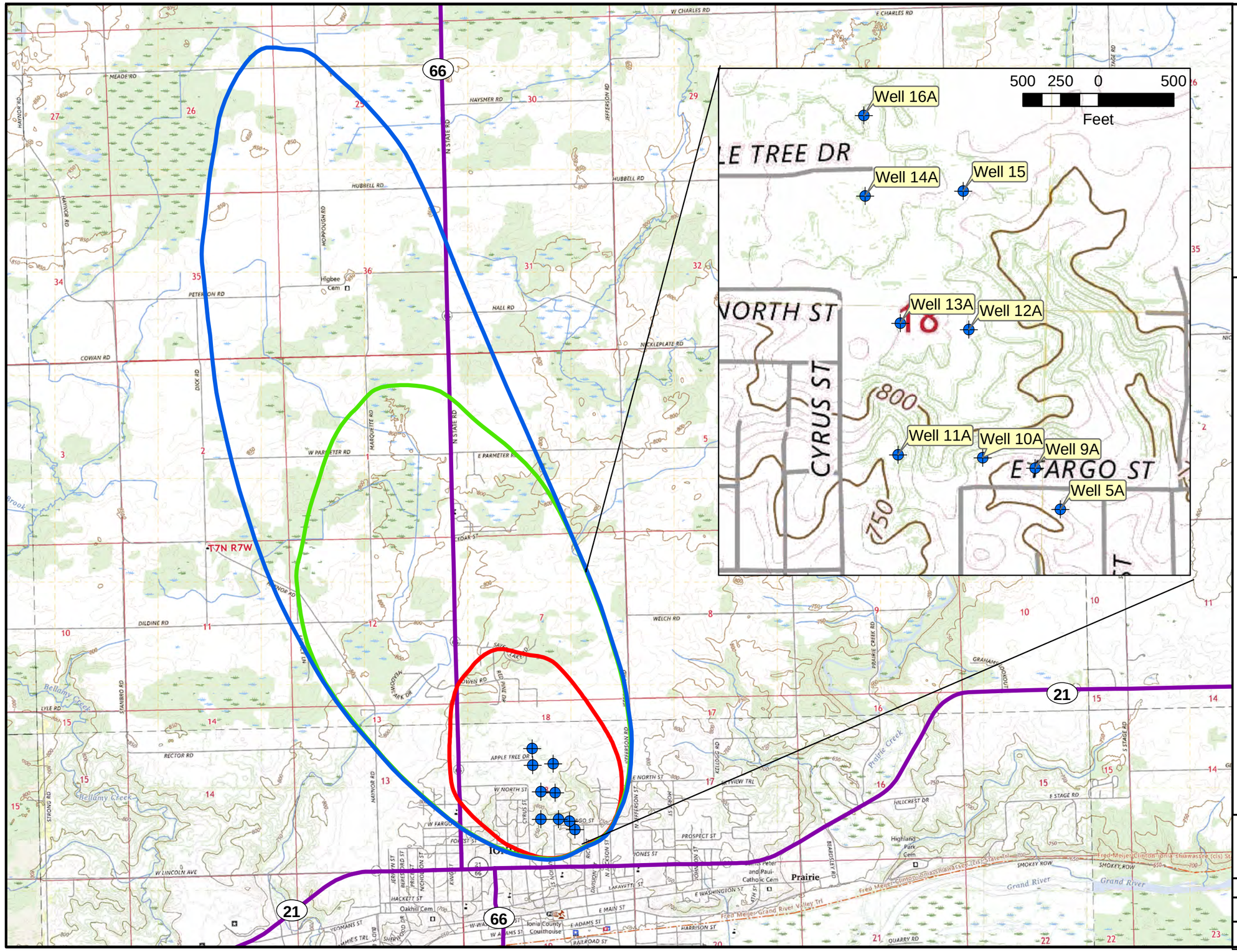
Ionia, MI SWPP Update

Proj. #:60953	Drawn by: KNS	Date: 04/24/25

PEERLESS-MIDWEST, INC.

Proj2 (T)\Ionia\WHPA_info\2025 WHPP Update\gis\60953.106_Ionia_SWPPUpdate_Fig1

FIGURE 1



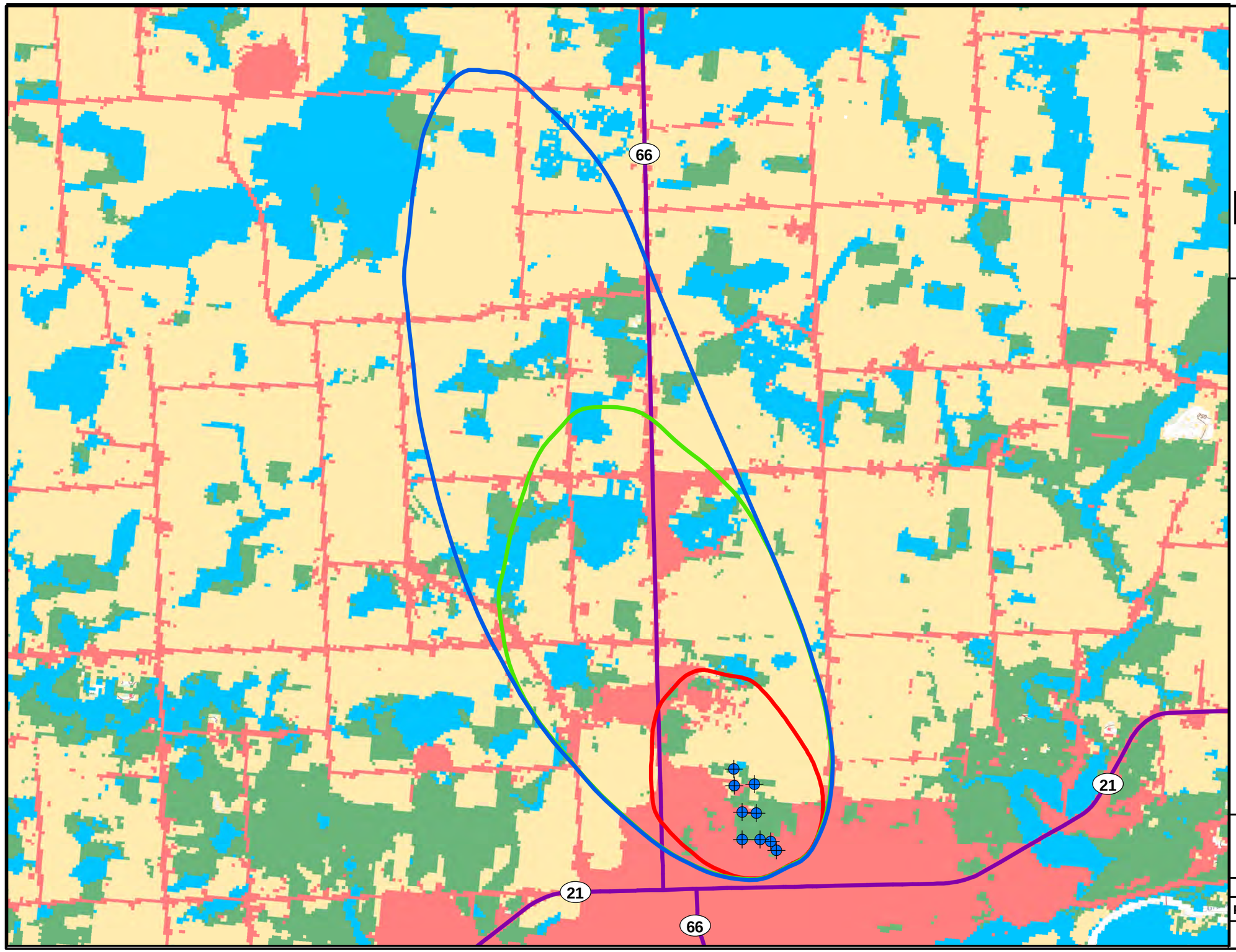
SITE DETAIL MAP

Ionia, MI SWPP Update		
Proj. #:60953	Drawn by: KNS	Date: 04/24/25

PEERLESS-MIDWEST, INC.

Proj2 (T)\Ionia\WHPA_info\2025 WHPP Update\gis\60953.106_Ionia_SWPPUpdate_Fig2

FIGURE 2





MAP FEATURES

- Production Wells
- 1 Year TOT WHPA
- 10 Year TOT WHPA
- 5 Year TOT WHPA
- State Highway
- Developed
- Forest
- Agricultural
- Wetland

N

1:36,000

3,000 1,500 0 3,000

Feet

LAND USE MAP

Ionia, MI SWPP Update

Proj. #:60953	Drawn by: KNS	Date: 04/24/25

PEERLESS-MIDWEST, INC.

Proj2 (T)\Ionia\WHPA_info\2025 WHPP Update\gis\60953.106_Ionia_SWPPUpdate_Fig3

FIGURE 3

I-Max Prison

Intermediate Sand Aquifer

Bellamy Creek Prison Site

Deep Sand Aquifer

Michigan Reformatory

Swartz Crk. Booster Station

Deep Sandstone Bedrock Aquifer

Tuttle Rd. Water Tank

IONIA

South Ionia

Ionia County Courthouse

Oakhill Cem

W LINCOLN AVE

POTTERS RD

W MAIN ST

W RIVERSIDE DR

E RIVERSIDE DR

BELLVIEW DR

HOLIDAY DR

HACKETT ST

FOREST ST

E FARGO ST

LAFAYETTE ST

E MAIN ST

W WASHINGTON ST

E ADAMS ST

W ADAMS ST

RAILROAD ST

YEOMANS ST

TAMMIE'S TRL

BUDS BLVD

SHERWOOD DR

WHISPERING CREEK DR

HORIZON DR

BATES RD

S STEELE ST

WALL ST

BERTHA BROCK DR

BROCKTON WOODS

Grand River

Fred Meijer Grand River Valley Trl

Ionia Rec. Area

T7N R7W

T6N R7W

Ionia

MAP FEATURES

Production Wells

State Highway

Proposed Well Locations

N

1:18,000

1,500 750 0 1,500

Feet

POTENTIAL FUTURE WELL LOCATIONS MAP

Ionia, MI SWPP Update

Proj. #:60953	Drawn by: KNS	Date: 05/05/25

PEERLESS-MIDWEST, INC.

Proj2 (T)\Ionia\WHPA_info\2025 WHPP Update\gis\60953.106_Ionia_SWPPUpdate_Fig5

FIGURE 5

APPENDIX A

City Well Logs

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	Section: 18	Well Status: Active	WSSN: 3370	Source ID/Well No: 5A

Well ID: 34000013604

Elevation:

Latitude: 42.990572

Longitude: -85.062096

Method of Collection: GPS Std Positioning Svc SA On

Distance and Direction from Road Intersection:
150' S of E Fargo St. and 460' E of Union St.

Well Owner: City of Ionia

Well Address:
Fargo St.
Ionia, MI 48846

Owner Address:
114 N Kidd St.
Ionia, MI 48846

Drilling Method: Rotary
Well Depth: 100.00 ft. **Well Use:** Type I public
Well Type: Replacement **Date Completed:** 12/7/2023

Casing Type: Steel - black **Height:** 2.00 ft. above grade
Casing Joint: Welded
Casing Fitting: None

Diameter: 12.00 in. to 80.00 ft. depth

Borehole: 20.00 in. to 100.00 ft. depth

Pump Installed: No
Pressure Tank Installed: No
Pressure Relief Valve Installed: No

Static Water Level: 53.04 ft. Below Grade
Well Yield Test: **Yield Test Method:** Test pump
Pumping level 66.60 ft. after 8.00 hrs. at 600 GPM

Formation Description	Thickness	Depth to Bottom
Topsoil	2.00	2.00
Sand Fine To Medium	50.00	52.00
Sand Fine To Medium W/Gravel	48.00	100.00

Screen Installed: Yes **Filter Packed:** Yes
Screen Diameter: 12.00 in. **Blank:**
Screen Material Type: Stainless steel-wire wrapped
Screen Installation Type: Attached

Slot	Length	Set Between
35.00	20.00 ft.	80.00 ft. and 100.00 ft.

Fittings: None

Well Grouted: Yes **Grouting Method:** Grout pipe outside casing

Grouting Material	Bags	Additives	Depth
Other	65.00	Retarder	0.00 ft. to 70.00 ft.

Geology Remarks:

Wellhead Completion: 12 inches above grade

Drilling Machine Operator Name: Bryant Anderson
Employment: Employee

Nearest Source of Possible Contamination:

Type	Distance	Direction
None		

Contractor Type: Water Well Drilling Contractor **Reg No:** 91-2688
Business Name: Peerless Midwest Inc
Business Address: 55860 Russell I.p., Mishawaka, IN, 46545

Abandoned Well Plugged: No
Reason Not Plugged: Will return to plug well at a later date

Water Well Contractor's Certification

This well and/or pump installation was performed under my registration.

Signature of Registered Contractor **Date**

General Remarks:

Other Remarks: Grouting Material 1:Type 1L Neat Cement

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	Section: 18	Well Status: Active	WSSN: 3370	Source ID/Well No: 9A

Well ID: 34000005489

Elevation: 765 ft.
Latitude: 42.991591
Longitude: -85.062205
Method of Collection: GPS Std Positioning Svc SA On

Distance and Direction from Road Intersection:
205' N of E Fargo St. and 65' W of Townsend St. (ext.)

Well Owner: City of Ionia

Well Address:
Ionia, MI 48846

Owner Address:
720 Wells St.
Ionia, MI 48846

Drilling Method: Rotary
Well Depth: 110.00 ft. **Well Use:** Type I public
Well Type: Replacement **Date Completed:** 6/10/2015

Casing Type: Steel - black **Height:** 2.00 ft. above grade
Casing Joint: Solvent welded/glued
Casing Fitting:

Diameter: 16.00 in. to 95.00 ft. depth

Borehole: 24.00 in. to 112.00 ft. depth

Pump Installed: No
Pressure Tank Installed: No
Pressure Relief Valve Installed: No

Static Water Level: 65.00 ft. Below Grade
Well Yield Test: **Yield Test Method:** Test pump

Formation Description	Thickness	Depth to Bottom
Sand W/Boulders	35.00	35.00
Clay Sandy	20.00	55.00
Sand Fine To Medium W/Gravel	2.00	57.00
Sand Medium W/Gravel	53.00	110.00

Screen Installed: Yes **Filter Packed:** Yes
Screen Diameter: 16.00 in. **Blank:**
Screen Material Type: Stainless steel-wire wrapped

Slot	Length	Set Between
100.00	15.00 ft.	95.00 ft. and 110.00 ft.

Fittings: None

Well Grouted: Yes **Grouting Method:** Grout pipe outside casing

Grouting Material	Bags	Additives	Depth
Neat cement	144.00	None	0.00 ft. to 85.00 ft.

Wellhead Completion: 12 inches above grade

Geology Remarks:

Nearest Source of Possible Contamination:

Type	Distance	Direction
None		

Abandoned Well Plugged: No
Reason Not Plugged: Will return to plug well at a later date

Drilling Machine Operator Name: Tim Hann
Employment: Employee

Contractor Type: Water Well Drilling Contractor **Reg No:** 91-2495
Business Name: Peerless Midwest Inc
Business Address: 55860 Russell I.p., Mishawaka, IN, 46545

Water Well Contractor's Certification

This well/pump was constructed under my supervision and I hereby certify that the work complies with Part 127 Act 368 PA 1978 and the well code.

Signature of Registered Contractor **Date**

General Remarks:
Other Remarks:

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	Section: 18	Well Status: Active	WSSN: 3370	Source ID/Well No: 10A

Well ID: 34000006543

Elevation:

Latitude: 42.991464

Longitude: -85.063172

Method of Collection: GPS Std Positioning Svc SA On

Distance and Direction from Road Intersection:
155' N of E Fargo St. & 155' E of Union St. (ext.)

Well Owner: City of Ionia

Well Address:	Owner Address:
Fargo St Ionia, MI 48846	114 N Kidd St. Ionia, MI 48846

Drilling Method: Rotary
Well Depth: 105.00 ft. **Well Use:** Type I public
Well Type: Replacement **Date Completed:** 1/22/2021

Casing Type: Steel - black **Height:** 2.00 ft. above grade
Casing Joint: Welded
Casing Fitting: None

Diameter: 12.00 in. to 90.00 ft. depth

Borehole: 18.00 in. to 105.00 ft. depth

Pump Installed: No
Pressure Tank Installed: No
Pressure Relief Valve Installed: No

Static Water Level: 99.90 ft. Below Grade
Well Yield Test: **Yield Test Method:** Test pump

Formation Description	Thickness	Depth to Bottom
Sand Fine	65.00	65.00
Sand Coarse	40.00	105.00

Screen Installed: Yes **Filter Packed:** Yes
Screen Diameter: 12.00 in. **Blank:**
Screen Material Type: Stainless steel-wire wrapped
Screen Installation Type: Attached

Slot	Length	Set Between
80.00	15.00 ft.	90.00 ft. and 105.00 ft.

Fittings: None

Well Grouted: Yes **Grouting Method:** Grout pipe outside casing

Grouting Material	Bags	Additives	Depth
Neat cement	90.00	None	0.00 ft. to 80.00 ft.

Geology Remarks:

Wellhead Completion: 12 inches above grade

Drilling Machine Operator Name: Gregg Burks
Employment: Employee

Nearest Source of Possible Contamination:

Type	Distance	Direction
None		

Contractor Type: Water Well Drilling Contractor **Reg No:** 91-2615
Business Name: Gregg Burks
Business Address: 3728 Westshore Dr., Bremen, IN, 46506

Abandoned Well Plugged: No
Reason Not Plugged: Will return to plug well at a later date

Water Well Contractor's Certification

This well and/or pump installation was performed under my registration.

Signature of Registered Contractor **Date**

General Remarks:

Other Remarks:

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID: 34070618304

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	Section: 18	Well Status:	WSSN: 3370	Source ID/Well No: IONIA WELL #11A

Well ID: 34000000121

Elevation: 776 ft.
Latitude: 42.991637
Longitude: -85.065277
Method of Collection: GPS Std Positioning Svc SA Off

Distance and Direction from Road Intersection:
WSSN# 03370; 175FT E OF W PROP. LINE & 125FT N OF S PRO

Well Owner: CITY OF IONIA

Well Address:
IONIA WELL #11A
IONIA, MI

Owner Address:
IONIA, MI

Drilling Method: Unknown
Well Depth: 113.00 ft. **Well Use:** Type I public
Well Type: New **Date Completed:** 5/23/1957

Casing Type: Steel - black **Height:** 3.00 ft. above grade
Casing Joint: Unknown
Casing Fitting: Drive shoe

Diameter: 12.00 in. to 77.30 ft. depth

Borehole:

Pump Installed: Yes **Pump Installation Only:** No
Pump Installation Date: **HP:**
Manufacturer: Other **Pump Type:** Unknown
Model Number: **Pump Capacity:** 700 GPM
Drop Pipe Length: 75.00 ft. **Pump Voltage:**
Drop Pipe Diameter: **Drilling Record ID:**
Draw Down Seal Used: No

Pressure Tank Installed: No
Pressure Relief Valve Installed: No

Static Water Level: 48.00 ft. Below Grade
Well Yield Test: **Yield Test Method:** Unknown
Pumping level 16.00 ft. after 24.00 hrs. at 700 GPM

Screen Installed: Yes **Filter Packed:** No
Screen Diameter: 11.50 in. **Blank:** 0.00 ft. Above
Screen Material Type:
Screen Installation Type: Unknown

Slot	Length	Set Between
10.00	29.90 ft.	77.10 ft. and 107.00 ft.

Fittings: None

Formation Description	Thickness	Depth to Bottom
Sand W/Clay	5.00	5.00
Sand & Clay	30.00	35.00
Sand W/Clay	5.00	40.00
Sand Fine W/Clay	16.00	56.00
Sand W/Gravel W/Clay	8.00	64.00
Sand & Gravel W/Clay	6.00	70.00
Sand W/Gravel W/Clay	2.00	72.00
Sand & Gravel W/Clay	2.00	74.00
Sand W/Gravel W/Clay	2.00	76.00
Sand W/Gravel W/Clay	2.00	78.00
Sand Gravel Clay	2.00	80.00
Sand & Gravel	2.00	82.00
Sand W/Gravel	6.00	88.00

(Continued On Page 2)

Well Grouted: No

Geology Remarks:

Wellhead Completion: Unknown

Drilling Machine Operator Name:
Employment: Unknown

Nearest Source of Possible Contamination:

Type	Distance	Direction
Unknown	0 ft.	

(Continued on page 2)

General Remarks: ORIGINAL WELLID# WAS 18004; VERT.TURBINE PUMP; HOFACRE, OHIO DRILLING CO
Other Remarks: Pump Manufacturer:DEMING

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID: 34070618304

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	**Section:** 18	**Well Status:**	**WSSN:** 3370	**Source ID/Well No:** IONIA WELL #11A

Well ID: 34000000121

Elevation: 776 ft.
Latitude: 42.991637
Longitude: -85.065277
Method of Collection: GPS Std Positioning Svc SA Off

Distance and Direction from Road Intersection:
WSSN# 03370; 175FT E OF W PROP. LINE & 125FT N OF S PRO

Well Owner: CITY OF IONIA

Well Address:
IONIA WELL #11A
IONIA, MI

Owner Address:
IONIA, MI

(Continued from Page 1)

Formation Description	Thickness	Depth to Bottom
Gravel & Sand	10.00	98.00
Sand Fine	2.00	100.00
Sand & Gravel	6.00	106.00
Clay & Stones	7.00	113.00

OTHER REMARKS:
Pump Manufacturer:DEMING

Contractor Type: Unknown **Reg No:**
Business Name:
Business Address:

Water Well Contractor's Certification

This well was drilled under my supervision and this report is true to the best of my knowledge and belief.

Signature of Registered Contractor **Date**

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	Section: 18	Well Status: Active	WSSN: 3370	Source ID/Well No: 12A

Well ID: 34000006523

Elevation:

Latitude: 42.993979

Longitude: -85.063574

Method of Collection: GPS Std Positioning Svc SA On

Distance and Direction from Road Intersection:
1,075' N of E Fargo St. & 275' E of Apple Tree Dr.

Well Owner: City of Ionia

Well Address:
Apple Tree Dr.
Ionia, MI 48846

Owner Address:
114 N Kidd St.
Ionia, MI 48846

Drilling Method: Rotary
Well Depth: 150.00 ft. **Well Use:** Type I public
Well Type: Replacement **Date Completed:** 12/3/2020

Casing Type: Steel - black **Height:** 2.00 ft. above grade
Casing Joint: Welded
Casing Fitting:

Diameter: 12.00 in. to 137.00 ft. depth

Borehole: 20.00 in. to 150.00 ft. depth

Pump Installed: Yes **Pump Installation Only:** No
Pump Installation Date: 12/22/2020 **HP:** 50.00
Manufacturer: National **Pump Type:** Vertical turbine
Model Number: K10MC **Pump Capacity:** 500 GPM
Drop Pipe Length: 130.00 ft. **Pump Voltage:** 460
Drop Pipe Diameter: 8.00 in. **Drilling Record ID:**
Draw Down Seal Used: No

Pressure Tank Installed: No
Pressure Relief Valve Installed: Unknown

Static Water Level: 109.00 ft. Below Grade
Well Yield Test: **Yield Test Method:** Test pump
Pumping level 123.00 ft. after 8.00 hrs. at 500 GPM

Formation Description	Thickness	Depth to Bottom
Topsoil	2.00	2.00
Brown Clay W/Sand W/Gravel	10.00	12.00
Sand	3.00	15.00
Brown Clay	9.00	24.00
Sand	61.00	85.00
Brown Clay W/Silt	26.00	111.00
Sand Fine To Coarse W/Gravel	39.00	150.00

Screen Installed: Yes **Filter Packed:** Yes
Screen Diameter: 12.00 in. **Blank:**
Screen Material Type: Stainless steel-wire wrapped
Screen Installation Type: Attached

Slot	Length	Set Between
50.00	13.00 ft.	137.00 ft. and 150.00 ft.

Fittings: None

Well Grouted: Yes **Grouting Method:** Grout pipe outside casing

Grouting Material	Bags	Additives	Depth
Neat cement	205.00	None	0.00 ft. to 127.00 ft.

Geology Remarks:

Wellhead Completion: 12 inches above grade

Nearest Source of Possible Contamination:

Type	Distance	Direction
None		

Drilling Machine Operator Name: Gregg Burks
Employment: Employee

Contractor Type: Water Well Drilling Contractor **Reg No:** 91-2615
Business Name: Peerless Midwest Inc
Business Address: 55860 Russell I.p., Mishawaka, IN, 46545

Abandoned Well Plugged: No
Reason Not Plugged: Well still in use for non-drinking water purposes

Water Well Contractor's Certification

This well and/or pump installation was performed under my registration.

Signature of Registered Contractor **Date**

General Remarks:

Other Remarks:

WATER WELL AND PUMP RECORD

Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Well ID: 34000004430

Tax No:	**Permit No**:	**County**: Ionia	**Township**: Ionia

Well ID: 34000004430

Elevation: 833 ft

Latitude: 42.9937

Longitude: -85.0657

Fraction:	**Section**:	**Town/Range**:	**WSSN**:	**Source ID/Well No**:
NE¼ NE¼ SW¼	18	07N 06W	3370	Well #13A

Distance and Direction from Road Intersection: 385' East of Cyrus & 350' South of North St. Extended, 225' Southwest of Water Tower

Well Owner: City Of Ionia

Well Address:
Cyrus St. Wellfield
Ionia MI 48846

Owner Address:
720 Wells St.
Ionia MI 48846

Drilling Method: Other

Well Depth: 171.00 ft. **Well Use**: Type I public

Well Type: Replacement **Date Completed**: 5/15/2008

Casing Type: Steel - black
Casing Joint: Welded
Diameter: 16.00 in. to 161.00 ft. depth

Bore Diameter 1: 24.00 in. to 171.00 ft. depth
Bore Diameter 2:
Bore Diameter 3:
Height: 2.00 ft. above grade
Casing Fitting: None

Pump Installed: No **Pump Installation only**: No
Pump Installation date: **HP**:
Manufacturer: **Pump Type**:
Model Number: **Pump Capacity**:
Length of Drop Pipe: **Id of Well**:
Diameter of Drop Pipe:
Draw Down Seal Used: No

Pressure Tank Installed: No
Pressure Tank Type:
Manufacturer:
Model Number : **Tank Capacity** : Gallons
Pressure Relief Valve Installed : No

Static Water Level: 131.00 ft. Below Grade(Not Flowing)
Yield Test Method: Test pump
Measurement Taken During Pump Test:
143.90 ft. after 8.00 hrs. pumping at 653.00 GPM

Abandoned Well Plugged: No
Reason for not plugging Well: Other
Abandoned well ID:

Formation Description	Thickness	Depth to Bottom
Clay Sandy	10.00	10.00
Clay & Gravel Sandy	43.00	53.00
Gravel & Clay W/Sand W/Cobbles	34.00	87.00
Sand & Clay Fine W/Gravel	51.00	138.00
Sand Fine To Medium	3.00	141.00
Sand Medium To Coarse W/Gravel	20.00	161.00
Sand Fine To Medium	2.00	163.00
Sand Fine To Medium W/Gravel	2.00	165.00
Sand & Gravel Coarse Fine To Medium	2.00	167.00
Gravel Fine To Coarse	4.00	171.00
Clay	2.00	173.00

Screen Installed: Yes **Well Intake**:
Filter Packed: Yes
Screen Diameter: 16.00 in. **Length**: 10.00 ft.
Screen Material Type: Stainless steel-wire wrapped
Slot: 80.00 in. Set Between 161.00 ft. and 171.00 ft.
Blank:
Fittings:
Blank above screen

Well Grouted: Yes **Grouting Method**: Grout pipe outside casing
No. of Bags: 393 **Additives**: None
Grouting Materials:
Neat cement From 5.00 ft. to 151.00 ft.

Well Head Completion: 12 inches above grade

Geology Remarks:

Nearest source of possible contamination:

Type	**Distance**	**Direction**
None		

Contractor Type: Water well drilling contractor
Registration Number: 2515
Business Name: Peerless-Midwest, Inc.
Business Address: 55860 Russell Industrial Pwy., Mishawaka, IN 46545

WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.

Drilling Machine Operator Name: Andrew Zarobinski

Employment: Employee

Signature of Registered Contractor **Date**

General Remarks:

OTHER REMARKS **Drilling Method**: Reverse Circulation **Reason For Not Plugging Well**: Abandoned well kept for monitoring point

EQP 2017C (2/2000)

ATTENTION WELL OWNER: FILE WITH DEED

6/20/2008 09:26

WATER WELL AND PUMP RECORD

Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Well ID: 34000002452

Tax No:	**Permit No**:	**County**: Ionia	**Township**: Ionia

Well ID: 34000002452

Elevation:

Latitude:

Longitude:

Fraction:	**Section**:	**Town/Range**:	**WSSN**:	**Source ID/Well No**:
SE¼ NW¼ SW¼	18	07N 06W		14A

Distance and Direction from Road Intersection: +/- 2880 FEET EAST OF M 66 AND 175 FEET SOUTH OF APPLE TREE ROAD (IF EXTENDED)

Well Owner: City Of Ionia

Well Address:

MI

Owner Address:
720 WELLS ST
IONIA MI 48846

Drilling Method: Rotary

Well Depth: 208.00 ft. **Well Use**: Type III public

Well Type: New **Date Completed**: 7/8/2004

Casing Type: Steel - unknown
Casing Joint: Unknown
Diameter: 16.00 in. to 193.00 ft. depth

Bore Diameter 1: 30.00 in. to 208.00 ft. depth
Bore Diameter 2:
Bore Diameter 3:
Height: 2.00 ft. above grade
Casing Fitting: None

Pump Installed: No **Pump Installation only**: No
Pump Installation date: **HP**:
Manufacturer: **Pump Type**:
Model Number: **Pump Capacity**:
Length of Drop Pipe: **Id of Well**:
Diameter of Drop Pipe:
Draw Down Seal Used: No

Pressure Tank Installed: No
Pressure Tank Type:
Manufacturer:
Model Number : **Tank Capacity** : Gallons
Pressure Relief Valve Installed : No

Static Water Level: 136.50 ft. Below Grade(Not Flowing)
Yield Test Method: Test pump
Measurement Taken During Pump Test:
151.63 ft. after 6.00 hrs. pumping at 885.00 GPM

Abandoned Well Plugged: No
Reason for not plugging Well:

Abandoned well ID:

Screen Installed: Yes **Well Intake**:
Filter Packed: Yes
Screen Diameter: 16.00 in. **Length**: 15.00 ft.
Screen Material Type: Stainless steel-wire wrapped
Slot: 30.00 in. Set Between 193.00 ft. and 208.00 ft.
Blank:
Fittings:
None

Well Grouted: Yes **Grouting Method**: Unknown
No. of Bags: 4 **Additives**: None
Grouting Materials:
Neat cement From 0.00 ft. to 136.00 ft.

Well Head Completion: 12 inches above grade

Nearest source of possible contamination:

Type	**Distance**	**Direction**
None		

Drilling Machine Operator Name: DOUG GENTRY & BRUCE MCLEISH
Employment: Employee

Formation Description	Thickness	Depth to Bottom
Topsoil	1.00	1.00
Clay Sandy	9.00	10.00
Tan Clay Soft	33.00	43.00
Gray Clay	8.00	51.00
Clay Sandy Gravely	7.00	58.00
Gray Clay Hard Gravely	25.00	83.00
Tan Clay & Sand Fine To Medium	30.00	113.00
Sand Fine	12.00	125.00
Sand & Gravel Fine To Medium Fine To Medium	5.00	130.00
Sand Fine To Coarse	20.00	150.00
Sand & Gravel Medium To Coarse Fine To Coarse	23.00	173.00
Gray Clay	10.00	183.00
Sand Fine To Medium Coarse	10.00	193.00
Sand & Gravel Fine To Coarse Fine To Coarse	8.00	201.00
Sand & Gravel Fine To Coarse Fine To Medium	7.00	208.00
Clay	2.00	210.00

(Continued on Page 2)

Completion is required under authority of Part 127 Act 368 PA 1978.

Well ID: 34000002452

Failure to comply is a misdemeanor.

Tax No:	**Permit No**:	**County**: Ionia	**Township**: Ionia

Well ID: 34000002452

Elevation:

Latitude:

Longitude:

Fraction:	**Section**:	**Town/Range**:	**WSSN**:	**Source ID/Well No**:
SE¼ NW¼ SW¼	18	07N 06W		14A

Distance and Direction from Road Intersection: +/- 2880 FEET EAST OF M 66 AND 175 FEET SOUTH OF APPLE TREE ROAD (IF EXTENDED)

Well Owner: City Of Ionia

Well Address:

MI

Owner Address:
720 WELLS ST
IONIA MI 48846

(Continued from Page 1)

Formation Description	Thickness	Depth to Bottom

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	Section: 18	Well Status: Active	WSSN: 3370	Source ID/Well No: IONIA WELL #15

Well ID: 34000000514

Elevation: 814 ft.
Latitude: 42.996304
Longitude: -85.063711
Method of Collection: GPS Std Positioning Svc SA Off

Distance and Direction from Road Intersection:
603' N of W North St. (extended) & 930' E of Cryus St. (extended)

Well Owner: City of Ionia #15

Well Address:	Owner Address:
IONIA WELL #15 Ionia , MI 48846	720 Wells St. Ionia, MI 48846

Drilling Method: Rotary
Well Depth: 181.00 ft. **Well Use:** Type I public
Well Type: New **Date Completed:** 6/16/1999

Casing Type: Steel - black **Height:** 2.00 ft. above grade
Casing Joint: Unknown
Casing Fitting: Unknown

Diameter: 16.00 in. to 142.00 ft. depth

Borehole: 30.00 in. to 181.00 ft. depth

Pump Installed: No
Pressure Tank Installed: No
Pressure Relief Valve Installed: No

Static Water Level: 112.00 ft. Below Grade
Well Yield Test: **Yield Test Method:** Test pump
Pumping level 135.00 ft. after 8.00 hrs. at 1002 GPM

Screen Installed: Yes **Filter Packed:** No
Screen Diameter: 16.00 in. **Blank:** 21.00 ft. *u
Screen Material Type: Stainless steel-wire wrapped
Screen Installation Type: Unknown

Slot	Length	Set Between
50.00	10.00 ft.	142.00 ft. and 180.00 ft.

Fittings: Unknown

Formation Description	Thickness	Depth to Bottom
Brown Clay Sandy	17.00	17.00
Sand Fine W/Clay	11.00	28.00
Clay W/Sand W/Gravel	42.00	70.00
Clay Hard Silty	18.00	88.00
Brown Clay Sticky	18.00	106.00
Sand Fine	20.00	126.00
Sand Fine To Medium	4.00	130.00
Sand & Gravel Fine To Coarse	17.00	147.00
Sand & Gravel Fine To Coarse Fine	2.00	149.00
Clay W/Gravel	9.00	158.00
Sand Fine W/Clay	4.00	162.00
Sand Fine W/Sand	5.00	167.00
Sand Fine To Medium W/Sand	3.00	170.00

(Continued On Page 2)

Well Grouted: Yes **Grouting Method:** Unknown

Grouting Material	Bags	Additives	Depth
Neat cement	0.00	None	0.00 ft. to 130.00 ft.

Geology Remarks:

Wellhead Completion: Other

Drilling Machine Operator Name: D. Gentry, R. Buck
Employment: Employee

Nearest Source of Possible Contamination:

Type	Distance	Direction
Unknown		

(Continued on page 2)

General Remarks:
Other Remarks: Wellhead Completion:24" above grade

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No:	County: Ionia			Township: Ionia	
		Town/Range: 07N 06W	**Section:** 18	**Well Status:** Active	**WSSN:** 3370	**Source ID/Well No:** IONIA WELL #15

Well ID: 34000000514

Elevation: 814 ft.
Latitude: 42.996304
Longitude: -85.063711
Method of Collection: GPS Std Positioning Svc SA Off

Distance and Direction from Road Intersection:
603' N of W North St. (extended) & 930' E of Cryus St. (extended)

Well Owner: City of Ionia #15

Well Address:	Owner Address:
IONIA WELL #15 Ionia , MI 48846	720 Wells St. Ionia, MI 48846

(Continued from Page 1)

Formation Description	Thickness	Depth to Bottom
Sand Fine To Coarse W/Gravel	1.00	171.00
Sand Fine To Coarse W/Gravel	7.00	178.00
Sand Fine To Coarse W/Gravel	1.00	179.00
Clay W/Sand W/Gravel	2.00	181.00

OTHER REMARKS:
Wellhead Completion:24" above grade

Contractor Type: Water Well Drilling Contractor **Reg No:** 91-1980
Business Name: Peerless-Midwest, Inc.
Business Address: 55860 Russel Industrial Parkway, Mishawaka, IN,

Water Well Contractor's Certification

This well was drilled under my supervision and this report is true to the best of my knowledge and belief.

Signature of Registered Contractor **Date**

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978.
Failure to comply is a misdemeanor.

Import ID:

Tax No:	Permit No: W136006	County: Ionia		Township: Ionia	
		Town/Range: 07N 06W	Section: 18	Well Status: Active	WSSN:	Source ID/Well No: #16A

Well ID: 34000005133

Elevation:
Latitude: 42.99756
Longitude: -85.06601
Method of Collection: GPS Std Positioning Svc SA Off

Distance and Direction from Road Intersection: 200' N. of Apple Tree Drive & 2,500' East of M-66

Well Owner: City of Ionia

Well Address: Well #16A, Ionia, MI

Owner Address: 720 Well St., Ionia, MI 48846

Drilling Method: Rotary
Well Depth: 184.00 ft. **Well Use:** Type I public
Well Type: Replacement **Date Completed:** 2/19/2013
Casing Type: Steel - black **Height:** 2.00 ft. above grade
Casing Joint: Welded
Casing Fitting:

Diameter: 16.00 in. to 174.00 ft. depth

Borehole: 24.00 in. to 189.00 ft. depth

Pump Installed: No
Pressure Tank Installed: No
Pressure Relief Valve Installed: No

Static Water Level: 127.00 ft. Below Grade
Well Yield Test: **Yield Test Method:** Test pump

Screen Installed: Yes **Filter Packed:** Yes
Screen Diameter: 16.00 in. **Blank:**
Screen Material Type: Stainless steel-wire wrapped

Slot	Length	Set Between
50.00	10.00 ft.	174.00 ft. and 184.00 ft.

Fittings: None

Formation Description	Thickness	Depth to Bottom
Sand Fine W/Clay	48.00	48.00
Brown Clay W/Gravel	14.00	62.00
Sand Fine To Medium	26.00	88.00
Sand Fine To Medium	35.00	123.00
Sand Fine To Medium W/Clay	19.00	142.00
Sand Fine To Medium W/Gravel	46.00	188.00

Well Grouted: Yes **Grouting Method:** Grout pipe outside casing

Grouting Material	Bags	Additives	Depth
Neat cement	216.00	None	0.00 ft. to 168.00 ft.

Wellhead Completion: 12 inches above grade

Geology Remarks:

Nearest Source of Possible Contamination:

Type	Distance	Direction
None		

Abandoned Well Plugged: No
Reason Not Plugged: Will return to plug well at a later date

Drilling Machine Operator Name: John Blatz
Employment: Employee

Contractor Type: Water Well Drilling Contractor **Reg No:** 91-2495
Business Name: Peerless Midwest Inc
Business Address: 55860 Russell I.p., Mishawaka, IN, 46545

Water Well Contractor's Certification

This well/pump was constructed under my supervision and I hereby certify that the work complies with Part 127 Act 368 PA 1978 and the well code.

Signature of Registered Contractor **Date**

General Remarks:
Other Remarks:

APPENDIX B

MDEQ WHPA Approval Letter

Well Usage Table

STATE OF MICHIGAN

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
"Better Service for a Better Environment"
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us
RUSSELL J. HARDING, Director

REPLY TO:

DRINKING WATER & RADIOLOGICAL
PROTECTION DIVISION
3423 N MARTIN L KING JR BLVD
PO BOX 30630
LANSING MI 48909-8130

September 14, 2000

Mr. Chris Kenyon, Director of Public Utilities
City of Ionia
114 North Kidd Street
Ionia, Michigan 48846-1699

WSSN: 3370

Dear Mr. Kenyon:

This letter is in regard to the "Wellhead Protection Area Delineation for the City of Ionia, Michigan" (June 2000) submitted on your behalf by Peerless-Midwest, Inc. (PMI). The report documents the development of groundwater flow modeling used to identify the wellhead protection area (WHPA) for the city of Ionia public water supply wells. The criteria for the WHPA delineation have been met, and the WHPA is approved. For your convenience, the approved WHPA is identified on the enclosed map.

The 1996 amendments to the federal Safe Drinking Water Act require that states complete a source water assessment on all public water supply systems. The source water assessments consist of determinations of geologic sensitivity and public water supply system susceptibility. The geologic sensitivity is inherent to the aquifers from which your groundwater originates. Public water supply system susceptibility is determined in large part by the number and type of contamination sources within a WHPA. Information from the WHPA delineation indicates the drift aquifer supplying the city of Ionia wells ranges from confined to unconfined. Unconfined aquifers are considered "sensitive," while confined aquifers are geologically categorized as "not sensitive." The susceptibility determination will be made upon completion of your WHPA contaminant source inventory.

We are pleased the city of Ionia is progressing in the development and implementation of a local wellhead protection program. However, it is important to realize delineation of a WHPA is only the first step in developing a comprehensive local program. With approval of the WHPA for water supply wells #5, #9, #10, #11A, #12, #13, #14, #15, and #16, the city of Ionia may begin to address the remaining elements of a local wellhead protection program.

Management of the WHPA will be a particularly important task. Portions of the approved WHPA lie outside of the corporate limits in sections 25, 26, 35, and 36 of Orleans Township; section 31 of Ronald Township; sections 1, 2, 11, 12, and 13 of Easton Township; and sections 6, 7, and 18 of Ionia Township. Accordingly, cooperation with the adjacent townships in management of the WHPA will be necessary.

In closing, we commend you and the city of Ionia for the progress you are making in the development and implementation of a local wellhead protection program. If you have any comments or questions with regard to wellhead protection, please contact Mr. Wayne Kukuk, Resource Analyst, at 517-335-8964, or Ms. Lisa Chadwick, Geologist, at 517-335-9505, Wellhead Protection Unit, Ground Water Supply Section, Drinking Water and Radiological Protection Division.

Sincerely,

Flint C. Watt, P.E., Chief
Drinking Water and Radiological
Protection Division
517-335-9218

Enclosure

cc: Mr. David Jeffers, PMI
Mr. Dave Timm, DEQ
Mr. Steve Miller, DEQ
Mr. Brant Fisher, DEQ
Mr. Wayne Kukuk, DEQ
Ms. Lisa Chadwick, DEQ

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION

PHILLIP D. ROOS
DIRECTOR

December 15, 2025

Katelynn Shail, P.G.
Peerless Midwest
55860 Russell Industrial Parkway
Mishawaka, Indiana 46545

SUBJECT: Public Water Supply Identification (PWSID): 00370

Dear Katelynn Shail:

This letter is in response to the received well production reports regarding the City of Ionia water withdrawals, submitted by Peerless Midwest. The production reports show the monthly withdrawal of the City's nine wells for 2022, 2023, and 2024. The City of Ionia operates below a third of the originally modelled rates that established the existing wellhead protection area (WHPA). At these rates the existing WHPA delineation remains valid.

In closing, we commend you and the other members of the wellhead protection team, along with the City of Ionia for the progress being made in the continued implementation of your local Wellhead Protection Program. If you have any questions or concerns regarding wellhead protection, please contact me at 517-242-4560; BauerT1@Michigan.gov; or Jason Berndt, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD, Environmental Health Section,
P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Travis Bauer,
Senior Geologist
Source Water Unit
Drinking Water and Environmental Health Division

cc: Joe Lafler, Utilities Director, City of Ionia
Brandon Morrill, EGLE
Jason Berndt, EGLE
Brock Howell, EGLE

City of Ionia, MI- Well Production Reports 2022-2024
Units are in gallons unless otherwise noted

	2022								
	Well 5	Well 11A	Well 9A	Well 10A	Well 12A	Well 13A	Well 14A	Well 15	Well 16A
January	2,312,000	3,702,000	7,103,000	6,654,000	5,645,000	5,807,000	6,918,000	6,674,000	168,000
February	2,012,000	3,042,000	6,584,000	6,174,000	2,871,000	6,120,000	3,849,000	6,932,000	2,172,000
March	3,534,000	5,058,000	7,136,000	7,703,000	5,295,200	7,530,700	7,366,000	8,714,000	3,047,800
April	2,443,000	3,549,000	8,747,000	8,005,000	6,501,000	6,494,000	4,251,000	7,749,000	2,510,000
May	1,570,000	3,090,000	8,553,000	8,187,000	6,318,000	6,375,000	3,883,000	7,564,000	2,580,000
June	1,529,000	3,393,000	7,650,000	10,184,000	8,396,000	8,669,000	5,002,000	2,425,000	2,706,000
July	2,029,000	3,025,000	10,126,000	9,622,000	9,606,000	10,154,000	5,530,000	0	3,888,000
August	1,858,000	2,755,000	10,172,000	9,844,000	10,006,000	10,728,000	5,280,000	0	4,076,000
September	4,899,000	6,719,000	9,552,000	9,281,000	9,102,000	10,128,000	4,184,000	0	4,421,000
October	5,326,000	6,681,000	6,763,000	8,561,000	6,908,000	6,520,000	3,779,000	0	2,686,000
November	2,850,000	4,450,000	7,125,000	7,017,000	5,320,000	5,344,000	3,001,000	4,532,000	2,086,000
December	2,519,000	3,998,000	7,552,000	6,871,000	5,424,000	5,504,000	2,815,000	4,909,000	2,383,000
Avg. Month	2,740,083.33	4,121,833.33	8088583	8,175,250.00	6,782,683.33	7,447,808.33	4,654,833.33	4,124,916.67	2,726,983.33
Max Month	5,326,000	6,719,000	10,172,000	10,184,000	10,006,000	10,728,000	7,366,000	8,714,000	4,421,000
Month	September	August	August	June	August	August	March	March	August

	2023								
	Well 5	Well 11A	Well 9A	Well 10A	Well 12A	Well 13A	Well 14A	Well 15	Well 16A
January	2,787,000	3,560,000	7,487,000	7,373,000	4,984,000	5,284,000	2,840,000	5,483,000	2,082,000
February	2,093,000	2,624,000	7,368,000	7,261,000	4,613,000	4,909,000	2,771,000	4,845,000	1,909,000
March	2,304,000	3,148,000	8,052,000	7,968,000	1,723,000	7,337,000	3,920,000	7,327,000	2,723,000
April	3,019,000	3,167,000	9,425,000	9,171,000	6,292,000	6,238,000	4,116,000	6,834,000	2,329,000
May	3,167,000	3,679,000	11,920,000	5,876,000	5,700,000	5,647,000	3,192,000	6,213,000	2,590,000
June	2,973,000	3,098,000	10,066,000	10,004,000	6,998,000	6,963,000	4,205,700	7,578,000	2,971,000
July	1,877,000	3,631,000	9,997,000	10,081,000	6,058,000	5,985,000	3,712,000	6,539,000	2,540,000
August	0	6,261,000	9,900,000	9,956,000	7,271,000	2,413,000	5,118,000	7,660,000	2,344,000
September	394,000	8,674,000	7,794,000	11,464,000	7,563,000	4,919,000	4,059,000	7,762,000	3,174,000
October	3,350,000	5,996,000	4,659,000	6,209,000	57,430,000	5,897,000	3,316,000	6,117,000	2,374,000
November	2,056,000	2,642,000	7,286,000	6,496,000	5,207,000	5,334,000	2,975,000	5,631,000	2,329,000
December	305,000	6,205,000	6,860,000	7,554,000	4,876,000	4,946,000	2,975,000	5,273,000	2,070,000
	2,027,083.33	4,390,416.67	8,401,166.67	8,284,416.67	9,892,916.67	5,489,333.33	3,599,975.00	6,438,500.00	2,452,916.67
	3,350,000	8,674,000	11,920,000	11,464,000	57,430,000	7,337,000	5,118,000	7,762,000	3,174,000
	October	September	May	September	October	March	August	September	September

	2024								
	Well 5	Well 11A	Well 9A	Well 10A	Well 12A	Well 13A	Well 14A	Well 15	Well 16A
January	682,000	5,731,000	8,038,000	7,743,000	5,263,000	5,427,000	2,605,000	5,675,000	2,533,000
February	338,000	5,752,000	7,618,000	7,274,000	5,148,000	5,311,000	3,125,000	5,561,000	1,967,000
March	49,000	5,336,000	8,657,000	8,231,000	5,766,000	5,927,000	3,247,000	6,120,000	2,418,000
April	3,610,000	8,139,000	9,030,000	3,619,000	6,819,000	6,880,000	3,847,000	7,354,000	2,870,000
May	6,209,000	6,294,000	6,670,000	2,457,000	6,447,000	6,813,000	3,856,000	6,929,000	2,474,000
June	5,705,000	4,947,000	2,018,000	8,972,000	6,601,000	6,580,000	3,726,000	7,167,000	2,662,000
July	2,195,000	2,155,000	9,527,000	9,026,000	6,433,000	6,155,000	3,372,000	6,777,000	2,430,000
August	2,609,000	1,308,000	10,589,000	9,670,000	6,592,000	6,252,000	3,477,000	6,910,000	2,418,000
September	3,416,000	3,042,000	10,965,000	10,146,000	8,591,000	8,389,000	3,909,000	8,392,000	2,737,000
October	2,042,000	1,899,000	9,458,000	8,479,000	6,544,000	6,378,000	1,062,000	6,938,000	3,613,000
November	1,767,000	1,652,000	8,300,000	7,709,000	5,539,000	5,388,000	0	5,534,000	3,389,000
December	1,774,000	1,982,000	7,577,000	7,165,000	5,347,000	5,233,000	0	5,915,000	3,447,000
	2,533,000.00	4,019,750.00	8,203,916.67	7,540,916.67	6,257,500.00	6,227,750.00	2,685,500.00	6,606,000.00	2,746,500.00
	6,209,000	8,139,000	10,965,000	10,146,000	8,591,000	8,389,000	3,909,000	8,392,000	3,613,000
	May	April	September	September	September	September	September	September	October

	Well 5	Well 11A	Well 9A	Well 10A	Well 12A	Well 13A	Well 14A	Well 15	Well 16A
Monthly Average over 3 years (g/mo)	2,433,389	4,177,333	8,231,222	8,000,194	7,644,367	6,388,297	3,646,769	5,723,139	2,642,133
Daily Average (gpd)	81,113	139,244	274,374	266,673	254,812	212,943	121,559	190,771	88,071
Daily Average (ft^3/d)	10,843	18,614	36,678	35,649	34,063	28,466	16,250	25,502	11,773
Modeled Delineation Values (ft^3/d)	55,108.5	43,982.4	66,836.0	56,547.6	80,938.2	88,121.9	234,277.2	60,378.5	10,700.0
Current Values per well (ft^3/d)	10,843.2	18,614.3	36,678.5	35,649.0	34,063.4	28,466.4	16,250.1	25,502.4	11,773.4
Percentage of Modeled Rate	19.676	42.322	54.878	63.043	42.086	32.303	6.936	42.238	110.032

Modeled Delineation Values (ft^3/d)	696,890.2
Current Values (ft^3/d)	217,840.7
Percentage of Modeled Rate	31.25896576

gpd = Gallons Per Day
ft^3/d = Cubic Feet Per Day
g/mo = Gallons per Month

APPENDIX C

Local Planning Team Meeting Documentation

CITY OF IONIA

The City of Ionia will host a meeting on March 26, 2026, at 5:00 PM in the Council Chambers of Ionia City Hall located at 114 North Kidd Street, Ionia, Michigan regarding updates to the City's Source Water Protection Plan. Members of the public are invited and encouraged to attend. At this meeting, Peerless Midwest, Inc. will present information to the public on how Source Water Protection Plan's assist in protecting community water and how the public and residents can help.

The City of Ionia complies with the "Americans with Disabilities Act." If auxiliary aids or services are required at a public meeting for individuals with disabilities, please contact Jonathan Bowman, City Clerk, at least three (3) business days prior to any such meeting.

Published 3/7/2026

CITY OF IONIA, MI SOURCE WATER PROTECTION PROGRAM
Local Planning Team Meeting – Thursday, March 26, 2026
City Hall – 5:00 pm

Printed Name	Signature	Title	Phone/Email
Chris Hyzer		Finance Director	616-523.0157
Joe Lafler		Utilities Director	616-523-0165
Corland McDiarmid		IDPS Director	616 527-4431
Geoffrey Peterson		DPW Director	616 523 0170
Precia Garland	Precia R. Garland	City Manager	616 527 5776

CITY OF IONIA, MI SOURCE WATER PROTECTION PROGRAM
Local Planning Team Meeting – Thursday, March 26, 2026
City Hall – 5:00 pm

AGENDA:

1. **SWPP Overview**
   a. **Local Planning Team**
   b. **WHPA Delineation**
   c. **Contaminant Source Inventory**
   d. **WHPA Management**
   e. **Contingency Plan**
   f. **Plan for New Well Field Location**
   g. **Public Participation and Outreach**
2. **Comments and Discussion**

APPENDIX D

General Risk Criteria (Oregon DEQ, 1996)

&

Potential Sources of Contamination

Table 3-3: Ranking The Potential Contaminant Sources*

(Use Your Browser's Back Arrow to Return to Document)

Commercial/Industrial	Agricultural/Rural	Residential/Municipal	Miscellaneous
Higher Risks			
Automobile Body Shops	Auction Lots	Airports - Maintenance/Fueling Areas	Historic Gas Stations
Gas Stations	Confined Animal Feeding Operations (CAFOs)	Landfills/Dumps	Historic Waste Dumps/Landfills
Repair Shops	Farm Machinery Repair	Railroad Yards/Maintenance/Fueling Areas	Injection Wells/Drywells/Sumps
Boat Services/Repair/Refinishing	Machine Shops	Septic Systems - High Density - >1/Acre	Military Installations
Chemical/Petroleum Processing/Storage	Lagoons/Liquid Wastes	Utility Stations - Maintenance Areas	Underground Storage Tanks; Confirmed Leaking Tanks (DEQ List)
Chemical/Petroleum Processing/Storage	Pesticide/Fertlizer/Petroleum Storage, Handling, Mixing, & Cleaning Areas		Non-Regulated Tanks - <1,100 Gallons)
Dry Cleaners			Not Yet Upgraded or Registered Tanks
Electrical/Electronic Manufacturing			Wells
Fleet/Trucking/Bus Terminals			
Furniture Repair/Manufacturing			
Home Manufacturing			
Junk/Scrap/Salvage Yards			
Machine Shops			
Metal Plating/Finishing/Fabricating			
Mines/Gravel Pits			
Parking Lots/Malls - >50 Spaces			
Photo Processing/Printing			
Plastics/Synthetics Producers			
Research Laboratories			
Wood Preserving/Treating			
Wood/Pulp/Paper Processing and Mills			
Moderate Risks			
Automobile Car Washes	Crops - Irrigated** Berries, Hops, Mint, Orchards, Vineyards, Nurseries	Drinking Water Treatment Plants	Above Ground Storage Tanks
Cement/Concrete Plants	Greenhouses, Vegetables	Golf Courses	Construction/Demolition Areas
Food Processing	Boarding Stables	Housing - High Density - >1 House/0.5 Acres	Managed Forests

Funeral Services/Graveyards	Land Application Sites	Motor Pools		Random Dumpsites	
Hardware/Lumber/Parts Stores			Parks	Sludge Disposal Areas	
Medical/Vet Office			Waste Transfer/Recycling Stations	Transportation Corridors	Freeways/State Highways
			Wastewater Treatment Plants/Collection Stat's.		Railroads
					Right-of-Ways-Herbicide Use Areas

Lower Risks

Office Buildings/Complexes	Crops - Nonirrigated	Christmas Trees, Grains, Grass Seeds, Hay, Pasture	Apartments and Condominiums	Surface Water - Streams/Lakes/Rivers	
RV/Mini Storage	Septic Systems - Low Density - <1/Acre		Campgrounds/RV Parks	Underground Storage Tanks	Decommissioned - Inactive
			Fire Stations		Upgraded and/or Registered - Active
			Schools		

* Facility-specific management practices are not taken into account in estimating risks and assigning these categories.

** Note: Drip-irrigated crops are considered lower risks.

GW\WH5868CG (November 1, 1996)

2001 Map ID	2025 Map ID	NAD 1927 Zone 16N		Civil Twp	Facility Name	Facility Address	Operating Status	Estimated Risk	Database	Reference Number	EDR ID	Potential Sources/ Comments	Potential Contaminants
		N	E										
1	1	4762123	657335.4	Ionia	Orion Manufacturing	480 Apple Tree Drive	Active	Low	RCRA NonGen/ NLR	1007098108	H37	Loading Docks, Parking lots, Urban Run off	Ignitable Waste
2	2	4768788	654840.7	Orleans	Demolished Home	N of Meade, 2000' w of Hoppough	Abandoned	Low	-	-	-	Old Heat Oil Tank, appears empty	Heating Oil
3	3	4768195	655540.9	Orleans	Farm House/Barn	4475 Hoppough	Active	High-Medium	-	-	-	Septic, Old well ?, 2 ASTs w/ no containment, 1 old 1 newer	Gas/Diesel
4	4	4767607	655509.7	Orleans	Old Farm House	762 Hubbell	Active	Medium	-	-	-	Old AST	Gas/Diesel/Oil
5	5	4766577	654427	Orleans	Bulk Grain Storage	1419 Peterson	Active	Medium	-	-	-	Approx. 2,000 gal AST, No Containment	Gas/Diesel/Oil
6	6	4766626	655263.7	Orleans	Farm House & Barn	942 Peterson	Active	High	-	-	-	2X 300AST, misc. containers,4X 55gl drums, no containment	Gas/Diesel/Oil
7	7	4766880	656864.3	Ronald	Boyce Elem School	3550 N State Rd 66	Active	Medium	-	-	-	Lg Capacity Septic,backup Gen fuel, parking lot run off	Gas/Diesel/Oil Nitrates, Bacteria
8, 28	8	4763726	656148.8	Easton	Consumers Power Tower	3000' N of Parmeter, 1500' W of Marquette	Active	Medium	RCRA VSQG, WDS, ECHO, FINDS, ENVIRO	1010319980, S111979387, 1010440246, S129660528	B10-B12, 20	Backup Generator suspected UST/AST	Ignitable Waste, Gas/Diesel/Oil
9	9	4765037	655799.7	Easton	Residential/Auto Service	660 Parmeter	Unknown	High	-	-	-	55 gal drums (appear deteriorated), old autos in rear	Gas/Diesel/Oil/ Solvents
10	10	4764929	655402	Easton	Leisure Time Amusements	937 W Parmeter Road	Active	Low	-	-	-	Large Truck, trailer storage	Gas/Diesel/Oil
11	11	4765107	656767.3	Easton	Michigan Recoery Services	2555 N State	Unknown	High	-	-	-	floor drains ? Auto repair, 12 auts present, 2 service bays, septic	Gas/Diesel/Oil/ Solvents
12	12	4766366	656744.1	Orleans	Farm House	3363 N State	Abandoned	Medium	-	-	-	3,000-5,000 gal AST, no containment, possibly inactive	Gas/Diesel/Oil
13	13	4765909	656889	Ionia	General Commercial	3024 N. State	Abandoned	High	-	-	-	floor drains, auto repair, septic	Gas/Diesel/Oil/ Solvents
14	14	4765676	656792.3	Easton	Nelson	2849 N. State	Active	Medium	-	-	-	2X 300gal AST no containment	Gas/Diesel/Oil
15	15	4765446	656761.2	Easton	Farm House	2705 N. State	Active	HIGH	-	-	-	Farm implement storage, old and dilapidated autos	Gas/Diesel/Oil Heavy Metals
16	16	4765242	656900.3	Ionia	Farm House	2638 N. State	Active	Medium	-	-	-	300 gal AST no containment	Gas/Diesel/Oil
17	17	4765197	656779.7	Easton	Joe's Motorcycle Tires	2593 N. State	Active	Medium	-	-	-	Potential storage of Oil and Gas	Gas/Diesel/Oil/ Solvents
18	18	4764959	657407.6	Ionia	CL Trucking & Excavating (Formerly George Ogden Excavating)	256 Parmeter Rd.	Active	Moderate	AST	A100365505	17	(1) 8,000 gallon diesel AST, Current in Use	Gas/Diesel/Oil
19	19	4765103	658074.8	Ionia	Barn	753 E Parmeter Rd	Active	Medium	-	-	-	1X 500gal AST no containment	Gas/Diesel/Oil
20	20	4765099	657820.3	Ionia	Residential Home	579 Parmeter	Unknown	Medium	-	-	-	3,000-5,000 gal AST, no containment, possibly inactive	Gas/Diesel/Oil
21	21	4764665	656801.8	Easton	Discount Tire & Battery	2265 N. State	Active	High	SPILLS	S128482873, S111343992, S128482871	A6, C13-C15	Auto repair, battery & tire storage, septic, 3/23/10- Tire Fire	Gas/Diesel/Oil/ Solvents
22	22	4764387	656824.7	Easton	Residential Home	W side SR 66 at Trailer Park Entrance	Active	Medium	-		-	1X 300 gal AST no containment	Gas/Diesel/Oil
23	23	4764385	656955.7	Ionia	Evergreen Mobile Home Park	2096 N. State	Active	High	CDL, PART 201, WDS, NPDES, ENVIRO, INVENTORY, SPILLS	S123340015, S123340021, S110484878, S128068227, S128065890, S110093072, S110788401	A2-A5, A7 & A8	Large sewage lagoon (over 2 acres) for +100 mobile homes	Nitrates, Bacteria
24	24	4764108	656929.5	Ionia	Lillie's Foreing & Domestic Auto Repair (formerly Giant's Enterprises)	1920 N. State	Active	High	WDS	S111948649	1	engine repair,sales,service, used oil from engines, septic	Gas/Diesel/Oil/ Solvents
25	25	4763987	656754.9	Easton	RBC Construction	W side SR 66, .4 mi N of Dildine	Active	Medium	-	-	-	2X AST no containment	Gas/Diesel/Oil
26	26	4763881	656903	Ionia	Horrocks Nursery	1776 N. State	Active	Medium	-	-	-	Pesticides,herbicides,fungicides	Pesticides, herbicides, fungicides
27	27	4763939	656013.2	Easton	Residential Home	1777 Marquette	Active	Medium	-	-	-	1X 300gal AST no containmet	Gas/Diesel/Oil
29	28	4762212	656077.1	Easton	Residential Home	877 Haynor	Active	Medium	-	-	-	2X Home Heating Oil Tanks, Agricultural Tank Sprayer	Oil & pesticides, herbicides

2001 Map ID	2025 Map ID	NAD 1927 Zone 16N		Civil Twp	Facility Name	Facility Address	Operating Status	Estimated Risk	Database	Reference Number	EDR ID	Potential Sources/ Comments	Potential Contaminants
		N	E										
30	29	4762563	656128.1	Easton	Residential Home	998 Haynor	Active	Medium	-	-	-	Contractor storage yard w/ AST ?	Gas/Diesel/Oil
31	30	4762688	655975.6	Easton	The Machine Shop	1069 Haynor	Active	High	-	-	-	Cutting Oils…etc	Cutting Oils Solvents
32	31	4762891	655850.3	Easton	Malokofsky	1187 Haynor	Active	Medium	-	-	-	1X 300 gal AST no containment	Gas/Diesel/Oil
33	32	4762949	655955	Easton	Residential Home	1216 Haynor	Active	Medium	-	-	-	Old Auto Storage in woods	Gas/Oil/antifreeze
34	33	4763478	655705.6	Easton	Residential Home/ Hanulcik Farm	740 Dildine	Active	Medium	-	-	-	1X 400 gal AST no containment, Agric. Tank Sprayer, Facility Identified on LEPC list (Paraquat)	Gas/Diesel/Oil, pesticide/herbicide
35	34	4763232	658620.4	Ionia	Residential Home	1366 N. Jefferson	Active	Medium	-	-	-	1X AST no containment	Gas/Diesel/Oil
36	35	4763072	658490.4	Ionia	Residential Home	1275 N. Jefferson	Active	High	-	-	-	UST- unknown size, Fill Pipe and Dispenser Visible	Gas/Diesel/Oil
37	36	4761976	658499.7	Ionia	Sterner Real Esate (former Sterner Veterinary Clinic)	821 N Jefferson	Unknown	High	-	-	-	Possible abandoned water well (see Windmill), Windmill in Rear (0.5 miles from Wellfield) Facility also identified on UST list (Tanks Removed)	general
38	37	4761924	657283.2	Ionia	Peerless-Midwest, Inc.	505 Apple Tree Drive	Active	High	-	-	-	Well Cleaning Chemical Storage, truck maintenance, AST no containment, AST is usually empty and normally filled and dispensed off-site - 700 feet from wellfield	Acids/Caustics, Gas/Oil/Diesel
39	38	4761389	657786.1	Ionia	Pine Vista Apartments	667 N. Union	Active	High	-	-	-	Parking Lot run-off, fuel for back-up generator, Approximately 200 feet from wellfield	Gas/Diesel/Oil, Urban Run-off
40	39	4761768	657489.1	Ionia	Residential Home	323 North Street	Active	High	-	-	-	AST no containment, <1/4 mile from wellfield, Trucking service operation	Gas/Diesel/Oil
41	40	4761834	657113.3	Ionia	Residential Home	436 North Street	Active?	High	-	-	-	AST no containment, <1/4 mile from wellfield	Gas/Diesel/Oil
42	41	4762126	657179.5	Ionia	Enwork (formerly Volcor Finishing, Inc.	510 Apple Tree Drive	Active	High	PART 201, INVENTORY, BEA, RCRA-VSQG, ECHO, FINDS, E MANIFSEST	S129190807, S129290335, 1000988250, 1031535989	33-H36	Cutting Oils, Lubricants, Solvents, Painting, <1/4 mile from wellfield, Facility Identified on RCRIS list.	240 gallon drums of Waste Solids Containing Flammable Liquid, Oils, Solvents, Paints, 55 gallon drums of Flammable Liquid Waste, Corrosive Liqud Waste
-	42	4763742	655297.3	Easton	Residential Home	1602 Haynor Rd.	Inactive	Low	SPILLS	S128483081, S111343923	E21 & E22	6/12/10- Anhydrous Ammonia tank ruptured in field	Anhydrous Ammonia
-	43	4763487	655460.8	Easton	Residential Home	1597 Haynor Rd.	Inactive	Low	SPILLS	S128479880	E23	No Information Available	Unknown
-	47	4765687	656800.7	Easton	Darby's Standard Service	2913 N State Rd.	Inactive	Low	EDR Hist Auto	1022149058	27	Former Auto Service 1969-1971	Gas/Diesel/Oil
-	45	4765854	656858.4	Ionia	Boxer Storage (former Wells Oil Co)	3006 N State Rd	Inactive	Moderate	AST, INVENTORY, WDS, LUST, UST, UST FINDER RELEASE, UST FINDER, EDR Hist Auto	A100128093, U000255381, 1029032799, 1028433755, 1020524951	G28-G32	(4) USTs, removed from ground in 1991, unknown contaminants in storage units could leak, Former Auto Service 1989-1995	VOCs, SVOCs, unknown, Gas/Diesel/Oil
-	46	4761775	657686.1	Ionia	City of Ionia	City Well Field	Active	Low	UST FINDER, UST	1028432708, U003327666	J42 & J43	500 gallon diesel UST removed in 1991	Diesel
-	47	4761771	657027.3	Ionia	Residential Home	66 W North St.	Active	Moderate	-	-	-	Falling down barn/ shed	Unknown
-	48	4761700	656788.9	Easton	Residential Home	718 N King St.	Active	Moderate	-	-	-	Miscellaneous scrap/ junk, household applicances, multiple storage sheds	Unknown
-	49	4766564	656060.7	Orleans	Residential Home	3372 N Marquette Rd.	Active	Moderate	-	-	-	Miscellaneous scrap/ junk, vehicles	Gas/Diesel/Oil, unknown
-	50	4765388	656072.7	Easton	Residential Home	2736 N Marquette Rd	Active	Low	-	-	-	Miscellaneous scrap/ junk, vehicles	Gas/Diesel/Oil, unknown
-	-			All	MDOT	SR 66	Active	Medium	-	-	-	Transportation Vehicles, Potential vehcile accident could release motor fluids, or HAZMAT if vehicle is hauling hazardous materials	Gas/Diesel/Oil, Misc Chemicals

Ionia SWPP
Fargo St.
Ionia, MI 48846

Inquiry Number: 7974177.2s
April 30, 2025

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

FARGO ST.
IONIA, MI 48846

COORDINATES

Latitude (North):	43.0143460 - 43° 0' 51.64''
Longitude (West):	85.0765770 - 85° 4' 35.67''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	656745.1
UTM Y (Meters):	4763988.0
Elevation:	813 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	14454725 SHILOH, MI
Version Date:	2019
South Map:	14450386 IONIA, MI
Version Date:	2019

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20200702
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
FARGO ST.
IONIA, MI 48846

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	GIANT ENTERPRISES	1920 N STATE RD	MI WDS	Lower	524, 0.099, NE
A2	NORTH STATE ROAD (IO	2096 NORTH STATE ROA	MI PART 201, MI WDS	Lower	1357, 0.257, NNE
A3		2096 N STATE	MI CDL	Lower	1357, 0.257, NNE
A4		2096 N STATE 89	MI CDL	Lower	1357, 0.257, NNE
A5		2096 N STATE RD	MI CDL	Lower	1357, 0.257, NNE
A6	DISCOUNT TIRE & BATT	2265 N STATE RD	MI INVENTORY, MI SPILLS, MI WDS	Lower	1357, 0.257, NNE
A7	EVERGREEN MOBILE HOM	2096 NORTH STATE ROA	MI NPDES, MI ENVIRO	Lower	1357, 0.257, NNE
A8		2096 N STATE RD	MI CDL	Lower	1357, 0.257, NNE
9	COMPLAINT:06-34-0014	2190 N. STATE ROAD	MI ENVIRO	Lower	1785, 0.338, NNE
B10	INTERNATIONAL TRANSM	1718 MARQUETTE RD	RCRA-VSQG	Lower	2451, 0.464, WNW
B11	INTERNATIONAL TRANSM	1718 MARQUETTE RD	FINDS, ECHO	Lower	2451, 0.464, WNW
B12	INTERNATIONAL TRANSM	1718 MARQUETTE RD	MI WDS	Lower	2451, 0.464, WNW
C13		2265 NORTH STATE ROA	MI SPILLS	Lower	2501, 0.474, North
C14		2265 N STATE RD	MI SPILLS	Lower	2501, 0.474, North
C15		2265 NORTH STATE ROA	MI SPILLS	Lower	2501, 0.474, North
16	WOLBERS POSSEHN	1276 N STATE RD	MI ENVIRO	Lower	3253, 0.616, South
17	CL TRUCKING & EXCAVA	256 E PARMETER RD	MI AST	Higher	3865, 0.732, NNE
D18	AMERITECH-GRAND RAPI		MI ENVIRO	Lower	4040, 0.765, NNW
D19	COMPLAINT:11-34-0008	SPRAGUE AND HARWOOD	MI ENVIRO	Lower	4040, 0.765, NNW
20	34-CONSUMERS ENERGY	MARQUETTE & PARMETER	MI ENVIRO	Higher	4081, 0.773, NNW
E21		1602 HAYNOR RD	MI SPILLS	Higher	4285, 0.812, WSW
E22		1602 HAYNOR RD	MI SPILLS	Higher	4285, 0.812, WSW
E23		1597 HAYNOR RD, IONI	MI SPILLS	Higher	4323, 0.819, WSW
F24	2717 NORTH STATE STR	2717 NORTH STATE STR	US CDL	Higher	4614, 0.874, North
F25	COMPLAINT:06-34-0009	2757 NORTH STATE ROA	MI ENVIRO	Higher	4813, 0.912, North
26	34-579 E PARMETER RD	579 E PARMETER RD	MI ENVIRO	Higher	4961, 0.940, NE
27	DARBYS STANDARD SERV	2913 N STATE RD	EDR Hist Auto	Lower	5587, 1.058, North
G28	WELLS OIL-IONIA	3006 N STATE RD	UST FINDER RELEASE	Lower	6056, 1.147, North
G29	WELLS OIL CO	3006 N STATE RD	UST FINDER	Lower	6056, 1.147, North
G30	WELLS ENTERPRISE	3006 N STATE RD	MI AST	Lower	6056, 1.147, North
G31	WELLS OIL CO	3006 N STATE RD	MI LUST, MI UST, MI INVENTORY, MI WDS	Lower	6056, 1.147, North
G32	WELLS OIL COMPANY	3009 N STATE RD	EDR Hist Auto	Lower	6064, 1.148, North
33	500 510 520 APPLE TR	500 510 520 APPLE TR	MI INVENTORY, MI PART 201	Higher	6218, 1.178, SSE
H34	500 510 520 APPLE TR	500 510 520 APPLE TR	MI BEA	Higher	6490, 1.229, South
H35	ENWORK - IONIA	510 APPLE TREE DRIVE	E MANIFEST	Higher	6498, 1.231, South
H36	VOLCOR FINISHING INC	510 APPLETREE DR	RCRA-VSQG, FINDS, ECHO, E MANIFEST	Higher	6498, 1.231, South
H37	ORION MANUFACTURING	480 APPLE TREE DR	RCRA NonGen / NLR	Higher	6525, 1.236, South
I38	RUSSELL WALCOTT TRUS	1090 RECTOR RD	UST FINDER	Lower	7744, 1.467, SW
I39	RUSSELL WALCOTT TRUS	1090 RECTOR RD	MI UST	Lower	7744, 1.467, SW

MAPPED SITES SUMMARY

Target Property Address:
FARGO ST.
IONIA, MI 48846

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
I40	1090 RECTOR ROAD	1090 RECTOR ROAD	MI PART 201, MI INVENTORY, MI BEA	Lower	7744, 1.467, SW
41	ROSE LAND AND FINANC	1004 ELMWOOD DR	RCRA-VSQG	Lower	7787, 1.475, South
J42	CITY OF IONIA	776 CYRUS ST	MI UST	Higher	7861, 1.489, SSE
J43	CITY OF IONIA	776 CYRUS ST	UST FINDER	Higher	7861, 1.489, SSE
44	TODD FUELS INC	807 W FARGO ST	MI AST	Higher	8532, 1.616, South
K45	YEOMANS EGGS	602 HAYNOR RD	MI UST	Lower	9293, 1.760, SSW
K46	YEOMANS EGGS	602 HAYNOR RD	UST FINDER	Lower	9293, 1.760, SSW
K47	YEOMANS ENTERPRISE L	601 HAYNOR ROAD	RCRA-VSQG	Lower	9317, 1.765, SSW
48	MICHIGAN BELL GARAGE	336 S STEEL	UST FINDER RELEASE	Lower	9355, 1.772, SSE
L49	DOMINOS	648 W LINCOLN AVE	UST FINDER	Lower	9814, 1.859, South
L50	DOMINOS	648 W LINCOLN AVE	MI LUST, MI UST, MI INVENTORY	Lower	9814, 1.859, South
L51	PURKEYS LIFETIME MUF	648 W LINCOLN AVE	EDR Hist Auto	Lower	9814, 1.859, South
L52	IONIA DOMINO'S	648 W LINCOLN	UST FINDER RELEASE	Lower	9814, 1.859, South
M53	EDWARD STERNER	821 N JEFFERSON ST	MI UST	Lower	9843, 1.864, SE
M54	EDWARD STERNER	821 N JEFFERSON ST	UST FINDER	Lower	9843, 1.864, SE
L55	BLACKS SERVICE INC	703 W LINCOLN	EDR Hist Auto	Lower	9852, 1.866, South
L56	FORMER GRAB-N-GET GA	703 WEST LINCOLN AVE	MI BEA	Lower	9852, 1.866, South
L57	GRAB N GIT	703 W LINCOLN AVE	RCRA NonGen / NLR	Lower	9852, 1.866, South
L58	GRAB-N-GIT CONVENIEN	703 W LINCOLN AVE	UST FINDER RELEASE	Lower	9852, 1.866, South
L59	PURKS MOBIL	703 W LINCOLN AVE	UST FINDER	Lower	9852, 1.866, South
L60	PURKS MOBIL	703 W LINCOLN AVE	MI LUST, MI UST, MI INVENTORY, MI CDL, MI BEA, MI...	Lower	9852, 1.866, South
L61	GIANTS GULF SERVICE	643 W LINCOLN	EDR Hist Auto	Lower	9854, 1.866, South
N62	MUFFLER MAN	500 W LINCOLN AVE	UST FINDER, UST FINDER RELEASE	Lower	9875, 1.870, South
N63	MUFFLER MAN	500 W LINCOLN AVE	RCRA-VSQG, FINDS, ECHO	Lower	9875, 1.870, South
N64	MUFFLER MAN	500 W LINCOLN AVE	MI LUST, MI UST, MI INVENTORY, MI WDS	Lower	9875, 1.870, South
N65	RAINBOW MUFFLER INC	500 W LINCOLN AVE	EDR Hist Auto	Lower	9875, 1.870, South
N66	INTERSECTION PARTY S	501 W LINCOLN AVE	UST FINDER	Lower	9915, 1.878, South
N67	INTERSECTION PARTY S	501 W LINCOLN AVE	MI LUST, MI UST, MI INVENTORY	Lower	9915, 1.878, South
N68	INTERSECTION PARTY S	501-503 W.LINCOLN	UST FINDER RELEASE	Lower	9915, 1.878, South
O69	M P D PETROLEUM INC	439 W LINCOLN AVE	EDR Hist Auto	Lower	9953, 1.885, South
O70	DRAKES MARKET PLUS	439 W LINCOLN AVE	MI LUST, MI UST, MI INVENTORY, RCRA NonGen / NLR,...	Lower	9953, 1.885, South
O71	FORMER DRAKES MARKET	439 W LINCOLN AVE	UST FINDER, UST FINDER RELEASE	Lower	9953, 1.885, South
O72	DRAKE'S MARKET PLUS	439 WEST LINCOLN AVE	MI BEA	Lower	9953, 1.885, South
P73	428 LINCOLN AVENUE	428 WEST LINCOLN AVE	MI PART 201, MI INVENTORY, MI BEA	Lower	9977, 1.890, South
P74	BERGER MOTOR SALES I	428 W LINCOLN AVE	RCRA NonGen / NLR, FINDS, ECHO	Lower	9977, 1.890, South
P75	PDS-1 MICHIGAN INC	431 W LINCOLN AVE	MI MANIFEST, MI WDS	Lower	9996, 1.893, South
P76	RITE AID #04326	431 WEST LINCOLN HIG	RCRA NonGen / NLR, E MANIFEST	Lower	9996, 1.893, South
Q77	TONYS CRYSTAL FLASH	1026 W LINCOLN	EDR Hist Auto	Lower	10032, 1.900, SSW
Q78	TONYS CRYSTAL FLASH	1036 W LINCOLN AVE	UST FINDER	Lower	10044, 1.902, SSW

MAPPED SITES SUMMARY

Target Property Address:
FARGO ST.
IONIA, MI 48846

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
Q79	TONYS CRYSTAL FLASH	1036 W LINCOLN AVE	MI LUST, MI UST, MI INVENTORY, MI BEA	Lower	10044, 1.902, SSW
Q80	TONYS CRYSTAL FLASH	1036 W LINCOLN	EDR Hist Auto	Lower	10044, 1.902, SSW
Q81	TONYS CRYSTAL FLASH	1036 W LINCOLN (W M-	UST FINDER RELEASE	Lower	10044, 1.902, SSW
Q82	BUD MONTGOMERY	1048 W LINCOLN AVE	MI UST	Lower	10056, 1.905, SSW
Q83	BUD MONTGOMERY	1048 W LINCOLN AVE	UST FINDER	Lower	10056, 1.905, SSW
Q84	HAYNOR AREA GW CONTA	HAYNOR RD & W. LINCO	MI INVENTORY, MI PART 201	Lower	10076, 1.908, SSW
Q85	IONIA BODY SHOP	1033 W LINCOLN AVE	RCRA-VSQG, FINDS, ECHO, WI MANIFEST	Lower	10079, 1.909, SSW
O86	420 NORTH DEXTER STR	420 NORTH DEXTER STR	MI PART 201, MI INVENTORY, MI BEA	Lower	10085, 1.910, South
R87	TONYS CRYSTAL FLASH	1110 W LINCOLN	EDR Hist Auto	Lower	10149, 1.922, SSW
88	431 - 437 W. LINCOLN	431 - 437 W. LINCOLN	MI BEA	Lower	10180, 1.928, South
R89	GARY L FERGUSON	1115 W LINCOLN AVE	UST FINDER	Lower	10194, 1.931, SSW
R90	GARY L FERGUSON	1115 W LINCOLN AVE	MI UST	Lower	10194, 1.931, SSW
91	CUSTOM OFFICE SYSTEM	1243 W LINCOLN AVE	RCRA-VSQG, FINDS, ECHO	Lower	10398, 1.969, SSW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROLS ---------- Institutional Controls Sites List

EXECUTIVE SUMMARY

Federal ERNS list

ERNS ---------- Emergency Response Notification System

Lists of state- and tribal hazardous waste facilities

MI SHWS ---------- This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

Lists of state and tribal landfills and solid waste disposal facilities

MI SWF/LF ---------- Solid Waste Facilities Database

Lists of state and tribal leaking storage tanks

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST ---------- Underground Storage Tank Listing
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

MI AUL ---------- Engineering and Institutional Controls

Lists of state and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

MI BROWNFIELDS ---------- Brownfields and UST Site Database

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

MI SWRCY ---------- Recycling Facilities
MI HIST LF ---------- Inactive Solid Waste Facilities
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
MI DEL PART 201 ---------- Delisted List of Contaminated Sites

EXECUTIVE SUMMARY

Local Land Records

MI LIENS ---- Lien List
LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations
FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
MINES MRDS ---- Mineral Resources Data System
ABANDONED MINES ---- Abandoned Mines
UXO ---- Unexploded Ordnance Sites
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
FUELS PROGRAM ---- EPA Fuels Program Registered Listing
PFAS NPL ---- Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES ---- Federal Sites PFAS Information
PFAS TSCA ---- PFAS Manufacture and Imports Information
PFAS TRIS ---- List of PFAS Added to the TRI
PFAS RCRA MANIFEST ---- PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR ---- PFAS Contamination Site Location Listing
PFAS WQP ---- Ambient Environmental Sampling for PFAS

PFAS PROJECT NORTHEASTERN UNIVERSITY PFAS PROJECT
PFAS NPDES Clean Water Act Discharge Monitoring Information
PFAS ECHO Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAIN Facilities in Industries that May Be Handling PFAS Listing
PFAS PT 139 AIRPORT All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC Aqueous Foam Related Incidents Listing
BIOSOLIDS ICIS-NPDES Biosolids Facility Data
MI PFAS PFAS Contaminated Sites Listing
MI AQUEOUS FOAM Aqueous Film Forma Foam Listing
MI AIRS Permit and Emissions Inventory Data
MI ASBESTOS ASBESTOS
MI COAL ASH Coal Ash Disposal Sites
MI DRYCLEANERS Drycleaning Establishments
MI LEAD Lead Safe Housing Registry
MI UIC Underground Injection Wells Database
MI SSCUP State Owned Sites Cleanup Program List

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

MI RGA PART 201 Recovered Government Archive State Hazardous Waste Facilities List
MI RGA LF Recovered Government Archive Solid Waste Facilities List
MI RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal RCRA generators

RCRA-VSQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting

the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-VSQG list, as provided by EDR, and dated 02/17/2025 has revealed that there are 7 RCRA-VSQG sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VOLCOR FINISHING INC EPA ID:: MIR000000620	***510 APPLETREE DR***	***S 1 - 2 (1.231 mi.)***	***H36***	***55***

Lower Elevation	Address	Direction / Distance	Map ID	Page
INTERNATIONAL TRANSM EPA ID:: MIK411852411	1718 MARQUETTE RD	WNW 1/4 - 1/2 (0.464 mi.)	B10	26
ROSE LAND AND FINANC EPA ID:: MIK148774961	1004 ELMWOOD DR	S 1 - 2 (1.475 mi.)	41	68
YEOMANS ENTERPRISE L EPA ID:: MIK127976932	601 HAYNOR ROAD	SSW 1 - 2 (1.765 mi.)	K47	75
MUFFLER MAN EPA ID:: MID985664887	***500 W LINCOLN AVE***	***S 1 - 2 (1.870 mi.)***	***N63***	***106***
IONIA BODY SHOP EPA ID:: MID985632645	***1033 W LINCOLN AVE***	***SSW 1 - 2 (1.909 mi.)***	***Q85***	***169***
CUSTOM OFFICE SYSTEM EPA ID:: MID089962344	***1243 W LINCOLN AVE***	***SSW 1 - 2 (1.969 mi.)***	***91***	***182***

Lists of state and tribal leaking storage tanks

MI LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Quality's Leaking Underground Storage Tank (LUST) Database.

A review of the MI LUST list, as provided by EDR, and dated 02/07/2025 has revealed that there are 7 MI LUST sites within approximately 2 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WELLS OIL CO Release Status: Open Facility Id: 00033029 Facility Id: 33029	***3006 N STATE RD***	***N 1 - 2 (1.147 mi.)***	***G31***	***44***
DOMINOS Release Status: Open Facility Id: 39257 Facility Id: 00039257	***648 W LINCOLN AVE***	***S 1 - 2 (1.859 mi.)***	***L50***	***79***
PURKS MOBIL Release Status: Open Substance Release: Gasoline	***703 W LINCOLN AVE***	***S 1 - 2 (1.866 mi.)***	***L60***	***94***

Facility Id: 12590
Facility Id: 00012590

MUFFLER MAN	***500 W LINCOLN AVE***	***S 1 - 2 (1.870 mi.)***	***N64***	***109***
Release Status: Open Facility Id: 1804 Facility Id: 00001804				
INTERSECTION PARTY S	***501 W LINCOLN AVE***	***S 1 - 2 (1.878 mi.)***	***N67***	***116***
Release Status: Open Facility Id: 35601 Facility Id: 00035601				
DRAKES MARKET PLUS	***439 W LINCOLN AVE***	***S 1 - 2 (1.885 mi.)***	***O70***	***119***
Release Status: Open Facility Id: 17896 Facility Id: 00017896				
TONYS CRYSTAL FLASH	***1036 W LINCOLN AVE***	***SSW 1 - 2 (1.902 mi.)***	***Q79***	***160***
Release Status: Open Facility Id: 11067 Facility Id: 00011067				

Lists of state and tribal registered storage tanks

MI UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Quality's Michigan UST database.

A review of the MI UST list, as provided by EDR, has revealed that there are 13 MI UST sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CITY OF IONIA	776 CYRUS ST	SSE 1 - 2 (1.489 mi.)	J42	71
Database: UST, Date of Government Version: 12/02/2024 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00002401				

Lower Elevation	Address	Direction / Distance	Map ID	Page
WELLS OIL CO	***3006 N STATE RD***	***N 1 - 2 (1.147 mi.)***	***G31***	***44***
Database: UST, Date of Government Version: 12/02/2024 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00033029				
RUSSELL WALCOTT TRUS	1090 RECTOR RD	SW 1 - 2 (1.467 mi.)	I39	66
Database: UST, Date of Government Version: 12/02/2024 Tank Status: Temporarily Out of Use Facility Type: ACTIVE Facility Id: 00042634				
YEOMANS EGGS	602 HAYNOR RD	SSW 1 - 2 (1.760 mi.)	K45	73
Database: UST, Date of Government Version: 12/02/2024 Tank Status: Removed from Ground				

Facility Type: CLOSED
Facility Id: 00018645

DOMINOS ***648 W LINCOLN AVE*** ***S 1 - 2 (1.859 mi.)*** ***L50*** ***79***
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Facility Type: CLOSED
Facility Id: 00039257

EDWARD STERNER 821 N JEFFERSON ST SE 1 - 2 (1.864 mi.) M53 84
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Facility Type: CLOSED
Facility Id: 00015127

PURKS MOBIL ***703 W LINCOLN AVE*** ***S 1 - 2 (1.866 mi.)*** ***L60*** ***94***
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Tank Status: Currently In Use
Facility Type: ACTIVE
Facility Id: 00012590

MUFFLER MAN ***500 W LINCOLN AVE*** ***S 1 - 2 (1.870 mi.)*** ***N64*** ***109***
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Tank Status: Closed in Ground
Facility Type: CLOSED
Facility Id: 00001804

INTERSECTION PARTY S ***501 W LINCOLN AVE*** ***S 1 - 2 (1.878 mi.)*** ***N67*** ***116***
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Facility Type: CLOSED
Facility Id: 00035601

DRAKES MARKET PLUS ***439 W LINCOLN AVE*** ***S 1 - 2 (1.885 mi.)*** ***O70*** ***119***
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Facility Type: CLOSED
Facility Id: 00017896

TONYS CRYSTAL FLASH ***1036 W LINCOLN AVE*** ***SSW 1 - 2 (1.902 mi.)*** ***Q79*** ***160***
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Facility Type: CLOSED
Facility Id: 00011067

BUD MONTGOMERY 1048 W LINCOLN AVE SSW 1 - 2 (1.905 mi.) Q82 167
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Facility Type: CLOSED
Facility Id: 00038139

GARY L FERGUSON 1115 W LINCOLN AVE SSW 1 - 2 (1.931 mi.) R90 180
Database: UST, Date of Government Version: 12/02/2024
Tank Status: Removed from Ground
Facility Type: CLOSED
Facility Id: 00035649

MI AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Natural Resources' Michigan AST database.

A review of the MI AST list, as provided by EDR, and dated 01/29/2025 has revealed that there are 3 MI AST sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CL TRUCKING & EXCAVA Facility Id: 91085105 Tank Status: Currently In Use	256 E PARMETER RD	NNE 1/2 - 1 (0.732 mi.)	17	33
TODD FUELS INC Facility Id: 91034008 Removed/Closed Date: 06/28/1991 Tank Status: Removed from Premises	807 W FARGO ST	S 1 - 2 (1.616 mi.)	44	72

Lower Elevation	Address	Direction / Distance	Map ID	Page
WELLS ENTERPRISE Facility Id: 92084094 Removed/Closed Date: 10/01/2003 Tank Status: Removed from Premises	3006 N STATE RD	N 1 - 2 (1.147 mi.)	G30	44

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

MI PART 201: A Part 201 Listed site is a location that has been evaluated and scored by the DEQ using the Part 201 scoring model. The location is or includes a "facility" as defined by Part 201, where there has been a release of a hazardous substance(s) in excess of the Part 201 residential criteria, and/or where corrective actions have not been completed under Part 201 to meet the applicable cleanup criteria for unrestricted residential use. The Part 201 List does not include all of the sites of contamination that are subject to regulation under Part 201 because owners are not required to inform the DEQ about the sites and can pursue cleanup independently. Sites of environmental contamination that are not known to DEQ are not on the list, nor are sites with releases that resulted in low environmental impact.

A review of the MI PART 201 list, as provided by EDR, and dated 01/13/2025 has revealed that there are 6 MI PART 201 sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
500 510 520 APPLE TR Facility ID: 34000194	***500 510 520 APPLE TR***	***SSE 1 - 2 (1.178 mi.)***	***33***	***49***

Lower Elevation	Address	Direction / Distance	Map ID	Page
NORTH STATE ROAD (IO Facility ID: 34000145	***2096 NORTH STATE ROA***	***NNE 1/4 - 1/2 (0.257 mi.)***	***A2***	***8***
1090 RECTOR ROAD Facility ID: 34000152	***1090 RECTOR ROAD***	***SW 1 - 2 (1.467 mi.)***	***I40***	***67***
428 LINCOLN AVENUE Facility ID: 34000175	***428 WEST LINCOLN AVE***	***S 1 - 2 (1.890 mi.)***	***P73***	***130***
HAYNOR AREA GW CONTA	***HAYNOR RD & W. LINCO***	***SSW 1 - 2 (1.908 mi.)***	***Q84***	***168***

Facility Status: Interim Response conducted - No further activities anticipated
Facility ID: 34000022

420 NORTH DEXTER STR	***420 NORTH DEXTER STR***	***S 1 - 2 (1.910 mi.)***	***O86***	***173***

Facility ID: 34000135

MI INVENTORY: The Inventory of Facilities has three data sources: Facilities under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) identified through state funded or private party response activities (Projects); Facilities under Part 213, Leaking Underground Storage Tanks of the NREPA; and Facilities identified through submittals of Baseline Environmental Assessments (BEA) submitted pursuant to Part 201 or Part 213 of the NREPA. The Part 201 Projects Inventory does not include all of the facilities that are subject to regulation under Part 201 because owners are not required to inform the Department of Environmental Quality (DEQ) about the facilities and can pursue cleanup independently. Facilities that are not known to DEQ are not on the Inventory, nor are locations with releases that resulted in low environmental impact. Part 213 facilities listed here may have more than one release; a list of releases for which corrective actions have been completed and list of releases for which corrective action has not been completed is located on the Leaking Underground Storage Tanks Site Search webpage. The DEQ may or may not have reviewed and concurred with the conclusion that the corrective actions described in a closure report meets criteria. A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

A review of the MI INVENTORY list, as provided by EDR, and dated 01/13/2025 has revealed that there are 13 MI INVENTORY sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
500 510 520 APPLE TR Facility ID: 34000194	***500 510 520 APPLE TR***	***SSE 1 - 2 (1.178 mi.)***	***33***	***49***

Lower Elevation	Address	Direction / Distance	Map ID	Page
DISCOUNT TIRE & BATT Facility ID: 34000145	***2265 N STATE RD***	***NNE 1/4 - 1/2 (0.257 mi.)***	***A6***	***11***
WELLS OIL CO Facility ID: 00033029	***3006 N STATE RD***	***N 1 - 2 (1.147 mi.)***	***G31***	***44***
1090 RECTOR ROAD Facility ID: 34000152	***1090 RECTOR ROAD***	***SW 1 - 2 (1.467 mi.)***	***I40***	***67***
DOMINOS Facility ID: 00039257	***648 W LINCOLN AVE***	***S 1 - 2 (1.859 mi.)***	***L50***	***79***
PURKS MOBIL Facility ID: 00012590	***703 W LINCOLN AVE***	***S 1 - 2 (1.866 mi.)***	***L60***	***94***
MUFFLER MAN Facility ID: 00001804	***500 W LINCOLN AVE***	***S 1 - 2 (1.870 mi.)***	***N64***	***109***
INTERSECTION PARTY S Facility ID: 00035601	***501 W LINCOLN AVE***	***S 1 - 2 (1.878 mi.)***	***N67***	***116***
DRAKES MARKET PLUS Facility ID: 00017896	***439 W LINCOLN AVE***	***S 1 - 2 (1.885 mi.)***	***O70***	***119***
428 LINCOLN AVENUE Facility ID: 34000175	***428 WEST LINCOLN AVE***	***S 1 - 2 (1.890 mi.)***	***P73***	***130***
TONYS CRYSTAL FLASH	***1036 W LINCOLN AVE***	***SSW 1 - 2 (1.902 mi.)***	***Q79***	***160***

Facility ID: 00011067

HAYNOR AREA GW CONTA	***HAYNOR RD & W. LINCO***	***SSW 1 - 2 (1.908 mi.)***	***Q84***	***168***
Facility ID: 34000022				
420 NORTH DEXTER STR	***420 NORTH DEXTER STR***	***S 1 - 2 (1.910 mi.)***	***O86***	***173***
Facility ID: 34000135				

MI CDL: A listing of clandestine drug lab locations.

A review of the MI CDL list, as provided by EDR, and dated 10/28/2024 has revealed that there are 4 MI CDL sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	2096 N STATE	NNE 1/4 - 1/2 (0.257 mi.)	A3	9
Not reported	2096 N STATE 89	NNE 1/4 - 1/2 (0.257 mi.)	A4	9
Not reported	2096 N STATE RD	NNE 1/4 - 1/2 (0.257 mi.)	A5	10
Not reported	2096 N STATE RD	NNE 1/4 - 1/2 (0.257 mi.)	A8	24

US CDL: A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

A review of the US CDL list, as provided by EDR, and dated 12/31/2024 has revealed that there is 1 US CDL site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
2717 NORTH STATE STR	2717 NORTH STATE STR	N 1/2 - 1 (0.874 mi.)	F24	39

Records of Emergency Release Reports

MI SPILLS: Environmental pollution emergencies reported to the Department of Environmental Quality such as tanker accidents, pipeline breaks, and release of reportable quantities of hazardous substances.

A review of the MI SPILLS list, as provided by EDR, and dated 09/27/2024 has revealed that there are 7 MI SPILLS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1602 HAYNOR RD	WSW 1/2 - 1 (0.812 mi.)	E21	36
Not reported	1602 HAYNOR RD	WSW 1/2 - 1 (0.812 mi.)	E22	37
Not reported	1597 HAYNOR RD, IONI	WSW 1/2 - 1 (0.819 mi.)	E23	38

Lower Elevation	Address	Direction / Distance	Map ID	Page
DISCOUNT TIRE & BATT	***2265 N STATE RD***	***NNE 1/4 - 1/2 (0.257 mi.)***	***A6***	***11***
Not reported	2265 NORTH STATE ROA	N 1/4 - 1/2 (0.474 mi.)	C13	29
Not reported	2265 N STATE RD	N 1/4 - 1/2 (0.474 mi.)	C14	30
Not reported	2265 NORTH STATE ROA	N 1/4 - 1/2 (0.474 mi.)	C15	31

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 02/17/2025 has revealed that there are 5 RCRA NonGen / NLR sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ORION MANUFACTURING EPA ID:: MIK461681470	480 APPLE TREE DR	S 1 - 2 (1.236 mi.)	H37	61

Lower Elevation	Address	Direction / Distance	Map ID	Page
GRAB N GIT EPA ID:: MIK424586956	703 W LINCOLN AVE	S 1 - 2 (1.866 mi.)	L57	88
DRAKES MARKET PLUS EPA ID:: MIR000023622	***439 W LINCOLN AVE***	***S 1 - 2 (1.885 mi.)***	***O70***	***119***
BERGER MOTOR SALES I EPA ID:: MID017146952	***428 W LINCOLN AVE***	***S 1 - 2 (1.890 mi.)***	***P74***	***133***
RITE AID #04326 EPA ID:: MIK168814162	***431 WEST LINCOLN HIG***	***S 1 - 2 (1.893 mi.)***	***P76***	***143***

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 11/11/2024 has revealed that there is 1 FINDS site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
INTERNATIONAL TRANSM Registry ID:: 110031361693	***1718 MARQUETTE RD***	***WNW 1/4 - 1/2 (0.464 mi.)***	***B11***	***28***

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 12/21/2024 has revealed that there is 1 ECHO site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
INTERNATIONAL TRANSM	***1718 MARQUETTE RD***	***WNW 1/4 - 1/2 (0.464 mi.)***	***B11***	***28***

EXECUTIVE SUMMARY

Registry ID: 110031361693

UST FINDER RELEASE: US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

A review of the UST FINDER RELEASE list, as provided by EDR, and dated 06/08/2023 has revealed that there are 8 UST FINDER RELEASE sites within approximately 2 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WELLS OIL-IONIA	3006 N STATE RD	N 1 - 2 (1.147 mi.)	G28	42
MICHIGAN BELL GARAGE	336 S STEEL	SSE 1 - 2 (1.772 mi.)	48	77
IONIA DOMINO'S	648 W LINCOLN	S 1 - 2 (1.859 mi.)	L52	84
GRAB-N-GIT CONVENIEN	703 W LINCOLN AVE	S 1 - 2 (1.866 mi.)	L58	91
MUFFLER MAN	***500 W LINCOLN AVE***	***S 1 - 2 (1.870 mi.)***	***N62***	***103***
INTERSECTION PARTY S	501-503 W.LINCOLN	S 1 - 2 (1.878 mi.)	N68	118
FORMER DRAKES MARKET	***439 W LINCOLN AVE***	***S 1 - 2 (1.885 mi.)***	***O71***	***128***
TONYS CRYSTAL FLASH	1036 W LINCOLN (W M-	SSW 1 - 2 (1.902 mi.)	Q81	166

UST FINDER: EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

A review of the UST FINDER list, as provided by EDR, and dated 06/08/2023 has revealed that there are 13 UST FINDER sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CITY OF IONIA	776 CYRUS ST	SSE 1 - 2 (1.489 mi.)	J43	71

Lower Elevation	Address	Direction / Distance	Map ID	Page
WELLS OIL CO	3006 N STATE RD	N 1 - 2 (1.147 mi.)	G29	42
RUSSELL WALCOTT TRUS	1090 RECTOR RD	SW 1 - 2 (1.467 mi.)	I38	65
YEOMANS EGGS	602 HAYNOR RD	SSW 1 - 2 (1.760 mi.)	K46	74
DOMINOS	648 W LINCOLN AVE	S 1 - 2 (1.859 mi.)	L49	78
EDWARD STERNER	821 N JEFFERSON ST	SE 1 - 2 (1.864 mi.)	M54	86
PURKS MOBIL	703 W LINCOLN AVE	S 1 - 2 (1.866 mi.)	L59	92
MUFFLER MAN	***500 W LINCOLN AVE***	***S 1 - 2 (1.870 mi.)***	***N62***	***103***
INTERSECTION PARTY S	501 W LINCOLN AVE	S 1 - 2 (1.878 mi.)	N66	115
FORMER DRAKES MARKET	***439 W LINCOLN AVE***	***S 1 - 2 (1.885 mi.)***	***O71***	***128***
TONYS CRYSTAL FLASH	1036 W LINCOLN AVE	SSW 1 - 2 (1.902 mi.)	Q78	159
BUD MONTGOMERY	1048 W LINCOLN AVE	SSW 1 - 2 (1.905 mi.)	Q83	167
GARY L FERGUSON	1115 W LINCOLN AVE	SSW 1 - 2 (1.931 mi.)	R89	179

E MANIFEST: EPA established a national system for tracking hazardous waste shipments electronically. This system, known as ?e-Manifest,? will modernize the nation?s cradle-to-grave hazardous waste tracking process while saving valuable time, resources, and dollars for industry and states.

A review of the E MANIFEST list, as provided by EDR, and dated 02/17/2025 has revealed that there are 3 E MANIFEST sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ENWORK - IONIA	510 APPLE TREE DRIVE	S 1 - 2 (1.231 mi.)	H35	51
VOLCOR FINISHING INC	***510 APPLETREE DR***	***S 1 - 2 (1.231 mi.)***	***H36***	***55***

Lower Elevation	Address	Direction / Distance	Map ID	Page
RITE AID #04326	***431 WEST LINCOLN HIG***	***S 1 - 2 (1.893 mi.)***	***P76***	***143***

MI BEA: A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

A review of the MI BEA list, as provided by EDR, and dated 02/07/2025 has revealed that there are 10 MI BEA sites within approximately 2 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
500 510 520 APPLE TR	500 510 520 APPLE TR	S 1 - 2 (1.229 mi.)	H34	50

Lower Elevation	Address	Direction / Distance	Map ID	Page
1090 RECTOR ROAD	***1090 RECTOR ROAD***	***SW 1 - 2 (1.467 mi.)***	***I40***	***67***
FORMER GRAB-N-GET GA	703 WEST LINCOLN AVE	S 1 - 2 (1.866 mi.)	L56	88
PURKS MOBIL	***703 W LINCOLN AVE***	***S 1 - 2 (1.866 mi.)***	***L60***	***94***
DRAKES MARKET PLUS	***439 W LINCOLN AVE***	***S 1 - 2 (1.885 mi.)***	***O70***	***119***
DRAKE'S MARKET PLUS	439 WEST LINCOLN AVE	S 1 - 2 (1.885 mi.)	O72	130
428 LINCOLN AVENUE	***428 WEST LINCOLN AVE***	***S 1 - 2 (1.890 mi.)***	***P73***	***130***
TONYS CRYSTAL FLASH	***1036 W LINCOLN AVE***	***SSW 1 - 2 (1.902 mi.)***	***Q79***	***160***
420 NORTH DEXTER STR	***420 NORTH DEXTER STR***	***S 1 - 2 (1.910 mi.)***	***O86***	***173***
431 - 437 W. LINCOLN	431 - 437 W. LINCOLN	S 1 - 2 (1.928 mi.)	88	179

MI MANIFEST: A generator who transports, or offers for transportation, hazardous waste for off-site treatment, storage or disposal must prepare a hazardous waste manifest to accompany such shipment.

A review of the MI MANIFEST list, as provided by EDR, and dated 06/30/2018 has revealed that there is 1 MI MANIFEST site within approximately 2 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PDS-1 MICHIGAN INC	***431 W LINCOLN AVE***	***S 1 - 2 (1.893 mi.)***	***P75***	***141***

WI MANIFEST: Hazardous waste manifest information.

A review of the WI MANIFEST list, as provided by EDR, and dated 05/31/2018 has revealed that there is 1 WI MANIFEST site within approximately 2 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
IONIA BODY SHOP	***1033 W LINCOLN AVE***	***SSW 1 - 2 (1.909 mi.)***	***Q85***	***169***
ACT Status: A				
FID: 0				
EPA ID: MID985632645				

MI NPDES: General information regarding NPDES (National Pollutant Discharge Elimination System) permits and NPDES Storm Water permits.

A review of the MI NPDES list, as provided by EDR, and dated 03/31/2025 has revealed that there is 1 MI NPDES site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
EVERGREEN MOBILE HOM	***2096 NORTH STATE ROA***	***NNE 1/4 - 1/2 (0.257 mi.)***	***A7***	***12***
Permit Number: M00603				
Permit Number: GW1810198				

MI WDS: The Waste Data System (WDS) tracks activities at facilities regulated by the Solid Waste, Scrap Tire, Hazardous Waste, and Liquid Industrial Waste programs.

A review of the MI WDS list, as provided by EDR, and dated 12/08/2023 has revealed that there are 4 MI WDS sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GIANT ENTERPRISES	1920 N STATE RD	NE 0 - 1/8 (0.099 mi.)	1	8
Site Id: MIG000016003				
WMD Id: 419422				
NORTH STATE ROAD (IO	***2096 NORTH STATE ROA***	***NNE 1/4 - 1/2 (0.257 mi.)***	***A2***	***8***
WMD Id: 472216				
DISCOUNT TIRE & BATT	***2265 N STATE RD***	***NNE 1/4 - 1/2 (0.257 mi.)***	***A6***	***11***
Site Id: MIG000062065				
WMD Id: 421554				
INTERNATIONAL TRANSM	1718 MARQUETTE RD	WNW 1/4 - 1/2 (0.464 mi.)	B12	29
Site Id: MIK411852411				
WMD Id: 482537				

MI ENVIRO: MiEnviro is permitting and compliance for air quality and water resources, including National Pollutant Discharge Elimination System (NPDES), storm water, groundwater discharge, aquatic nuisance control, Part 41 construction, medical waste registrations, and land and water interface permits.

A review of the MI ENVIRO list, as provided by EDR, and dated 12/30/2024 has revealed that there are 8 MI ENVIRO sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
34-CONSUMERS ENERGY	MARQUETTE & PARMETER	NNW 1/2 - 1 (0.773 mi.)	20	34

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
COMPLAINT:06-34-0009	2757 NORTH STATE ROA	N 1/2 - 1 (0.912 mi.)	F25	39
34-579 E PARMETER RD	579 E PARMETER RD	NE 1/2 - 1 (0.940 mi.)	26	39

Lower Elevation	Address	Direction / Distance	Map ID	Page
EVERGREEN MOBILE HOM	***2096 NORTH STATE ROA***	***NNE 1/4 - 1/2 (0.257 mi.)***	***A7***	***12***
COMPLAINT:06-34-0014	2190 N. STATE ROAD	NNE 1/4 - 1/2 (0.338 mi.)	9	25
WOLBERS POSSEHN	1276 N STATE RD	S 1/2 - 1 (0.616 mi.)	16	31
AMERITECH-GRAND RAPI		NNW 1/2 - 1 (0.765 mi.)	D18	33
COMPLAINT:11-34-0008	SPRAGUE AND HARWOOD	NNW 1/2 - 1 (0.765 mi.)	D19	34

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 10 EDR Hist Auto sites within approximately 2 miles of the target property.

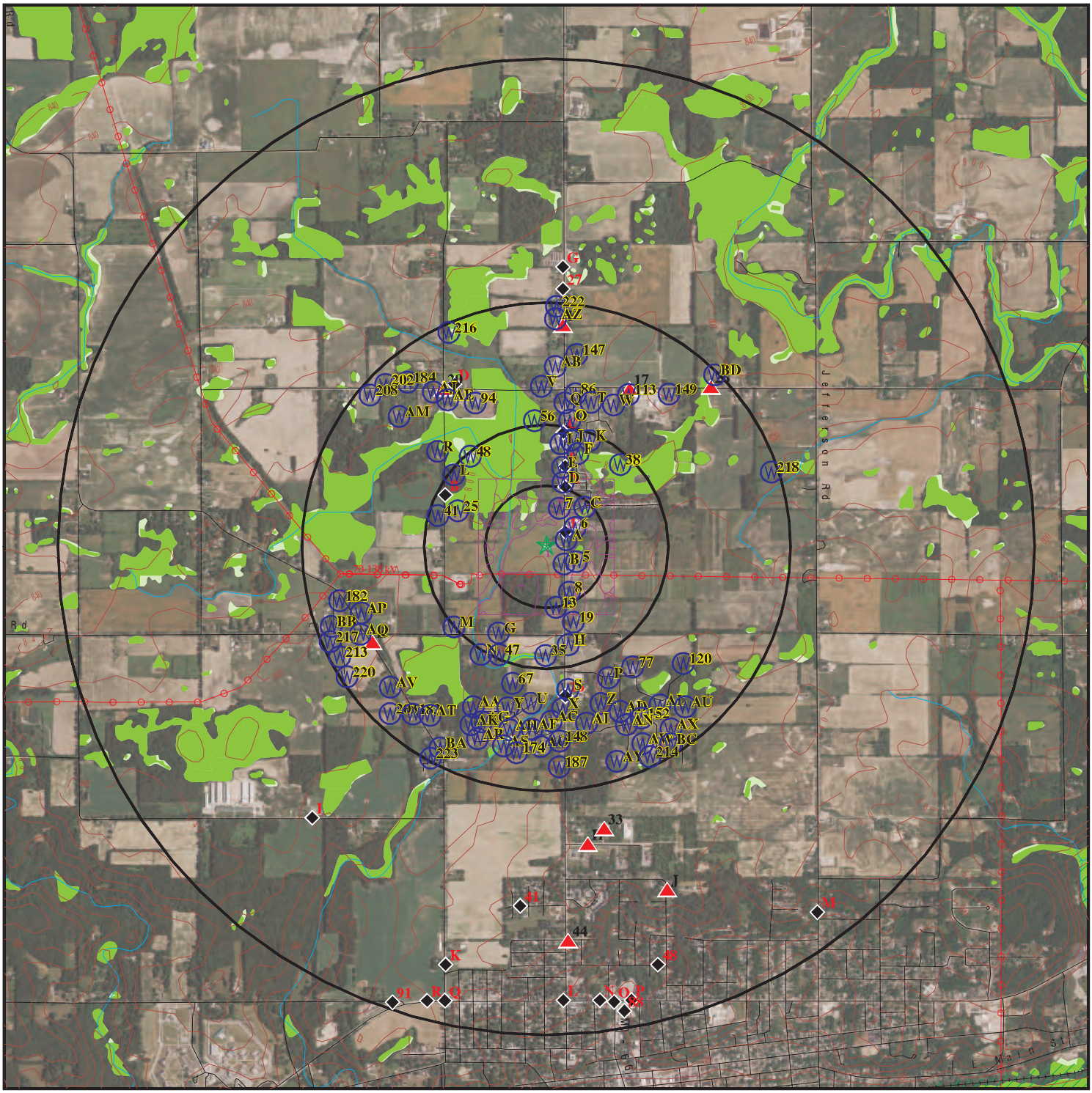
Lower Elevation	Address	Direction / Distance	Map ID	Page
DARBYS STANDARD SERV	2913 N STATE RD	N 1 - 2 (1.058 mi.)	27	41
WELLS OIL COMPANY	3009 N STATE RD	N 1 - 2 (1.148 mi.)	G32	49
PURKEYS LIFETIME MUF	648 W LINCOLN AVE	S 1 - 2 (1.859 mi.)	L51	83
BLACKS SERVICE INC	703 W LINCOLN	S 1 - 2 (1.866 mi.)	L55	87
GIANTS GULF SERVICE	643 W LINCOLN	S 1 - 2 (1.866 mi.)	L61	102
RAINBOW MUFFLER INC	500 W LINCOLN AVE	S 1 - 2 (1.870 mi.)	N65	114
M P D PETROLEUM INC	439 W LINCOLN AVE	S 1 - 2 (1.885 mi.)	O69	119
TONYS CRYSTAL FLASH	1026 W LINCOLN	SSW 1 - 2 (1.900 mi.)	Q77	158
TONYS CRYSTAL FLASH	1036 W LINCOLN	SSW 1 - 2 (1.902 mi.)	Q80	165
TONYS CRYSTAL FLASH	1110 W LINCOLN	SSW 1 - 2 (1.922 mi.)	R87	178

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 6 records.

Site Name	Database(s)
118 & 123 SOUTH KIDD	MI INVENTORY, MI PART 201
200 BLOCK OF SOUTH DEXTER STREET	MI INVENTORY, MI PART 201
IONIA CITY OF	SEMS-ARCHIVE
	MI CDL
	MI CDL
	MI CDL

OVERVIEW MAP - 7974177.2S



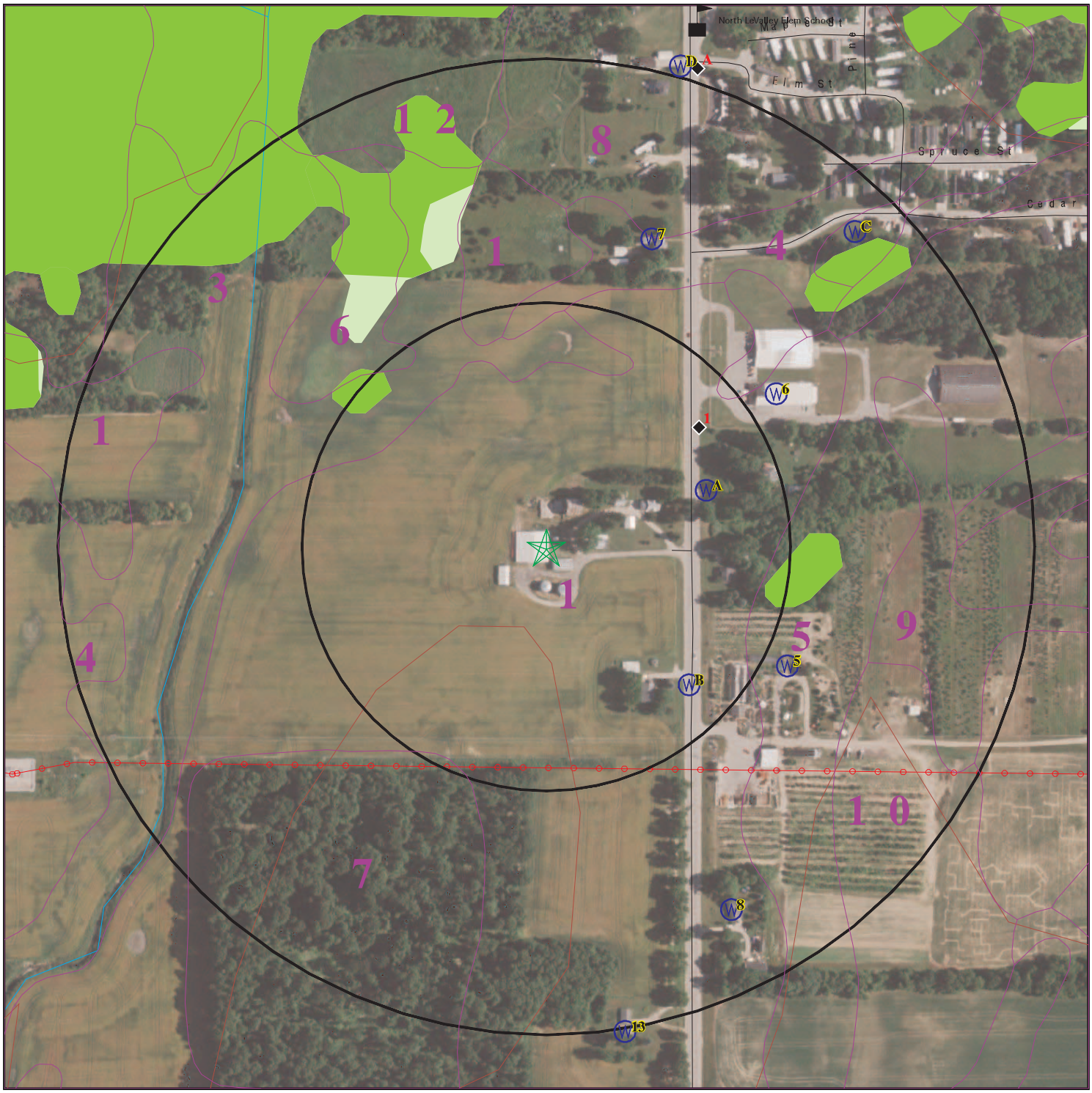
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Ionia SWPP	CLIENT:	Peerless-Midwest, Inc.
ADDRESS:	Fargo St. Ionia MI 48846	CONTACT:	Katelynn Shail
		INQUIRY #:	7974177.2s
LAT/LONG:	43.014346 / 85.076577	DATE:	April 30, 2025 2:46 pm

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DETAIL MAP - 7974177.2S



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Ionia SWPP	CLIENT: Peerless-Midwest, Inc.
ADDRESS: Fargo St.	CONTACT: Katelynn Shail
Ionia MI 48846	INQUIRY #: 7974177.2s
LAT/LONG: 43.014346 / 85.076577	DATE: April 30, 2025 2:47 pm

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1
NE
< 1/8
0.099 mi.
524 ft.

GIANT ENTERPRISES
1920 N STATE RD
IONIA, MI 48846

MI WDS **S111948649**
N/A

Relative:
Lower

Actual:
809 ft.

WDS:

Name:	GIANT ENTERPRISES
Address:	1920 N STATE RD
City,State,Zip:	IONIA, MI 48846
Site Id:	MIG000016003
WMD Id:	419422
Site Specific Name:	GIANT ENTERPRISES
Mailing Address:	1920 N STATE RD
Mailing City/State/Zip:	48846
Mailing County:	IONIA

A2
NNE
1/4-1/2
0.257 mi.
1357 ft.

NORTH STATE ROAD (IONIA)
2096 NORTH STATE ROAD
IONIA, MI 48846

Site 1 of 7 in cluster A

MI PART 201 **S110484878**
MI WDS **N/A**

Relative:
Lower

Actual:
810 ft.

PART 201:

Name:	NORTH STATE ROAD (IONIA)
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Facility ID:	34000145
Facility Status:	Not reported
Latitude:	43.01701878
Source:	Not reported
Longitude:	-85.07354475
SAM Score:	Not reported
SAM Score Date:	Not reported
Township:	Not reported
Range:	Not reported
Section:	Not reported
Quarter:	Not reported
Quarter/Quarter:	Not reported
Pollutants:	Not reported
Location Type:	201
Work Unit:	Not reported
Project Manager:	Ten Brink, Daniel
Risk Condition:	Risks Present and Immediate

WDS:

Name:	EVERGREEN MOBILE HOME COMMUNITY
Address:	2096 N STATE RD
City,State,Zip:	IONIA, MI 48846
Site Id:	Not reported
WMD Id:	472216
Site Specific Name:	EVERGREEN MOBILE HOME COMMUNITY
Mailing Address:	2096 N STATE RD
Mailing City/State/Zip:	48846
Mailing County:	IONIA

A3
NNE
1/4-1/2
0.257 mi.
1357 ft.

2096 N STATE
IONIA, MI 48846

Site 2 of 7 in cluster A

MI CDL **S123340021**
N/A

Relative:
Lower

Actual:
810 ft.

CDL:

Name:	Not reported
Address:	2096 N STATE
City:	IONIA
Date:	Not reported
Type:	Not reported
Cross street:	Not reported
Lab type:	Not reported
Agency:	Not reported
Complaint #:	Not reported
Oic:	Not reported
Child:	Not reported
Fire:	Not reported
Injuries:	Not reported
Who:	Not reported
Lab:	Not reported
Dump:	Not reported
Glass:	Not reported
Unknown:	Not reported
<2:	Not reported
2 - 8oz:	Not reported
9oz - 1lb:	Not reported
2 - 9lb:	Not reported
10 - 19lb:	Not reported
20lb >:	Not reported
Chemical:	Methamphetamines
Quantity Seized:	1000
ORI Number:	Not reported
Incident Number:	1700006673
Incident Date:	11/08/2017
Entry Date:	12/07/2017
Loss Type:	Seized
Unit of Measure:	GM
Latitude:	43.017712
Longitude:	-85.075046
ORI Name:	MI3413400
Micr Incidents ID:	Not reported
Drug Desc:	Not reported

A4
NNE
1/4-1/2
0.257 mi.
1357 ft.

2096 N STATE 89
IONIA, MI 48846

Site 3 of 7 in cluster A

MI CDL **S123340015**
N/A

Relative:
Lower

Actual:
810 ft.

CDL:

Name:	Not reported
Address:	2096 N STATE 89
City:	IONIA
Date:	Not reported
Type:	Not reported
Cross street:	Not reported
Lab type:	Not reported

(Continued) **S123340015**

Agency:	Not reported
Complaint #:	Not reported
Oic:	Not reported
Child:	Not reported
Fire:	Not reported
Injuries:	Not reported
Who:	Not reported
Lab:	Not reported
Dump:	Not reported
Glass:	Not reported
Unknown:	Not reported
<2:	Not reported
2 - 8oz:	Not reported
9oz - 1lb:	Not reported
2 - 9lb:	Not reported
10 - 19lb:	Not reported
20lb >:	Not reported
Chemical:	Methamphetamines
Quantity Seized:	5000
ORI Number:	Not reported
Incident Number:	1700002986
Incident Date:	06/05/2017
Entry Date:	07/11/2017
Loss Type:	Seized
Unit of Measure:	GM
Latitude:	43.017712
Longitude:	-85.075046
ORI Name:	MI3413400
Micr Incidents ID:	Not reported
Drug Desc:	Not reported

A5 **MI CDL** **S128068227**
NNE **2096 N STATE RD** **N/A**
1/4-1/2 **IONIA, MI 48846**
0.257 mi.
1357 ft. **Site 4 of 7 in cluster A**

Relative: CDL:
Lower

Name:	Not reported
Address:	2096 N STATE RD
City:	IONIA
Date:	Not reported
Type:	Not reported
Cross street:	Not reported
Lab type:	Not reported
Agency:	Ionia County Sheriff's Department
Complaint #:	Not reported
Oic:	Not reported
Child:	Not reported
Fire:	Not reported
Injuries:	Not reported
Who:	Not reported
Lab:	Not reported
Dump:	Not reported
Glass:	Not reported
Unknown:	Not reported
<2:	Not reported
2 - 8oz:	Not reported

Actual:
810 ft.

(Continued) **S128068227**

9oz - 1lb:	Not reported
2 - 9lb:	Not reported
10 - 19lb:	Not reported
20lb >:	Not reported
Chemical:	Methamphetamines
Quantity Seized:	100
ORI Number:	Not reported
Incident Number:	2000002171
Incident Date:	04/21/2020
Entry Date:	Not reported
Loss Type:	Seized
Unit of Measure:	GM
Latitude:	43.017913
Longitude:	-85.075122
ORI Name:	Not reported
Micr Incidents ID:	Not reported
Drug Desc:	Not reported

A6 **DISCOUNT TIRE & BATTERY** **MI INVENTORY** **S110788401**
NNE **2265 N STATE RD** **MI SPILLS** **N/A**
1/4-1/2 **IONIA, MI 48846** **MI WDS**
0.257 mi.
1357 ft. **Site 5 of 7 in cluster A**

Relative: **Lower**
Actual: **810 ft.**

INVENTORY:

Name:	NORTH STATE ROAD (IONIA)
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Township:	Ionia
District:	Grand Rapids
Data Source:	Risks Present and Immediate
Lust Name:	Not reported
Regulatory Program:	201
Release Status:	Not reported
Project Manager:	Ten Brink, Daniel
Latitude:	43.01701878
Longitude:	-85.07354475

PEAS:

Name:	Not reported
Address:	2265 N STATE RD
City,State,Zip:	IONIA, MI
Incident Date:	2010-03-23 00:00:00
Office Status:	AFTER HOURS
Initials of Incoming Operator:	RAJ
Time Received by DNRE Staff:	Not reported
Time Occur:	Not reported
Date Of PEAS Call:	Not reported
Complainant / Company:	Not reported
Complainant Address:	2265 N STATE RD
Company Involved:	DISCOUNT TIRE
DEQ Division Involved:	Not reported
Incident Description:	APPROXIMATELY 150 TIRES CAUGHT FIRE. OVER A WELL HEAD PROTECTION AREA. CONCERNED ABOUT DRINKING WATER SUPPLY
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Description:	Not reported

DISCOUNT TIRE & BATTERY (Continued) **S110788401**

Date Discovered:	3/23/2010
Time Discovered:	1942 HOURS
Office/After Hours:	Not reported
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Source decode:	Not reported
Lead Division 2:	Not reported
Party Involved Type:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Release/Incident Ctrl:	Not reported
Release/Incident Ctrl Detail:	Not reported
Special Referral:	Not reported

WDS:

Name:	DISCOUNT TIRE & BATTERY
Address:	2265 N STATE RD
City,State,Zip:	IONIA, MI 48846
Site Id:	MIG000062065
WMD Id:	421554
Site Specific Name:	DISCOUNT TIRE & BATTERY
Mailing Address:	2265 N STATE RD
Mailing City/State/Zip:	48846
Mailing County:	IONIA

A7 **EVERGREEN MOBILE HOME PARK** **MI NPDES** **S110093072**
NNE **2096 NORTH STATE ROAD** **MI ENVIRO** **N/A**
1/4-1/2 **IONIA, MI 48846**
0.257 mi.
1357 ft. **Site 6 of 7 in cluster A**

Relative:
Lower

Actual:
810 ft.

MI NPDES:

Name:	EVERGREEN MOBILE HOME PARK
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Permit Number:	M00603
Permitee PO Box:	Not reported
Permitee Email:	Not reported
Issue Date:	03/24/1994
Effective Date:	03/24/1994
Expiration Date:	03/01/1999
Permittee Name:	Evergreen Mobile Home Community
Permittee Address:	2096 North State Road, RR #3
Permittee Addr2:	Not reported
Permittee City,St,Zip:	Ionia, MI 48846
Permit Type:	GW-Commercial
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported
Designed Name:	Not reported
Latitude:	43.0168
Lat Direction:	Not reported
Lat Type Code:	Not reported
Longitude:	-85.0731

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Lon Direction:	Not reported
Lon Type Code:	Not reported
Hydrologic Unit Code:	Not reported
Permit Status:	Superseded
COC Permit Category:	Rule 2218 Authorization
DEQ District Email:	Grand Rapids
DEQ Permit Compliance Manager:	Brian Esparsa (INACTIVE)
DEQ Permit Compliance Manager Email:	esparsab@michigan.gov

Name:	EVERGREEN MOBILE HOME PARK
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Permit Number:	GW1810198
Permitee PO Box:	N
Permitee Email:	Not reported
Issue Date:	05/08/2008
Effective Date:	06/01/2008
Expiration Date:	06/01/2011
Permittee Name:	Shamee Development Company, LLC
Permittee Address:	13078 Helmer Road South
Permittee Addr2:	Not reported
Permittee City,St,Zip:	Battle Creek, MI 49015
Permit Type:	GW-Commercial
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported
Designed Name:	Evergreen Mobile Home Park
Latitude:	43.0168
Lat Direction:	N
Lat Type Code:	LAT
Longitude:	-85.0731
Lon Direction:	W
Lon Type Code:	LON
Hydrologic Unit Code:	4050006
Permit Status:	Superseded
COC Permit Category:	Rule 2218 Authorization
DEQ District Email:	Grand Rapids
DEQ Permit Compliance Manager:	Derrick Simmons
DEQ Permit Compliance Manager Email:	simmonsd@michigan.gov

Name:	EVERGREEN MOBILE HOME PARK
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Permit Number:	M00603
Permitee PO Box:	Not reported
Permitee Email:	Not reported
Issue Date:	03/24/1994
Effective Date:	03/24/1994
Expiration Date:	03/01/1999
Permittee Name:	Evergreen Mobile Home Community
Permittee Address:	2096 North State Road, RR #3
Permittee Addr2:	Not reported
Permittee City,St,Zip:	Ionia, MI 48846
Permit Type:	Sanitary-Private
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Designed Name:	Not reported
Latitude:	43.0168
Lat Direction:	Not reported
Lat Type Code:	Not reported
Longitude:	-85.0731
Lon Direction:	Not reported
Lon Type Code:	Not reported
Hydrologic Unit Code:	Not reported
Permit Status:	Superseded
COC Permit Category:	Rule 2218 Authorization
DEQ District Email:	Grand Rapids
DEQ Permit Compliance Manager:	Brian Esparsa (INACTIVE)
DEQ Permit Compliance Manager Email:	esparsab@michigan.gov

Name:	EVERGREEN MOBILE HOME PARK
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Permit Number:	GW1810198
Permitee PO Box:	N
Permitee Email:	Not reported
Issue Date:	05/08/2008
Effective Date:	06/01/2008
Expiration Date:	06/01/2011
Permittee Name:	Shamee Development Company, LLC
Permittee Address:	13078 Helmer Road South
Permittee Addr2:	Not reported
Permittee City,St,Zip:	Battle Creek, MI 49015
Permit Type:	Sanitary-Private
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported
Designed Name:	Evergreen Mobile Home Park
Latitude:	43.0168
Lat Direction:	N
Lat Type Code:	LAT
Longitude:	-85.0731
Lon Direction:	W
Lon Type Code:	LON
Hydrologic Unit Code:	4050006
Permit Status:	Superseded
COC Permit Category:	Rule 2218 Authorization
DEQ District Email:	Grand Rapids
DEQ Permit Compliance Manager:	Derrick Simmons
DEQ Permit Compliance Manager Email:	simmonsd@michigan.gov

Name:	EVERGREEN MOBILE HOME PARK
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Permit Number:	GW1810198
Permitee PO Box:	N
Permitee Email:	Not reported
Issue Date:	02/11/2016
Effective Date:	03/01/2016
Expiration Date:	03/01/2021
Permittee Name:	Battle Creek Rentals, LLC
Permittee Address:	3500 Morgan Road
Permittee Addr2:	Not reported

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Permittee City,St,Zip:	Nashville, MI 49073
Permit Type:	GW-Commercial
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported
Designed Name:	Evergreen Mobile Home Park
Latitude:	43.0168
Lat Direction:	N
Lat Type Code:	LAT
Longitude:	-85.0731
Lon Direction:	W
Lon Type Code:	LON
Hydrologic Unit Code:	4050006
Permit Status:	Extended
COC Permit Category:	Rule 2218 Authorization
DEQ District Email:	Grand Rapids
DEQ Permit Compliance Manager:	Leslie Sorensen
DEQ Permit Compliance Manager Email:	sorensenl@michigan.gov

Name:	EVERGREEN MOBILE HOME PARK
Address:	2096 NORTH STATE ROAD
City,State,Zip:	IONIA, MI 48846
Permit Number:	GW1810198
Permitee PO Box:	N
Permitee Email:	Not reported
Issue Date:	02/11/2016
Effective Date:	03/01/2016
Expiration Date:	03/01/2021
Permittee Name:	Battle Creek Rentals, LLC
Permittee Address:	3500 Morgan Road
Permittee Addr2:	Not reported
Permittee City,St,Zip:	Nashville, MI 49073
Permit Type:	Sanitary-Private
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported
Designed Name:	Evergreen Mobile Home Park
Latitude:	43.0168
Lat Direction:	N
Lat Type Code:	LAT
Longitude:	-85.0731
Lon Direction:	W
Lon Type Code:	LON
Hydrologic Unit Code:	4050006
Permit Status:	Extended
COC Permit Category:	Rule 2218 Authorization
DEQ District Email:	Grand Rapids
DEQ Permit Compliance Manager:	Leslie Sorensen
DEQ Permit Compliance Manager Email:	sorensenl@michigan.gov

ENVIRO:

Site ID:	-70012914164797645
Name:	EVERGREEN MOBILE HOME PARK
Address:	2096 NORTH STATE ROAD
Latitude:	43.0177
Longitude:	-85.0697

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Site URL:

Environmental Actions:

Site ID:	-70012914164797645
Site Number:	104649
Program Code:	GROUNDWATER
ENF Action Type:	Violation Notice
ENF Action Gen Type:	Violation Notice
ENF Action Gen Type Description:	Violation Notice
ENF Action Description:	Violation Notice. Compliance Action Reference: VN-005304
ENF Action Date:	6/22/2012 12:00:00 AM
Notes:	Status: Closed. 17 violation(s) addressed by this action.

Site ID:	-70012914164797645
Site Number:	104649
Program Code:	GROUNDWATER
ENF Action Type:	Violation Notice
ENF Action Gen Type:	Violation Notice
ENF Action Gen Type Description:	Violation Notice
ENF Action Description:	Violation Notice. Compliance Action Reference: VN-004289
ENF Action Date:	10/13/2009 12:00:00 AM
Notes:	Status: Closed. 1 violation(s) addressed by this action.

Document File:

Site ID:	-70012914164797645
Document ID:	-8187526379463427974
Document Name:	DMR Daily - GW1810198 _10_01_2015_to_10_31_2015_V1.pdf
Document Type:	Schedule - DMR Documents
Document Description:	Permit: GW1810198 v1.0. DMR Daily Data for period 10/01/2015 - 10/31/2015_V1
Document Date:	12/8/2015 12:00:00 AM
Site Number:	104649

URL:

Site ID:	-70012914164797645
Document ID:	-8136781648499900619
Document Name:	GW1810198_2023-06-01_to_2023-06-30_DMR.pdf
Document Type:	Schedule - DMR Documents
Document Description:	Permit: GW1810198 v3.0.
Document Date:	7/5/2023 12:00:00 AM
Site Number:	104649

URL:

Site ID:	-70012914164797645
Document ID:	-8033282663627957073
Document Name:	Evergreen inspect Feb 2001.pdf
Document Type:	Conversion - Application / Request
Document Description:	Inspection/Evaluation: E-B744-A1-94ED on 04/30/2001.
Document Date:	8/25/2005 12:00:00 AM
Site Number:	104649

URL:

Site ID: -70012914164797645

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Document ID: -7947616875114991475
Document Name: DMR Daily - GW1810198 _06_01_2018_to_06_30_2018_V1.pdf
Document Type: Schedule - DMR Documents
Document Description: Permit: GW1810198 v3.0. DMR Daily Data for period 06/01/2018 - 06/30/2018_V1
Document Date: 8/15/2018 12:00:00 AM
Site Number: 104649

URL:

Site ID: -70012914164797645
Document ID: -7305590124069489011
Document Name: Evergree Feb 2001 inspevt.pdf
Document Type: Conversion - Application / Request
Document Description: Inspection/Evaluation: E-B744-A1-94ED on 04/30/2001.
Document Date: 8/25/2005 12:00:00 AM
Site Number: 104649

URL:

Site ID: -70012914164797645
Document ID: -5070269493946405312
Document Name: Rule 2218 Permit Template.pdf
Document Type: Conversion - Permit
Document Description: Permit: GW1810198 v2.0. Rule 2218 Permit Template
Document Date: 2/19/2014 12:00:00 AM
Site Number: 104649

URL:

Site ID: -70012914164797645
Document ID: -2717416247479197233
Document Name: DMR Summary - GW1810198 _12_01_2018_to_12_31_2018_V1.pdf
Document Type: Schedule - DMR Documents
Document Description: Permit: GW1810198 v3.0. DMR Summary Data for period 12/01/2018 - 12/31/2018_V1
Document Date: 2/8/2019 12:00:00 AM
Site Number: 104649

URL:

Site ID: -70012914164797645
Document ID: -2215949664146718389
Document Name: Evergreen site.pdf
Document Type: Conversion - Application / Request
Document Description: Inspection/Evaluation: E-EE97-DC-55A3 on 04/29/2002.
Document Date: 8/25/2005 12:00:00 AM
Site Number: 104649

URL:

Site ID: -70012914164797645
Document ID: -1797341045953329933
Document Name: Evergreen site.pdf
Document Type: Conversion - Application / Request
Document Description: Inspection/Evaluation: E-7516-BD-3C4E on 08/07/2003.
Document Date: 8/26/2005 12:00:00 AM

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Site Number: 104649

URL:

Site ID: -70012914164797645
Document ID: -1390018933155069091
Document Name: DMR Daily - GW1810198 _08_01_2017_to_08_31_2017_V1.pdf
Document Type: Schedule - DMR Documents
Document Description: Permit: GW1810198 v3.0. DMR Daily Data for period 08/01/2017 - 08/31/2017_V1
Document Date: 10/2/2017 12:00:00 AM
Site Number: 104649

URL:

Site ID: -70012914164797645
Document ID: -1138854629485318142
Document Name: Evergreen site.pdf
Document Type: Conversion - Application / Request
Document Description: Inspection/Evaluation: E-5D74-DD-3E77 on 04/13/2005.
Document Date: 8/26/2005 12:00:00 AM
Site Number: 104649

URL:

Click this hyperlink while viewing on your computer to access
287 additional MI ENVIRO: record(s) in the EDR Site Report.

Environmental Intentions:
Site ID: -70012914164797645
Site Number: 104649
Program ID: GW1810198
Start Date Description: Effective
Start Date: 3/1/2016 12:00:00 AM
End Date Description: Expiration / Termination
End Date: 3/1/2021 12:00:00 AM
Type Code: GW_2218
ENV INT Number: GW1810198
Type Description Long: Permit Number: GW1810198 v3. 0. Category: Rule 2218 Authorization. Type: Sanitary Sewage. Status: Extended
Type Description: Rule 2218 Authorization
Contact Name: Leslie Sorensen | (616) 204-7334 | sorensenl@michigan.gov
ENV INT Notes: Not reported

Site ID: -70012914164797645
Site Number: 104649
Program ID: CSO-SSO-15766
Start Date Description: Received
Start Date: 1/22/2014 12:00:00 AM
End Date Description: Not reported
End Date: Not reported
Type Code: REQST
ENV INT Number: CSO-SSO-15766
Type Description Long: Report of Discharge (CSO/SSO/RTB); Status: Completed
Type Description: Report of Discharge (CSO/SSO/RTB)
Contact Name: Derrick Simmons | (616) 710-2139 | simmonsd@michigan.gov
ENV INT Notes: Status: Completed

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Violations:

Site ID:	-70012914164797645
Profile Violation ID:	3900d065-f5b7-40f3-8078-1607c8d628fa
Source Identifier:	-70012914164797645
Violation ID:	Not reported
Violation Sequence:	-720523541699864567
Determination Date:	11/1/2015 12:00:00 AM
Notes:	Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-C141-FF-449A; Status: Active Not Reviewed
URL:	Not reported
Program Code:	GROUNDWATER
Is Resolved:	1
Program Description:	DMR value exceeds Limit value
Comments:	Reported value 1.9 exceeds maximum effluent limit of Maximum Daily 0.3. Supplied comment: 'Will track and check history and flush well prior to next sample event.'

Site ID:	-70012914164797645
Profile Violation ID:	c9421785-d238-4625-8f64-262a4d0d7cf7
Source Identifier:	-70012914164797645
Violation ID:	Not reported
Violation Sequence:	-3331478616299904417
Determination Date:	2/11/2024 12:00:00 AM
Notes:	Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-98578; Status: Active Not Reviewed
URL:	Not reported
Program Code:	GROUNDWATER
Is Resolved:	1
Program Description:	DMR value exceeds Limit value
Comments:	Reported value 5.36 exceeds maximum effluent limit of Maximum Daily 1.0 mg/L. Supplied comment: 'MW located next to an active farm field for crops.'

Site ID:	-70012914164797645
Profile Violation ID:	7f790fe2-6624-4777-86c6-2649d36cebae
Source Identifier:	-70012914164797645
Violation ID:	Not reported
Violation Sequence:	2447243762515922611
Determination Date:	8/30/2023 12:00:00 AM
Notes:	Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-62431; Status: Active Not Reviewed
URL:	Not reported
Program Code:	GROUNDWATER
Is Resolved:	1
Program Description:	DMR value exceeds Limit value
Comments:	Reported value 1.93 exceeds maximum effluent limit of Maximum Daily 0.5 mg/L. Supplied comment: 'MW located beside an active nursery farm,'

Site ID:	-70012914164797645
Profile Violation ID:	eb2024dd-4707-4639-826e-447c91e71a55
Source Identifier:	-70012914164797645
Violation ID:	Not reported
Violation Sequence:	-8824992054459744527
Determination Date:	5/15/2022 12:00:00 AM
Notes:	Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-3BPG-VRRS-T4WA; Status: Active Not Reviewed

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR value exceeds Limit value
Comments: Reported value 25.4 exceeds maximum effluent limit of Maximum Daily 5.0 mg/L. Supplied comment: 'MW located beside an active farm field'

Site ID: -70012914164797645
Profile Violation ID: df9bc06b-6934-4e93-ad2f-5d3ff854cdd0
Source Identifier: -70012914164797645
Violation ID: Not reported
Violation Sequence: 2997426738243092750
Determination Date: 8/30/2023 12:00:00 AM
Notes: Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-62431; Status: Active Not Reviewed
URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR value exceeds Limit value
Comments: Reported value 5.29 exceeds maximum effluent limit of Maximum Daily 5.0 mg/L. Supplied comment: 'MW located beside an active tree nursery.'

Site ID: -70012914164797645
Profile Violation ID: 9e35b83d-a1b2-4a62-9a30-821f8e60c035
Source Identifier: -70012914164797645
Violation ID: Not reported
Violation Sequence: 5531267771218847220
Determination Date: 7/21/2020 12:00:00 AM
Notes: Program: WRD - Groundwater; DMR not submitted by due date; Identifying Evaluation: E-7TSD-VVKJ-QBEV; Status: Active Not Reviewed
URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR not submitted by due date
Comments: System-generated violation for Late DMR. (Period 06/01/2020-06/30/2020)

Site ID: -70012914164797645
Profile Violation ID: 5c7b1e29-5be1-48a0-b72c-a8a3e273ce56
Source Identifier: -70012914164797645
Violation ID: Not reported
Violation Sequence: -7655063780044769910
Determination Date: 8/7/2016 12:00:00 AM
Notes: Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-846A-D4-9AFE; Status: Active Not Reviewed
URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR value exceeds Limit value
Comments: Reported value 43.3 exceeds maximum effluent limit of Maximum Daily 5.0. Supplied comment: 'Will evacuate more next quarter. Monitoring well right next to an active farm field.'

Site ID: -70012914164797645
Profile Violation ID: acef5310-b496-4e83-9145-bbda7286bd68
Source Identifier: -70012914164797645

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Violation ID: Not reported
Violation Sequence: -6660747009957030464
Determination Date: 8/14/2018 12:00:00 AM
Notes: Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-0HYF-KR9G-5YTX; Status: Active Not Reviewed
URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR value exceeds Limit value
Comments: Reported value 26.8 exceeds maximum effluent limit of Maximum Daily 5.0. Supplied comment: 'This MW is near an active farm field used for crops.'

Site ID: -70012914164797645
Profile Violation ID: 859ea0f1-ba77-4c57-9f73-bf22f655e47a
Source Identifier: -70012914164797645
Violation ID: Not reported
Violation Sequence: 7762482614298123825
Determination Date: 5/21/2024 12:00:00 AM
Notes: Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-13455; Status: Active Not Reviewed
URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR value exceeds Limit value
Comments: Reported value 19.8 exceeds maximum effluent limit of Maximum Daily 5.0 mg/L. Supplied comment: 'MW located next to an active farm field for crops.'

Site ID: -70012914164797645
Profile Violation ID: 2de17766-de73-4b61-9370-cb85c6fc96de
Source Identifier: -70012914164797645
Violation ID: Not reported
Violation Sequence: -5088174945887326797
Determination Date: 1/21/2021 12:00:00 AM
Notes: Program: WRD - Groundwater; DMR not submitted by due date; Identifying Evaluation: E-E6CT-5WT9-FWQA; Status: Active Not Reviewed
URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR not submitted by due date
Comments: System-generated violation for Late DMR. (Period 01/01/2020-12/31/2020)

Site ID: -70012914164797645
Profile Violation ID: ffc289e3-3034-4119-bef5-01eb8c7abe0b
Source Identifier: -70012914164797645
Violation ID: Not reported
Violation Sequence: -5331720092259615018
Determination Date: 5/21/2024 12:00:00 AM
Notes: Program: WRD - Groundwater; DMR value exceeds Limit value; Identifying Evaluation: E-13455; Status: Active Not Reviewed
URL: Not reported
Program Code: GROUNDWATER
Is Resolved: 1
Program Description: DMR value exceeds Limit value
Comments: Reported value 6.84 exceeds maximum effluent limit of Maximum Daily

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

5.0 mg/L. Supplied comment: 'MW located next to an active tree nursery.'

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95 additional MI ENVIRO: record(s) in the EDR Site Report.

Evaluations:

Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Recon -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Recon -- Permit: GW1810198. Evaluation Reference: E-F43A-93-BC55
Evaluation Type:	Groundwater Recon
Evaluation SEQ:	1
Evaluation Date:	9/24/2013 12:00:00 AM
Notes:	Not reported

Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Recon -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Recon -- Permit: GW1810198. Evaluation Reference: E-CADA-97-BFD3
Evaluation Type:	Groundwater Recon
Evaluation SEQ:	1
Evaluation Date:	12/2/2015 12:00:00 AM
Notes:	Not reported

Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Recon -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Recon -- Permit: GW1810198. Evaluation Reference: E-DFEA-C5-CA91
Evaluation Type:	Groundwater Recon
Evaluation SEQ:	1
Evaluation Date:	6/12/2014 12:00:00 AM
Notes:	Not reported

Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Recon -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Recon -- Permit: GW1810198. Evaluation Reference: E-A4EE-42-D1EB
Evaluation Type:	Groundwater Recon
Evaluation SEQ:	1
Evaluation Date:	5/13/2015 12:00:00 AM
Notes:	Not reported

Site ID:	-70012914164797645
Source ID:	-70012914164797645

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Program Code:	NPDES
Program Description:	WRD - NPDES
Evaluation Gen. Type:	Reconnaissance Inspection -- Permit: GW1810198
Evaluation Gen. Description:	Reconnaissance Inspection -- Permit: GW1810198. Evaluation Reference: E-7E55-E3-679D
Evaluation Type:	Reconnaissance Inspection
Evaluation SEQ:	1
Evaluation Date:	1/30/2009 12:00:00 AM
Notes:	Not reported
Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Recon -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Recon -- Permit: GW1810198. Evaluation Reference: E-3F44-41-BC12
Evaluation Type:	Groundwater Recon
Evaluation SEQ:	1
Evaluation Date:	1/27/2014 12:00:00 AM
Notes:	Not reported
Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Compliance Evaluation Inspection (CEI) -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Compliance Evaluation Inspection (CEI) -- Permit: GW1810198. Evaluation Reference: E-D8F2-39-1A2E
Evaluation Type:	Groundwater Compliance Evaluation Inspection (CEI)
Evaluation SEQ:	1
Evaluation Date:	6/20/2017 12:00:00 AM
Notes:	Not reported
Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	NPDES
Program Description:	WRD - NPDES
Evaluation Gen. Type:	Converted Data
Evaluation Gen. Description:	Converted Data. Evaluation Reference: E-4A6D-2C-5159
Evaluation Type:	Converted Data
Evaluation SEQ:	1
Evaluation Date:	12/12/2011 12:00:00 AM
Notes:	1 new violation(s) identified.
Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Recon -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Recon -- Permit: GW1810198. Evaluation Reference: E-63D2-CE-F6FC
Evaluation Type:	Groundwater Recon
Evaluation SEQ:	1
Evaluation Date:	2/6/2014 12:00:00 AM
Notes:	Not reported

EVERGREEN MOBILE HOME PARK (Continued) **S110093072**

Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater Recon -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater Recon -- Permit: GW1810198. Evaluation Reference: E-AF8B-36-C39F
Evaluation Type:	Groundwater Recon
Evaluation SEQ:	1
Evaluation Date:	2/17/2016 12:00:00 AM
Notes:	Not reported

Site ID:	-70012914164797645
Source ID:	-70012914164797645
Program Code:	GROUNDWATER
Program Description:	WRD - Groundwater
Evaluation Gen. Type:	Groundwater CSI-Conventionals Only -- Permit: GW1810198
Evaluation Gen. Description:	Groundwater CSI-Conventionals Only -- Permit: GW1810198. Evaluation Reference: E-B787-C7-6CAB
Evaluation Type:	Groundwater CSI-Conventionals Only
Evaluation SEQ:	1
Evaluation Date:	5/27/2015 12:00:00 AM
Notes:	Not reported

Click this hyperlink while viewing on your computer to access
29 additional MI ENVIRO: record(s) in the EDR Site Report.

A8
NNE
1/4-1/2
0.257 mi.
1357 ft.

2096 N STATE RD
IONIA TWP, MI

Site 7 of 7 in cluster A

MI CDL **S128065890**
N/A

Relative:
Lower

Actual:
810 ft.

CDL:

Name:	Not reported
Address:	2096 N STATE RD
City:	IONIA TWP
Date:	Not reported
Type:	Not reported
Cross street:	Not reported
Lab type:	Not reported
Agency:	MSP CMET
Complaint #:	Not reported
Oic:	Not reported
Child:	Not reported
Fire:	Not reported
Injuries:	Not reported
Who:	Not reported
Lab:	Not reported
Dump:	Not reported
Glass:	Not reported
Unknown:	Not reported
<2:	Not reported
2 - 8oz:	Not reported
9oz - 1lb:	Not reported
2 - 9lb:	Not reported

(Continued) **S128065890**

10 - 19lb:	Not reported
20lb >:	Not reported
Chemical:	Methamphetamines
Quantity Seized:	27300
ORI Number:	Not reported
Incident Number:	1040000147
Incident Date:	09/22/2020
Entry Date:	Not reported
Loss Type:	Seized
Unit of Measure:	GM
Latitude:	43.007702
Longitude:	-85.002554
ORI Name:	Not reported
Micr Incidents ID:	Not reported
Drug Desc:	Not reported

9
NNE
1/4-1/2
0.338 mi.
1785 ft.

COMPLAINT:06-34-0014-V
2190 N. STATE ROAD
IONIA, MI 48846

MI ENVIRO **S129545741**
N/A

Relative:
Lower

Actual:
803 ft.

ENVIRO:

Site ID:	-1849907946137912826
Name:	COMPLAINT:06-34-0014-V
Address:	2190 N. STATE ROAD
Latitude:	43.0249
Longitude:	-85.0641

Site URL:

Environmental Actions:

Site ID:	-1849907946137912826
Site Number:	06-34-0014-V
Program Code:	RESOURCES
ENF Action Type:	Violation Notice - Order to Restore
ENF Action Gen Type:	Violation Notice - Order to Restore
ENF Action Gen Type Description:	Violation Notice - Order to Restore
ENF Action Description:	Violation Notice - Order to Restore. Compliance Action Reference: 06-34-0014-V
ENF Action Date:	10/6/2006 12:00:00 AM
Notes:	Status: Closed.

Evaluations:

Site ID:	-1849907946137912826
Source ID:	-1849907946137912826
Program Code:	RESOURCES
Program Description:	WRD - Resources
Evaluation Gen. Type:	Resources Complaint Inspection
Evaluation Gen. Description:	Resources Complaint Inspection. Evaluation Reference: E-E3EA-D4-BBA3
Evaluation Type:	Resources Complaint Inspection
Evaluation SEQ:	1
Evaluation Date:	10/4/2006 12:00:00 AM
Notes:	1 new violation(s) identified.

B10 **INTERNATIONAL TRANSMISSION COMPANY LLC** **RCRA-VSQG** **1010319980**
WNW **1718 MARQUETTE RD** **MIK411852411**
1/4-1/2 **IONIA, MI 48846**
0.464 mi.
2451 ft. **Site 1 of 3 in cluster B**

Relative: **Lower**
Actual: **810 ft.**

RCRA Listings:

Date Form Received by Agency:		20060901
Handler Name:		International Transmission Company Llc
Handler Address:		1718 Marquette Rd
Handler City,State,Zip:		IONIA, MI 48846
EPA ID:		MIK411852411
Contact Name:		STEVE SCZYTKO
Contact Address:		1718 MARQUETTE RD
Contact City,State,Zip:		IONIA, MI 48846
Contact Telephone:		734-547-0266
Contact Fax:		Not reported
Contact Email:		Not reported
Contact Title:		Not reported
EPA Region:		05
Land Type:		Private
Federal Waste Generator Description:		Conditionally Exempt Small Quantity Generator
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Handler Activities
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		39500 ORCHARD HILL PL
Mailing City,State,Zip:		NOVI, MI 48375
Owner Name:	Consumers Energy Co	
Owner Type:		Private
Operator Name:	Itc Transmission	
Operator Type:		Private
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
202 GPRA Corrective Action Baseline:		No
Subject to Corrective Action Universe:		No
Non-TSDFs Where RCRA CA has Been Imposed Universe:		No
Corrective Action Priority Ranking:		No NCAPS ranking
Environmental Control Indicator:		No
Institutional Control Indicator:		No

INTERNATIONAL TRANSMISSION COMPANY LLC (Continued) **1010319980**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20110303
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: CONSUMERS ENERGY CO	
Legal Status:	Private
Date Became Current:	19900101
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: METC-MICHIGAN ELECTRICAL TRANSMISSION CO	
Legal Status:	Private
Date Became Current:	20060901
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: ITC TRANSMISSION	
Legal Status:	Private
Date Became Current:	20060901
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported

INTERNATIONAL TRANSMISSION COMPANY LLC (Continued) **1010319980**

Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 20060901
Handler Name: INTERNATIONAL TRANSMISSION COMPANY LLC
Federal Waste Generator Description: Very Small Quantity Generator (formerly Conditionally-Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 221121
NAICS Description: Electric Bulk Power Transmission And Control

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B11
WNW
1/4-1/2
0.464 mi.
2451 ft.

INTERNATIONAL TRANSMISSION COMPANY LLC
1718 MARQUETTE RD
IONIA, MI 48846

Site 2 of 3 in cluster B

FINDS **1010440246**
ECHO **N/A**

Relative:
Lower

Actual:
810 ft.

FINDS:
Registry ID: 110031361693

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1010440246
Registry ID: 110031361693

DFR URL:
Name: INTERNATIONAL TRANSMISSION COMPANY LLC
Address: 1718 MARQUETTE RD

INTERNATIONAL TRANSMISSION COMPANY LLC (Continued) **1010440246**

City,State,Zip: IONIA, MI 48846

B12 **INTERNATIONAL TRANSMISSION COMPANY LLC** **MI WDS** **S111979387**
WNW **1718 MARQUETTE RD** **N/A**
1/4-1/2 **IONIA, MI 48846**
0.464 mi.
2451 ft. **Site 3 of 3 in cluster B**

Relative: **Lower**
Actual: **810 ft.**

WDS:

Name:	INTERNATIONAL TRANSMISSION COMPANY LLC
Address:	1718 MARQUETTE RD
City,State,Zip:	IONIA, MI 48846
Site Id:	MIK411852411
WMD Id:	482537
Site Specific Name:	ITC/METC MARQUETTE SUBSTATION
Mailing Address:	39500 ORCHARD HILL PL
Mailing City/State/Zip:	48375
Mailing County:	OAKLAND

C13 **MI SPILLS** **S111343992**
North **2265 NORTH STATE ROAD** **N/A**
1/4-1/2 **IONIA, MI**
0.474 mi.
2501 ft. **Site 1 of 3 in cluster C**

Relative: **Lower**
Actual: **808 ft.**

PEAS:

Name:	Not reported
Address:	2265 NORTH STATE ROAD
City,State,Zip:	IONIA, MI
Incident Date:	2010-03-24 00:00:00
Office Status:	OFFICE HOURS
Initials of Incoming Operator:	ARC
Time Received by DNRE Staff:	Not reported
Time Occur:	Not reported
Date Of PEAS Call:	Not reported
Complainant / Company:	Not reported
Complainant Address:	2265 NORTH STATE ROAD
Company Involved:	DISCOUNT TIRE
DEQ Division Involved:	Not reported
Incident Description:	MEDIUM SIZED FIRE IN THE BACK LOT, BETWEEN 600-1000 TIRES AT MOST
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Description:	Not reported
Date Discovered:	3/23/2010
Time Discovered:	1942 HOURS
Office/After Hours:	Not reported
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Source decode:	Not reported
Lead Division 2:	Not reported
Party Involved Type:	Not reported
Latitude:	Not reported

(Continued) **S111343992**

Longitude:	Not reported
Release/Incident Ctrl:	Not reported
Release/Incident Ctrl Detail:	Not reported
Special Referral:	Not reported

C14 **MI SPILLS** **S128482871**
North **2265 N STATE RD** **N/A**
1/4-1/2 **IONIA, MI**
0.474 mi.
2501 ft. **Site 2 of 3 in cluster C**

Relative: **Lower**

Actual: **808 ft.**

PEAS:

Name:	Not reported
Address:	2265 N STATE RD
City,State,Zip:	IONIA, MI
Incident Date:	03/23/2010
Office Status:	Not reported
Initials of Incoming Operator:	RAJ
Time Received by DNRE Staff:	Not reported
Time Occur:	7:42:00 PM
Date Of PEAS Call:	Not reported
Complainant / Company:	Not reported
Complainant Address:	Not reported
Company Involved:	Not reported
DEQ Division Involved:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Description:	Not reported
Date Discovered:	Not reported
Time Discovered:	Not reported
Office/After Hours:	AFTER HOURS
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Source decode:	Not reported
Lead Division 2:	Not reported
Party Involved Type:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Release/Incident Ctrl:	Not reported
Release/Incident Ctrl Detail:	Not reported
Special Referral:	Not reported

C15
North
1/4-1/2
0.474 mi.
2501 ft.

2265 NORTH STATE ROAD
IONIA, MI

Site 3 of 3 in cluster C

MI SPILLS **S128482873**
N/A

Relative:
Lower

Actual:
808 ft.

PEAS:

Name:	Not reported
Address:	2265 NORTH STATE ROAD
City,State,Zip:	IONIA, MI
Incident Date:	03/24/2010
Office Status:	Not reported
Initials of Incoming Operator:	ARC
Time Received by DNRE Staff:	Not reported
Time Occur:	7:42:00 PM
Date Of PEAS Call:	Not reported
Complainant / Company:	Not reported
Complainant Address:	Not reported
Company Involved:	Not reported
DEQ Division Involved:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Description:	Not reported
Date Discovered:	Not reported
Time Discovered:	Not reported
Office/After Hours:	OFFICE HOURS
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Source decode:	Not reported
Lead Division 2:	Not reported
Party Involved Type:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Release/Incident Ctrl:	Not reported
Release/Incident Ctrl Detail:	Not reported
Special Referral:	Not reported

16
South
1/2-1
0.616 mi.
3253 ft.

WOLBERS POSSEHN
1276 N STATE RD
IONIA, MI 48846

MI ENVIRO **S132571006**
N/A

Relative:
Lower

Actual:
783 ft.

ENVIRO:

Site ID:	-5334991524688040002
Name:	WOLBERS POSSEHN
Address:	1276 N STATE RD
Latitude:	43.006
Longitude:	-85.075

Site URL:

Environmental Actions:

Site ID:	-5334991524688040002
Site Number:	22GZ-TRHD-E23

17
NNE
1/2-1
0.732 mi.
3865 ft.

CL TRUCKING & EXCAVATING, LLC
256 E PARMETER RD
IONIA, MI 48846

MI AST **A100365505**
N/A

Relative:
Higher

Actual:
819 ft.

AST:

Name:	CL TRUCKING & EXCAVATING, LLC
Address:	256 E PARMETER RD
City:	IONIA
Zip:	48846-9618
Facility ID:	91085105
Owner Name:	CL TRUCKING & EXCAVAATING LLC
Owner Address:	256 E PARMETER RD
Owner City,St,Zip:	IONIA, MI 48846
District:	2
Date of Collection:	06/13/2012
Accuracy:	10 FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Description Category:	Plant Entrance (Freight)
Method of Collection:	GPS Code Meas. Standard Positioning Service SA Off
Horizontal Datum:	NAD83
Latitude:	43.0230600
Longitude:	-85.069300
Tank Id:	ATK-138450-15
Tank Status:	Currently In Use
Capacity (in gallons):	8000
Installation Date:	06/29/2012
Substance Stored:	Diesel
Removed/Closed Date:	Not reported

D18
NNW
1/2-1
0.765 mi.
4040 ft.

AMERITECH-GRAND RAPIDS: 97-09-0358-P
, MI
Site 1 of 2 in cluster D

MI ENVIRO **S129714644**
N/A

Relative:
Lower

Actual:
809 ft.

ENVIRO:

Site ID:	-899266005498515413
Name:	AMERITECH-GRAND RAPIDS: 97-09-0358-P
Address:	Not reported
Latitude:	43.024
Longitude:	-85.084

Site URL:

Environmental Intentions:

Site ID:	-899266005498515413
Site Number:	97-09-0358-P
Program ID:	97-09-0358-P
Start Date Description:	Effective
Start Date:	6/10/1997 12:00:00 AM
End Date Description:	Expiration / Termination
End Date:	12/31/1998 12:00:00 AM
Type Code:	RESC_MINR_PRJCT
ENV INT Number:	97-09-0358-P
Type Description Long:	Permit Number: 97-09-0358-P v1. 0. Category: Resources Minor Project. Status: Expired

AMERITECH-GRAND RAPIDS: 97-09-0358-P (Continued) **S129714644**

Type Description:	Resources Minor Project
Contact Name:	Inactive Staff
ENV INT Notes:	Not reported

D19 NNW 1/2-1 0.765 mi. 4040 ft. **COMPLAINT:11-34-0008-V SPRAGUE AND HARWOOD RDS , MI** **MI ENVIRO** **S129852074 N/A**

Site 2 of 2 in cluster D

Relative: Lower

Actual: 809 ft.

ENVIRO:

Site ID:	6493759032215136788
Name:	COMPLAINT:11-34-0008-V
Address:	SPRAGUE AND HARWOOD RDS
Latitude:	43.024
Longitude:	-85.084

Site URL:

Environmental Actions:

Site ID:	6493759032215136788
Site Number:	11-34-0008-V
Program Code:	RESOURCES
ENF Action Type:	Violation Notice - After the Fact
ENF Action Gen Type:	Violation Notice - After the Fact
ENF Action Gen Type Description:	Violation Notice - After the Fact
ENF Action Description:	Violation Notice - After the Fact. Compliance Action Reference: 11-34-0008-V
ENF Action Date:	3/5/2012 12:00:00 AM
Notes:	Status: Closed.

Evaluations:

Site ID:	6493759032215136788
Source ID:	6493759032215136788
Program Code:	RESOURCES
Program Description:	WRD - Resources
Evaluation Gen. Type:	Resources Complaint Inspection
Evaluation Gen. Description:	Resources Complaint Inspection. Evaluation Reference: E-8174-BD-3D26
Evaluation Type:	Resources Complaint Inspection
Evaluation SEQ:	1
Evaluation Date:	7/15/2011 12:00:00 AM
Notes:	1 new violation(s) identified.

---

20 NNW 1/2-1 0.773 mi. 4081 ft. **34-CONSUMERS ENERGY ON MARQUETTE AND PARMETER-IONI MARQUETTE & PARMETER ROADS IONIA, MI 48846** **MI ENVIRO** **S129660528 N/A**

Relative: Higher

Actual: 815 ft.

ENVIRO:

Site ID:	-6705526246918637154
Name:	34-CONSUMERS ENERGY ON MARQUETTE AND PARMETER-IONIA
Address:	MARQUETTE & PARMETER ROADS
Latitude:	43.0203

34-CONSUMERS ENERGY ON MARQUETTE AND PARMETER-IONIA (Continued) **S129660528**

Longitude: -85.0816

Site URL:

Document File:
Site ID: -6705526246918637154
Document ID: 1034540634895247092
Document Name: Ionia Rd Comm Permit_v1.pdf
Document Type: Applicant Attachments
Document Description: Application/Request: 2ET-5N93-FWEG. Ionia Rd Comm Permit.pdf
Document Date: 4/13/2016 12:00:00 AM
Site Number: 8F224789-4364

URL:

Site ID: -6705526246918637154
Document ID: -2221586845550942252
Document Name: CONSUMERSIONIAAPPCOMP.pdf
Document Type: Application Docs Resources
Document Description: Application/Request: 2ET-5N93-FWEG.
Document Date: 5/5/2016 12:00:00 AM
Site Number: 8F224789-4364

URL:

Site ID: -6705526246918637154
Document ID: -889019269705121653
Document Name: Directional Drill (HDD) contingency plan 2004_v1.pdf
Document Type: Applicant Attachments
Document Description: Application/Request: 2ET-5N93-FWEG. Directional Drill (HDD) contingency plan 2004.doc
Document Date: 4/13/2016 12:00:00 AM
Site Number: 8F224789-4364

URL:

Site ID: -6705526246918637154
Document ID: 4025182275416355515
Document Name: DEQ jpa P303 Marquette_v1.pdf
Document Type: Applicant Attachments
Document Description: Application/Request: 2ET-5N93-FWEG. DEQ jpa P303 Marquette.pdf
Document Date: 4/13/2016 12:00:00 AM
Site Number: 8F224789-4364

URL:

Site ID: -6705526246918637154
Document ID: -6271418600928640685
Document Name: Ionia Rd Comm Permit_v1.pdf
Document Type: Applicant Attachments
Document Description: Application/Request: 2ET-5N93-FWEG. Ionia Rd Comm Permit.pdf
Document Date: 4/13/2016 12:00:00 AM
Site Number: 8F224789-4364

URL:

Site ID: -6705526246918637154
Document ID: 4071118443353579666

34-CONSUMERS ENERGY ON MARQUETTE AND PARMETER-IONIA (Continued) **S129660528**

Document Name:	DEQ jpa P303 Marquette drawings_v1.pdf
Document Type:	Applicant Attachments
Document Description:	Application/Request: 2ET-5N93-FWEG. DEQ jpa P303 Marquette drawings.pdf
Document Date:	4/13/2016 12:00:00 AM
Site Number:	8F224789-4364

URL:

Site ID:	-6705526246918637154
Document ID:	7177966513457591351
Document Name:	Directional Drill (HDD) contingency plan 2004_v1.pdf
Document Type:	Applicant Attachments
Document Description:	Application/Request: 2ET-5N93-FWEG. Directional Drill (HDD) contingency plan 2004.doc
Document Date:	4/13/2016 12:00:00 AM
Site Number:	8F224789-4364

URL:

Environmental Intentions:

Site ID:	-6705526246918637154
Site Number:	8F224789-4364
Program ID:	WRP002721
Start Date Description:	Effective
Start Date:	5/27/2016 12:00:00 AM
End Date Description:	Expiration / Termination
End Date:	5/27/2021 12:00:00 AM
Type Code:	RESC_MINR_PRJCT
ENV INT Number:	WRP002721
Type Description Long:	Permit Number: WRP002721 v1. 0. Category: Resources Minor Project. Status: Expired
Type Description:	Resources Minor Project
Contact Name:	Jeff Fischer | (616) 710-0574 | fischerj1@michigan.gov
ENV INT Notes:	Not reported

E21
WSW
1/2-1
0.812 mi.
4285 ft.

1602 HAYNOR RD
IONIA, MI

Site 1 of 3 in cluster E

MI SPILLS **S111343923**
N/A

Relative:
Higher

Actual:
827 ft.

PEAS:

Name:	Not reported
Address:	1602 HAYNOR RD
City,State,Zip:	IONIA, MI
Incident Date:	2010-06-21 00:00:00
Office Status:	OFFICE HOURS
Initials of Incoming Operator:	RMV
Time Received by DNRE Staff:	Not reported
Time Occur:	Not reported
Date Of PEAS Call:	Not reported
Complainant / Company:	Not reported
Complainant Address:	1602 HAYNOR
Company Involved:	LOCAL FARMER
DEQ Division Involved:	Not reported

(Continued) **S111343923**

Incident Description:	ANHYDROUS AMMONIA TANK RUPTURED IN FARM FIELD
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Description:	Not reported
Date Discovered:	6/12/2010
Time Discovered:	1300 HOURS
Office/After Hours:	Not reported
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Source decode:	Not reported
Lead Division 2:	Not reported
Party Involved Type:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Release/Incident Ctrl:	Not reported
Release/Incident Ctrl Detail:	Not reported
Special Referral:	Not reported

E22
WSW
1/2-1
0.812 mi.
4285 ft.

1602 HAYNOR RD
IONIA, MI

Site 2 of 3 in cluster E

MI SPILLS **S128483081**
N/A

Relative:
Higher

Actual:
827 ft.

PEAS:

Name:	Not reported
Address:	1602 HAYNOR RD
City,State,Zip:	IONIA, MI
Incident Date:	06/21/2010
Office Status:	Not reported
Initials of Incoming Operator:	RMV
Time Received by DNRE Staff:	Not reported
Time Occur:	1:00:00 PM
Date Of PEAS Call:	Not reported
Complainant / Company:	Not reported
Complainant Address:	Not reported
Company Involved:	Not reported
DEQ Division Involved:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Description:	Not reported
Date Discovered:	Not reported
Time Discovered:	Not reported
Office/After Hours:	OFFICE HOURS
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Source decode:	Not reported
Lead Division 2:	Not reported
Party Involved Type:	Not reported

(Continued) **S128483081**

Latitude:	Not reported
Longitude:	Not reported
Release/Incident Ctrl:	Not reported
Release/Incident Ctrl Detail:	Not reported
Special Referral:	Not reported

E23
WSW
1/2-1
0.819 mi.
4323 ft.

1597 HAYNOR RD, IONIA, MI
IONIA, MI

Site 3 of 3 in cluster E

MI SPILLS **S128479880**
N/A

Relative:
Higher

Actual:
826 ft.

PEAS:

Name:	Not reported
Address:	1597 HAYNOR RD, IONIA, MI
City,State,Zip:	IONIA, MI
Incident Date:	08/20/2006
Office Status:	Not reported
Initials of Incoming Operator:	EL - PEAS
Time Received by DNRE Staff:	Not reported
Time Occur:	6:00:00 PM
Date Of PEAS Call:	Not reported
Complainant / Company:	Not reported
Complainant Address:	Not reported
Company Involved:	Not reported
DEQ Division Involved:	AQD
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Incident Description:	Not reported
Description:	Not reported
Date Discovered:	Not reported
Time Discovered:	Not reported
Office/After Hours:	Not reported
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Source decode:	Not reported
Lead Division 2:	Not reported
Party Involved Type:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Release/Incident Ctrl:	Not reported
Release/Incident Ctrl Detail:	Not reported
Special Referral:	Not reported

34-579 E PARMETER RD-IONIA (Continued) **S129847598**

Document Type: Misc. Application and Request Docs
Document Description: Service Request: HP9-0DY1-DAH3Q. Submission PDF
Document Date: 5/26/2021 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

Site ID: 6303296882925769264
Document ID: 1286886697893846102
Document Name: Applewood Farms - Live Photo_v1.pdf
Document Type: Form Submission Attachments
Document Description: Service Request: HP9-0DY1-DAH3Q. nForm Document
Document Date: 5/26/2021 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

Site ID: 6303296882925769264
Document ID: 2700849606026845704
Document Name: Pre-Application Meeting Inquiry for site 34-579 E Parmeter Rd-Ionia .pdf
Document Type: Application Docs Resources
Document Description: Service Request: HP9-0DY1-DAH3Q. Email Correspondence
Document Date: 3/8/2022 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

Site ID: 6303296882925769264
Document ID: -2050044751948470500
Document Name: RE_ 579 Eagle Point (2).pdf
Document Type: Application Docs Resources
Document Description: Service Request: HP9-0DY1-DAH3Q. Email Correspondence
Document Date: 3/8/2022 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

Site ID: 6303296882925769264
Document ID: -3431723492378731718
Document Name: Applewood Farms -Overhead View_v1.pdf
Document Type: Form Submission Attachments
Document Description: Service Request: HP9-0DY1-DAH3Q. nForm Document
Document Date: 5/26/2021 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

Site ID: 6303296882925769264
Document ID: -1689224078996065979
Document Name: RE_ Pre-Application Meeting Inquiry for site 34-579 E Parmeter Rd-Ionia (1).pdf
Document Type: Application Docs Resources
Document Description: Service Request: HP9-0DY1-DAH3Q. Email Correspondence
Document Date: 3/8/2022 12:00:00 AM
Site Number: D03K-XW45-13N

34-579 E PARMETER RD-IONIA (Continued) **S129847598**

URL:

Site ID: 6303296882925769264
Document ID: -3986354365306873925
Document Name: RE_ 579 Eagle Point.pdf
Document Type: Application Docs Resources
Document Description: Service Request: HP9-0DY1-DAH3Q. Email Correspondence
Document Date: 3/8/2022 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

Site ID: 6303296882925769264
Document ID: -8469259053525480280
Document Name: RE_ 579 Eagle Point-Site 34-579 E Parmeter Rd-Ionia .pdf
Document Type: Application Docs Resources
Document Description: Service Request: HP9-0DY1-DAH3Q. Email Correspondence
Document Date: 3/8/2022 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

Site ID: 6303296882925769264
Document ID: 8261348775649794666
Document Name: RE_ Pre-Application Meeting Inquiry for site 34-579 E Parmeter Rd-Ionia.pdf
Document Type: Application Docs Resources
Document Description: Service Request: HP9-0DY1-DAH3Q. Email Correspondence
Document Date: 3/8/2022 12:00:00 AM
Site Number: D03K-XW45-13N

URL:

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27 **DARBYS STANDARD SERVICE** **EDR Hist Auto** **1022149058**
North **2913 N STATE RD** **N/A**
> 1 **IONIA, MI 48846**
1.058 mi.
5587 ft.

Relative: EDR Hist Auto
Lower

Actual: **810 ft.**

Year:	Name:	Type:
1969	DARBYS STANDARD SERVICE	Gasoline Service Stations
1970	DARBYS STANDARD SERVICE	Gasoline Service Stations
1971	DARBYS STANDARD SERVICE	Gasoline Service Stations

G28 **WELLS OIL-IONIA** **UST FINDER RELEASE** **1029032799**
North **3006 N STATE RD** **N/A**
> 1 **IONIA, MI 48888**
1.147 mi.
6056 ft. **Site 1 of 5 in cluster G**

Relative: UST FINDER RELEASE:
Lower

Actual: Object ID:	523516
810 ft. Facility ID:	MI00033029
Lust ID:	MIC-2616-90
Name:	WELLS OIL-IONIA
Address:	3006 N STATE RD
City,State,Zip:	IONIA, MI 48888
Address Match Type:	Not reported
Reported Date:	1990/12/07 15:59:59+00
Status:	Open
Substance:	Not reported
Population within 1500ft:	19
Domestic Wells within 1500ft:	7
Land Use:	Non-Developed
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Yes
WHPA PWS Facility ID:	MI2029334_23195
WHPA Water Type:	GW - Ground water
WHPA Facility Type:	WL - Well
WHPA HUC12:	040500060305
Within 100yr Floodplain:	No
Tribe:	Not reported
EPA Region:	5
NFA Letter 1:	Not reported
NFA Letter 2:	Not reported
NFA Letter 3:	Not reported
NFA Letter 4:	Not reported
Closed With Residual Contaminate:	Not reported
Coordinate Source:	State
X Coord:	-85.07501
Y Coord:	43.03263
Latitude:	43.0326299999999
Longitude:	-85.07501

G29 **WELLS OIL CO** **UST FINDER** **1028433755**
North **3006 N STATE RD** **N/A**
> 1 **IONIA, MI**
1.147 mi.
6056 ft. **Site 2 of 5 in cluster G**

Relative: UST FINDER:
Lower

Actual: Object ID:	222507
810 ft. Facility ID:	MI33029
Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA, MI
Address Match Type:	PointAddress
Open USTs:	0
Closed USTs:	4
TOS USTs:	0

WELLS OIL CO (Continued) **1028433755**

Population 1500ft:	20
Private Wells 1500ft:	7
Within 100yr Floodplain:	No
Land Use:	Non-Developed
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Yes
WHPA PWS Facility ID:	MI2029334_23195
WHPA Water Type:	GW - Ground water
WHPA Facility Type:	WL - Well
WHPA HUC12:	040500060305
Facility Status:	Closed UST(s)
Date of Last Inspection:	Not reported
EPA Region:	5
Tribe:	Not reported
Coordinate Source:	Geocode
X Coord:	-85.07510239
Y Coord:	43.0313400000001
Latitude:	43.03134
Longitude:	-85.07510239

UST FINDER:

Object ID:	821028
Facility ID:	MI33029
Tank ID:	MIUTK-030028-15
Tank Status:	Closed
Installation Date:	1979/10/06 16:00:00+00
Removal Date:	1991/09/10 15:59:59+00
Tank Capacity:	4000
Substances:	Gasoline,
Tank Wall Type:	Not reported

Object ID:	821029
Facility ID:	MI33029
Tank ID:	MIUTK-033288-15
Tank Status:	Closed
Installation Date:	1979/10/06 16:00:00+00
Removal Date:	1991/09/10 15:59:59+00
Tank Capacity:	2000
Substances:	Gasoline,
Tank Wall Type:	Not reported

Object ID:	821030
Facility ID:	MI33029
Tank ID:	MIUTK-064385-15
Tank Status:	Closed
Installation Date:	1979/10/06 16:00:00+00
Removal Date:	1991/09/10 15:59:59+00
Tank Capacity:	2000
Substances:	Diesel,
Tank Wall Type:	Not reported

Object ID:	821244
Facility ID:	MI33029
Tank ID:	MIUTK-040888-15

WELLS OIL CO (Continued) **1028433755**

Tank Status:	Closed
Installation Date:	1985/01/01 16:00:00+00
Removal Date:	1991/09/01 15:59:59+00
Tank Capacity:	4000
Substances:	Gasoline,
Tank Wall Type:	Not reported

G30 **WELLS ENTERPRISE** **MI AST** **A100128093**
North **3006 N STATE RD** **N/A**
> 1 **IONIA, MI 48846**
1.147 mi.
6056 ft. **Site 3 of 5 in cluster G**

Relative: **Lower**
Actual: **810 ft.**

AST:

Name:	WELLS ENTERPRISE
Address:	3006 N STATE RD
City:	IONIA
Zip:	48846-9614
Facility ID:	92084094
Owner Name:	INERGY PROPANE LLC (DBA) HOOSIER PROPANE OF STANTON
Owner Address:	1117 W STANTON PO BOX 728
Owner City,St,Zip:	STANTON, MI 48888
District:	2
Date of Collection:	01/11/2001
Accuracy:	100 FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Description Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Horizontal Datum:	NAD83
Latitude:	43.0326330
Longitude:	-85.075014
Tank Id:	ATK-043978-15
Tank Status:	Removed from Premises
Capacity (in gallons):	1000
Installation Date:	06/30/1998
Substance Stored:	LPG
Removed/Closed Date:	10/01/2003

G31 **WELLS OIL CO** **MI LUST** **U000255381**
North **3006 N STATE RD** **MI UST** **N/A**
> 1 **IONIA, MI 48846** **MI INVENTORY**
1.147 mi. **MI WDS**
6056 ft. **Site 4 of 5 in cluster G**

Relative: **Lower**
Actual: **810 ft.**

LUST:

Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA, MI 48846
Facility ID:	33029
Source:	24000
Owner Name:	E STONE, OLA
Owner Address:	Not reported
Owner City,St,Zip:	Not reported

WELLS OIL CO (Continued) **U000255381**

Owner Contact:	Not reported
Owner Phone:	Not reported
Country:	Not reported
District:	Grand Rapids
Site Name:	Wells Oil-ionia
Latitude:	43.03114
Longitude:	-85.07479
Date of Collection:	Not reported
Method of Collection:	The geographic coordinate determination method based on interpolation-photo.
Accuracy:	20
Accuracy Value Unit:	Not reported
Horizontal Data:	North American Datum of 1983
Point Line Area:	Center of a facility or station
Desc Category:	Not reported
Regulatory Program:	Not reported
Risk Condition:	Not reported
Project Manager:	Not reported
Senate District:	Not reported
House District:	Not reported
US Congressional District:	Not reported

Leak Number:	17403
Release Date:	12/07/1990
Substance Released:	Not reported
Release Status:	Open
Release Closed Date:	Not reported

Leak Number:	17403
Release Date:	12/07/1990
Substance Released:	Not reported
Release Status:	Open
Release Closed Date:	Not reported

UST:

Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA 48846-9614
Facility Type:	CLOSED
Facility ID:	00033029
Owner Name:	WELLS OIL CO
Owner Address:	PO BOX 789
Owner City:	STANTON
Owner State:	MI
Owner Zip:	48888-0789
Owner Contact:	Not reported
Owner Phone:	5178315666
Contact:	WARREN R. WELLS
Contact Phone:	(517) 831-5666
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 3 - Grand Rapids District Office

WELLS OIL CO (Continued) **U000255381**

Tank ID:	5
Capacity:	4000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	01/01/1985
Remove Date:	09/01/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	43.03263
Longitude:	-85.07501

Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA 48846-9614
Facility Type:	CLOSED
Facility ID:	00033029
Owner Name:	WELLS OIL CO
Owner Address:	PO BOX 789
Owner City:	STANTON
Owner State:	MI
Owner Zip:	48888-0789
Owner Contact:	Not reported
Owner Phone:	5178315666
Contact:	WARREN R. WELLS
Contact Phone:	(517) 831-5666
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 3 - Grand Rapids District Office
Tank ID:	3
Capacity:	2000
Tank Status:	Removed from Ground
Substance:	Diesel
Install Date:	10/06/1979
Remove Date:	09/10/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	43.03263
Longitude:	-85.07501

WELLS OIL CO (Continued) **U000255381**

Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA 48846-9614
Facility Type:	CLOSED
Facility ID:	00033029
Owner Name:	WELLS OIL CO
Owner Address:	PO BOX 789
Owner City:	STANTON
Owner State:	MI
Owner Zip:	48888-0789
Owner Contact:	Not reported
Owner Phone:	5178315666
Contact:	WARREN R. WELLS
Contact Phone:	(517) 831-5666
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 3 - Grand Rapids District Office
Tank ID:	2
Capacity:	2000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	10/06/1979
Remove Date:	09/10/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	43.03263
Longitude:	-85.07501

Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA 48846-9614
Facility Type:	CLOSED
Facility ID:	00033029
Owner Name:	WELLS OIL CO
Owner Address:	PO BOX 789
Owner City:	STANTON
Owner State:	MI
Owner Zip:	48888-0789
Owner Contact:	Not reported
Owner Phone:	5178315666
Contact:	WARREN R. WELLS
Contact Phone:	(517) 831-5666
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83

WELLS OIL CO (Continued) **U000255381**

Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 3 - Grand Rapids District Office
Tank ID:	1
Capacity:	4000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	10/06/1979
Remove Date:	09/10/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	43.03263
Longitude:	-85.07501

INVENTORY:

Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA, MI 48846
Township:	Ionia
District:	Grand Rapids
Data Source:	Risks Controlled-Interim
Lust Name:	Wells Oil-ionia
Regulatory Program:	213
Release Status:	Open
Project Manager:	Ten Brink, Daniel
Latitude:	43.03114119
Longitude:	-85.07479094

WDS:

Name:	WELLS OIL CO
Address:	3006 N STATE RD
City,State,Zip:	IONIA, MI 48846
Site Id:	MIG000026190
WMD Id:	449917
Site Specific Name:	WELLS OIL CO
Mailing Address:	3006 N STATE RD
Mailing City/State/Zip:	48846
Mailing County:	IONIA

G32 **WELLS OIL COMPANY** **EDR Hist Auto** **1020524951**
North **3009 N STATE RD** **N/A**
> 1 **IONIA, MI 48846**
1.148 mi.
6064 ft. **Site 5 of 5 in cluster G**

Relative: EDR Hist Auto
Lower

Actual: Year: Name: Type:
810 ft. 1989 WELLS OIL COMPANY Gasoline Service Stations
1990 WELLS OIL COMPANY Gasoline Service Stations
1991 WELLS OIL COMPANY Gasoline Service Stations
1992 WELLS OIL COMPANY Gasoline Service Stations
1993 WELLS OIL COMPANY Gasoline Service Stations
1994 WELLS OIL COMPANY Gasoline Service Stations
1995 WELLS OIL COMPANY Gasoline Service Stations

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33 **500 510 520 APPLE TREE DRIVE, IONIA** **MI INVENTORY** **S129190807**
SSE **500 510 520 APPLE TREE DRIVE** **MI PART 201** **N/A**
> 1 **IONIA, MI 48838**
1.178 mi.
6218 ft.

Relative: INVENTORY:
Higher

Actual:
827 ft.

Name:	500 510 520 APPLE TREE DRIVE, IONIA
Address:	500 510 520 APPLE TREE DRIVE
City,State,Zip:	IONIA, MI 48838
Township:	Not reported
District:	Grand Rapids
Data Source:	Risks Present and Require Action in Short-term
Lust Name:	Not reported
Regulatory Program:	201
Release Status:	Not reported
Project Manager:	Ten Brink, Daniel
Latitude:	42.99763241
Longitude:	-85.07188345

PART 201:

Name:	500 510 520 APPLE TREE DRIVE, IONIA
Address:	500 510 520 APPLE TREE DRIVE
City,State,Zip:	IONIA, MI 48838
Facility ID:	34000194
Facility Status:	Not reported
Latitude:	42.99763241
Source:	Not reported
Longitude:	-85.07188345
SAM Score:	Not reported
SAM Score Date:	Not reported
Township:	Not reported
Range:	Not reported
Section:	Not reported
Quarter:	Not reported
Quarter/Quarter:	Not reported
Pollutants:	Not reported
Location Type:	201
Work Unit:	Not reported
Project Manager:	Ten Brink, Daniel
Risk Condition:	Risks Present and Require Action in Short-term

H34 **500 510 520 APPLE TREE DRIVE, IONIA** **MI BEA** **S129290335**
South **500 510 520 APPLE TREE DRIVE** **N/A**
> 1 **IONIA, MI**
1.229 mi.
6490 ft. **Site 1 of 4 in cluster H**

Relative:
Higher

Actual:
828 ft.

BEA:

Name:	500 510 520 APPLE TREE DRIVE, IONIA
Address:	500 510 520 APPLE TREE DRIVE
City,State,Zip:	IONIA, MI
Secondary Address:	Not reported
BEA Number:	Not reported
District:	Not reported
Date Received:	10/17/2022
Submitter Name:	Not reported
Petition Determination:	Not reported
Petition Disclosure:	Not reported
Category:	Not reported
Determination 20107A:	Not reported
Reviewer:	Not reported
Division Assigned:	Not reported
Location ID:	34000194
Submittal Type:	BEA
Submittal Number:	34000194-BEA-2
Approval Status:	In Review
Workflow Status:	Submitted
Date Submitted:	10/18/2022
Date Completed:	Not reported
Township:	Not reported
Work Unit:	Grand Rapids
Comments:	Not reported
Organization:	ASSA Group, Inc.
Contact:	Not reported
Contact Type:	Not reported
Organization Street Address:	Not reported
Organization City:	Not reported
Organization State:	Not reported
Organization Zip Code:	Not reported
Organization County:	Not reported
Contact Street Address:	Not reported
Contact City:	Not reported
Contact Zip Code:	Not reported
Contact State:	Not reported

Name:	500 510 520 APPLE TREE DRIVE, IONIA
Address:	500 510 520 APPLE TREE DRIVE
City,State,Zip:	IONIA, MI
Secondary Address:	Not reported
BEA Number:	Not reported
District:	Not reported
Date Received:	10/17/2022
Submitter Name:	Not reported
Petition Determination:	Not reported
Petition Disclosure:	Not reported
Category:	Not reported
Determination 20107A:	Not reported
Reviewer:	Not reported
Division Assigned:	Not reported
Location ID:	34000194

500 510 520 APPLE TREE DRIVE, IONIA (Continued) **S129290335**

Submittal Type:	BEA
Submittal Number:	34000194-BEA-1
Approval Status:	In Review
Workflow Status:	Submitted
Date Submitted:	10/18/2022
Date Completed:	Not reported
Township:	Not reported
Work Unit:	Grand Rapids
Comments:	Not reported
Organization:	Annecy Group LLC
Contact:	Not reported
Contact Type:	Not reported
Organization Street Address:	Not reported
Organization City:	Not reported
Organization State:	Not reported
Organization Zip Code:	Not reported
Organization County:	Not reported
Contact Street Address:	Not reported
Contact City:	Not reported
Contact Zip Code:	Not reported
Contact State:	Not reported

H35 **ENWORK - IONIA** **E MANIFEST** **1031535989**
South **510 APPLE TREE DRIVE** **N/A**
> 1 **IONIA, MI 48846**
1.231 mi.
6498 ft. **Site 2 of 4 in cluster H**

Relative:
Higher

Actual:
828 ft.

E MANIFEST:

Manifest Tracking Number:	008891362SKS
Last Updated Date:	20230904
Shipped Date:	20230731
Received Date:	20230815
Manifest Status:	Signed
Submission Type:	DataImage5Copy
Origin Type:	Service
Generator EPA ID:	CESQG
Generator Name:	Enwork - Ionia
Generator Location Street Number:	Not reported
Generator Location Street 1:	510 APPLE TREE DRIVE
Generator Location Street 2:	Not reported
Generator Location City:	IONIA
Generator Location State:	MI
Generator Location Zip:	48846
Generator Mail Street Number:	Not reported
Generator Mail Street 1:	510 Apple Tree Drive
Generator Mail Street 2:	Not reported
Generator Mail City:	Ionia
Generator Mail Zip:	48846
Generator Mail State:	MI
Generator Contact Company Name:	Enwork - Ionia
Designated Facility EPA ID:	ARD069748192
Designated Facility Name:	Clean Harbors El Dorado Llc
Designated Facility Mail Street Number:	Not reported
Designated Facility Mail Street 1:	Not reported
Designated Facility Mail Street 2:	309 American Circle
Designated Facility Mail City:	El Dorado
Designated Facility Mail Zip:	71730

ENWORK - IONIA (Continued) **1031535989**

Designated Facility Mail State:	AR
Designated Facility Location Street Number:	Not reported
Designated Facility Location Street 1:	309 American Circle
Designated Facility Location Street 2:	Not reported
Designated Facility Location City:	El Dorado
Designated Facility Location Zip:	71730
Designated Facility Location State:	AR
Designated Facility Contact Company Name:	Not reported
Manifest Residue Indicator:	N
Rejection Indicator:	N

Manifest Tracking Number:	009099801SKS
Last Updated Date:	20231205
Shipped Date:	20231023
Received Date:	20231109
Manifest Status:	Signed
Submission Type:	DataImage5Copy
Origin Type:	Service
Generator EPA ID:	CESQG
Generator Name:	Enwork - Ionia
Generator Location Street Number:	Not reported
Generator Location Street 1:	510 APPLE TREE DRIVE
Generator Location Street 2:	Not reported
Generator Location City:	IONIA
Generator Location State:	MI
Generator Location Zip:	48846
Generator Mail Street Number:	Not reported
Generator Mail Street 1:	510 Apple Tree Drive
Generator Mail Street 2:	Not reported
Generator Mail City:	Ionia
Generator Mail Zip:	48846
Generator Mail State:	MI
Generator Contact Company Name:	Enwork - Ionia
Designated Facility EPA ID:	ARD069748192
Designated Facility Name:	Clean Harbors El Dorado Llc
Designated Facility Mail Street Number:	301
Designated Facility Mail Street 1:	Not reported
Designated Facility Mail Street 2:	309 American Circle
Designated Facility Mail City:	El Dorado
Designated Facility Mail Zip:	71730
Designated Facility Mail State:	AR
Designated Facility Location Street Number:	309
Designated Facility Location Street 1:	American Circle
Designated Facility Location Street 2:	Not reported
Designated Facility Location City:	El Dorado
Designated Facility Location Zip:	71730
Designated Facility Location State:	AR
Designated Facility Contact Company Name:	Not reported
Manifest Residue Indicator:	N
Rejection Indicator:	N

Manifest Tracking Number:	009199711SKS
Last Updated Date:	20241023
Shipped Date:	20240815
Received Date:	20240913
Manifest Status:	Corrected
Submission Type:	DataImage5Copy

ENWORK - IONIA (Continued) **1031535989**

Origin Type:	Service
Generator EPA ID:	CESQG
Generator Name:	Enwork - Ionia
Generator Location Street Number:	Not reported
Generator Location Street 1:	510 APPLE TREE DRIVE
Generator Location Street 2:	Not reported
Generator Location City:	IONIA
Generator Location State:	MI
Generator Location Zip:	48846
Generator Mail Street Number:	Not reported
Generator Mail Street 1:	510 APPLE TREE DRIVE
Generator Mail Street 2:	Not reported
Generator Mail City:	IONIA
Generator Mail Zip:	48846
Generator Mail State:	MI
Generator Contact Company Name:	ENWORK - IONIA
Designated Facility EPA ID:	ARD069748192
Designated Facility Name:	Clean Harbors El Dorado Llc
Designated Facility Mail Street Number:	301
Designated Facility Mail Street 1:	Not reported
Designated Facility Mail Street 2:	309 AMERICAN CIRCLE
Designated Facility Mail City:	EL DORADO
Designated Facility Mail Zip:	71730
Designated Facility Mail State:	AR
Designated Facility Location Street Number:	309
Designated Facility Location Street 1:	AMERICAN CIRCLE
Designated Facility Location Street 2:	Not reported
Designated Facility Location City:	EL DORADO
Designated Facility Location Zip:	71730
Designated Facility Location State:	AR
Designated Facility Contact Company Name:	Not reported
Manifest Residue Indicator:	N
Rejection Indicator:	N

Manifest Tracking Number:	009327090SKS
Last Updated Date:	20240811
Shipped Date:	20240624
Received Date:	20240721
Manifest Status:	Signed
Submission Type:	DataImage5Copy
Origin Type:	Service
Generator EPA ID:	CESQG
Generator Name:	Enwork - Ionia
Generator Location Street Number:	Not reported
Generator Location Street 1:	510 APPLE TREE DRIVE
Generator Location Street 2:	Not reported
Generator Location City:	IONIA
Generator Location State:	MI
Generator Location Zip:	48846
Generator Mail Street Number:	Not reported
Generator Mail Street 1:	510 APPLE TREE DRIVE
Generator Mail Street 2:	Not reported
Generator Mail City:	IONIA
Generator Mail Zip:	48846
Generator Mail State:	MI
Generator Contact Company Name:	ENWORK - IONIA
Designated Facility EPA ID:	ARD069748192

ENWORK - IONIA (Continued) **1031535989**

Designated Facility Name:	Clean Harbors El Dorado Llc
Designated Facility Mail Street Number:	301
Designated Facility Mail Street 1:	Not reported
Designated Facility Mail Street 2:	309 AMERICAN CIRCLE
Designated Facility Mail City:	EL DORADO
Designated Facility Mail Zip:	71730
Designated Facility Mail State:	AR
Designated Facility Location Street Number:	309
Designated Facility Location Street 1:	AMERICAN CIRCLE
Designated Facility Location Street 2:	Not reported
Designated Facility Location City:	EL DORADO
Designated Facility Location Zip:	71730
Designated Facility Location State:	AR
Designated Facility Contact Company Name:	Not reported
Manifest Residue Indicator:	N
Rejection Indicator:	N

Transporter:

Manifest Tracking Number:	009327090SKS
Transporter Line Number:	1
Transporter EPA ID:	TXR000081205
Transporter Name:	Safety-Kleen Systems, Inc.
Manifest Tracking Number:	009327090SKS
Transporter Line Number:	2
Transporter EPA ID:	MAD039322250
Transporter Name:	Clean Harbors Environmental Services, Inc.

Waste Line:

Manifest Tracking Number:	009327090SKS
Waste Line Number:	1
U.S. DOT Hazardous Indicator:	Y
U.S. DOT ID Number:	UN3175
U.S. DOT Description:	Un3175, Waste Solids Containing Flammable Liquid, N.O.S. (Methyl Ethyl Ketone), 4.1, Pg Ii
Non-Hazardous Waste Description:	Not reported
Number of Containers:	4
Container Type Code:	DM
Container Type Description:	Metal drums, barrels, kegs
Waste Quantity:	240
Quantity Unit of Measure Code:	G
Quantity Unit of Measure Description:	Gallons
Waste Quantity, in Tons:	1.00083
Acute Waste Quantity, in Tons:	0
Non-Acute Waste Quantity, in Tons:	1.00083
Waste Quantity, in Kilograms:	907.78649
Acute Waste Quantity, in Kilograms:	0
Non-Acute Waste Quantity, in Kilorgrams:	907.7828349
Management Method Code:	H040
Management Method Description:	INCINERATION
Waste Residue Indicator:	N
Quantity Discrepancy Indicator:	N
Waste Type Discrepancy Indicator:	N
Waste Density:	Not reported
Waste Density Unit of Measure Code:	Not reported
Waste Density Unit of Measure Description:	Not reported

ENWORK - IONIA (Continued) **1031535989**

Form Code:	Not reported
Form Code Description:	Not reported
Source Code:	Not reported
Source Code Description:	Not reported
Waste Minimization Code:	Not reported
Waste Minimization Code Description:	Not reported
Consent Number:	Not reported
EPA Waste Indicator:	Y
Federal Waste Codes:	D001, D035, F005
Quantity Haz Kg:	907.7828349
Quantity Haz Tons:	1.00083
Quantity Non Haz Kg:	0
Quantity Non Haz Tons:	0
State Waste Codes:	Not reported

H36 **VOLCOR FINISHING INC** **RCRA-VSQG** **1000988250**
South **510 APPLETREE DR** **FINDS** **MIR000000620**
> 1 **IONIA, MI 48846** **ECHO**
1.231 mi. **E MANIFEST**
6498 ft. **Site 3 of 4 in cluster H**

Relative: **Higher**
Actual: **828 ft.**

RCRA Listings:

Date Form Received by Agency:		19950307
Handler Name:		Volcor Finishing Inc
Handler Address:		510 Appletree Dr
Handler City,State,Zip:		IONIA, MI 48846
EPA ID:		MIR000000620
Contact Name:		DENNIS SCHUMACHER
Contact Address:		510 APPLETREE DR
Contact City,State,Zip:		IONIA, MI 48846
Contact Telephone:		616-527-5555
Contact Fax:		Not reported
Contact Email:		Not reported
Contact Title:		Not reported
EPA Region:		05
Land Type:		Private
Federal Waste Generator Description:		Conditionally Exempt Small Quantity Generator
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Handler Activities
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		510 APPLETREE DR
Mailing City,State,Zip:		IONIA, MI 48846
Owner Name:	Volcor Finishing Inc	
Owner Type:		Private
Operator Name:	Volcor Finishing Inc	
Operator Type:		Private
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No

VOLCOR FINISHING INC (Continued) **1000988250**

Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20110303
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: VOLCOR FINISHING INC	
Legal Status:	Private
Date Became Current:	19930101
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: VOLCOR FINISHING INC	
Legal Status:	Private
Date Became Current:	19930101
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported

VOLCOR FINISHING INC (Continued) **1000988250**

Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:
Receive Date: 19950307
Handler Name: VOLCOR FINISHING INC
Federal Waste Generator Description: Very Small Quantity Generator (formerly Conditionally-Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 19980227
Handler Name: VOLCOR FINISHING INC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 331511
NAICS Description: Iron Foundries

NAICS Code: 336399
NAICS Description: All Other Motor Vehicle Parts Manufacturing

Has the Facility Received Notices of Violations:
Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported

VOLCOR FINISHING INC (Continued) **1000988250**

Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	20070821
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

FINDS:
Registry ID: 110000798067

Click Here for FRS Facility Detail Report:

Environmental Interest/Information System:
The Department of Labor, Occupational Safety and Health Administration information system consists of inspection case detail for approximately 100,000 OSHA inspections conducted annually. The FRS dataset includes facilities that had inspections within the last 7 years within the mining, oil and gas, utilities, and manufacturing sectors.
The Resource Conservation and Recovery Act Information System (RCRAInfo) is EPA's comprehensive information system in support of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. It tracks many types of information about generators, transporters, treaters, storers, and disposers of hazardous waste.

VOLCOR FINISHING INC (Continued) **1000988250**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000988250
Registry ID:	110000798067

DFR URL:

Name:	VOLCOR FINISHING INC
Address:	510 APPLETREE DR
City,State,Zip:	IONIA, MI 48846

E MANIFEST:

Manifest Tracking Number:	024529550JJK
Last Updated Date:	20220721
Shipped Date:	20220627
Received Date:	20220701
Manifest Status:	Signed
Submission Type:	DataImage5Copy
Origin Type:	Service
Generator EPA ID:	MIR000000620
Generator Name:	Volcor Finishing
Generator Location Street Number:	Not reported
Generator Location Street 1:	510 APPLE TREE
Generator Location Street 2:	Not reported
Generator Location City:	IONIA
Generator Location State:	MI
Generator Location Zip:	48846
Generator Mail Street Number:	Not reported
Generator Mail Street 1:	510 Apple Tree
Generator Mail Street 2:	Not reported
Generator Mail City:	Ionia
Generator Mail Zip:	48846
Generator Mail State:	MI
Generator Contact Company Name:	Not reported
Designated Facility EPA ID:	MID092947928
Designated Facility Name:	Drug & Laboratory Disposal, Inc.
Designated Facility Mail Street Number:	331
Designated Facility Mail Street 1:	Not reported
Designated Facility Mail Street 2:	BROAD ST
Designated Facility Mail City:	PLAINWELL
Designated Facility Mail Zip:	49080
Designated Facility Mail State:	MI
Designated Facility Location Street Number:	331
Designated Facility Location Street 1:	331 Broad Street
Designated Facility Location Street 2:	Not reported
Designated Facility Location City:	Plainwell
Designated Facility Location Zip:	49080
Designated Facility Location State:	MI
Designated Facility Contact Company Name:	Not reported
Manifest Residue Indicator:	N
Rejection Indicator:	N

Transporter:

Manifest Tracking Number:	024529550JJK
Transporter Line Number:	1

VOLCOR FINISHING INC (Continued) **1000988250**

Transporter EPA ID: MIK111229563
Transporter Name: Plummer'S Environmental Services Inc.

Waste Line:
Manifest Tracking Number: 024529550JJK
Waste Line Number: 1
U.S. DOT Hazardous Indicator: Y
U.S. DOT ID Number: UN1993
U.S. DOT Description: Un1993 Waste Flammable Liquid, N.O.S., 3, Pgiii (Methanol, Glycol Ether)
Non-Hazardous Waste Description: Not reported
Number of Containers: 1
Container Type Code: DM
Container Type Description: Metal drums, barrels, kegs
Waste Quantity: 55
Quantity Unit of Measure Code: G
Quantity Unit of Measure Description: Gallons
Waste Quantity, in Tons: 0.2293578
Acute Waste Quantity, in Tons: 0
Non-Acute Waste Quantity, in Tons: 0.2293578
Waste Quantity, in Kilograms: 208.03441
Acute Waste Quantity, in Kilograms: 0
Non-Acute Waste Quantity, in Kilorgrams: 208.03441
Management Method Code: H141
Management Method Description: STORAGE, BULKING AND/OR TRANSFER OFF SITE
Waste Residue Indicator: N
Quantity Discrepancy Indicator: N
Waste Type Discrepancy Indicator: N
Waste Density: Not reported
Waste Density Unit of Measure Code: Not reported
Waste Density Unit of Measure Description: Not reported
Form Code: Not reported
Form Code Description: Not reported
Source Code: Not reported
Source Code Description: Not reported
Waste Minimization Code: Not reported
Waste Minimization Code Description: Not reported
Consent Number: Not reported
EPA Waste Indicator: Y
Federal Waste Codes: D001
Quantity Haz Kg: 208.03441
Quantity Haz Tons: 0.2293578
Quantity Non Haz Kg: 0
Quantity Non Haz Tons: 0
State Waste Codes: Not reported

Manifest Tracking Number: 024529550JJK
Waste Line Number: 2
U.S. DOT Hazardous Indicator: Y
U.S. DOT ID Number: UN3264
U.S. DOT Description: Un3264 Waste Corrosive Liquid, Acidic, Inorganic, N.O.S., 8, Pgiii (Sulfuric Acid)
Non-Hazardous Waste Description: Not reported
Number of Containers: 1
Container Type Code: DM
Container Type Description: Metal drums, barrels, kegs
Waste Quantity: 55

VOLCOR FINISHING INC (Continued) **1000988250**

Quantity Unit of Measure Code:	G
Quantity Unit of Measure Description:	Gallons
Waste Quantity, in Tons:	0.2293578
Acute Waste Quantity, in Tons:	0
Non-Acute Waste Quantity, in Tons:	0.2293578
Waste Quantity, in Kilograms:	208.03441
Acute Waste Quantity, in Kilograms:	0
Non-Acute Waste Quantity, in Kilorgrams:	208.03441
Management Method Code:	H141
Management Method Description:	STORAGE, BULKING AND/OR TRANSFER OFF SITE
Waste Residue Indicator:	N
Quantity Discrepancy Indicator:	N
Waste Type Discrepancy Indicator:	N
Waste Density:	Not reported
Waste Density Unit of Measure Code:	Not reported
Waste Density Unit of Measure Description:	Not reported
Form Code:	Not reported
Form Code Description:	Not reported
Source Code:	Not reported
Source Code Description:	Not reported
Waste Minimization Code:	Not reported
Waste Minimization Code Description:	Not reported
Consent Number:	Not reported
EPA Waste Indicator:	Y
Federal Waste Codes:	D002
Quantity Haz Kg:	208.03441
Quantity Haz Tons:	0.2293578
Quantity Non Haz Kg:	0
Quantity Non Haz Tons:	0
State Waste Codes:	Not reported

H37 **ORION MANUFACTURING INC** **RCRA NonGen / NLR** **1007098108**
South **480 APPLE TREE DR** **MIK461681470**
> 1 **IONIA, MI 48846**
1.236 mi.
6525 ft. **Site 4 of 4 in cluster H**

Relative: **Higher**
Actual: **828 ft.**

RCRA Listings:

Date Form Received by Agency:	20070827
Handler Name:	Orion Manufacturing Inc
Handler Address:	480 Apple Tree Dr
Handler City,State,Zip:	IONIA, MI 48846
EPA ID:	MIK461681470
Contact Name:	JOE STEWART
Contact Address:	480 APPLE TREE DR
Contact City,State,Zip:	IONIA, MI 48846
Contact Telephone:	616-527-5994
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	05
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported

ORION MANUFACTURING INC (Continued) **1007098108**

State District:		Not reported
Mailing Address:		480 APPLE TREE DR
Mailing City,State,Zip:		IONIA, MI 48846
Owner Name:	Orion Holding Llc	
Owner Type:		Private
Operator Name:	Orion Holding Llc	
Operator Type:		Private
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		N
Sub-Part K Indicator:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
202 GPRA Corrective Action Baseline:		No
Subject to Corrective Action Universe:		No
Non-TSDFs Where RCRA CA has Been Imposed Universe:		No
Corrective Action Priority Ranking:		No NCAPS ranking
Environmental Control Indicator:		No
Institutional Control Indicator:		No
Human Exposure Controls Indicator:		N/A
Groundwater Controls Indicator:		N/A
Significant Non-Complier Universe:		No
Unaddressed Significant Non-Complier Universe:		No
Addressed Significant Non-Complier Universe:		No
Significant Non-Complier With a Compliance Schedule Universe:		No
Financial Assurance Required:		Not reported
Handler Date of Last Change:		20110303
Recognized Trader-Importer:		No
Recognized Trader-Exporter:		No
Importer of Spent Lead Acid Batteries:		No
Exporter of Spent Lead Acid Batteries:		No
Recycler Activity Without Storage:		No
Manifest Broker:		No
Sub-Part P Indicator:		No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	Ignitable Waste

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	ORION HOLDING LLC

ORION MANUFACTURING INC (Continued) **1007098108**

Legal Status:	Private
Date Became Current:	20010806
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: ORION HOLDING LLC	
Legal Status:	Private
Date Became Current:	20010806
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name: ORION HOLDING LLC	
Legal Status:	Private
Date Became Current:	20010806
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name: ORION HOLDING LLC	
Legal Status:	Private
Date Became Current:	20010806
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20010806
Handler Name: ORION MANUFACTURING INC	
Federal Waste Generator Description:	Very Small Quantity Generator (formerly Conditionally-Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No

ORION MANUFACTURING INC (Continued) **1007098108**

Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 20070827
Handler Name: ORION MANUFACTURING INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 33999
NAICS Description: All Other Miscellaneous Manufacturing

Has the Facility Received Notices of Violations:
Found Violation: No
Agency Which Determined Violation: Not reported
Violation Short Description: Not reported
Date Violation was Determined: Not reported
Actual Return to Compliance Date: Not reported
Return to Compliance Qualifier: Not reported
Violation Responsible Agency: Not reported
Scheduled Compliance Date: Not reported
Enforcement Identifier: Not reported
Date of Enforcement Action: Not reported
Enforcement Responsible Agency: Not reported
Enforcement Docket Number: Not reported
Enforcement Attorney: Not reported
Corrective Action Component: Not reported
Appeal Initiated Date: Not reported
Appeal Resolution Date: Not reported
Disposition Status Date: Not reported
Disposition Status: Not reported
Disposition Status Description: Not reported
Consent/Final Order Sequence Number: Not reported
Consent/Final Order Respondent Name: Not reported
Consent/Final Order Lead Agency: Not reported
Enforcement Type: Not reported
Enforcement Responsible Person: Not reported
Enforcement Responsible Sub-Organization: Not reported
SEP Sequence Number: Not reported
SEP Expenditure Amount: Not reported
SEP Scheduled Completion Date: Not reported
SEP Actual Date: Not reported
SEP Defaulted Date: Not reported
SEP Type: Not reported
SEP Type Description: Not reported
Proposed Amount: Not reported
Final Monetary Amount: Not reported

ORION MANUFACTURING INC (Continued) **1007098108**

Paid Amount: Not reported
Final Count: Not reported
Final Amount: Not reported

Evaluation Action Summary:
Evaluation Date: 20070821
Evaluation Responsible Agency: State
Found Violation: No
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION
Evaluation Responsible Person Identifier: Not reported
Evaluation Responsible Sub-Organization: Not reported
Actual Return to Compliance Date: Not reported
Scheduled Compliance Date: Not reported
Date of Request: Not reported
Date Response Received: Not reported
Request Agency: Not reported
Former Citation: Not reported

I38 **RUSSELL WALCOTT TRUST** **UST FINDER** **1028442923**
SW **1090 RECTOR RD** **N/A**
> 1 **IONIA, MI**
1.467 mi.
7744 ft. **Site 1 of 3 in cluster I**

Relative: **Lower**
Actual: **804 ft.**

UST FINDER:
Object ID: 221966
Facility ID: MI42634
Name: RUSSELL WALCOTT TRUST
Address: 1090 RECTOR RD
City,State,Zip: IONIA, MI
Address Match Type: PointAddress
Open USTs: 0
Closed USTs: 0
TOS USTs: 1
Population 1500ft: 16
Private Wells 1500ft: 4
Within 100yr Floodplain: No
Land Use: Non-Developed
Within SPA: No
SPA PWS Facility ID: Not reported
SPA Water Type: Not reported
SPA Facility Type: Not reported
SPA HUC12: Not reported
Within WHPA: No
WHPA PWS Facility ID: Not reported
WHPA Water Type: Not reported
WHPA Facility Type: Not reported
WHPA HUC12: Not reported
Facility Status: Open UST(s)
Date of Last Inspection: Not reported
EPA Region: 5
Tribe: Not reported
Coordinate Source: Geocode
X Coord: -85.0962014999999
Y Coord: 42.9982294700001
Latitude: 42.99822947

J42 **CITY OF IONIA** **MI UST** **U003327666**
SSE **776 CYRUS ST** **N/A**
> 1 **IONIA, MI 48846**
1.489 mi.
7861 ft. **Site 1 of 2 in cluster J**

Relative: **Higher**
Actual: **833 ft.**

UST:

Name:	CITY OF IONIA
Address:	776 CYRUS ST
City,State,Zip:	IONIA 48846-1117
Facility Type:	CLOSED
Facility ID:	00002401
Owner Name:	CITY OF IONIA
Owner Address:	114 N KIDD ST PO BOX 496
Owner City:	IONIA
Owner State:	MI
Owner Zip:	48846-1608
Owner Contact:	Not reported
Owner Phone:	6165274170
Contact:	WAYNE KENYON
Contact Phone:	(616) 527-0370
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 3 - Grand Rapids District Office
Tank ID:	1
Capacity:	500
Tank Status:	Removed from Ground
Substance:	Diesel
Install Date:	04/02/1982
Remove Date:	05/28/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.99414
Longitude:	-85.06658

J43 **CITY OF IONIA** **UST FINDER** **1028432708**
SSE **776 CYRUS ST** **N/A**
> 1 **IONIA, MI**
1.489 mi.
7861 ft. **Site 2 of 2 in cluster J**

Relative: **Higher**
Actual: **833 ft.**

UST FINDER:

Object ID:	221891
Facility ID:	MI2401
Name:	CITY OF IONIA
Address:	776 CYRUS ST
City,State,Zip:	IONIA, MI
Address Match Type:	PointAddress

CITY OF IONIA (Continued) **1028432708**

Open USTs:	0
Closed USTs:	1
TOS USTs:	0
Population 1500ft:	244
Private Wells 1500ft:	29
Within 100yr Floodplain:	No
Land Use:	Developed, Open Space
Within SPA:	No
SPA PWS Facility ID:	Not reported
SPA Water Type:	Not reported
SPA Facility Type:	Not reported
SPA HUC12:	Not reported
Within WHPA:	Yes
WHPA PWS Facility ID:	MI0003370_1579
WHPA Water Type:	GW - Ground water
WHPA Facility Type:	WL - Well
WHPA HUC12:	040500060307
Facility Status:	Closed UST(s)
Date of Last Inspection:	Not reported
EPA Region:	5
Tribe:	Not reported
Coordinate Source:	Geocode
X Coord:	-85.06685398
Y Coord:	42.99449386
Latitude:	42.99449386
Longitude:	-85.06685398

UST FINDER:

Object ID:	824152
Facility ID:	MI2401
Tank ID:	MIUTK-050257-15
Tank Status:	Closed
Installation Date:	1982/04/02 16:00:00+00
Removal Date:	1991/05/28 15:59:59+00
Tank Capacity:	500
Substances:	Diesel,
Tank Wall Type:	Not reported

---

44 **TODD FUELS INC** **MI AST** **A100206011**
South **807 W FARGO ST** **N/A**
> 1 **IONIA, MI 48846**
1.616 mi.
8532 ft.

Relative:
Higher

Actual:
814 ft.

AST:

Name:	TODD FUELS INC
Address:	807 W FARGO ST
City:	IONIA
Zip:	48846-1020
Facility ID:	91034008
Owner Name:	TODD FUELS INC
Owner Address:	807 W FARGO ST
Owner City,St,Zip:	IONIA, MI 48846-1020
District:	2
Date of Collection:	01/11/2001
Accuracy:	100 FEET
Source:	STATE OF MICHIGAN

APPENDIX E

Flyer/ Survey &

Property Owner List

CITY OF IONIA CONTINUES PROGRAM TO PROTECT WATER SUPPLY

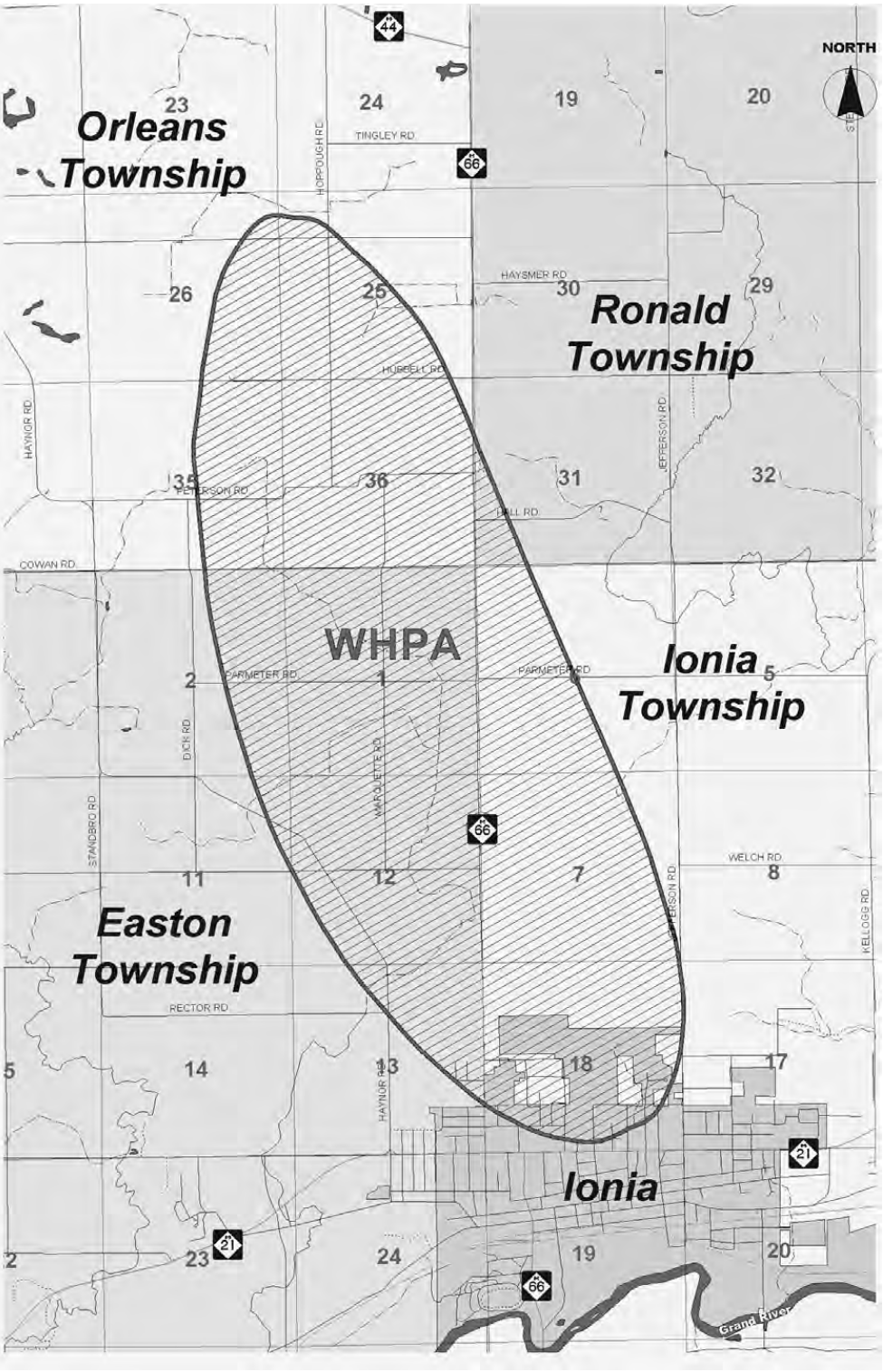
Why Wellhead Protection?

Water is the most basic resource in life. We all need it to survive. Most of the people in Ionia County rely on groundwater for their drinking water. Wellhead protection is a strategy to protect the public supplies from pollution that can threaten health and lives.

Wellhead protection also protects our investment in the community. The program protects wells and water treatment systems. The cost of treating contaminated groundwater or finding another source of water far outweighs implementing a protection program for the resources already in place.

The future economic development of The City of Ionia & Ionia County depends on it. A clean and reliable source of drinking water is a positive aspect of any community. It is a major selling point in attracting new businesses and industries and keeping the existing ones. The groundwater utilized by the City is considered some of the highest quality water in the Midwest.

Groundwater is filtered and cleaned naturally in underground aquifers. The City of Ionia "taps" the aquifer with wells to provide the public with drinking water. Groundwater is the cleanest, most reliable, and often least expensive source of water. Protecting this resource makes good sense environmentally, economically, and most importantly, for our health. The City has been proactive to ensure a safe supply.



The City of Ionia's Wellhead Protection Area (WHPA) was calculated with computer modeling using the actual properties of the underground aquifer as input values.

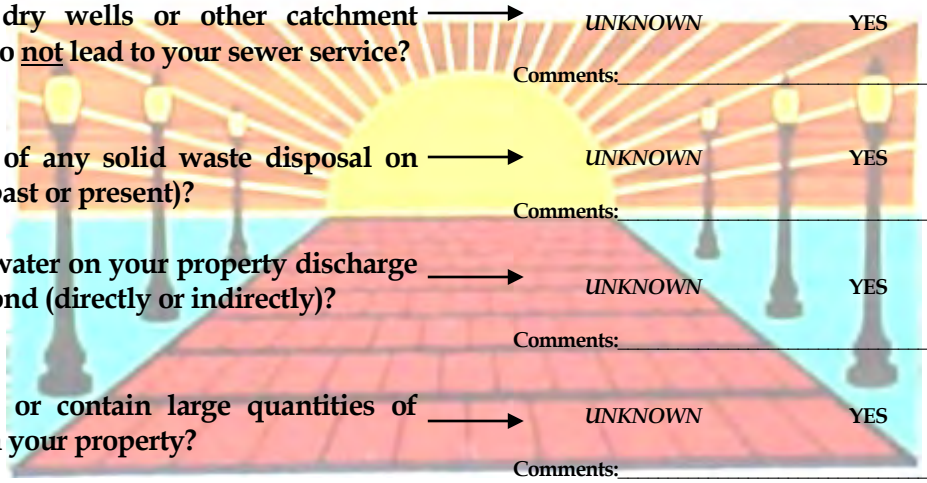
The City of Ionia's Drinking Water is <u>Regularly</u> Tested for a Variety of Potential Contaminants to Ensure a Safe Supply. However, We <u>Must All</u> Do Our Part to Protect This Precious Resource!

City of Ionia/Peerless-Midwest, Inc. (May 2025)

****** ENVIRONMENTAL SURVEY CHECKLIST ******

Your property or portions of your property are located within the City of Ionia's Wellhead Protection Area (WHPA). The front of this flyer explains in detail why this may be important to you and the other citizens of Ionia County. The City is concerned about protecting the drinking water it provides to the public, which we all use, even if we don't live within the City limits (at restaurants, schools, churches, etc.). The City will use the data you provide in the checklist for informational purposes only to further understand the environmental climate within the WHPA. The City may suggest that you as a property owner change some practices that may affect the environment. As an example, if an abandoned well is located on your property, the City would suggest that you have it properly sealed and would help you coordinate that effort. Due to certain State funded grants and other programs this cost may likely be entirely free to you, while at the same time you help the environment and ensure a safe supply of drinking water for future generations! Please take the time to fill out and return this brief survey.

DESCRIPTION OF DATA	CIRCLE BEST ANSWER		
1. Do you have an abandoned or unused well(s) located on your property that you would like properly sealed to help the environment?	*UNKNOWN*	YES	NO
Comments:_____			
2. Do you have any underground or aboveground storage tanks (USTs) located on your property?	*UNKNOWN*	YES	NO
Comments:_____			
3. Do you store large quantities (over 5 gallons) of chemicals or petroleum products on your property?	*UNKNOWN*	YES	NO
Comments:_____			
4. Do you have dry wells or other catchment structures that do not lead to your sewer service?	*UNKNOWN*	YES	NO
Comments:_____			
5. Are you aware of any solid waste disposal on your property (past or present)?	*UNKNOWN*	YES	NO
Comments:_____			
6. Does the wastewater on your property discharge to a stream or pond (directly or indirectly)?	*UNKNOWN*	YES	NO
Comments:_____			
7. Do you spread or contain large quantities of animal waste on your property?	*UNKNOWN*	YES	NO
Comments:_____			



What Can You Do To Help?

1. FILL OUT THIS SURVEY & DROP OFF AT CITY HALL or THE CITY'S PUBLIC UTILITIES BUILDING!
2. Have abandoned wells on your property properly sealed. Due to grants, the cost may be free! Contact the City of Ionia's Public Utilities Department at (616) 527-0370 or the MSU Extension Office at (616) 527-8219 for more information and eligibility requirements.
3. Take toxic household chemicals to a recycling center for proper disposal. Ionia County schedules several household hazardous waste collection events throughout the year. Contact Ionia County Health Department at (616) 527-2098 x 3089 for more information.
4. Don't use fertilizers & lawn chemicals excessively. Follow directions for use, to conserve, & save money.

Print Name:_____ Address:_____

Phone Number:_____ Is it OK to Contact You: Yes/No

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
SWAIN, DELBERT & TRACIE	1163 N STATE RD	IONIA, MI, 48846
HELMES, AL & NICOLE	2165 N STATE RD	IONIA, MI, 48846
PALMER, CALE & LAURIE	1053 CAITLIN DR	IONIA, MI, 48846
WILLS, DENNIS A.& BETH ELLEN	91 FLOWERS CRT.	IONIA, MI, 48846
FLORES-NAVA, GUADALUPE	5934 STAGE RD	IONIA, MI, 48846
DENHOUTEN, SUSAN	3480 MARQUETTE RD	IONIA, MI, 48846
STARKS, BRAD & JESSICA	1086 RED PINE DR	IONIA, MI, 48846
INGVARTSEN, MARCUS	2604 N MARQUETTE RD	IONIA, MI, 48846
VERTICAL BRIDGE NTCF, LLC.	750 PARK OF COMMERCE DR, SUITE 200	BOCA RATON, FL, 33487
KLEIN, TED	154 MEADOWLARK DR	IONIA, MI, 48846
FACE, CHRISTOPER	2234 MARQUETTE RD	IONIA, MI, 48846
BARCLAY, CRAIG & TABITHA	299 PINE VIEW DR	IONIA, MI, 48846
LISTERMAN, AARON L & ANGELA D	3827 HOPPOUGH RD	ORLEANS, MI, 48865
PERRY REV LIV TRUST, BETH L	4253 HOPPOUGH RD	ORLEANS, MI, 48865
ERSKINE, W JAMES II & JANE A	1151 RED PINE DR	IONIA, MI, 48846
HANEY, MICHAEL	3230 N BELLEMY RD	IONIA, MI, 48846
HUFF, JOHN A & MELISSA	937 W PARMETER RD	IONIA, MI, 48846
RICHARD, GARY L & JULIE A	883 JEFFERSON RD	IONIA, MI, 48846
GALLAGHER, JERRY M TRUST	4227 OSTRUM RD	BELDING, MI, 48809
STERNER REAL ESTATE LLC	821 N JEFFERSON ST	IONIA, MI, 48846-9601
BUSHONG, GARY L & JANIE C	973 RED PINE DR	IONIA, MI, 48846
COOPER, CHERYL J	1399 LEGACY LANE	IONIA, MI, 48846
LISTERMAN, TERESE	122 MEADOWLARK DR	IONIA, MI, 48846
ROUNDTREE, PATRICK H & KRISTINE M	1028 RED PINE DR	IONIA, MI, 48846
T & J REAL ESTATE LLC	2324 SOMERS RD	LYONS, MI, 48851
PARKER, TROY & JILL	109 MEADOWLARK DR.	IONIA, MI, 48846
OGDEN, GEORGE T	1637 N STATE RD	IONIA, MI, 48846
BROOKS III, JACK	2194 N MARQUETTE RD	IONIA, MI, 48846
LAVICTOR, BRIAN R	2318 N STATE RD	IONIA, MI, 48846
FULLER, STEVE & ANNETTE	2292 N MARQUETTE RD	IONIA, MI, 48846
COMPO ROBERT	2248 EDNA ST	IONIA, MI, 48846
L & J OCEAN GARAGE, LLC	2265 N STATE RD	IONIA, MI, 48846
JOHNSON, MARCIA & THEODORE	18033 FAYSMITH AVE	TORRANCE, CA, 90504
MUNROE, AUTUMN	2428 TROYS DR	IONIA, MI, 48846
MUELLER, DANIEL & MALINDA	3850 SHIRZ ST SW	GRANDVILLE, MI, 49418
HORROCKS, MATTHEW	3355 DIDLINE RD	IONIA, MI, 48846
MIKITA HOLDINGS, LLC	588 3 MILE RD , NW, STE 203	GRAND RAPIDS, MI, 49544
ERICKSON, RAYMOND & CHRIS	87 FLOWERS CT	IONIA, MI, 48846
BABCOCK, DEVIN	2445 N STATE RD	IONIA, MI, 48846
GROVER, TIMOTHY L & KIMBERLY S	2158 N STATE RD	IONIA, MI, 48846
CERES FARMS LLC	806 HOWARD ST STE 200	SOUTH BEND, IN, 46617
GOLDEN GRAIN FARMS, LLC	3957 108TH ST	CALEDONIA, MI, 49316
PERRY REV LIV TRUST, BETH L	4253 HOPPOUGH RD	ORLEANS, MI, 48865
TUFFS, HEATHER ANN	81 MEADOWLARK DR	IONIA, MI, 48846
MUELLER, AUTUMN, DANIEL, MELINDA	2655 GRAND CASTLE SW BLVD, # W 405	GRANDVILLE, MI, 49418

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
STUTZ, VICKY	2378 N STATE RD	IONIA, MI, 48846
SWAIN, STEVE & JODI	783 JEFFERSON RD	IONIA, MI, 48846
GREGORY, ROSS & SHARON	2006 MARQUETTE RD	IONIA, MI, 48846
MCKENDRY BRYAN & TILLOTTSON SYDNI	349 SAYERS LAKE RD	IONIA, MI, 48846
PEARCE, LARRY	PO BAX 46	IONIA, MI, 48846
STEIN, JEFFREY T & JANET M	210 PINE VIEW DR	IONIA, MI, 48846
GREGORY, AUSTIN & CROWLEY, CAITLIN	356 PETERSON RD	IONIA, MI, 48846
BROWN TY & TEELA L	295 OWEN RD	IONIA, MI, 48846
JARRETT, LANCE & TONYA	2700 W BLUEWATER HWY	IONIA, MI, 48846
HEPPE, GAROLD V	942 PETERSON RD	ORLEANS, MI, 48865
BAKER SCOTT LANCE	1088 JEFFERSON RD	IONIA, MI, 48846
JOURDAN, GARY E	2995 MARQUETTE RD	IONIA, MI, 48846
DANKENBRING RANDY & DANKENBRING RON	975 RED PINE DR	IONIA, MI, 48846
HANULCIK, ALEX & CAROL	740 DILDINE RD	IONIA, MI, 48846
BROWN TY & TEELA L	295 OWEN RD	IONIA, MI, 48846
BETTERLY, SHANNON & ROY	3080 MARQUETTE RD	IONIA, MI, 48846
RICCIUS DAVE & JENNIFER	251 OWEN RD	IONIA, MI, 48846
WILLIAMS DARCY ANN & TODD	2461 DEAN DR	IONIA, MI, 48846
REED, ROGER ALLEN	2821 N STATE RD	IONIA, MI, 48846
STEVENSON BUILDING PROPERTIES LLC	8283 BRANCH RD	ORLEANS, MI, 48865
HANSON ANN ELISABETH	935 N STATE RD	IONIA, MI, 48846
SMITH, DUSTIN	1777 N MARQUETTE RD	IONIA, MI, 48846
HOOVER LIVING TRUST, CHAD	PO BOX 285	IONIA, MI, 48846
RENUCCI, ROBERT E.	1462 N HAYNOR RD	IONIA, MI, 48846
UNDERWOOD, GLENN W & MISHAL A	296 DILDINE RD	IONIA, MI, 48846
HANLINE, THOMAS D & NORMA J	696 E PARMETER RD	IONIA, MI, 48846
HYBARGER, DENNIS W & MARGARET R	199 PINE VIEW DR	IONIA, MI, 48846
DINEHART, TRACIE A	126 MEADOWLARK DR	IONIA, MI, 48846
HORROCKS JACK H TRUST	3355 DILDINE RD	IONIA, MI, 48846
OWEN, ANTHONY & HANNAH	1630 N HAYNOR RD	IONIA, MI, 48846
AUSTIN, ROSS A & APRIL M	3096 MARQUETTE RD	IONIA, MI, 48846
LOZON, ANTHONY	470 PETERSON RD	IONIA, MI, 48846
PEABODY, AUSTIN J	1530 N STATE RD	IONIA, MI, 48846
ELLIOTT, JACK L	2705 N STATE RD	IONIA, MI, 48846
HELMER, RANDY	1335 HAYNOR RD	IONIA, MI, 48846
KAUFFMAN, ANDREW & THRESA	2270 N STATE RD	IONIA, MI, 48846
BRADSHAW, NATHAN	1957 N MARQUETTE RD	IONIA, MI, 48846
JOHNSON ROBIN C	2888 N STATE RD	IONIA, MI, 48846
DANKENBRING, RANDY L	975 RED PINE DR	IONIA, MI, 48846
BURROWS GERALD F & BARBARA A TRUST	1270 RED PINE DR	IONIA, MI, 48846
KAPP ROY A & RHONDA R	160 OWEN RD	IONIA, MI, 48846
WITTER, CHARLES	1216 N HAYNOR RD	IONIA, MI, 48846
RICHARDSON, JASON & LORI	2110 N MARQUETTE RD	IONIA, MI, 48846
CHRISTIANSEN, RICHARD & JACQUELINE	432 OWEN RD	IONIA, MI, 48846
ROCKAFELLOW, MARK & JACQUELINE	1602 N HAYNOR RD	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
PALMER, CALE & LAURIE	1053 CAITLIN DR	IONIA, MI, 48846
RAVELLETTE, JEFFREY D & RACHEL M	288 PETERSON RD	IONIA, MI, 48846
PEABODY, RICHARD	2464 TROYS DR	IONIA, MI, 48846
DRAYTON, CHRIS & SHAWNA	1607 HAWKINS DR	IONIA, MI, 48846
JUDKINS, LAWRENCE & NICOLE	79 BUTTERFLY COURT	IONIA, MI, 48846
WERNER MARK CHRISTOPHER & SHERRY S	254 OWED RD	IONIA, MI, 48846
SAYERS ROBERT & PHYLLIS & SAYERS C	1500 N STATE RD	IONIA, MI, 48846
HANULCIK ALEX & KRISTIN REV TRUST	1013 CAITLIN DR	IONIA, MI, 48846
GLAVAN, CHARLOTTE MARIE	6345 FLANNIGAN RD	ORLEANS, MI, 48865
HUNT, AARON	1187 N HAYNOR RD	IONIA, MI, 48846
DOTSON, CHARLES	PO BOX 937	SOUTH HAVEN, MI, 49090
PEARCE, LARRY & CATHERINE	PO BOX 46	IONIA, MI, 48846
HEPPE JOHNSON, JAYNE	4227 POTTERS RD	IONIA, MI, 48846
ROCKWELL, THOMAS & RANDALL, LISA	1101 HAYNOR RD	IONIA, MI, 48846
HEPPE, DONALD & KAREN	482 MEADE RD	ORLEANS, MI, 48865
SLOMSKI LIVING TRUST, JOYCE A	1564 N HAYNOR RD	IONIA, MI, 48846
HELMER, RANDY	1335 HAYNOR RD	IONIA, MI, 48846
HELMHOLDT, DIANE & KENTER, WAYNE	7695 CASCADE RD	GRAND RAPIDS, MI, 49546
COX, THOMAS & AMY	1063 HAYNOR RD.	IONIA, MI, 48846
BENNETT, ROBERT E & CYNTHIA	669 MEADE RD	ORLEANS, MI, 48865
PEARSON, JAMES	401 DILDINE RD	IONIA, MI, 48846
KLEIN, SANDRA	843 LYONS RD	PORTLAND, MI, 48875
DICK, GREGORY & WYATT-DICK, PAMELA	1130 N STATE RD	IONIA, MI, 48846
VOSBURG PROPERTIES	537 RIVERVIEW DR	GREENVILLE, MI, 48838
FOY, DARCY & EDWARDS, JARED	3320 MARQUETTE RD	IONIA, MI, 48846
MURPHY, CHAD D	3520 HOPPOUGH RD	ORLEANS, MI, 48865
BETHKE, BRYAN & GINA	3084 N STATE RD	IONIA, MI, 48846
LEWIS, JAMES A & TAMMY J	2147 N STATE	IONIA, MI, 48846
HANULCIK, ALEX & CAROL	740 DILDINE RD	IONIA, MI, 48846
STEWART CJ & JENNA	1350 SPRUCE ST	IONIA, MI, 48846
DECKER, DERRICK & REBECCA	150 MEADOWLARK DR	IONIA, MI, 48846
RICCIUS, DAVID P & JENNIFER K	251 OWEN RD	IONIA, MI, 48846
RAYMOND, KEVIN C & FREEDOM M	3122 MARQUETTE RD	IONIA, MI, 48846
NEW PAR	BOX 2549	ADDISON, TX, 75001
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WERNER, JOSEPH & SONDRA	1004 N HAYNOR RD	IONIA, MI, 48846
CHRISTENSEN, GARY & DEBRA	863 JEFFERSON RD	IONIA, MI, 48846
BENNETT, ROBERT E & CYNTHIA A	669 MEADE RD	ORLEANS, MI, 48865
WIREMAN, KERNIE & DENISE	153 MEADOWLARK DR	IONIA, MI, 48846
HARDY, KIMBERELY	440 SAYERS LAKE RD	IONIA, MI, 48846
HANEY, CHAD & RACHEL	3057 DICK RD	IONIA, MI, 48846
WHARRY, JOSEPH A SR & LYNDA L	2826 N STATE RD	IONIA, MI, 48846
ERRIDGE, GARY L & PAMELA J	1580 N HAYNOR RD	IONIA, MI, 48846
HORROCKS, MARK S & JANE E	3370 N STATE RD	IONIA, MI, 48846
HAWLEY II, BRADLEY E	456 HARTER ST	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
GALLAGHER, JERRY M TRUST	4227 OSTRUM RD	BELDING, MI, 48809
ECC PROPERTIES LLC	256 E PARMETER RD	IONIA, MI, 48846
GARCIA, HORACIO	2376 N STATE RD	IONIA, MI, 48846
CEMETERY	PETERSON RD	IONIA, MI, 48846
SPENCE, TODD & DOOLITTLE, CHRISTINE	888 N STATE RD	IONIA, MI, 48846
HOLTHER FAMILY TRUST, KARL & VIVIAN	877 N HAYNOR RD	IONIA, MI, 48846
RIGGS, CHRISTOPHER J	1218 N STATE RD	IONIA, MI, 48846
COLE, WILLIAM & RORER, SCARLETT	2198 EDNA ST	IONIA, MI, 48846
PATTERSON, PHIL & LYNN	88 MEADOWLARK DR	IONIA, MI, 48846
NORDHOF, JAMES & TARA	1331 SPRUCE ST	IONIA, MI, 48846
WARD, DENNIS	869 DILDINE RD	IONIA, MI, 48846
MCGUIRE, MATTHEW & MARY	138 MEADOWLARK DR	IONIA, MI, 48846
THOMPSON, WILLIAM & NICOLE	2448 N MARQUETTE RD.	IONIA, MI, 48846
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KEHL STEVEN	1032 DEN HERTOG	WYOMING, MI, 49509
JAROSZ, THOMAS P	PO BOX 96	ORLEANS, MI, 48865-0096
GREGORY, ROSS JR & SHARON	2006 MARQUETTE RD	IONIA, MI, 48846
BARCLAY, CRAIG & TABATHA	299 PINE VIEW DR	IONIA, MI, 48846
MATA, KRISTY	218 W LINCOLN AVE	IONIA, MI, 48846
HORROCKS NURSERY	3355 DILDINE RD	IONIA, MI, 48846
PALMER, CALE & LAURIE	1053 CAITLIN DR	IONIA, MI, 48846
BROOKS, JOSEPH H	785 W PARMETER RD	IONIA, MI, 48846
TJALSMA, KURT M & LAURA C	955 HAYNOR RD	IONIA, MI, 48846
PACKER RADIO WION, LLC	1150 HAYNOR RD	IONIA, MI, 48846
STEPHENS, SCOTT & JENNIFER	92 FLOWERS CT	IONIA, MI, 48846
WHITE, WILLIAM & JESSICA	2483 N MARQUETTE RD	IONIA, MI, 48846
BROOKS, JOSEPH H	785 W PARMETER RD	IONIA, MI, 48846
IONIA STORAGE VENTURES, LLC	3609 32ND ST SE	GRAND RAPIDS, MI, 49512
PUNG, GARY J & BRENDA L	271 W DILDINE RD	IONIA, MI, 48846
MCGRAIL, HARRY & CARLA	80 MEADOWLARK DR	IONIA, MI, 48846
TINGLEY TRUST, ROBERT & MARJORIE	444 DILDINE RD	IONIA, MI, 48846
LEHMAN, STEVE & CHERYL	260 DILDINE RD	IONIA, MI, 48846
SAYERS, JAMES & TOMI	499 SAYERS LAKE RD	IONIA, MI, 48846
HEPPE, DONALD & KAREN	482 MEADE RD	ORLEANS, MI, 48865
JIMENEZ-OSEGUEDA, J & QUINONES, M	2211 N STATE RD	IONIA, MI, 48846
STERNER REAL ESTATE LLC	821 JEFFERSON RD	IONIA, MI, 48846
MERKLINGER, SHAWN	1670 N STATE RD	IONIA, MI, 48846
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ANDREW, BRIAN & DEANNA	2935 N STATE RD	IONIA, MI, 48846
MISHLER, BENJAMIN & WUESTEN, ROGER	3380 MARQUETTE RD	IONIA, MI, 48846
MCCAUL, DUSTIN	306 PETERSON RD	IONIA, MI, 48846
OGDEN, JOSEPH	2273 EDNA ST	IONIA, MI, 48846
HELMER, CRAIG D	457 PETERSON RD	IONIA, MI, 48846
CONSUMERS ENERGY CO	ONE ENERGY PLAZA	JACKSON, MI, 49201-9938
MOORE, WALTER J & LINDA	2224 EDNA ST	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
SAYERS ROBERT & PHYLLIS & SAYERS C	1500 N STATE RD	IONIA, MI, 48846
DENNISON, SHERYL L	1078 TOMI JO DR	IONIA, MI, 48846
STALKER, DUANE E & THERESA J	850 N STATE RD	IONIA, MI, 48846
HANSON ANN ELISABETH	935 N STATE RD	IONIA, MI, 48846
STERNER TRUST, ROBERTA M	821 N JEFFERSON	IONIA, MI, 48846
ZELLER, HOLLY L	2921 N STATE RD	IONIA, MI, 48846
EMLINGER, E & DANKENBRING, H	526 PETERSON RD	IONIA, MI, 48846
JESKO, MICHEAL	1593 HAYNOR RD	IONIA, MI, 48846
PERRY, BETH	4253 HOPPOUGH RD	ORLEANS, MI, 48865
PERRY REV LIV TRUST, BETH L	4253 HOPPOUGH RD	ORLEANS, MI, 48865
HANULCIK TRUST, A. & K.	1013 CAITLIN DR	IONIA, MI, 48846
BUSHONG, GARY	973 RED PINE DR	IONIA, MI, 48846
MCELHANEY, BRIAN A	1224 W PARMETER RD	IONIA, MI, 48846
SHEAFFER, DANIEL & BRENDA	118 MEADOWLARK DR	IONIA, MI, 48846
MCGRAW, JOSHUA R	406 FOREST ST	IONIA, MI, 48846
CHAPA, ADAN	3372 MARQUETTE RD	IONIA, MI, 48846
ROBERTS BAILEY & LEMKE AUSTIN	2404 DEAN DR	IONIA, MI, 48846
WATERS, BRIAN S & KAREN M	611 W HUBBELL RD	ORLEANS, MI, 48865
WIREMAN, KERNIE & DENISE	153 MEADOWLARK DR	IONIA, MI, 48846
EVANS TERRY	940 N STATE RD	IONIA, MI, 48846
LISTERMAN CHAD & LAURA	256 E PARMETER RD	IONIA, MI, 48846
ROGERS, DAVID	130 MEADOWLARK DR	IONIA, MI, 48846
FROLING, ROGER	1000 W DILDINE RD.	IONIA, MI, 48846
RUSTIN, J. HOWARD	2068 JAMESTOWN DR SE	GRAND RAPIDS, MI, 49508
ERRIDGE, CHARLENE	256 W PARMETER RD	IONIA, MI, 48846
LOZO, GREG & PHYLLIS	85 MEADOW LARK DR	IONIA, MI, 48846
HOWORTH, ROY P	1680 HAYNOR RD	IONIA, MI, 48846
THELEN, DANIEL & NANCY	97 MEADOWLARK DRIVE	IONIA, MI, 48846
MUELLER, ERIK & ADAMS, ASHLEY	129 MEADOWLARK DR	IONIA, MI, 48846
STEIN, CASEY S	1335 LEGACY LANE	IONIA, MI, 48846
HEPPE, DONALD & KAREN	482 MEADE RD	ORLEANS, MI, 48865
THORNBURG, CHAD & STEPHANIE	543 W PARMETER RD	IONIA, MI, 48846
NEWCOMBE, KAREN	1594 N MARQUETTE RD	IONIA, MI, 48846
COURTNAY J J & H T & FINEIS TRUST	5666 HARTWELL RD	SARANAC, MI, 48881
REEDER, J & S	354 W PARMETER RD	IONIA, MI, 48846
PIERCEFIELD III, WAYNE E & KELLY	692 DILDNE RD	IONIA, MI, 48846
ZAMBRANO, TRENTON	535 GALLAGHER DR	IONIA, MI, 48846
LISTERMAN CHAD & LAURA	256 E PARMETER RD	IONIA, MI, 48846
TURNER, NICHOLAS & KELLY	960 DILDINE RD	IONIA, MI, 48846
BABCOCK, BRANDY	108 MEADOWLARK DR	IONIA, MI, 48846
COPE, JEFFREY D	121 W PARMETER RD	IONIA, MI, 48846
CLIFFORD, JANE	1559 HAWLEY HWY	SARANAC, MI, 48881
CHALLENDER, NIQUEL	1021 N STATE RD	IONIA, MI, 48846
MORGAN, LEANN L	699 W PARMETER RD	IONIA, MI, 48846
STEPHENSON, KEVIN	1602 HAWKINS DR	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
DOTSON, CHARLES	PO BOX 937	SOUTH HAVEN, MI, 49090
BIERLING, CARTER, J	1877 N STATE RD	IONIA, MI, 48846
MOON, DOUGLAS & MARY	570 GALLAGHER DR	IONIA, MI, 48846
TAYLOR, WILLIAM B & TRANG	996 TOMI JO DR	IONIA, MI, 48846
GREGG, TRAVIS	2595 MARQUETTE RD	IONIA, MI, 48846
CLARK, MICHAEL	909 W PARMETER RD	IONIA, MI, 48846
HENDRICK DONNA LYNN	88 E PARMETER RD	IONIA, MI, 48846
HEPPE, DONALD H/KAREN L	482 MEADE RD	ORLEANS, MI, 48865
OMARA, STEPHEN C & CATHERINE D	225 OWEN RD	IONIA, MI, 48846
SEIDELMAN, MELINDA	86 EASTON COURT	IONIA, MI, 48846
LOBDELL, WILLIAM H & JUDITH M	540 W PARMETER RD	IONIA, MI, 48846
RUEHS, ROBERT A	1326 N STATE RD	IONIA, MI, 48846
HANULCIK, ALEX & CAROL	740 DILDINE RD	IONIA, MI, 48846
MOORE, KAREN S.& PAUL M.	2303 N MARQUETTE RD	IONIA, MI, 48846
COOPER TROY & GREEN KAREN COOPER	2429 DEAN DR	IONIA, MI, 48846
HELMES, BRUCE W & TERESA	1275 W PARMETER RD	IONIA, MI, 48846
REISBIG, THOMAS & PUNG, JESSICA	2571 MARQUETTE RD	IONIA, MI, 48846
GRANT, KIM ET AL	3581 N STATE RD	IONIA, MI, 48846
SIMON, DANIEL & MANDI	95 FLOWERS CT	IONIA, MI, 48846
BUSHONG, GARY L & JANIE C	973 RED PINE DR	IONIA, MI, 48846
PHELPS, BRIAN & PATRICE	459 OWEN RD	IONIA, MI, 48846
MCGRAW, PHILIP R & COLLEEN R	164 ADAMS ST	IONIA, MI, 48846
PERRY REV LIV TRUST, BETH L	4253 HOPPOUGH RD	ORLEANS, MI, 48865
HOOVER LIVING TRUST, CHAD	PO BOX 285	IONIA, MI, 48846
STRANGER, CODY & KIRSTEN	3624 HOPPOUGH RD	ORLEANS, MI, 48865
SCHEURER, DOUGLAS	2349 TROYS DR	IONIA, MI, 48846
SLOCUM, GREG & LISA	1185 N STATE RD	IONIA, MI, 48846
HILL, GREGORY D & KATHY M	1894 N STATE RD	IONIA, MI, 48846
FROLING, ROGER CLARENCE	1000 W DILDINE RD	IONIA, MI, 48846
OLIVEROS, CESAR S & SUAREZ, BLANCA	2018 N STATE RD	IONIA, MI, 48846
LAPIERRE PROPERTIES LLC	3164 FREEWAY LANE	SAGINAW, MI, 48601
HEPPE, DONALD H/KAREN L	482 MEADE RD	ORLEANS, MI, 48865
PERRY, BETH L & RICHARD J & AAREN R	4253 HOPPOUGH RD	ORLEANS, MI, 48865
DODDS, JAMES & NANCY	134 MEADOWLARK DR.	IONIA, MI, 48846
SAYERS ROBERT C & PHYLLIS J & ET AL	1500 N STATE RD	IONIA, MI, 48846
PERRY REV LIV TRUST, BETH L	4253 HOPPOUGH RD	ORLEANS, MI, 48865
KAMMERS, JOSEPH J & JANICE J TRUST	4265 N STATE RD	IONIA, MI, 48846
LEACH, RUSS	1611 N STATE RD	IONIA, MI, 48846
TOMPKINS, WILLIAM J & LISA M	347 PETERSON RD	IONIA, MI, 48846
ROZELLE, DARCI	2331 EDNA ST	IONIA, MI, 48846
WOLBERS, GREGORY A & TINA R TRUST	1276 N STATE RD	IONIA, MI, 48846
HULL, TERRI & NICHOLAS	810 MAPLE RD	IONIA, MI, 48846
KREMSREITER VIRGINIA A	2430 DEAN DR	IONIA, MI, 48846
HEYKOOP II, TIMOTHY	454 DILDINE RD	IONIA, MI, 48846
LISTERMAN, CHAD L & LAURA J	2913 N JEFFERSON RD	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
FROLING, ROGER	1000 W DILDINE RD	IONIA, MI, 48846
BRUSE, KRISTI M	94 EASTON COURT	IONIA, MI, 48846
PIERCE, JOHN W	2215 N MARQUETTE RD	IONIA, MI, 48846
COOK, MELISSA K	260 W PARMETER RD	IONIA, MI, 48846
HANEY, DYLAN	615 ELM ST	GREENVILLE, MI, 48838
LISTERMAN, CHAD & LAURA	2913 N JEFFERSON RD	IONIA, MI, 48846
SEIDELMAN, PHILLIP R & MARY M	5584 STEDMAN RD	IONIA, MI, 48846
SWAIN, DONALD C	1164 N STATE RD	IONIA, MI, 48846
STARKS, RONALD J & CAROL S	375 OWEN RD	IONIA, MI, 48846
PRATER, DEREK & KRISTA	2484 DEAN DR	IONIA, MI, 48846
NUMMER, STANLEY	1514 HAWKINS DR	IONIA, MI, 48846
COVERT, GREGORY R & KAREN L	1550 HAWKINS DR	IONIA, MI, 48846
ANDERSON, JOSHUA & MAEGAN	1144 PHYLLIS JEAN DR	IONIA, MI, 48846
BANDT, FREDERICK H & CHRISTINA	446 SAYERS LAKE RD	IONIA, MI, 48846
WOOD, CODY & VALERIE	540 GALLAGHER DR	IONIA, MI, 48846
DICK KEVIN & JENNIFER	228 E PARMETER RD	IONIA, MI, 48846
JANSMA, CASSANDRA	507 GALLAGHER DR	IONIA, MI, 48846
GOODSELL JR, ALBERT & DIANE	4815 E BOYER R	FENWICK, MI, 48834
WIRTH, BRAD & SNOEYINK, GABRIELLE	110 MEADOWLARK DR	IONIA, MI, 48846
JONES, REBECCA S	2473 N MARQUETTE RD	IONIA, MI, 48846
DULYEA, MICHAEL	2757 N STATE RD	IONIA, MI, 48846
DINEHART, JOHN & JENNY	1824 STANBRO RD	IONIA, MI, 48846
BROWN REV TRUST, ROY W & LEONA F	1591 KELSEY HWY	IONIA, MI, 48846
SMITH, CARL	2351 N STATE RD	IONIA, MI, 48846
MCDIARMID, CORLAND J & SARAH M &	1028 CAITLIN DR	IONIA, MI, 48846
KANOUSE, CHRIS	837 HAYNOR RD	IONIA, MI, 48846
SWINEHART, LINDA A	1355 PENNY DR	IONIA, MI, 48846
BOWNE, JEFFREY & CONNIE	1183 N HAYNOR RD	IONIA, MI, 48846
HAMEL, ROGER	1030 HAYNOR RD	IONIA, MI, 48846
CERES FARMS LLC	806 HOWARD ST STE 200	SOUTH BEND, IN, 46617
SEIDELMAN, PHILLIP & MARY	5584 STEDMAN RD	IONIA, MI, 48846
HETRICK, VICKIE LEE	5729 W 6 MILE RD	BRIMLEY, MI, 49715
BENTLEY, RENEE	PO BOX 38	IONIA, MI, 48846
HEINLEIN, KEVIN & AMIE	349 OWEN RD	IONIA, MI, 48846
LOPEZ, ROEL	2431 MARQUETTE RD	IONIA, MI, 48846
PETTIT, RON	90 BUTTERFLY COURT	IONIA, MI, 48846
BANDT, FREDERICK H & CHRISTINA	446 SAYERS LAKE RD	IONIA, MI, 48846
MORIARTY TRUST, EUGENIA	7717 BORDEN RD.	MUIR, MI, 48860
WATERMAN, TODD & CONNIE	2592 N. MARQUETTE RD.	IONIA, MI, 48846
SHOCKEY, JOHN	965 W PARMETER RD	IONIA, MI, 48846
REVELLO, KAREN	53546 VILLA ROSA	MACOMB, MI, 48042-5788
MCCLINTOCK, FRANK & JULIE	1330 SPRUCE ST	IONIA, MI, 48846
MARKHAM, PHILIP R & LAURIE H	2401 TROYS DR	IONIA, MI, 48846
BUCHOLTZ, ANDREW & CARRIE	595 W PARMETER RD	IONIA, MI, 48846
JENNINGS, BREK	2197 EDNA DR	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
ROWLEY LAVERN E	2320 EDNA ST	IONIA, MI, 48846
REURINK STORAGE SOLUTIONS, LLC	843 N BELLEMY RD	IONIA, MI, 48846
STERNER, DALE	448 SAYERS LAKE RD	IONIA, MI, 48846
LISTERMAN, CHAD L & LAURA J	256 E PARMETER RD	IONIA, MI, 48846
BERGER, BRETT	367 OWEN RD	IONIA, MI, 48846
BRIGGS LIV TRUST, RUSSELL	95 BUTTERFLY COURT	IONIA, MI, 48846
KAPP, ROY A & RHONDA R	160 OWEN RD	IONIA, MI, 48846
RICHMOND, DEBBRA	795 PETERSON RD	ORLEANS, MI, 48865
WESTRA, T & MORRISON, S	1279 N HAYNOR RD	IONIA, MI, 48846
WINKLER, RONALD D	2255 TROYS DR	IONIA, MI, 48846
BREDICE, CHRISTOPHER & ELIZABETH	468 E LINCOLN RD	IONIA, MI, 48846
MOON, DOUG	570 GALLAGHER DR	IONIA, MI, 48846
HADDER, BONNIE	783 N STATE RD	IONIA, MI, 48846
HANULCIK, ALEX & CAROL	740 DILDINE RD	IONIA, MI, 48846
BRADLEY, PATRICK & MICHELLE	5170 N STATE RD	ORLEANS, MI, 48865
PAINTER, MATT	97 BUTTERFLY COURT	IONIA, MI, 48846
SAYERS, JOHN & PENNY	1520 N STATE RD	IONIA, MI, 48846
WEITZEL JANICE	4365 HOPPOUGH RD	ORLEANS, MI, 48865
BLOOD, GRANT & PATRICIA	1661 HAYNOR ROAD	IONIA, MI, 48846
WENTWORTH TAMARA L & DAMON W	780 KELLOGG RD	IONIA, MI, 48846
GLASSNER, RODNEY & DARLENE	98 FLOWERS CT	IONIA, MI, 48846
SEIDELMAN, PHILLIP & MARY	5584 STEDMAN RD	IONIA, MI, 48846
BOROFF, JACOB	2460 DEAN DR	IONIA, MI, 48846
BALICE, MARGARET & DEPOVER, P	1559 N HAYNOR RD	IONIA, MI, 48846
NORDHOF, JAMES A & TARA J	1331 SPRUCE ST	IONIA, MI, 48846
FLINN ROGER III	2638 N STATE RD	IONIA, MI, 48846
JACKSON DERRICK & LYDIA	961 RED PINE DR	IONIA, MI, 48846
ELLIOTT, DARIN & JACK	10036 BELDING RD	ROCKFORD, MI, 49341
EMLINGER, DUANE R & JUDI L	578 W PARMETER RD	IONIA, MI, 48846
CARTER, CALIE	180 W PARMETER RD	IONIA, MI, 48846
HORROCKS, ARLENE M	3355 DILDINE RD	IONIA, MI, 48846
ROBBENNOLT, THOMAS & LEATHA	2815 S NEVINS RD	SIDNEY, MI, 48885
BUXTON JAMES J & MARILEE J	807 JEFFERSON RD	IONIA, MI, 48846
MARTIN, GAYLE	3073 MARQUETTE RD	IONIA, MI, 48846
SHATTUCK, S & DORNE, B & WERNER, S	1024 N HAYNOR RD	IONIA, MI, 48846
BUSHONG, GARY	973 RED PINE DR	IONIA, MI, 48846
BARNA ADRIENNE L	1320 SPRUCE ST	IONIA, MI, 48846
LYONS, MICHAEL A	862 N STATE RD	IONIA, MI, 48846
BOER, NATE & LEAH	1775 N STATE RD	IONIA, MI, 48846
HELMER, MAYNARD L & BARBARA J	1235 YEOMANS ST	IONIA, MI, 48846
LISTERMAN, TRENTON & ANNETTE	2746 DICK RD	IONIA, MI, 48846
HILL, JAMES & LINDA	1019 W PARMETER RD	IONIA, MI, 48846
LOPEZ, ERIC	1191 JEFFERSON RD	IONIA, MI, 48846
RUEHS SERVICES LLC	1326 N STATE RD	IONIA, MI, 48846
HANULCIK, ALEX & CAROL	740 DILDINE RD	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
ROUNDTREE, PATRICK H & KRISTINE M	1028 RED PINE DR	IONIA, MI, 48846
SEIDLEMAN, DAVID	1775 N STATE RD	IONIA, MI, 48846
RAYMOND, KEVIN C & FREEDOM M	3122 MARQUETTE RD	IONIA, MI, 48846
TOP RUNG RENOVATIONS, LLC	3115 DILDINE RD	IONIA, MI, 48846
HEPPE, GAROLD VERNON	942 PETERSON RD	ORLEANS, MI, 48865
BURNS, JULIANNE	937 N HAYNOR RD	IONIA, MI, 48846
WENTWORTH TAMARA L & DAMON	780 KELLOGG RD	IONIA, MI, 48846
HANSON, ANN E	935 N STATE RD	IONIA, MI, 48846
BADDER ROBERT BURT & ASHLEY	1840 N STATE RD	IONIA, MI, 48846
SIMON, RENE' ,GEORGE & RONDA J	998 N HAYNOR RD	IONIA, MI, 48846
RICH, HAROLD E & DARLENE	2901 BELDING RD	ORLEANS, MI, 48865
ROSENBURG, WILLIAM	114 MEADOWLARK DR.	IONIA, MI, 48846
LARAWAY, CARL	265 W DILDINE RD	IONIA, MI, 48846
KERR, STEVEN	2466 TROYS DR	IONIA, MI, 48846
CERES FARMS LLC	806 HOWARD ST STE 200	SOUTH BEND, IN, 46617
CHARLES MICHAEL	190 OWEN RD	IONIA, MI, 48846
OM ONE STOP SHOP INC	2260 N STATE RD	IONIA, MI, 48846
HEPPE, CAROL A TRUST	885 PETERSON RD	ORLEANS, MI, 48865
HOPKINS, KAY	2398 TROYS DR	IONIA, MI, 48846
IONIA PUBLIC SCHOOLS	250 E TUTTLE RD	IONIA, MI, 48846
NELSON, JEAN A	656 PETERSON RD	IONIA, MI, 48846
HELMER, RANDY	1335 HAYNOR RD	IONIA, MI, 48846
PAYNE, RICHARD	2280 N STATE RD	IONIA, MI, 48846
NELSON, MICHAEL J	2849 N STATE RD	IONIA, MI, 48846
ARNDT, JERED	2989 N MARQUETTE RD	IONIA, MI, 48846
RUEHS, SCOTT & TERESA	80 TINGLEY RD	ORLEANS, MI, 48865
SAYERS JOHN & PENNY	1520 N STATE RD	IONIA, MI, 48846
CONLEY, SHERRY	26 W PARMETER RD	IONIA, MI, 48846
WARD, DENNIS	869 W DILDINE RD	IONIA, MI, 48846
		, ,
DERUISCHER, SCOTT & PATRICIA	912 N STATE RD	IONIA, MI, 48846
CERES FARMS LLC	806 HOWARD ST STE 200	SOUTH BEND, IN, 46617
BENNETT, SHANNON	595 PETERSON RD	IONIA, MI, 48846
GALLAGHER, JERRY M TRUST	4227 OSTRUM RD	BELDING, MI, 48809
CHAPA, ADAN	3372 MARQUETTE RD	IONIA, MI, 48846
NELSON, MICHAEL	2849 N STATE RD	IONIA, MI, 48846
MAY, JOHN & TERRY	132 E PARMETER RD	IONIA, MI, 48846
TRIERWEILER, VIRGINIA	265 W DILDINE RD	IONIA, MI, 48846
FACE, CHRISTOPHER	2234 N MARQUETTE RD	IONIA, MI, 48846
LEFORGE, TIM & AMY	91 BUTTERFLY COURT	IONIA, MI, 48846
MCKENDRY, TERRY & TERESA	102 MEADOWLARK DR	IONIA, MI, 48846
ELLIOTT, JACK	2705 N STATE RD	IONIA, MI, 48846
KLEIN, SANDRA	843 LYONS RD	PORTLAND, MI, 48875
HEPPE, JOHN	8660 SUNSET DR	ORLEANS, MI, 48865
FOX, ALICE, BRUCE, ALAN & ROSS, L	1059 N STATE RD	IONIA, MI, 48846

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
RODRIGUEZ JALEN	2260 EDNA ST	IONIA, MI, 48846
PERRY REV LIV TRUST, BETH L	4253 HOPPOUGH RD	ORLEANS, MI, 48865
MOON, GLEN M & HEIDI B	590 GALLAGHER DR	IONIA, MI, 48846
LAPIERRE PROPERTIES LLC	3164 FREEWAY LANE	SAGINAW, MI, 48601
FOX, ANDREW & AMIAH	1506 HAYNOR RD	IONIA, MI, 48846
GALLAGHER, JERRY M TRUST	4227 OSTRUM RD	BELDING, MI, 48809
CONSUMERS ENERGY CO	ONE ENERGY PLAZA	JACKSON, MI, 49201
NORTH LEVALLEY SCHOOL	2120 N STATE RD	IONIA, MI, 48846
WANDEL AUTO SALES & PARTS	1620 KELLOGG RD	IONIA, MI, 48846
KRICK, KEVIN A	92 E PARMETER RD	IONIA, MI, 48846
WHARRY, JOSEPH A SR & LYNDA L	2826 N STATE RD	IONIA, MI, 48846
CERES FARMS LLC	806 HOWARD ST STE 200	SOUTH BEND, IN, 46617
MALLINDINE, ADDISON	1875 N STATE RD	IONIA, MI, 48846
TAYLOR, WILLIAM B & TRANG	996 TOMI JO DR	IONIA, MI, 48846
STERNER REAL ESTATE LLC	821 JEFFERSON RD	IONIA, MI, 48846
BARBER, MELISSA	214 WILSON LANE	IONIA, MI, 48846
RICCIUS DAVE & JENNIFER	251 OWEN RD	IONIA, MI, 48846
LEE JESSICA	2403 DEAN DR	IONIA, MI, 48846
1633 HAWKINS, LLC	1661 HAYNOR RD	IONIA, MI, 48846
WEBER, RICHARD J & CHRISTINA L	1173 RED PINE DR	IONIA, MI, 48846
KANOUSE, CHARLES CLYDE & GAIL	903 N HAYNOR RD	IONIA, MI, 48846
DANKENBRING RANDY & DANKENBRING RON	975 RED PINE DR	IONIA, MI, 48846
PATRICK, DONALD & BARBARA TRUST	433 OWEN RD	IONIA, MI, 48846
MATHIS, RONALD & AMY	1639 HAYNOR RD	IONIA, MI, 48846
MASENGALE, BRANDEN	99 BUTTERFLY COURT	IONIA, MI, 48846
BATTLE CREEK RENTALS LLC	3500 MORGAN RD	NASHVILLE, MI, 49073
KAUFFMAN, ANDREW & THRESA	2270 N STATE RD	IONIA, MI, 48846
HETRICK, VICKIE LEE	5729 W 6 MILE RD	BRIMLEY, MI, 49715
MARTIN, VICKI L.	1560 HAWKINS DR	IONIA, MI, 48846
VAZQUEZ, HUGO & YBARRA	416 W PARMETER RD	IONIA, MI, 48846
WENTWORTH TAMARA L & DAMON W	780 KELLOGG RD	IONIA, MI, 48846
YEOMANS TRUST, SANFORD	608 HAYNOR RD	IONIA, MI, 48846
RHODES JASON & CHRISTIAN D	1040 N STATE RD	IONIA, MI, 48846
ONRUST LAND, ROCKING, FIELD, PRIME	588 3 MILE ROAD NW SUITE 101	GRAND RAPIDS, MI, 49544
SCHAFER, ANTHONY J.& DEBBIE A.	131 MEADOWLARK DR	IONIA, MI, 48846
BARKER, PAUL D & JEAN M	1137 PHYLLIS JEAN DR	IONIA, MI, 48846
FULLER, JACK	83 BUTTERFLY COURT	IONIA, MI, 48846
CLELLAND, STEVE & GLENDA	2071 N STATE RD	IONIA, MI, 48846
DINEHART, JOHN & JENNY	1824 STANBRO RD	IONIA, MI, 48846
NUMMER, STANLEY	1514 HAWKINS DR	IONIA, MI, 48846
HAFFNER RICHARD HANSON & ROBIN SUE	980 N STATE RD	IONIA, MI, 48846
MCPHERSON, ROGER A & LINDA L	2435 ERNEST RD	IONIA, MI, 48846
LOPEZ ALLISON	721 E MAIN ST	IONIA, MI, 48846
VELASQUEZ, JASON M/KRISTIN M	519 PETERSON RD	IONIA, MI, 48846
HEPPE, DONALD	482 MEADE RD	ORLEANS, MI, 48865

PROPERTY OWNER	OWNER ADDRESS	OWNER CITY, STATE, ZIP
CERES FARMS LLC	806 HOWARD ST STE 200	SOUTH BEND, IN, 46614
VOSBURG PROPERTIES LLC	537 RIVERVIEW DR	GREENVILLE, MI, 48838
NELSON, MICHAEL	2849 N STATE RD	IONIA, MI, 48846
SWAINSTON, BRIAN	603 PETERSON RD	IONIA, MI, 48846
DASHKOVITZ, RICHARD	142 MEADOWLARK DR	IONIA, MI, 48846
DERUISCHER, SCOTT & PATRICIA	912 N STATE RD	IONIA, MI, 48846
SCHECK BRANDON MICHAEL & SAYRE JOHN	210 E PARMETER RD	IONIA, MI, 48846
IONIA STORAGE VENTURES LLC	3609 32ND ST SE	GRAND RAPIDS, MI, 49512
GALLAGHER, JERRY M TRUST	4227 OSTRUM RD	BELDING, MI, 48809
HULL, TERRI & NICHOLAS	810 MAPLE RD	IONIA, MI, 48846
FRANCISCO PROTECTION TRUST	349 W PARMETER RD	IONIA, MI, 48846
OM ONE STOP SHOP INC	2260 N STATE RD	IONIA, MI, 48846
BAILEY, ERIK & MROZINSKI, SAMANTHA	146 MEADOWLARK DR	IONIA, MI, 48846
RAYMOND TRUST, JANICE	2922 DICK RD	IONIA, MI, 48846
HEPPE, JOHN	8660 SUNSET DR	ORLEANS, MI, 48865
HUFF, JOHN & MELISSA	937 W PARMETER RD	IONIA, MI, 48846
WINSOR, RICHARD	2973 N STATE RD	IONIA, MI, 48846
STEVENS, LINDA	1573 HAYNOR RD	IONIA, MI, 48846
LELAND, MIKE & JACKSON, PAM	1036 HAYNOR RD	IONIA, MI, 48846
HARTMAN, FRANK & HARTMAN, MARCUS	719 E HUBBELL RD	IONIA, MI, 48846
BEAM, LINDA L	1313 SPRUCE ST	IONIA, MI, 48846
T & J REAL ESTATE LLC	2324 SOMERS RD	LYONS, MI, 48851
REISBIG, THOMAS	2571 MARQUETTE RD	IONIA, MI, 48846
HANLINE, THOMAS D & NORMA J	696 E PARMETER RD	IONIA, MI, 48846
THOMAS, TROY & STAR	105 MEADOWLARK DR	IONIA, MI, 48846
BROOKS, JOE	2593 N STATE RD	IONIA, MI, 48846
ONRUST LAND, ROCKING, FIELD, PRIME	588 3 MILE ROAD NW SUITE 101	GRAND RAPIDS, MI, 49544
PERRY REV LIV TRUST, BETH L	4253 HOPPOUGH RD	ORLEANS, MI, 48865
HARRISON, MEGAN	791 N STATE RD	IONIA, MI, 48846
GALLAGHER, JERRY M TRUST	4227 OSTRUM RD	BELDING, MI, 48809
HANULCIK ALEX & KRISTIN REV TRUST	1013 CAITLIN DR	IONIA, MI, 48846
BLOOD, GRANT & PATRICIA	1661 N HAYNOR RD	IONIA, MI, 48846
ROJAS TRUST	5715 STATE RD	IONIA, MI, 48846
MCDIARMID, CORLAND J & SARAH M &	1028 CAITLIN DR	IONIA, MI, 48846
ONRUST LAND, ROCKING, FIELD, PRIME	588 3 MILE ROAD NW SUITE 101	GRAND RAPIDS, MI, 49544
BENNETT, ROBERT E & CYNTHIA A	669 MEADE RD	ORLEANS, MI, 48865

APPENDIX F

Example Environmental Permits Checklist

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

PERMIT INFORMATION

Michigan.gov/EGLEPermits

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has prepared a list of key questions to help identify what EGLE permits, licenses, or approvals of a permit-like nature may be needed. By contacting the appropriate offices indicated, you will help reduce the possibility that your project or activity will be delayed due to the untimely discovery of additional permitting requirements later in the construction process. While this list covers the existence of permits and approvals required from EGLE, it is not a comprehensive list of all legal responsibilities. A useful way to learn whether other requirements will apply is to go through the Self-Environmental Assessment in the Michigan Guide to Environmental, Health, and Safety Regulations, online at: Michigan.gov/EHSguide. Please call the Environmental Assistance Center at 800-662-9278 to talk with any of the EGLE programs noted below.

How Do I Know that I Need a Construction Permit?

1) Will your business involve the installation or construction of any process equipment that has the potential to emit air contaminants (e.g. dry sand blasting, boilers, standby generators)? Air Quality Permit to Install, Air Quality Division (AQD), Permit Section

☐ Yes ☐ No

2) Does the project involve renovating or demolishing all or portions of a building? Notification is required for asbestos removal and required for all demolitions even if the structure never contained asbestos. Asbestos Notification, AQD, Asbestos Program, 517-284-6777

☐ Yes ☐ No

3) Please consult the Permitting at the Land and Water Interface Decision Tree document to evaluate whether your project needs a land and water management permit (i.e., Does the project involve filling, dredging, placement of structures, draining, or use of a wetland?). Land and Water Featured Programs (Water Resources Division - WRD) - Joint Permit Application, 517-284-5567:

   a. Does the project involve construction of a building or septic system in a designated Great Lakes high risk erosion area?

   ☐ Yes ☐ No

   b. Does the project involve dredging, filling, grading, or other alteration of the soil, vegetation, or natural drainage, or placement of permanent structures in a designated environmental area?

   ☐ Yes ☐ No

c. Does the project propose any development, construction, silvicultural activities or contour alterations within a designated critical dune area?

☐ Yes ☐ No

d. Does the project involve construction of a dam, weir or other structure to impound flow?

☐ Yes ☐ No

4) Does the project involve an earth change activity (including land balancing, demolition involving soil movement, and construction) or does the project involve construction which will disturb one or more acres that come into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water? Soil Erosion and Construction Storm Water, 269-567-3515, or Local Agency

☐ Yes ☐ No

5) Does the project involve the construction or alteration of a water supply system or sewage disposal system for a manufactured housing project? Drinking Water & Environmental Health Division (DWEHD), 517-284-6524

☐ Yes ☐ No

6) Does the project involve construction or alteration of any sewage collection or treatment facility? WRD, Part 41 Construction Permit Program (staff), 906-228-4527, or EGLE District Office

☐ Yes ☐ No

7) Public Swimming Pool Construction (Spas/Hot Tubs) Permits: Will your business involve the construction or modification of a public swimming pool, spa or hot tub? Public Swimming Pool Program, 517-284-6541, or EGLE District Office

☐ Yes ☐ No

8) Does the project involve the construction or modification of a campground? DWEHD, Campgrounds program, 517-284-6529

☐ Yes ☐ No

9) Does the project involve construction of a facility that landfills, transfers, or processes of any type of solid non-hazardous waste on-site, or places industrial residuals/sludge into or onto the ground? Materials Management Division (MMD), Solid Waste, 517-284-6588, or EGLE District Office

☐ Yes ☐ No

10) Does the project involve the construction of an on-site treatment, storage, or disposal facility for hazardous waste? MMD, Hazardous Waste Section, Treatment, Storage and Disposal, 517-284-6562

☐ Yes ☐ No

Who Regulates My Drinking (Potable) Water Supply?

11) I am buying water from my community water supply (i.e. city of Detroit or Grand Rapids), Contact Local Water Utility, 517-284-6512

☐ Yes ☐ No

12) I have a Non-Community Water Supply (Type II) Guide, Contact (District or County) Local Health Department, 517-485-0660

☐ Yes ☐ No

13) I am a community water supply (Type I) Community Water Supply, DWEHD District Office, Community Water Supply Program, 517-284-6512

☐ Yes ☐ No

14) Do you desire to develop a withdrawal of over 2,000,000 gallons of water per day from any source including groundwater, inland surface water, or the Great Lakes and their connecting waterways? WRD, Great Lakes Shorelands Unit, Water Use Program, 517-284-5563

☐ Yes ☐ No

Who Regulates My Drinking (Potable) Water Supply?

15) NPDES: Does the project involve the discharge of any type of wastewater to a storm sewer, drain, lake, stream, or other surface water? WRD, EGLE District Office, or National Pollutant Discharge Elimination (NPDES) Permit Program, 517-284-5568

☐ Yes ☐ No

16) Does the facility have industrial activity that comes into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water? WRD, Permits Section, or EGLE District Office, 517-284-5588

☐ Yes ☐ No

17) Does the project involve the discharge of wastewaters into or onto the ground (e.g. subsurface disposal or irrigation)? WRD, Groundwater Permits Program, 517-290-2570

☐ Yes ☐ No

18) Does the project involve the drilling or deepening of wells for waste disposal? Oil, Gas and Minerals Division (OGMD), 517-284-6841

☐ Yes ☐ No

What Operational Permits are Relevant to My Operation and Air Emissions?

19) Renewable Operating Permit: Does your facility have the potential to emit any of the following: 100 tons per year or more of any criteria pollutant; 10 tons per year or more of any hazardous air pollutant; or 25 tons per year or more of any combination of hazardous air pollutants? AQD, Permit Section, 517-284-6634

☐ Yes ☐ No

20) Does your facility have an electric generating unit that sells electricity to the grid and burns a fossil fuel? AQD, Acid Rain Permit Program, 517-780-7843

☐ Yes ☐ No

What Operational Permits are Relevant to My Waste Management?

21) Does the project involve landfilling, transferring, or processing of any type of solid non-hazardous waste on-site, or placing industrial residuals/sludge into or onto the ground? MMD, 517-284-6588 or EGLE District Office

☐ Yes ☐ No

22) Does the project involve the on-site treatment, storage, or disposal of hazardous waste? MMD, Hazardous and Liquid Waste, 517-284-6562

☐ Yes ☐ No

23) Does the project require a site identification number (EPA number) for regulated waste activities (used oil, liquid waste, hazardous waste, universal waste, PCBs)? (Hazardous Waste Program Forms & License Applications) MMD, EGLE District Office, 517-284-6562

☐ Yes ☐ No

24) Does the project involve the receipt, possession, manufacture, use, storage, transport, transfer, release, or disposal of radioactive material in any form? MMD, Radioactive Material and Standards Unit, 517-284-6581

☐ Yes ☐ No

25) Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background? MMD Radioactive Material and Standards Unit, 517-284-6581

☐ Yes ☐ No

26) Does the project involve the generation of medical waste or a facility that treats medical waste prior to its disposal? MMD, Medical Waste Regulatory Program, 517-284-6594

☐ Yes ☐ No

What Sector-Specific Permits May be Relevant to My Business?

Transporters

27) Does the project involve the transport of some other facility's non-hazardous liquid waste? MMD, Transporter Program, 517-284-6562

☐ Yes ☐ No

28) Does the project involve the transport of hazardous waste? MMD, Transporter Program, 517-284-6562

☐ Yes ☐ No

29) Do you engage in the business of transporting bulk water for drinking or household purposes (except for your own household use)? DWEHD, Water Hauler Information, 517-284-6527

☐ Yes ☐ No

30) Does the project involve transport of septic tank, cesspool, or dry well contents or the discharge of septage or sewage sludge into or onto the ground? DWEHD, Septage Program, 517-284-6535

☐ Yes ☐ No

31) Do you store, haul, shred or process scrap tires? MMD, Scrap Tire Program, 517-284-6586

☐ Yes ☐ No

Sectors

32) Is the project a dry-cleaning establishment utilizing perchloroethylene or a flammable solvent in the cleaning process? AQD, Dry Cleaning Program, 517-284-6780

☐ Yes ☐ No

33) Does your laboratory test potable water as required for compliance and monitoring purposes of the Safe Drinking Water Act? Laboratory Services Certifications, 517-284-5424

☐ Yes ☐ No

34) Does the project involve the operation of a public swimming pool? DWEHD, Public Swimming Pool Program, 517-284-6529

☐ Yes ☐ No

35) Does the project involve the operation of a campground? DWEHD, Campgrounds program, 517-284-6529

☐ Yes ☐ No

What Permits Do I Need to Add Chemicals to Lakes and Streams?

36) Are you applying a chemical treatment for the purpose of aquatic nuisance control (pesticide/herbicide etc.) in a water body (i.e. lake, pond or river)? WRD, Aquatic Nuisance Control, 517-284-5593

☐ Yes ☐ No

37) Are you applying materials to a water body for a water resource management project (i.e. mosquito control treatments, dye testing, or fish reclamation projects)? WRD, Surface Water Assessment Section, 517-331-5228

☐ Yes ☐ No

Why would I be subject to Oil, Gas and Mineral Permitting?

38) Do you want to operate a central production facility (applies to oil and gas production facilities where products of diverse ownership are commingled)? OGMD, Petroleum Geology and Production Unit, 517-284-6826

☐ Yes ☐ No

39) Does the project involve the removal of sand from a sand dune area within two (2) miles of a Great Lakes shoreline? OGMD, Minerals and Mapping Unit, Sand Dune Mining Program, 517-284-6826

☐ Yes ☐ No

40) Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background? MMD, Radioactive Protection Programs, 517-284-6581

☐ Yes ☐ No

Petroleum and Mining, OGMD, 517-284-6826

41) Does the project involve the diversion and control of water for the mining and processing of low-grade iron ore?

☐ Yes ☐ No

42) Does the project involve the surface or open-pit mining of metallic mineral deposits?

☐ Yes ☐ No

43) Does the project involve the mining of nonferrous mineral deposits at the surface or in underground mines?

☐ Yes ☐ No

44) Does the project involve mining coal?

☐ Yes ☐ No

45) Does the project involve changing the status or plugging of a mineral well?

☐ Yes ☐ No

46) Does the project involve the drilling or deepening of wells for brine production, solution mining, storage, or as test wells?

☐ Yes ☐ No

Permits and Bonding, OGMD, 517-284-6841

47) Do you want to change the status of an oil or gas well (i.e. plug the well)?

☐ Yes ☐ No

48) Does the project involve drilling of oil, gas, brine disposal, secondary recovery, or hydrocarbon storage wells?

☐ Yes ☐ No

If you need further assistance, please fill out the information below and email the form to EGLE-assist@Michigan.gov.

Requestor Information

First and Last Name: _____

Requestor Phone Number: _____

Requestor E-Mail: _____

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at EGLE-NondiscriminationCC@Michigan.gov or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

ENVIRONMENTAL PERMITS CHECKLIST

IONIA COUNTY HEALTH DEPARTMENT

Name of Business:

Mailing Address:

Telephone: **Fax:**

Type of Business:

Facility Owner or Manager:

Date: **Signature:**

Circle (Y/N) the items that may pertain to your project or facility; then contact the office(s) listed to determine specific requirements. Return a copy of this checklist to the City or County Building Departments as part of your site plan submittal -- even if state and county approvals have not yet been obtained. An updated copy should be submitted prior to occupancy.

1. **Y N** Will an on-site wastewater treatment system or septic system be installed?

For subsurface sanitary sewage disposal in quantities of 10,000 gallons per day or less:
- *Ionia County Health Department:* 616/527-5340.

2. **Y N** Will the project involve the construction of a water supply well or the extension of a water supply service from an existing water system?
Contact: *Ionia County Health Department:* 616/527-5340.

3. **Y N** Are there out-of-service wells, abandoned wells, or cisterns on the site? (drinking water, irrigation, & monitoring wells)
Contact: *Ionia County Health Department:* 616/527-5340

4. **Y N** Will the project involve a subdivision or site condominium project utilizing individual on-site subsurface disposal systems or individual wells?
Contact: *Ionia County Health Department:* 616/527-5340

APPENDIX G

Management Plan Documentation

General Resolution
City of Ionia, Michigan

WELLHEAD PROTECTION AND ADMINISTRATION PROCEDURES

Preamble:

The purpose of this resolution is to setforth the policy and administrative procedures which will be used by the City of Ionia to protect the municipal groundwater supply.

The following resolution was introduced by Mayor Dan Balice.
and supported by Council member Kevin Miller.

WHEREAS, the City of Ionia recognises the importance of its groundwater supply as a natural resource used for human consumption; and

WHEREAS, it is within the responsibility of the City of Ionia as public water supplier, to consider the health, safety and welfare of the community and its customers, and

WHEREAS, groundwater contamination can and does occur as a consequence of a variety of land use activities, and

WHEREAS, it is desirable to preserve and protect the quantity and quality of our groundwater resources to assure a continued safe, adequate and useable supply, now and in the future; and

WHEREAS the protection of current and potential future resources of groundwater used for drinking water is worthwhile from the standpoint of resource protection; and

WHEREAS, state and local laws and regulations require certain land uses to obtain permits and approvals for construction and operation; and

WHEREAS, state agencies are not always aware of new development proposals and the owners or developers of proposed new land uses are not always aware of state and local permit and approval requirements; and

WHEREAS, local government officials, through adopted zoning ordinances, have the legal authority to review and/or approve land uses for the purposes of meeting the needs of the state's residents for natural resource protection and public services, including public water supply;

NOW THEREFORE BE IT RESOLVED, that the City of Ionia does hereby agree to take action to protect their immediate wellhead area and to take steps to determine the zone of contribution to its wells and well fields, so as to be in compliance with the State of Michigan Wellhead Protection Program; and

BE IT FURTHER RESOLVED that the City of Ionia designates budget line item number 591-561,000-980 for expenses accrued in determining the zone of contribution of the municipal wells and well fields at such time as funds become available; and;

BE IT ALSO RESOLVED that the City of Ionia issue no zoning permit or special land use permit until all required federal, state, county and local environmental permits or approvals have been obtained, and there is evidence that proper application to responsible county, state and federal agencies has been made and significant issues affecting a State approved wellhead protection area have been addressed. The environmental Permits Checklist is hereby adopted for administrative use when new or expanded land use activities are proposed.

YEAS: 9

NAYS: 0

Resolution declared adopted this 5th day of January, 1999 at a regular meeting of the City of Ionia

General Resolution
Township of Ronald

WELLHEAD PROTECTION AND ADMINSITRATION PROCEDURES

Preamble: The purpose of this resolution is to set forth the policy and administrative procedures which will be used by the Township of Ronald to protect the municipal groundwater supply.
The following resolution was introduced by Arthur Pelon and supported by Tamara Hartman.

WHEREAS, the Township of Ronald recognizes the importance of it's groundwater supply as a natural resource used for human consumption; and

WHEREAS, it is within the responsibility of the City of Ionia, working with the Township of Ronald as public water supplier, to consider the health, safety and welfare of the community and it's customers, and

WHEREAS, groundwater contamination can and does occur as a consequence of a variety of land use activities, and

WHEREAS, it is desirable to preserve and protect the quantity and quality of our groundwater resources to assure a continued safe, adequate and useable supply, now and in the future; and

WHEREAS the protection of current and potential future resources of groundwater used for drinking ter is worthwhile from the standpoint of resource protection; and

WHEREAS, state and local laws and regulations require certain land uses to obtain permits and approvals for construction and operation; and

WHEREAS, state agencies are not always aware of new development proposals and the owners or developers of proposed new land uses are not always aware of state and local permit and approval requirements; and

WHEREAS, local government officials, through adopted zoning ordinances, have the legal authority to review and/or approve land uses for the purposes of meeting the needs of the state's residents for natural resource protection and public services, including public water supply;

NOW, THEREFORE BE IT RESOLVED that the Township of Ronald supports the City of Ionia as it designates budgets for expenses accrued in determining the zone of contribution of the municipal wells and well fields at such time as funds become available; and;

BE IT ALSO RESOLVED that the Township of Ronald issues no zoning permit or special land use permit until all required federal, state, county and local environmental permits or approvals have been obtained, and there is evidence that proper application to responsible county, state and federal agencies has been made and significant issues affecting a State approved wellhead protection area have been addressed. The environmental Permits Checklist is hereby adopted for administrative use when new or expanded land use vities are proposed and the County of Ionia, as lead agency for issuance of building permits and septic permits is hereby directed to strictly enforce the provisions indicated in the Permit Checklist.

YEAS: 5

NAYS: 0

Resolution declared adopted this 14th day of May at a regular meeting of the Township of Ronald held in the Ronald Township Hall at 7:00 p.m. on the date indicated.

Arthur Pelon
Ronald Township Clerk

Resolution NO. 159

General Resolution
Township of Orleans

WELLHEAD PROTECTION AND ADMINSITRATION PROCEDURES

Preamble: The purpose of this resolution is to set forth the policy and administrative procedures which will be used by the Township of Orleans to protect the municipal groundwater supply.
The following resolution was introduced by Joel Noe and supported by Joyce Doty

WHEREAS, the Township of Orleans recognizes the importance of it's groundwater supply as a natural resource used for human consumption; and

WHEREAS, it is within the responsibility of the City of Ionia, working with the Township of Orleans as public water supplier, to consider the health, safety and welfare of the community and it's customers, and

WHEREAS, groundwater contamination can and does occur as a consequence of a variety of land use activities, and

WHEREAS, it is desirable to preserve and protect the quantity and quality of our groundwater resources to assure a continued safe, adequate and useable supply, now and in the future; and

WHEREAS the protection of current and potential future resources of groundwater used for drinking water is worthwhile from the standpoint of resource protection; and

WHEREAS, state and local laws and regulations require certain land uses to obtain permits and approvals for construction and operation; and

WHEREAS, state agencies are not always aware of new development proposals and the owners or developers of proposed new land uses are not always aware of state and local permit and approval requirements; and

WHEREAS, local government officials, through adopted zoning ordinances, have the legal authority to review and/or approve land uses for the purposes of meeting the needs of the state's residents for natural resource protection and public services, including public water supply;

NOW, THEREFORE BE IT RESOLVED that the Township of Orleans supports the City of Ionia as it designates budgets for expenses accrued in determining the zone of contribution of the municipal wells and well fields at such time as funds become available; and;

BE IT ALSO RESOLVED that the Township of Orleans issues no zoning permit or special land use permit until all required federal, state, county and local environmental permits or approvals have been obtained, and there is evidence that proper application to responsible county, state and federal agencies has been made and significant issues affecting a State approved wellhead protection area have been addressed. The environmental Permits Checklist is hereby adopted for administrative use when new or expanded land use activities are proposed and the County of Ionia, as lead agency for issuance of building permits and septic permits is hereby directed to strictly enforce the provisions indicated in the Permit Checklist.

YEAS: 5

NAYS: None

Resolution declared adopted this 10th day of April, 2001 at a regular meeting of the Township of Orleans held in the Orleans Township Hall at 7:00 p.m. on the date indicated.

Joyce E. Doty
Orleans Township Clerk

Certification

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Township Board of the Township of Orleans, County of Ionia, State of Michigan at a meeting held on April 10, 2001, the original of which is on file in my office and available to the public. Public notice of said meeting was given pursuant to and in compliance, with the Open Meetings Act, Act No. 267 of the Public Acts of Michigan of 1976, including the case of a special or rescheduled meeting, notice by posting at least eighteen (18) hours prior to the time set for said meeting.

Joyce E. Doty
Joyce E. Doty
Township Clerk

Dated: April 10, 2001

General Resolution
Township of Easton

WELLHEAD PROTECTION AND ADMINSITRATION PROCEDURES

Preamble: The purpose of this resolution is to set forth the policy and administrative procedures which will be used by the Township of Easton to protect the municipal groundwater supply.
The following resolution was introduced by and supported by

WHEREAS, the Township of Easton recognizes the importance of it's groundwater supply as a natural resource used for human consumption; and

WHEREAS, it is within the responsibility of the City of Ionia, working with the Township of Easton as public water supplier, to consider the health, safety and welfare of the community and it's customers, and

WHEREAS, groundwater contamination can and does occur as a consequence of a variety of land use activities, and

WHEREAS, it is desirable to preserve and protect the quantity and quality of our groundwater resources to assure a continued safe, adequate and useable supply, now and in the future; and

WHEREAS the protection of current and potential future resources of groundwater used for drinking water is worthwhile from the standpoint of resource protection; and

WHEREAS, state and local laws and regulations require certain land uses to obtain permits and approvals for construction and operation; and

WHEREAS, state agencies are not always aware of new development proposals and the owners or developers of proposed new land uses are not always aware of state and local permit and approval requirements; and

WHEREAS, local government officials, through adopted zoning ordinances, have the legal authority to review and/or approve land uses for the purposes of meeting the needs of the state's residents for natural resource protection and public services, including public water supply;

NOW, THEREFORE BE IT RESOLVED that the Township of Easton supports the City of Ionia as it designates budgets for expenses accrued in determining the zone of contribution of the municipal wells and well fields at such time as funds become available; and;

BE IT ALSO RESOLVED that the Township of Easton issues no zoning permit or special land use permit until all required federal, state, county and local environmental permits or approvals have been obtained, and there is evidence that proper application to responsible county, state and federal agencies has been made and significant issues affecting a State approved wellhead protection area have been addressed. The Environmental Permits Checklist is hereby adopted for administrative use when new or expanded land use activities are proposed and the County of Ionia, as lead agency for issuance of building permits and septic permits is hereby directed to strictly enforce the provisions indicated in the Permit Checklist.

YEAS: 5

NAYS: 0

Resolution declared adopted this 3rd day of April, 2007 at a regular meeting of the Township of Easton held in the Easton Township Hall at 7:00 p.m. on the date indicated.

Betty L. Rowley
Easton Township Clerk

General Resolution
Township of Ionia

WELLHEAD PROTECTION AND ADMINSITRATION PROCEDURES

Preamble: The purpose of this resolution is to set forth the policy and administrative procedures which will be used by the Township of Ionia to protect the municipal groundwater supply.
The following resolution was introduced by and supported by

WHEREAS, the Township of Ionia recognizes the importance of it's groundwater supply as a natural resource used for human consumption; and

WHEREAS, it is within the responsibility of the City of Ionia, working with the Township of Ionia as public water supplier, to consider the health, safety and welfare of the community and it's customers, and

WHEREAS, groundwater contamination can and does occur as a consequence of a variety of land use activities, and

WHEREAS, it is desirable to preserve and protect the quantity and quality of our groundwater resources to assure a continued safe, adequate and useable supply, now and in the future; and

WHEREAS the protection of current and potential future resources of groundwater used for drinking water is worthwhile from the standpoint of resource protection; and

WHEREAS, state and local laws and regulations require certain land uses to obtain permits and approvals for construction and operation; and

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WHEREAS, local government officials, through adopted zoning ordinances, have the legal authority to review and/or approve land uses for the purposes of meeting the needs of the state's residents for natural resource protection and public services, including public water supply;

NOW, THEREFORE BE IT RESOLVED that the Township of Ionia supports the City of Ionia as it designates budgets for expenses accrued in determining the zone of contribution of the municipal wells and well fields at such time as funds become available; and;

BE IT ALSO RESOLVED that the Township of Ionia issues no zoning permit or special land use permit until all required federal, state, county and local environmental permits or approvals have been obtained, and there is evidence that proper application to responsible county, state and federal agencies has been made and significant issues affecting a State approved wellhead protection area have been addressed. The Environmental Permits Checklist is hereby adopted for administrative use when new or expanded land use activities are proposed and the County of Ionia, as lead agency for issuance of building permits and septic permits is hereby directed to strictly enforce the provisions indicated in the Permit Checklist.

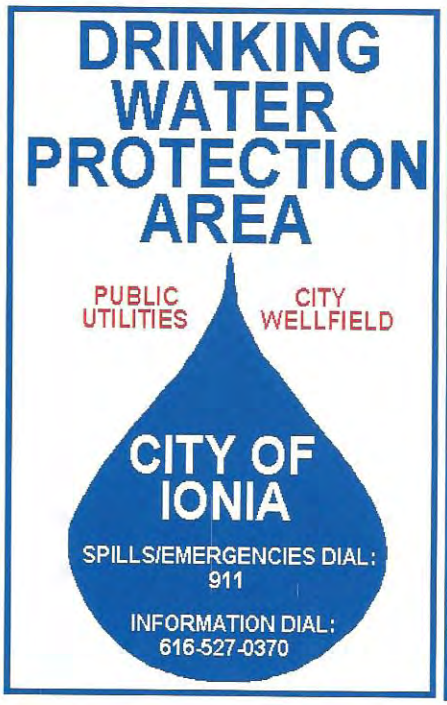
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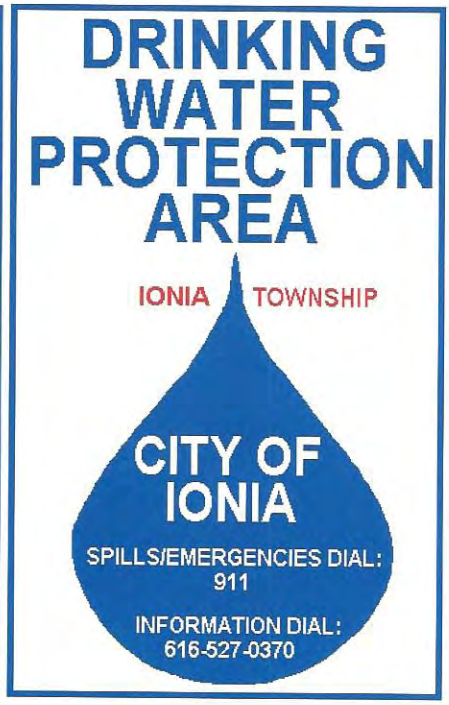
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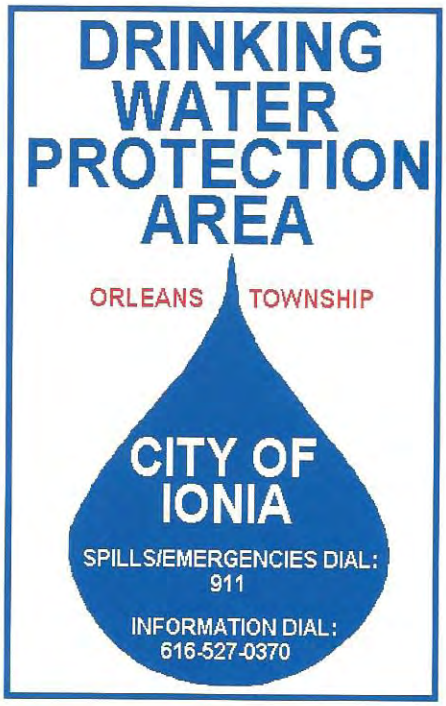
Resolution declared adopted this 3rd day of April 2001 at a regular meeting of the Township of Ionia held in the Ionia Township Hall at 7:00 p.m. on the date indicated.

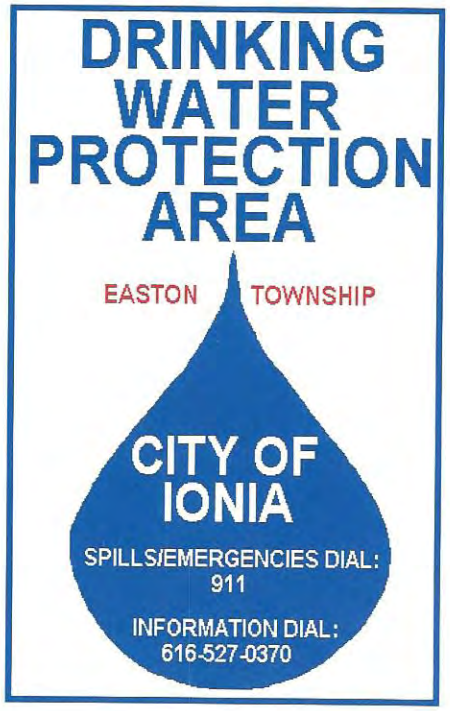
Cynthia V. Higbee
Ionia Township Clerk

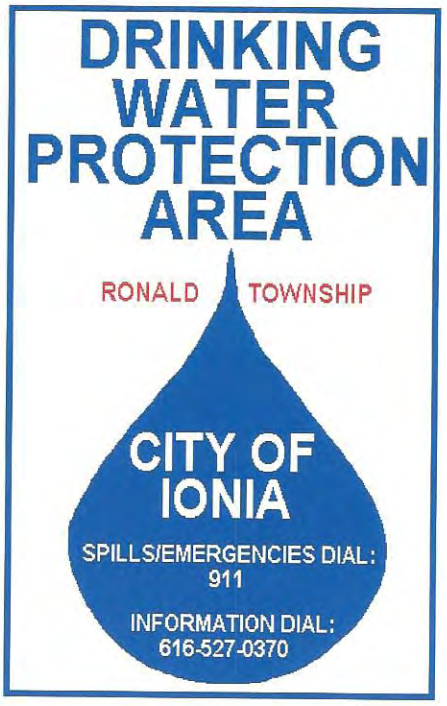
CITY OF IONIA WHPA SIGNAGE











CHAPTER 1040

Water Generally

1040.01 Purposes.

1040.02 Authority.

1040.03 Definitions.

1040.04 Findings.

1040.05 Establishment of Municipal Water Supply System.

1040.06 Water connections.

1040.07 Water mains and service lines.

1040.08 Turning water service on or off.

1040.09 Water meters.

1040.10 Rates and charges.

1040.11 Water emergency.

1040.12 Additional regulations.

1040.13 Hydrant use.

1040.14 Funding of water supply-system improvements.

1040.15 Injury to facilities.

1040.16 MISS DIG system.

1040.17 Cross-connection prevention.

1040.18 Mandatory connection, exception; new private wells, prohibition, continuation, abandonment.

1040.19 Geothermal heat systems.

1040.20 Repealer; continuation of prior bond authorizing ordinances.

1040.21 Water well restrictions.

1040.99 Penalty.

CROSS REFERENCES

Water quality - see Mich. Const. Art. 4, §§ 22.52; M.C.L.A. §§ 67.38, 323.1 et seq.

Water supply generally - see Mich. Const. Art 7. § 24; M.C.L.A. §§ 46.171 et seq., 123.11 et seq., 325.201 et seq., 486.51 et seq., 486.101 et seq.

Water supply in home rule cities - see M.C.L.A. §§ 117.4b, 117.4e, 117.4f, 117.35, 123.115

1040.01 PURPOSES.

(a) This chapter sets forth the uniform requirements for users of the Municipal Water Supply System for the City of Ionia and enables the City of Ionia to comply with applicable State and Federal laws regulating provision of a potable water supply system.

(b) The purpose of this chapter is to consolidate, restate, and amend all prior ordinances adopted by the City of Ionia for the purpose of establishing a water supply system in the City, regulating the use of the water supply system, financing the costs of improvements, enlargements, extensions, and replacements of the water supply system, and setting the standards and rules relating to rates and charges to users of the water supply system.

(Ord. Unno. Passed 9-7-99.)

1040.02 AUTHORITY.

By establishing and regulating the water supply system, the City is exercising the authority granted to the City by Act 94 of the Public Acts of 1933, as amended; Act 279 of the Public Acts of 1909, as amended; and Article 7, § 21 of the Michigan Constitution of 1963.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.03 DEFINITIONS.

As used in this chapter:

(a) "City Manager" shall mean the City Manager for the City of Ionia, or his or her designee.

(b) “Commodity Charge” is the cost associated with providing water to the users. The Commodity Charge is the actual budget cost of the operation, maintenance and repair divided by the estimated number of gallons to be produced for delivery to the users. The Commodity Charge may also include all or a portion of the annual debt service expense incurred by the Water Supply System.

(c) "Department" shall mean the Public Utilities Department for the City.

(d) "Director" shall refer to the Director of Public Utilities for the City of Ionia, or his or her designee.

(e) “Facilities Maintenance Charge” is the name given to the costs associated with retiring all or a portion of the debt of the water supply system.

(f) “Person” shall mean any individual, firm, association, public or private corporation or public agency or instrumentality.

(g) “Premises” shall mean each lot or parcel of land, building or unit connected to the Water Supply System of the City.

(h) “REU” means Residential Equivalent Unit and is equal to 22,000 gallons of metered water usage per quarter. An REU is the average use of a residence as established by recognized State and Federal standards.

(i) “Treasurer” shall mean the Treasurer for the City of Ionia or his or her designee.

(j) “User” shall mean any person who receives water from or benefits from the Water Supply System.

(k) “Water service lines” shall mean that part of the water distribution system connecting the water main with the premises served.

(l) "Water main" shall mean that part of the water distribution system located within easement lines or streets designed to supply more than one water service line.

(m) “Water Supply System” shall mean the complete Water Supply System of the City, including all water mains, connections, pipes, meters, hydrants, wells, well houses, pumps, water storage facilities, transmission lines, water service lines and all water treatment facilities, plants, works, instrumentalities and properties used or useful in obtaining a water supply, treating and distributing the same for domestic, commercial, industrial, institutional and/or fire protection purposes, and all other appurtenances thereto, including all easements, rights and land for such easements, and including all extensions and improvements thereto which may be acquired or constructed on behalf of current and future users of the Water Supply System.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.04 FINDINGS.

(a) History. Prior to 1956, the City established a water supply system by resolution, and thereafter adopted Ordinance Numbers 148, 153, 270, 271, 280, 331 and 378 for the purpose of regulating the water supply system, establishing rates and charges for use of the water supply system, and enabling the acquisition, construction, and installation of enhancements, and improvements to the water supply system.

(b) Necessity. The City has previously found, and currently reaffirms, that the businesses, industries, governmental and charitable agencies and residents located in the City need to have potable and otherwise usable water.

(c) Availability of Potable Water. The City further has previously found, and currently reaffirms, that the supply of potable water available from private wells within the City is insufficient to assure that all businesses, industries, governmental and charitable agencies, and residents will have sufficient potable water available for their use and other water necessary for industrial and fire prevention and control unless the City offers water to all properties located within the City.

(d) Method of Measuring Use of the Water Supply System Based on the advice of its engineers, the City has previously found, and currently reaffirms, that the most precise method of measuring for use of the water supply system by any user is by a meter or meters installed and controlled by the City.

(e) Continuation of Service. The City has previously found and further reaffirms that in order to provide and continue to provide clean potable and other usable water to all users of the water supply system, in quantities necessary for all varieties of use, it is necessary from time to time to install improvements, enlargements, and extensions and repairs to the system.

(f) Purpose of Rates and Charges. The City has previously found and further currently reaffirms that the fairest and most reasonable method of providing for the operation, maintenance, repair, replacement and improvement of the water supply system, is to charge each user, based in all cases on amount of use, for (1) the cost of retiring debt secured by the net revenues of the system issued to pay for improvements and replacements to the Water System Production Plant; (2) the costs of ongoing repair, replacement and improvement paid for from the Replacement Fund and Improvement Fund and budgeted as part of the annual costs of the Water System Production Plant; and (3) operation, administration and maintenance costs paid for from the Operating Fund.

(g) Proportionality of Classifications of Users According to Residential Equivalent Units Based on Historic Consumption The City has previously found and further currently reaffirms that, based on the advice of its engineers, the fairest method of charging its users proportionately for payment of the costs of improvements to and replacements of the Water System Production Plant is to impose a flat charge, based on Residential Equivalent Units (22,000 gallons of metered water per quarter), calculated annually on the basis of amount of use in the previous year, to classes of users divided according to annual quantity of use.

(Ord. Unno. Passed 9-7-99.)

1040.05 ESTABLISHMENT OF MUNICIPAL WATER SUPPLY SYSTEM.

Based on the above findings and for the purposes set forth above, the City has previously established and hereby re-establishes the Municipal Water Supply System, hereinafter referred to as the Water Supply System or the System, consisting of all of the water mains, pumping and storage facilities, pressure systems, wells, and all other appurtenances to the water treatment and distribution system.

(Ord. Unno. Passed 9-7-99.)

1040.06 WATER CONNECTIONS.

Applications for water connections shall be made to the City on forms prescribed and furnished by the City. Water connections and water meters shall be installed in accordance with rules and regulations of the City and upon payment of the required connection fee and meter installation fee. All meters shall be installed by and be the property of the City. Connection fees shall not be less than the cost of materials, installation and overhead attributable to such installations. Every user connected to the City's Water Supply System, whether such user is located inside or outside of the City, shall be subject to the ordinances, rules and regulations of the City which shall be available for inspection at the City Clerk's office.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.07 WATER MAINS AND SERVICE LINES.

The City is responsible for all water mains and water service lines up to the water shut-off box. The user is responsible for maintenance of the water service line from the shut-off box to the building as well as all inside plumbing. The City shall furnish the meter and yoke, billing the same to the property owner on initial installation and then maintaining the same at the City's expense. In no case shall water service lines be allowed to leak more than twenty-four hours without repair. In the case of a line leaking after twenty-four (24) hours and the property owner being notified, the City shall terminate the water supply by shutting the same off at the water shut-off box. Property owners or agents shall be liable for penalties as contained in Section 1040.99.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.08 TURNING WATER SERVICE ON OR OFF.

No person, other than an authorized employee of the City, shall turn on or off any water service, unless written authorization is provided by the City.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.09 WATER METERS.

(a) Requirement for Installation. All premises using water shall be metered, except as otherwise provided by Code. No person, except a City employee, shall break or injure the seal of, or change the location of, alter or interfere in any way with, any water meter. On all new installations there shall be a shut-off on each side of the meter for the purpose of testing, inspecting and replacement of the water meter.

(b) Access to Meters. The Department shall have the right to shut off the supply of water to any premises where the Department is not able to obtain access to the meter. Any qualified employee of the Department shall at all reasonable hours have the right to enter the premises where such meters are installed for the purpose of reading, testing, removing, or inspecting the same and no person shall hinder, obstruct, or interfere with such employee in the lawful discharge of his or her duties in relation to the care and maintenance of such water meter.

(c) Shut-offs Required for Each Unit. In the case of multiple-family living houses, each unit shall be equipped with a shut-off valve for the purpose of discontinuing water/sewer service if the bill to the City is not paid. If no such arrangement is provided, then the property owner is responsible for all delinquent bills regardless of contracts with the tenant. The City is responsible for providing service and has the right to discontinue such service. If no such provision is provided by the owner of the property, then he or she becomes the responsible party.

(d) Reimbursement for Damage. Any damage which a meter may sustain resulting from carelessness of the owner, agent, or tenant or from neglect of either of them to properly secure and protect the meter, as well as any damage which may be wrought by frost, hot water, or steam from a boiler, shall be paid by the owner of the property to the City on presentation of a bill therefore, and in cases where the bill is not paid, the water shall be shut off and shall not be turned on until all charges have been paid to the City.

(e) Meter Failure. If any meter shall fail to register properly, the City shall estimate the consumption and bill accordingly.

(f) Inaccurate Meters. A user may require that the meter be tested. If the meter is found accurate, a charge equal to the amount of staff time (pay plus benefit cost), plus equipment rental, shall be billed for the testing process. If the meter is found defective, it shall be repaired or an accurate meter installed and no charge shall be made.

(g) Accuracy Required. A meter shall be considered accurate if, when tested, it registers not to exceed two (2) percent more to two (2) percent less than the actual quantity of water passing through it. If a meter registers in excess of two (2) percent more than the actual quantity of water passing through it, it shall be considered "fast" to that extent. If a meter registers in excess of two (2) percent less than the actual quantity of water passing through it, it shall be considered "slow" to that extent.

(h) Bill Adjustment. If a meter has been tested at the request of a user and shall have been determined to register "fast", the City shall credit the user with a sum equal to the percent "fast" multiplied by the amount of all bills incurred by said user within the three months prior to the test. If a meter so tested is determined to be "slow", the City may collect from the user a sum equal to the percent "slow" multiplied by the amount of all bills incurred by the user for the prior three (3) months. When the Department on its own initiative makes a test of a water meter, it shall be done without cost to the user, other than his or her paying the amount due the City for water used by him or her as above provided, if the meter is found to be "slow".

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.10 RATES AND CHARGES.

(a) In General. The City Council shall establish rates, fees, and charges for services of the Water Supply System consistent with the provisions of Section 214.05 of the Code.

(b) No Free Service. No free water service shall be furnished to any person, firm or corporation, public or private, or to a public agency or instrumentality.

(c) Contracts for Service and Rates and Charges for Service Outside of the City; Franchise

Contracts; Outside City Service. The City has previously entered into contracts with certain townships whereby the City has received consideration in exchange for providing certain capital costs, and other indirect costs, of providing service to users of the Water Supply System located in those townships. Rates, fees, and charges billed for use by the user of those townships shall be in accordance with the applicable contract and Section 214.05 of the Code.

(d) Payment of Charges by City, Exception. The City shall pay for all water used by it at the rates established by ordinance. The water used through a fire hydrant by the City is hereby deemed to be a public benefit and there shall be no charge for service. Charges against the City shall be payable in quarterly installments from current funds of the City.

(e) Illegal Disconnection, Connection or Tampering With a Water Meter. For illegally disconnecting, connecting or tampering with a water meter, the property owner shall be charged two times the cost of the last quarterly billing. No service shall be provided until such bill is paid in full. If not paid, such cost shall be added to the property taxes and collected as delinquent.

(f) Facilities Maintenance Charge. A Facilities Maintenance Charge shall be charged against every premises connected to the Water Supply System whether water is used or not and shall be calculated consistent with the provisions of Section 214.05 of the Code and in accordance with a Residential Equivalent Unit (REV) basis. A single family unit is considered one REV. In the case of a multiple unit residence, each unit shall be charged one Facilities Maintenance Charge REV. In December of each year, or at such other time as may be deemed appropriate, the City shall review REV allocations, taking into account factors such as the amount of use for each class of user in the previous year, and shall adjust such REV allocations as necessary with the revised allocations effective for the following twelve month period or until a subsequent review.

(g) Fee for Water Turn-On After Disconnection. If service is discontinued, a fee, consistent with the provisions of Section 214.05 of the Code and as established by resolution of the Council from time to time, shall be charged to turn the utilities back on. In the case of winter shut-offs, no charge shall be made to turn the utility off. However, a fee shall be charged to turn service back on.

(h) Final Readings. At least twenty-four (24) hours notice shall be given to the City for a final notice reading on a property. If such time limit cannot be given, a fee, consistent with the provisions of Section 214.05 of the Code and as established by resolution of the City Council from time to time, shall be made to perform the work on an emergency basis.

(i) Contracts for Service. No user shall receive service from the Water Supply System without first completing a contract application and providing evidence of ownership of the property to be served or by taking other steps as set forth in Section 214.05 of the Code. No utility service will be activated without a signed contract, and no billings shall be made to "Occupant" or any person other than the owner of the property being served, or a tenant who has complied with the requirements of this Code, or such other person as the City Manager approves.

(j) Billing Cycle; Penalty; Collection. The City Manager shall have charge of the reading of all meters and shall have all meters read at least quarterly. Bills for water service shall be due and payable when rendered. There shall be added to all bills not paid on or before the twentieth day of the first month following the end of each quarter a penalty often percent of the amount of the bill. The Treasurer shall be responsible for collecting all charges and crediting the proper account.

(k) Non-payment of Bills. All bills not paid shall result in the termination of water service to the premises. No user who has had his or her water shut off shall reactivate his or her service by their own action. The City may disable the service to

prevent future reactivation.

(l) Liens. The rates, fees, and charges for services furnished by the Water Supply System shall be liens on the property served in the manner, and subject to the provisions of, Section 214.05(e) of the Code.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09; Res. 2024-11. Passed 5-1-24; Ord. 587. Passed 5-1-24.)

1040.11 WATER EMERGENCY.

The City Manager may regulate, limit or prohibit the use of water for any purpose. Such regulations shall restrict less essential water uses to the extent deemed necessary to assure an adequate supply for essential domestic and commercial needs and for fire-fighting. No such regulation, limitation or prohibition shall be effective until twenty-four (24) hours after the publication thereof in a newspaper of general circulation in the City. Any person violating such rule or regulation shall be deemed guilty of a misdemeanor.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.12 ADDITIONAL REGULATIONS.

The City Manager may make and issue additional rules and regulations concerning the Water Supply System, connection thereto, meter installation and maintenance, connection and meter installation fees, hydrants and water mains and the appurtenances thereto, not inconsistent with this chapter. Such rules and regulations shall be effective upon approval by the City Council. The rules and regulations now in effect shall continue until changed in accordance with this section.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.13 HYDRANT USE.

No person, except an employee of the City in the performance of his or her duties, shall open or use any fire hydrant except in case of emergency, without first securing a written permit from the City and paying such charges as may be prescribed. Violation of this section shall be a civil infraction.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.14 FUNDING OF WATER SUPPLY SYSTEM IMPROVEMENTS.

Whenever the City determines that it is necessary to acquire, construct, furnish and equip improvements, replacements or extraordinary repairs to the Water Supply System, and to borrow money and issue bonds to pay those costs, the City shall adopt a separate bond authorizing ordinance in compliance with the provisions of Act 94 of the Public Acts of 1933, as amended.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.15 INJURY TO FACILITIES.

No person, except an employee of the City in the performance of his or her duties, shall willfully or carelessly break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is a part of the Water Supply System.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.16 MISS DIG SYSTEM.

Any person wishing to perform work on a connection to the Water Supply System shall notify the MISS DIG at least seventy-two (72) hours before performing the work, and the Department at least twenty-four (24) hours before performing the work.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.17 CROSS-CONNECTION PREVENTION.

To comply with certain State and Federal laws, the following regulations relating to cross-connections in the System shall be enforced.

(a) The City of Ionia adopts by reference the Water Supply Cross-Connection Rules of the Michigan Department of Public Health, being R 325.11401 to R 325.11407 of the Michigan Administrative Code.

(b) It shall be the duty of the Department to cause inspections to be made of all properties served by the public water supply where cross-connections with the public water supply are deemed possible. The frequency of inspections and reinspections based on potential health hazards involved shall be as established by the City and as approved by the Michigan Department of Environmental Quality.

(c) The representative of the City of Ionia shall have the right to enter at any reasonable time any property served by a connection to the Water Supply System of the City of Ionia for the purpose of inspecting the piping system or systems thereof for cross-connections. On request, the owner, lessees, or occupants of any property so served shall furnish to the

inspection agency any pertinent information regarding the piping system or systems on such property. The refusal of such information or refusal of access, when requested, shall be deemed evidence of the presence of cross-connections.

(d) The City is hereby authorized and directed to discontinue water service after reasonable notice to any property wherein any connection in violation of this chapter exists and to take such other precautionary measures deemed necessary to eliminate any danger of contamination of the Municipal Water Supply System. Water service to such property shall not be restored until the cross-connection(s) has been eliminated in compliance with the provisions of this chapter.

(e) The potable water supply made available on the properties served by the public water supply shall be protected from possible contamination as specified by this chapter and by the State and BOCA Plumbing Codes. Any water outlet which could be used for potable or domestic purposes and which is not supplied by the potable system must be labeled in a conspicuous manner:

WATER UNSAFE

FOR DRINKING

(f) This chapter does not supersede the State Plumbing Code or any City ordinance, but is supplementary to them.

(Ord. Unno. Passed 9-7-99; Ord. No. 466. Passed 6-2-09.)

1040.18 MANDATORY CONNECTION, EXCEPTION; NEW PRIVATE WELLS, PROHIBITION, CONTINUATION, ABANDONMENT.

(a) Except as otherwise provided in division (b), any property or structure in or on which water is used or consumed and which has City water “available” to it shall be connected to the City Water Supply System. Such connection shall be made within ninety (90) days of written notice from the City to do so. For purposes of this section, City water shall be considered “available” if the City Water Supply System is located within two hundred (200) feet of the nearest property line of said property.

(b) The installation of new private wells is prohibited, except for properties that do not have City water “available.” A private well existing on the date of the adoption of this section may continue to be used until it is no longer operable, subject to division (c). A private well that has been disconnected from any structure on the property that is still operable shall be used solely for outdoor purposes only. A private well that is disconnected from a structure and that is still in service shall be subject to inspection as part of the City’s cross connection program.

(c) When a private well is no longer operable, its use shall be discontinued and the well disconnected, unless it is repaired within forty-five (45) days from the date that it becomes inoperable. A private well that is inoperable and/or unable to be repaired shall be properly abandoned within forty-five (45) days of its inoperability in accordance with the requirements of the Michigan Department of Environmental Quality. Proof of the abandonment shall be filed with the Ionia County Health Department and the City’s Utilities Department which shall inspect the well to confirm its proper abandonment.

(Ord. No. 466. Passed 6-2-09.)

1040.19 GEOTHERMAL HEAT SYSTEMS.

(a) Geothermal heat pumps. It is recognized that residential buildings in the City may be constructed, or be retrofitted with geothermal heat pumps. It is recognized that these climate control systems use substantial amounts of water. It is also recognized that this water, which for the purposes of this chapter shall be identified as sending water, can cause excess wetness or flooding on nearby properties, resulting in undesirable conditions. It is further recognized that if sending water mixes with other water, which for the purpose of this chapter shall be identified as receiving water, it can have a potentially detrimental impact on the ecosystem in and around the receiving waters, resulting in undesirable conditions.

(b) Drainage. Owners of buildings in the City equipped with geothermal heat pump systems must install a closed loop system that will continuously process (heated or cooled) sending water and circulate it through the enclosed or sealed heat pump system, with no discharge of returning water out of the heat pump.

(c) Discharge of water. No sending water from a geothermal heat pump system shall be directly or indirectly discharged out of the closed loop system.

(d) Liability. The owner of a geothermal heat pump system shall be fully responsible for the proper operation and for the maintenance of the geothermal heat pump system, and shall he liable for any damage caused by any discharge of sending water from the system.

(e) Penalty. Violation of this Section shall be deemed a municipal civil infraction and punishable by a fine commensurate with the amount or amounts established by the Ionia City Council, as set forth in the Codified Ordinances.

(Ord. No. 466. Passed 6-2-09.)

1040.20 REPEALER; CONTINUATION OF PRIOR BOND AUTHORIZING ORDINANCES.

All ordinances and resolutions, or parts of ordinances and resolutions, which conflict with this chapter, are hereby repealed, to the extent of such conflict. This section shall not operate to repeal any provision of any prior ordinance or resolution adopted by the City, the repeal of which would impair the obligation of the City or the Water Supply System with regard to any outstanding bonds of the City secured by a lien on the net revenues of the Water Supply System.

(Ord. Unno. Passed 9-7-99; Ord. 466. Passed 6-2-09.)

1040.21 WATER WELL RESTRICTIONS.

(a) Findings. The City Council has been informed and hereby finds that an aquifer in certain areas of the City has been contaminated or otherwise adversely impacted by hazardous substances and that identified public health, safety and welfare risks may affect drinking water drawn from certain areas of such impacted aquifers. The City Council has determined that it is necessary and appropriate to prohibit or otherwise restrict the use of wells to supply water in and from the affected areas in order to protect City residents by minimizing the health, safety and welfare risks and minimizing the potential for migration of contaminated groundwater into presently unaffected groundwater.

(b) Definitions. As used in this section:

(1) "Affected parcel" means a parcel of land, any part of which is located within a restricted zone.

(2) "Applicant" means a person who applies or applied for the establishment of a restricted zone pursuant to this section.

(3) "City property" means any interest in real property owned or held by the City and shall include but not be limited to the following:

A. Real property owned by the City;

B. Real property leased by the City as lessee; and

C. City streets, alleys or other City rights-of-way or easements.

(4) "Contaminated groundwater" means groundwater in which there is present concentrations of hazardous substances that exceed drinking water criteria under the Safe Drinking Water Act, 1976 PA 399, as amended, or the residential drinking water criteria established by the MDEQ in rules promulgated pursuant to Part 201, Environmental Remediation, M.C.L.A. 324.20101 et seq.

(5) "Domestic use" means the use of water by humans for drinking, cooking, food preparation and other food-related services, cleaning, washing, bathing and similar household-type water uses in any dwelling, or in any building in which commercial/business, governmental/public or industrial activities are conducted. The term does not include water used solely for closed-loop heat pumps, non-contact cooling, production, or processing purposes of commercial or industrial enterprises.

(6) "Irrigation use" means the use of water for lawn, garden, or landscaping irrigation on a residential parcel of land. The term also includes water used for commercial, agricultural, or farm irrigation. A well used primarily for irrigation uses shall connect to the Water Supply System and shall be plugged/abandoned, unless such use is allowed by the MDEQ and is consistent with any of the exceptions found in division (e) of this section.

(7) "MDEQ" means the Michigan Department of Environmental Quality, or its successor agency.

(8) "Owner" means the holder of record title for a parcel of land and also the occupant of a parcel of land in possession under a land contract or lease.

(9) "Part 201" means Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), M.C.L.A. 324.20101 et seq., as amended.

(10) "Part 213" means Part 213, Leaking Underground Storage Tanks, NREPA, M.C.L.A. 324.21301 et seq., as amended.

(11) "Person" means any individual, partnership, corporation, association, club, joint venture, estate, trust, and any other group or combination acting as a unit, and the individuals constituting such group or unit.

(12) "Restricted zone" means an area or areas described within division (c) of this section for which the prohibition of wells and the use of groundwater applies.

(13) "Well" means an opening in the surface of the earth for the purpose of removing groundwater through non-mechanical or mechanical means for any purpose other than a public emergency or conducting response actions that are consistent with NREPA, the Comprehensive Environmental Response, Compensation and Liability Act, the Resource Conservation and Recovery Act, or other applicable statute.

(c) Restricted Zone. The following described areas in the City shall be a restricted zone under this section. It may be referred to by reference to the name provided in the caption preceding its description. Additional restricted zones, along with a map illustrating the restricted zone and legal descriptions of all affected parcels, may be added by amending the section in accordance with divisions (k) and (l) of this section and all other applicable laws.

(1) Cleveland Street Restricted Zone. The Cleveland Street Restricted Zone is legally described below and depicted in the map attached to Ordinance No. 513 as Appendix 1.

(1a) Legal Description: Beginning at the Center of Section 20, T7N, R6W, City of Ionia, Michigan; thence along the North-South 1/4 line, South 469 feet; thence East 922 feet; thence South 343 feet to the North line of the Pere Marquette Railroad right-of-way; thence along said North line, East 300.5 feet to a point lying 99 feet West of the East line of the NW

1/4 of the SE 1/4 of said Section 20; thence South 315 feet, more or less, to the Grand River; thence along the bank of the Grand River to the East line of Mill Street extended; thence along the East line of Mill Street extended, North 559 feet, more or less, to a point lying 441 feet South of the centerline of the Pere Marquette Railroad; thence West 33 feet to the centerline of Mill Street; thence along said centerline, North 66 feet; thence East 33 feet to the East line of Mill Street; thence along said East line, North 375 feet, more or less, to the South line of the Pere Marquette Railroad right-of-way; thence Southeasterly along said South line 933.6 feet to a line lying 17.75 feet East of the West line of Lot 119 extended, Merritt's Addition to the City of Ionia as recorded in Liber M, Page 774; thence parallel with the West line of Lot 119, North 265 feet; thence West 17.75 feet to the West line of Lot 110 of said Merritt's Addition; thence along said West line, North 101 feet, more or less, to the Northwest corner of Lot 110; thence along the North line of Lot 110, East 462 feet, more or less, to the West line of Cleveland Street; thence along the West line of Cleveland Street, North 165 feet, more or less, to the South line of Bayard Street; thence along the South line of Bayard Street, East 594 feet, more or less, to the North-South 1/4 line of said Section 20; thence along said North-South 1/4 line, South 75 feet, more or less, to the Center of said Section 20 and the Point of Beginning.

(1b) Property Tax Id. Nos.: 203-240-000-020-00

203-240-000-040-00

203-240-000-045-00

203-240-000-120-00

203-240-000-220-00

204-120-000-240-00

204-120-000-240-01

204-140-000-005-10

204-140-000-005-20

(2) Dexter Street Restricted Zone. The Dexter Street Restricted Zone is legally described below and depicted in the map attached to Ordinance No. 543 as Appendix 1.

(2a) Legal Description:

- THE S 92 FT OF LOT 21 OF SUP HUTCHINS ADD TO CITY OF IONA; ALSO A PARCEL OF LAND 6 FT N AND S BY 188 FT E AND W LYING S OF AND ADJ TO LOT 21; ALSO LOT 20 EXC S 80 FT; ALSO N 40 FT OF LOT 21.

- CITY OF IONIA SUP HUTCHINS ADDITION S 40FT OF LOT 20. ALSO THE N 40 FT OF S 80 FT OF LOT 20.

- CITY OF IONIA SUP HUTCHINS ADDITION LOT 15.

- CITY OF IONIA SUP HUTCHINS ADDITION LOT 14.

(2b) Property Tax Id. Nos.: 201-130-000-075-00

201-130-000-080-00

201-130-000-085-00

201-130-000-095-00

(d) Prohibition. Except as provided in division (e) of this section, no person shall install or utilize, or allow, permit, or provide for the installation or utilization of a well on any affected parcel. Any existing well at the time of the enactment of a restricted zone on any affected parcel within that restricted zone shall be plugged/abandoned at the expense of the applicant for that particular restricted zone and as provided for in division (f) of this section and in accordance with applicable laws, regulations and ordinances, unless such existing well falls within one of the exceptions listed in division (e). Except as provided in division (e), no person shall use any groundwater from an affected parcel.

(e) Exceptions. A person may install or utilize, or allow, permit, or provide for the installation or utilization of a well in any restricted zone if any of the following exceptions applies and the person complies with the requirements of the exception. The party proposing an exception to the well prohibition shall conduct all appropriate inquiry and prepare a due care analysis pursuant to Part 201 or Part 213 of NREPA.

(1) Proof of No Influence. If the MDEQ determines based on information provided to it by the person seeking this exception that the use of a well in a restricted zone will not exacerbate existing groundwater contamination, and that water from the proposed well will not be affected by contaminated groundwater or that water from the proposed well does not pose a threat to human health or the environment, and proof of those determinations is delivered to the City, the well may be so used.

(2) Groundwater Monitoring/Remediation. A well may be used for groundwater monitoring or remediation as part of a response activity approved by the MDEQ, the United States Environmental Protection Agency, or their successor agencies.

(3) Construction Dewatering. A well may be used for construction dewatering if the following conditions are satisfied: (i) the use of the dewatering well will not result in unacceptable exposure to contaminated groundwater, possible cross-

contamination between saturated zones, or exacerbation of contaminated groundwater, as defined in Part 201 or Part 213 of NREPA; and (ii) the water generated by that activity is properly handled and disposed of in compliance with all applicable laws, rules, regulations, permit and license requirements, orders and directives of any governmental entity or agency of competent jurisdiction. Any exacerbation caused by the use of the well under this exception shall be the responsibility of the person operating the dewatering well, as provided in Part 201 or Part 213 of NREPA.

(4) Processing Activities. If the MDEQ determines that the use of a well for non-contact heating, cooling, production, or processing involved in industrial or commercial activities will not cause migration or exacerbation of contaminated groundwater, and proof of that determination is delivered to the City, such use of the well under terms and conditions specified by the MDEQ will be allowed. All information necessary for the MDEQ determination described in this division shall be provided by the person seeking this exception.

(5) Public Emergencies. A well may be used in the event of a public emergency. Notice of such use shall be provided to the MDEQ within a reasonable time thereafter.

(f) Sources of Water Supplied for Domestic Use and Irrigation Use

(1) For affected parcels that have a well and are not already connected to the Water Supply System on the day of enactment of a restricted zone, the applicant of the restricted zone shall be responsible for the costs to connect those affected parcels within that restricted zone to the Water Supply System. Furthermore, for affected parcels that have a well on the day of enactment of a restricted zone that is used primarily for irrigation uses, the applicant of the restricted zone shall be responsible for the costs to connect the irrigation system on the affected parcel within that restricted zone to the Water Supply System.

(2) This section shall not be deemed as affecting the rights and remedies of an owner, or any other person or entity or of any federal, state or local government that may exist under any law, regulation, rule, ordinance, order, agreement, or remedial action plan addressing groundwater within the City.

(3) In no event shall the City be required to incur any expense or cost under this section, except as may otherwise be approved by the City Council for a public works project or by a separate agreement with the applicant, owner, other person or entity, or a governmental body or agency.

(g) Enforcement. The City Manager, or his or her designee, shall be the official having the authority to enforce this section. After the effective date of this section, the enforcement official shall contact all owners of affected parcels, which from the information available to the City, appear to have wells prohibited under this section, giving written notice of the need to cease using such wells and of the need for establishment of a domestic use water source as prescribed under division (f) of this section, or to obtain approval or acknowledgment of an exception under division (e). The owner shall immediately take steps to comply with the provisions of this section with regard to provision of domestic use water within 60 days from the date of such notice. Any existing well in violation of this section shall then be plugged or abandoned in conformance with applicable legal requirements. Where, upon information available to the enforcement official, it is suspected that a well is being used on an affected parcel in violation of this section, the enforcement official may inspect such affected parcel and serve an appropriate notice and order of such violation requiring that action be taken promptly by the owner to bring the affected parcel into compliance. If the owner fails to act in accordance with such order, the enforcement official may seek remedies and penalties as provided in division (h) of this section.

(h) Penalty. Any person who violates any provision of this section shall be liable for a municipal civil infraction under the provisions of Section 202.99(b). In addition, the City may seek an order from a court of appropriate jurisdiction requiring compliance with this section and may also seek collection of costs and attorney fees associated with such enforcement action. Any violation of this section is a public nuisance, subject to abatement, and any well in violation of this section shall be immediately taken out of service and lawfully abandoned in compliance with applicable legal requirements. A court of competent jurisdiction may order any person violating any provision of this section to properly and lawfully remove or abandon a well.

(i) Building and Zoning Permits. No permit for the construction or alteration of a building or structure nor any permit for any zoning approval shall be issued by the City Building and Zoning Administrator for any improvement on an affected parcel that has, or proposes, a water supply from a well in violation of this section.

(j) Administrative Liability. No officer, agent or employee of the City or member of the City Council shall render himself or herself personally liable for any damage that may occur to any person or entity as the result of any act or decision performed in the discharge of his or her duties and responsibilities pursuant to the section.

(k) Amendment; Repeal. The MDEQ, an applicant, an owner, an entity involved in a response or cleanup plan or other interested party may request in writing to add parcels to or delete parcels from a restricted zone or to establish an additional restricted zone or to otherwise amend or repeal this section, and shall provide advance notice to the MDEQ and any applicant for such restricted zone of any proposed change hereunder, including the reasons supporting such request. The City on its own motion and upon advance notice to the MDEQ and any applicant for such restricted zone, may also take action to amend or repeal this section as it deems appropriate. The amendment or repeal of this section shall be by an appropriate ordinance adopted in the same manner as this section unless the amendment is for a release regulated pursuant to Part 213. If an amendment to this section is sought for a release regulated pursuant to Part 213, then this section or an amendment to this section shall be filed with the register of deeds as an ordinance affecting multiple properties. Any action to amend or repeal this section shall be in the sole legislative discretion of the City Council and shall comply with the publication and notice requirements of Chapter 2.13 of the City Charter.

(l) Notification of Lapse, or Intent to Amend or Repeal At least 30 days prior to any action regarding a proposed amendment or repeal in whole or in part of this section, the City shall notify the MDEQ and any applicant of its intent to so act. The City shall also notify the MDEQ and any applicant that this section may lapse at least 30 days prior to the section being allowed to lapse.

(m) Severability. The City shall promptly notify the MDEQ and any applicant upon the occurrence of any event described in Section 202.05 resulting in one or more provisions of this section being severed.

(n) Reimbursement of Additional City Construction Costs. The Applicant of a restricted zone shall reimburse the City for the reasonable additional costs the City incurs for dewatering contaminated groundwater or disposing of soils impacted by contaminated groundwater in connection with construction activity undertaken by the City on City property in that restricted zone, provided that the City supplies the applicant with documentation confirming the amount and necessity of such additional costs, including the extent to which they exceeded the cost of dewatering or disposing of materials not impacted by contaminated groundwater.

(Ord. 513. Passed 7-1-14; Ord. 544. Passed 9-3-19.)

1040.99 PENALTY.

(EDITOR'S NOTE: See Section 202.99 of these Codified Ordinances for the general Code penalty if no specific penalty is provided.)

In addition to the penalty provided in Section202.99 of these Codified Ordinances for any person who turns on water service for any building or residence in the City after such service has been discontinued for leak, non-payment or other delinquency, such property shall be billed an administrative penalty of one and one-half times the cost of the last quarterly bill. Failure to pay such administrative penalty shall result in the addition of such cost to the property taxes of the property.

(Ord. Unno. Passed 9-7-99.)

indicate that the installer is authorized to install such systems for a three (3) year period from the date issued. Licensed installers shall carry the certificate or wallet-sized versions provided by the Ionia County Health Department whenever they are on a work site, and display it upon request to a representative of the Health Department, a law enforcement officer, or the property owner.

303.08 - Workmanship

All work done such as repairs, installation or alterations, or sewage disposal system modifications shall be performed in a workmanlike manner, and the property served left in a safe and sanitary condition.

303.09 - Rights to Appeal

Whenever a licensed sewage disposal contractor feels he has been aggrieved by a decision of the Health Officer to suspend or refuse to issue his license, he may appeal that decision to the Ionia County Sanitary Code Board of Appeals in accordance with Chapter II of these regulations.

303.10 - Sewage Disposal Contractor's Advisory Board

There shall be created an Ionia County Sewage Disposal Contractor's Advisory Board whose duty it shall be to advise and assist the Health Officer in the formulation of policy and in the execution and implementation of these regulations in matters pertaining to sewage disposal. This Board shall also advise and assist in the process of examining sewage disposal contractor license applications, and participate in enforcement activities against same.

The Sewage Disposal Contractor's Advisory Board consists of two (2) licensed sewage contractors whose principal place of business is located in Ionia County, and one (1) representative from the general public. Appointments to the Sewage Disposal Advisory Board are made by the Board of Health for a non-concurrent term of up to two years.

Chapter IV - Water Supplies

Section 400 - Technical Definitions

400.01 - Abandoned Well

"Abandoned Well" shall mean a water well whose use has been permanently discontinued; a water well or portion thereof which is in such disrepair that its

continued use for the purpose of obtaining water is impractical; a water well which has been left uncompleted; a water well which is a threat to other sources of water; or a water supply well which is or may be a health hazard or safety hazard.

400.02 - Aquifer

"Aquifer" shall mean subsurface water-bearing geologic material that transmits water in sufficient quantities to supply a well.

400.03 - Artesian

"Artesian" shall mean a water supply subject to hydrostatic pressure, causing the static water level to rise above the level of the aquifer, whether above or below the ground surface.

400.04 - Contaminant

"Contaminant" shall mean a biological, physical or radiological constituent which when present in groundwater is or may become injurious to public health, safety or welfare or adversely impacts domestic, commercial, industrial, agricultural or other uses that are being made of groundwater.

400.05 - Extensive Changes

"Extensive Changes" shall mean work performed on an existing water well system which includes but is not limited to replacing the casing, removing a casing from the ground for any reason, changing aquifers, deepening or plugging back a bedrock well, installing a liner, changing pump type or increasing the capacity of the pump by more than 50 gallons per minute.

400.06 - Minor Changes or Repairs

"Minor Changes or Repairs" shall mean work performed on an existing water well supply, which includes replacing a telescoped well screen, replacing a similar pump, drop pipe, pressure tank or controls, chemical rehabilitation, well disinfection or redevelopment.

400.07 - Public Water Supply

"Public Water Supply" shall mean a water supply which provides water for drinking or household purposes to persons other than the supplier of water, except those water supplies which supply water to only one (1) living unit.

400.08 - Water Supply System

"Water Supply System" shall mean an integrated system of pipes, controls, reservoirs, and mechanical devices used for the purpose of extracting and

providing water for domestic or commercial use. See also Section 101.27.

400.09 - Water Well Advisory Committee

"Water Well Advisory Committee" shall mean the Ionia County Water Well Advisory Committee, whose duty shall be to assist and advise the Health Officer in carrying out, executing and implementing these regulations in matters pertaining to water wells.

The "Water Well Advisory Committee" shall consist of two (2) registered water well contractors whose principal place of business is located in Ionia County, and one representative from the general public. Appointments to the Water Well Advisory Committee are made by the Board of Health for a non-concurrent term of two (2) years.

400.10 – Well

See sections 101.27 and 400.09.

Section 401-– Water Supply Requirements

401.01 – Jurisdiction

These regulations apply to water supplies intended for use or used to supply groundwater within the County of Ionia. Such uses include, but are not limited to, wells which provide potable water, irrigation wells, water wells for industrial processes including water for oil or gas exploration, air conditioning or heating, wells used to obtain hydrogeological information for the design or operation of a water supply well, wells constructed to obtain hydrogeological information for determining the adequacy of water supply for developments, or wells intended to replenish water into an aquifer.

"Closed-loop" heat pump systems will be considered as needing a single well permit, regardless of the number of actual holes/casings installed in the ground for the system.

401.02 - State Laws and Regulations

Unless otherwise specified the requirements as set forth in Part 127 of the Public Health Code, Act 368 of the Public Acts of 1978, as amended, and the Safe Drinking Water Act, Act 399 of the Public Acts of 1976, as amended, and the rules and regulations adopted pursuant to those acts, are hereby adopted as requirements

of these regulations.

401.03 - Approved Water Supplies Required

Every habitable building shall be provided with an approved potable water supply system meeting the requirements of these regulations and applicable State of Michigan regulations.

401.04 - Water Quality Standards

The quality of water furnished to any lavatory, drinking fountain, dishwasher, bathtub, shower, or other fixture, device or equipment wherein or from which direct consumption or human body contact is possible, shall be safe for human consumption and potable as approved by the Health Officer. Acceptability shall be based upon the minimum chemical and bacteriological standards of the Michigan Department of Environmental Quality.

401.05 - Upgrade of Water Supply Construction and Quality

Existing water supplies that do not comply with the minimal construction standards and chemical or bacteriological requirements of the Michigan Department of Environmental Quality (MDEQ) shall be upgraded and/or treated by methods approved by the MDEQ. If it is not possible to secure satisfactory compliance, the water supply shall be abandoned and, when applicable, the well shall be sealed to protect the water-bearing formation against further contamination.

401.06 - Imminent or Substantial Hazard

Water supply systems which, in the judgment of the Health Officer, represent a potential, imminent or substantial hazard may be condemned by the Health Officer. Unless otherwise provided for in these regulations, condemned water supplies shall be repaired or replaced within 30 calendar days of receiving a notice of condemnation from the Health Officer. Contaminated water supplies which, in the judgment of the Health Officer, represent an immediate or substantial hazard shall be posted with suitable signs at each outlet, or the outlet shall be made inoperative.

401.07 - Connection Required

Where connection can be made to an available approved public or municipal water supply, the Health Officer shall not issue a permit to construct a private water supply system, unless approved by the local municipality. No cross connections between a public and private water supply system shall be allowed.

401.08 - Abandoned Well Closure

An abandoned well shall be sealed by filling with materials in accordance with the specifications and procedures outlined in Act 368 of the Public Acts of 1978, as amended, and Act 399 of the Public Acts of 1976, as amended. It shall be accomplished so as to prevent it from acting as a channel for vertical contaminant movement or the escape of subterranean gases. Pumps, drop pipes or other debris or obstructions shall be removed from the well prior to sealing if at all possible.

The Health Officer may order the well owner or well drilling contractor to seal an abandoned well or dry hole.

401.09 - Temporarily Abandoned Well

A temporarily abandoned well means a well whose use has been discontinued but is intended to be used as a source of water by the owner within the next three years. A temporarily abandoned well shall meet the construction and isolation distance requirements of the Michigan Public Health Code and these regulations.

(a) A temporarily abandoned well shall be disconnected from any water distribution piping, and shall have the top of the casing capped to prevent the entrance of surface water or foreign materials and to prevent access into the well. The casing shall extend a minimum of twelve (12) inches above grade or as directed by the Health Officer. The casing shall be constructed to prevent the entrance of water or foreign material into the well.

(b) The owner shall notify the Health Officer in writing not more than 30 calendar days after the well that has been temporarily abandoned has been taken out of service.

(c) The Health Officer shall investigate to determine if a well meets the requirements to be temporarily abandoned.

(d) After a well has been temporarily abandoned for not less than 3 years, it shall be considered permanently abandoned and shall be sealed in accordance with these regulations unless the owner requests an extension indicating reasons why the well should not be permanently abandoned. The request to extend the status of a temporarily

abandoned well shall be made in writing to the Health Officer and shall state the reasons why the well should not be permanently abandoned. The Health Officer may grant an extension of up to three years if (i) the well construction meets the requirements of the Public Health Code and these regulations, (ii) the well does not present a health hazard and (iii) the owner intends at a future date to place the well in production. Additional extensions may be requested by the owner.

401.10 - Abandonment of Improperly Constructed Wells

The Health Officer may require the sealing of a well constructed in violation of the Ionia County Sanitary Code, the Public Health Code or Act 399 of the Public Acts of 1976, as amended. All costs of sealing the well shall be borne by the property owner.

401.11 - Location of Wells

All water supply systems shall be located wholly upon the property served, except that under certain conditions where suitably executed and recorded easements or right-of-way agreements exist, this provision may be waived by specific written permission of the Health Officer. Wells shall not be located in road right-of-ways, easements, or within 10 (ten) feet of any property line.

401.12 - Permit Required/Termination/Extension/Denial

No person shall install or construct a new water supply system or make an extensive change to an existing water well system, unless a valid permit has been issued by the Health Officer authorizing such installation or construction. This provision shall not encompass the normal routine maintenance of a water supply system or when minor changes or repairs are made to the system (i.e., replacing pump, screen, pressure tank, piping, wiring, or treatment devices).

(a) Application for a permit shall be made by the property owner(s) or their authorized representative. The application shall be made upon such forms and shall contain such reasonable information as required by the Health Officer.

(b) Permits are not transferable with respect to property or specific parcel served. Should the ownership of the property for which a permit has

been issued change, the permit may be transferred to the new owner. Such transfer shall be requested in writing on forms to be provided by the Health Officer and signed by the current permit holder.

(c) A permit for installation or construction shall become void twelve (12) months from the date of issuance, but may be extended an additional twelve (12) months upon written request previous to the expiration date, and payment of the appropriate fee.

(d) Application for a permit shall be accompanied by the appropriate service fee, adequate plans showing locations of pertinent features of the proposed water system, including potential sources of contamination, and all necessary data which may be required by the Health Officer.

(e) The Health Officer shall refuse to issue a permit for a water supply system where the submitted information is not in compliance with the provisions of these regulations, and/or the location and construction will not meet the requirements and provisions of these regulations.

401.13 - Extensive Changes or Repairs

When extensive changes or repairs are made to the water well system, they shall conform to these regulations unless otherwise approved by the Health Officer. A permit shall be obtained from the Ionia County Health Department prior to any extensive changes being completed on a water well system, except as provided for in Section 401.27 under "Emergency Conditions."

401.14 - Minor Changes or Repairs

Upgrading of a water system to conform with these regulations is not required when making minor changes or repairs to the system. A permit shall not be required for any work conducted by a well owner or registered well driller when performing these activities.

401.15 - Permits Issued by State Agencies

If, under Act 399, Public Acts of 1976, as amended, and the rules and regulations promulgated pursuant to that Act, the owner, well driller or pump installer is required to obtain a permit directly or exclusively from the Michigan Department

of Environmental Quality, it shall not be a requirement to obtain a permit from the Ionia County Health Department. When the Ionia County Health Department issues a permit for the installation or alteration of a public water supply system under an agreement, contract or cooperative arrangement as stated in Act 399, Public Acts of 1976, as amended, the permit shall be issued in accordance with Section 401.12 of these regulations.

401.16 - Stop Work Order – Void Permit

When during construction any new work, major change, or extensive change to an onsite water supply system is found in violation of the provisions of these regulations, the Health Officer may issue a "Stop Work Order" by posting a notice at the site. Any valid water supply construction permit shall be declared void when a "Stop Work Order" is posted.

401.17 - Permit Required Before Building Construction

No municipality, township or other agency shall issue a building permit or otherwise allow construction to commence on any land where an approved public or municipal water supply is not available until an onsite water supply construction permit has first been issued by the Health Officer, or until written approval from the Health Officer is presented allowing the continued use of the existing water well system.

401.18 - Altered or Repaired Existing Buildings

The Health Officer shall determine if the construction and location of an existing onsite water supply system is adequate to allow an increase in living or working area to an existing building. This would include, but not be limited to, adding bedrooms to an existing dwelling or additions to industrial or commercial establishments. The Health Officer shall determine if an existing onsite water supply system is sufficient and adequate to allow a repair or the rebuilding of an existing building. All industrial, commercial or residential buildings shall conform to the minimum requirements of this regulation if these circumstances apply:

(a) Rebuilding after existing structure is voluntarily demolished.

(c) Rebuilding after fire or casualty destroys over 50% of building

401.19 - Well Development Restrictions; Emergency Powers

In areas of suspected or possible groundwater contamination, the Health Officer may place restrictions and/or conditions for well development in these areas for up to a one hundred twenty (120) calendar day period. Well permits may be temporarily withheld for this period of time while investigations are being conducted.

401.20 - Restrictions or Conditions on Well Development

The Ionia County Board of Health may place restrictions or conditions on well development in areas where there is known or suspected groundwater contamination, concerns for general water quality, problems with yield, problems with protection or based on other factors present which in its opinion may adversely affect public health. A written policy shall govern the procedures to be followed in such situations.

401.21 - Inspection Authority

The Health Officer may enter and inspect, at any reasonable hour, on private or public property, an installation for the development or abandonment of a water supply.

401.22 - Water Supply Inspection and Approval

The Health Officer may make such inspections or evaluations and collect samples that are necessary to determine that a water supply system complies with the provisions of the Ionia County Sanitary Code. Approval from the Health Officer shall be received prior to a new water well or extensively repaired water well being placed into service. Unless otherwise specified on the permit, the submittal of an acceptable water well record and safe bacteriological sample analysis will be sufficient to provide adequate information to the Health Officer.

401.23 - Well Grouting

All wells constructed after the effective date of these regulations shall be grouted in accordance with techniques approved by the Michigan Department of Environmental Quality.

401.24 - Isolation Distances From Contamination Sources

As required under Part 127 of the Public Health Code, as amended, and the rules

promulgated thereunder, water well supplies shall be isolated the following distances from potential sources of contamination:

(a) A well furnishing water for any beneficial use shall be located where it is not subject to contamination.

(b) A well shall be located at least 800 feet from the active work area of a landfill or land surface application of septage waste, as described in Part 117 of Act 451 of the Public Acts of 1994, as amended.

(c) A well shall be located at least 300 feet from any major source of contamination such as land application or subsurface injection of effluent or digested sludge from a municipal wastewater treatment facility, oil and gas wells, petroleum product processing or storage facilities, and underground or above grade storage tank systems of not less than 1100 gallons which are regulated under Part 211 of Act 451 of the Public Acts of 1994, as amended.

(d) A well shall be located at least 150 feet from the preparation area or storage area of fertilizers, agricultural chemicals, or other chemicals that may result in contamination of the soil or groundwater.

(e) A well shall be located at least 50 feet from a buried sewer, septic tank, subsurface disposal field or bed, drywell, sewage pump chamber, pressurized sewer, grease trap, seepage pit, cesspool, animal or poultry yard, outhouse, other wastewater handling or disposal unit, liquid waste draining into the soil, storm water drain, underground or above grade storage tanks which have a capacity of less than 1,100 gallons and are regulated under Part 211 of Act 451 of the Public Acts of 1994, as amended, and having secondary containment, and underground or above grade storage tanks having a capacity of less than 1,100 gallons which store motor or heating oil for noncommercial purposes or consumptive use on the premises.

(f) A well shall be located no less than (i) 10 feet from a buried gravity flow sewer constructed of service weight or heavier ductile iron pipe with water tight joints, Schedule 40 PVC plastic with water tight

joints, or other material and joints given written approval by the Health Officer, (ii) 10 feet from a surface water body such as a lake, pond, river or stream, or (iii) 10 feet from a sump, pit, or unfilled space that is below the ground surface, except for a crawl space.

(g) Wells serving as public water supplies, as defined in Act 399, Public Acts of 1976, as amended, shall be isolated from contamination sources in accordance with the requirements specified in the administrative rules for that Act.

401.25 - Access to Well Location

It shall be the responsibility of the well owner to maintain access to a well by a well drilling machine.

401.26 - Premises Occupancy

It shall be unlawful for any person to occupy, or to permit to be occupied, any newly constructed or extensively remodeled habitable building (See Section 401.18) which is not equipped with an approved potable water supply system for drinking and culinary purposes. The system shall be constructed in accordance with the provisions of these regulations and approved in writing by the Health Officer prior to any local municipality or other agency granting approval for the building or residence to be occupied.

Violation of any of these requirements is non-compliance with the regulations of Chapter IV and the owner shall be responsible for a municipal civil infraction as provided in these regulations and/or subject to civil penalties of not more than $500.00 for each violation or day that the violation continues.

401.27 - Emergency Conditions

In the event an emergency arises when the office of the Ionia County Health Department is closed or when the well driller is involved with major repair work and it is deemed necessary to begin construction immediately on a new well or begin an extensive change, due to emergency conditions, a registered well driller may begin construction on a new water supply system or extensive change without notification or permit. The property owner shall then contact the Health Officer on the next official working day and obtain a permit for the installation. Any modification to an existing water well system shall be in accordance with the

requirements of these regulations. "Emergency Conditions" shall be limited to situations where no potable water is available at a residence, commercial site, or livestock housing facility.

Chapter V - Nuisance Abatement and Housing

Section 500 - Authority and Purpose

The provisions of this Chapter are authorized by Section 2455 of the Public Health Code, and all other applicable Michigan statutes. This chapter sets forth minimum standards governing the condition and maintenance of dwellings to ensure that they are safe and fit for human occupancy, establishing certain responsibilities of owners and occupants of dwellings, and procedures for the abatement of violations of this chapter.

Section 501 - Jurisdiction

The provisions of this chapter shall apply to all structures, dwellings, habitable buildings and premises within Ionia County, including travel trailers and mobile homes, with respect to conditions which may be deemed to constitute a nuisance to the health, safety or welfare of their occupants or the general public.

The regulations of this Chapter apply to any building, use, or condition which violates health laws or these regulations, or which the Health Officer reasonably believes to be a nuisance, unsanitary condition, cause of illness or unsafe condition within the County of Ionia.

Section 502 - Nuisance

Any structure, building, use, activity, or condition which violates any provision or requirement of these regulations, or State code or law, shall be deemed to be a nuisance.

Community Water Supply
Source Water Assessment

IONIA- WL005A

JOE LAFLER; (616)523-0165; 720 WELLS ST, PO BOX 496, IONIA, MI 48846

SUBJECT: **IONIA- WL005A** – County: **Ionia** WSSN: **03370** Source ID: **5**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by LAUREN JASKOT.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

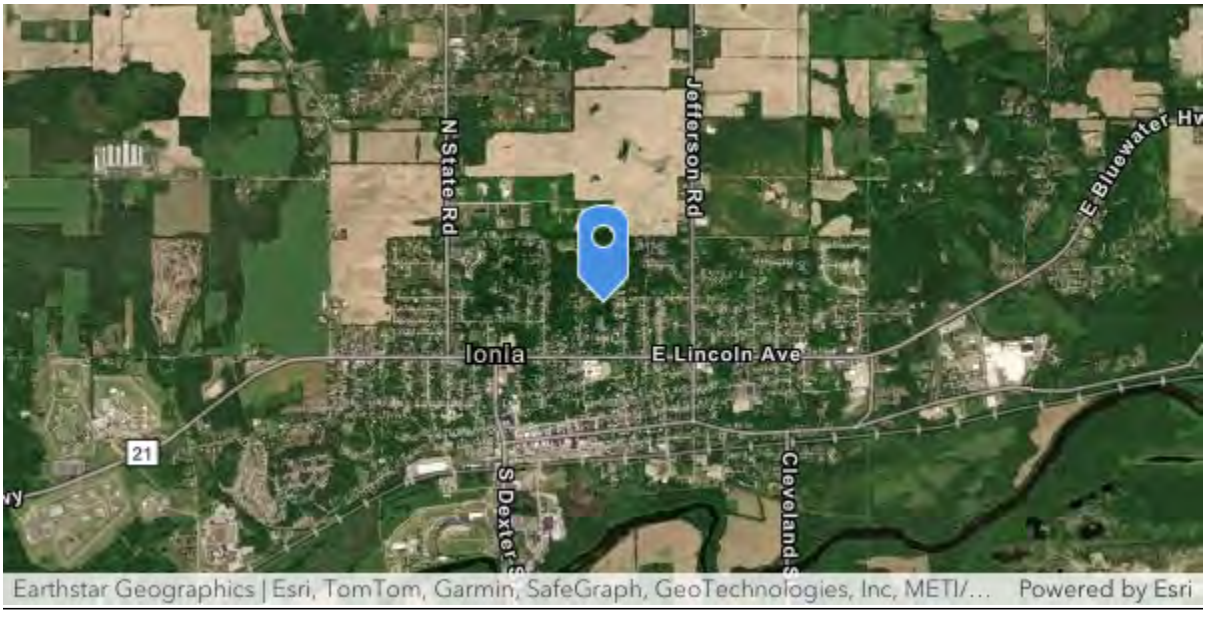
You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, LAUREN JASKOT at JASKOTL@MICHIGAN.GOV, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **5**

Date Assessed: **February 27, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000013604**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**0**
PCM Points Deducted:	**0**
Geologic Sensitivity SWAS(G):	**30**
Geologic Sensitivity Rating:	**high**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**0**
Well Age Points:	**0**
Casing Depth Points:	**10**

Pumping Rate Points:	**10**
Well Construction SWAS(W):	**20**
Total SWAS(W) Points:	**20**

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	**0**
Inorganics:	**0**
SOC:	**0**
VOC:	**0**
Radionuclides:	**0**
Tritium:	**No**
Total SWAS© Points:	**0**

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**4** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**1** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**125**

Control of Isolation Area

Isolation Points: **10**

Source Water Assessment Score (SWAS)

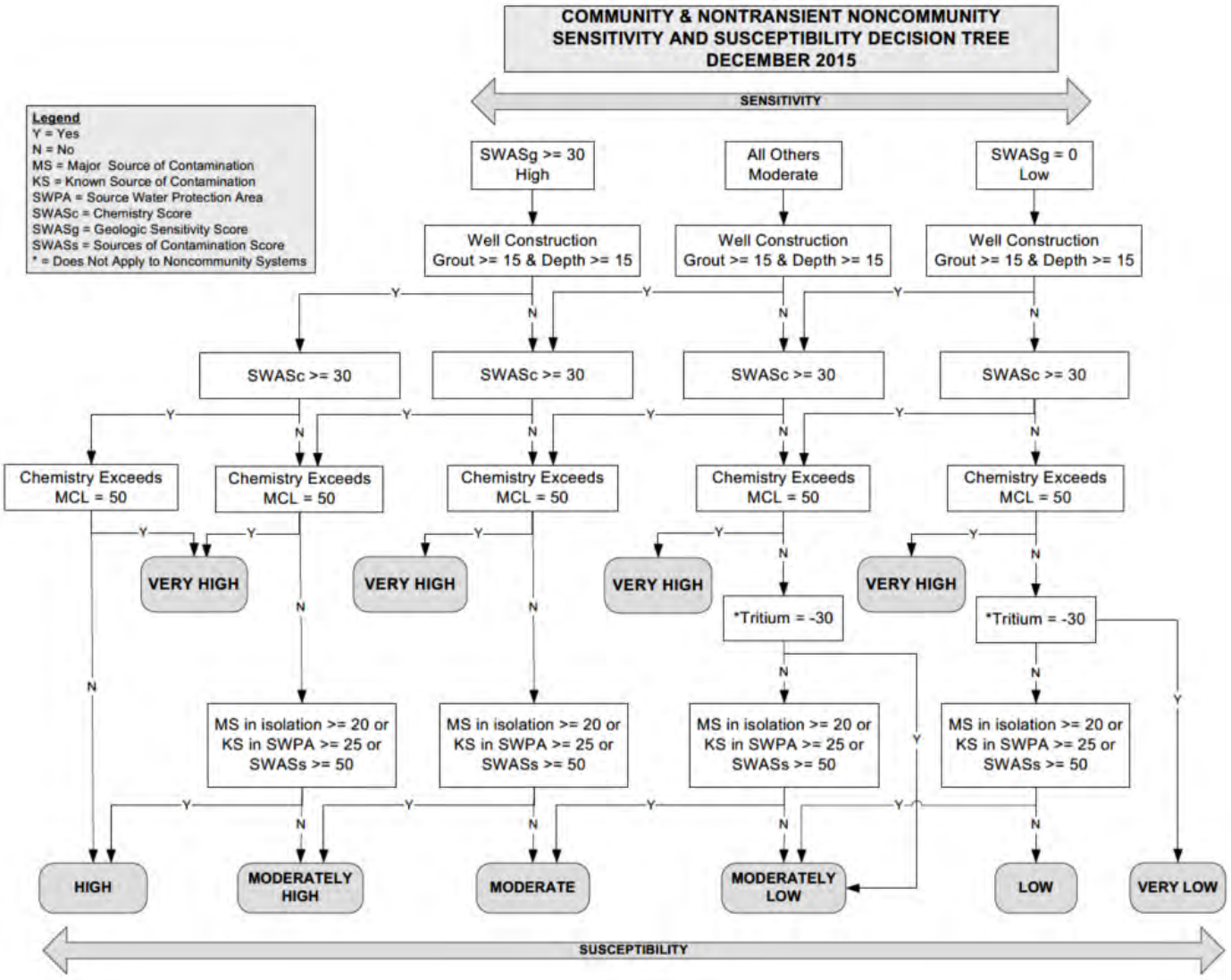
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **30** + SWAS(W) **20** + SWAS(C) **0**+ SWAS(S) **125**+ Isolation Points **10** = SWAS **185**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderately High**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
SENSITIVITY
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

City of Ionia - WL009A

114 N Kidd St PO BOX 496 Ionia MI 48846

SUBJECT: **City of Ionia - WL009A** – County: **Ionia** WSSN: **3370** Source ID: **9**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by Kim Hippensteel.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

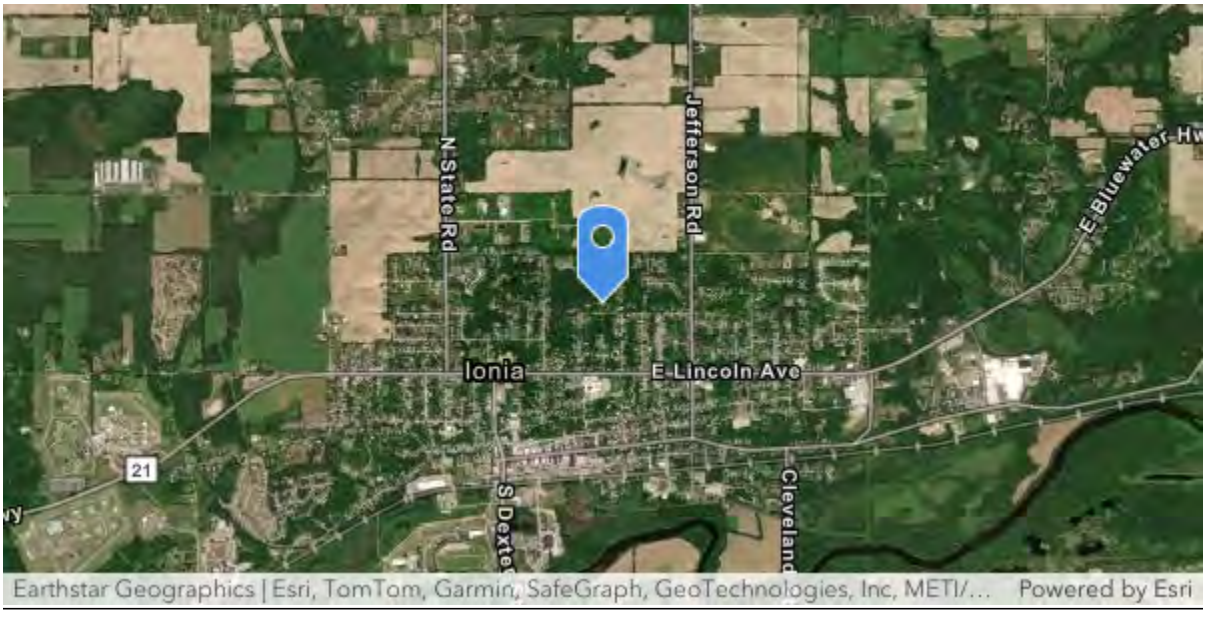
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If you wish to discuss the scoring of your water source, you may contact your assessor, Kim Hippensteel at hippensteelk1@michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **9**

Date Assessed: **February 27, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000005489**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**0**
PCM Points Deducted:	**6**
Geologic Sensitivity SWAS(G):	**24**
Geologic Sensitivity Rating:	**moderate**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**0**
Well Age Points:	**0**
Casing Depth Points:	**10**

Pumping Rate Points:	10
Well Construction SWAS(W):	20
Total SWAS(W) Points:	20

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	10
Inorganics:	0
SOC:	0
VOC:	0
Radionuclides:	0
Tritium:	No
Total SWAS© Points:	10

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**6** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**1** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**145**

Control of Isolation Area

Isolation Points: **10**

Source Water Assessment Score (SWAS)

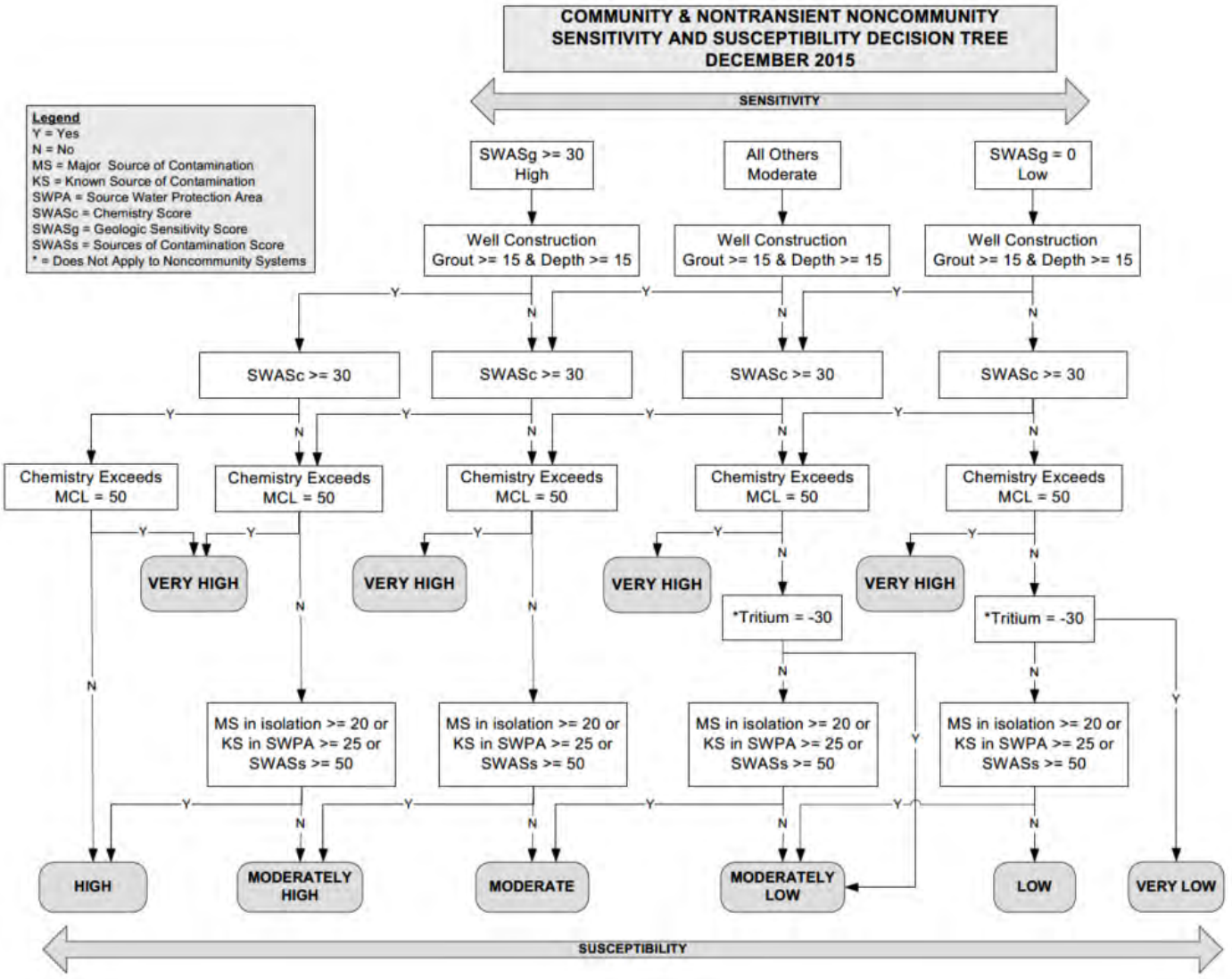
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **24** + SWAS(W) **20** + SWAS(C) **10**+ SWAS(S) **145**+ Isolation Points **10** = SWAS **209**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderate**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

City of Ionia--WL010A

114 N Kidd St PO BOX 496 Ionia MI 48846

SUBJECT: **City of Ionia--WL010A** – County: **Ionia** WSSN: **3370** Source ID: **10**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by Kim Hippensteel.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

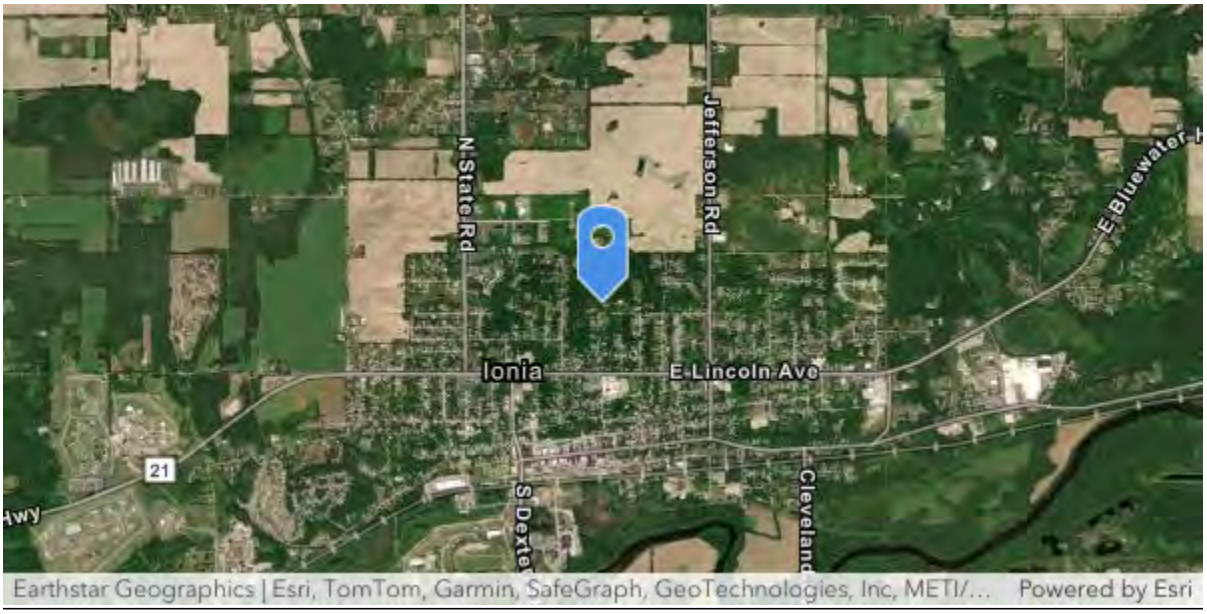
You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, Kim Hippensteel at hippensteelk1@michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **10**

Date Assessed: **February 27, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000006543**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**0**
PCM Points Deducted:	**0**
Geologic Sensitivity SWAS(G):	**30**
Geologic Sensitivity Rating:	**high**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**0**
Well Age Points:	**0**
Casing Depth Points:	**10**

Pumping Rate Points:	10
Well Construction SWAS(W):	20
Total SWAS(W) Points:	20

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	10
Inorganics:	0
SOC:	0
VOC:	0
Radionuclides:	0
Tritium:	No
Total SWAS© Points:	10

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**5** x 10
Major Sources within 2,000 ft.:	**1** x 20
Standard Sources within 200 ft.:	**1** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**154**

Control of Isolation Area

Isolation Points: **10**

Source Water Assessment Score (SWAS)

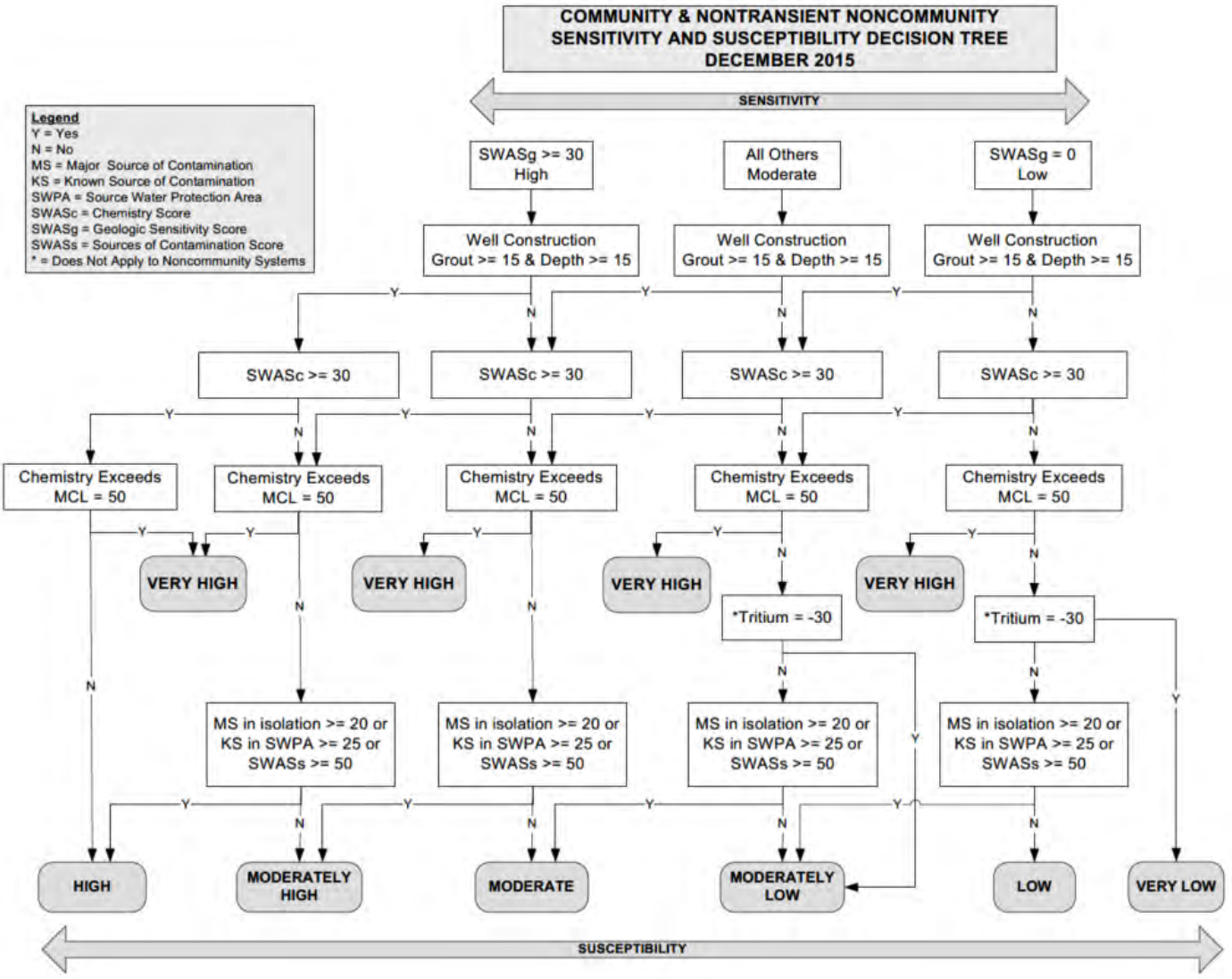
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **30** + SWAS(W) **20** + SWAS(C) **10**+ SWAS(S) **154**+ Isolation Points **10** = SWAS **224**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderately High**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

IONIA - WL011A

JOE LAFLER; (616)523-0165; 720 WELLS ST, PO BOX 496, IONIA, MI 48846

SUBJECT: **IONIA - WL011A** – County: **Ionia** WSSN: **03370** Source ID: **11**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by LAUREN JASKOT.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, LAUREN JASKOT at jaskotl@Michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **11**

Date Assessed: **February 27, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000000121**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**0**
PCM Points Deducted:	**24**
Geologic Sensitivity SWAS(G):	**6**
Geologic Sensitivity Rating:	**moderate**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**15**
Well Age Points:	**15**
Casing Depth Points:	**10**

Pumping Rate Points:	**10**
Well Construction SWAS(W):	**50**
Total SWAS(W) Points:	**50**

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	**0**
Inorganics:	**0**
SOC:	**0**
VOC:	**0**
Radionuclides:	**0**
Tritium:	**No**
Total SWAS© Points:	**0**

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**4** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**0** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**115**

Control of Isolation Area

Isolation Points: **0**

Source Water Assessment Score (SWAS)

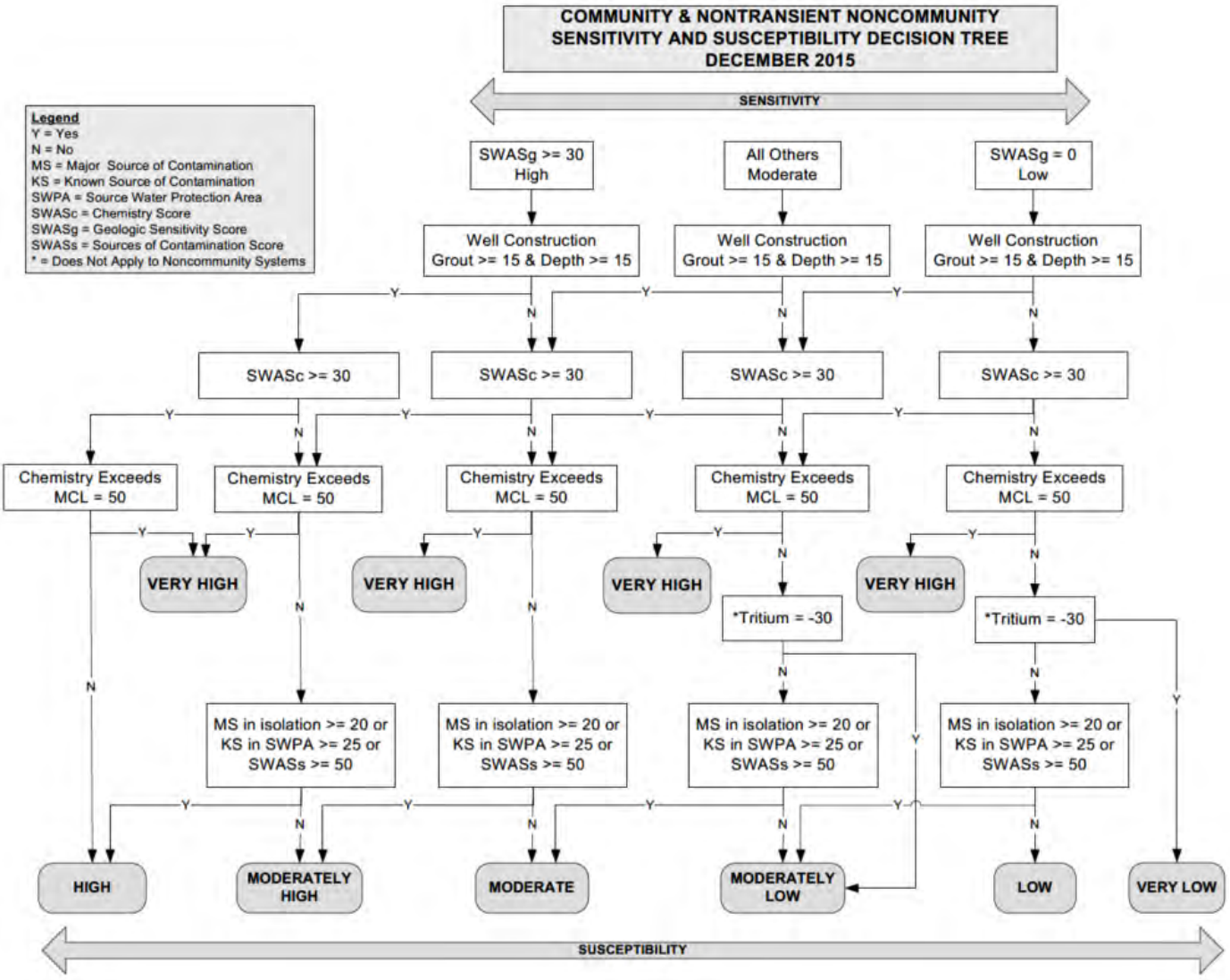
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **6** + SWAS(W) **50** + SWAS(C) **0**+ SWAS(S) **115**+ Isolation Points **0** = SWAS **171**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderate**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

City of Ionia - WL12A

720 Wells Street, Ionia, MI 48846

SUBJECT: **City of Ionia - WL12A** – County: **Ionia** WSSN: **03370** Source ID: **12**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by Brandon Ryan.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

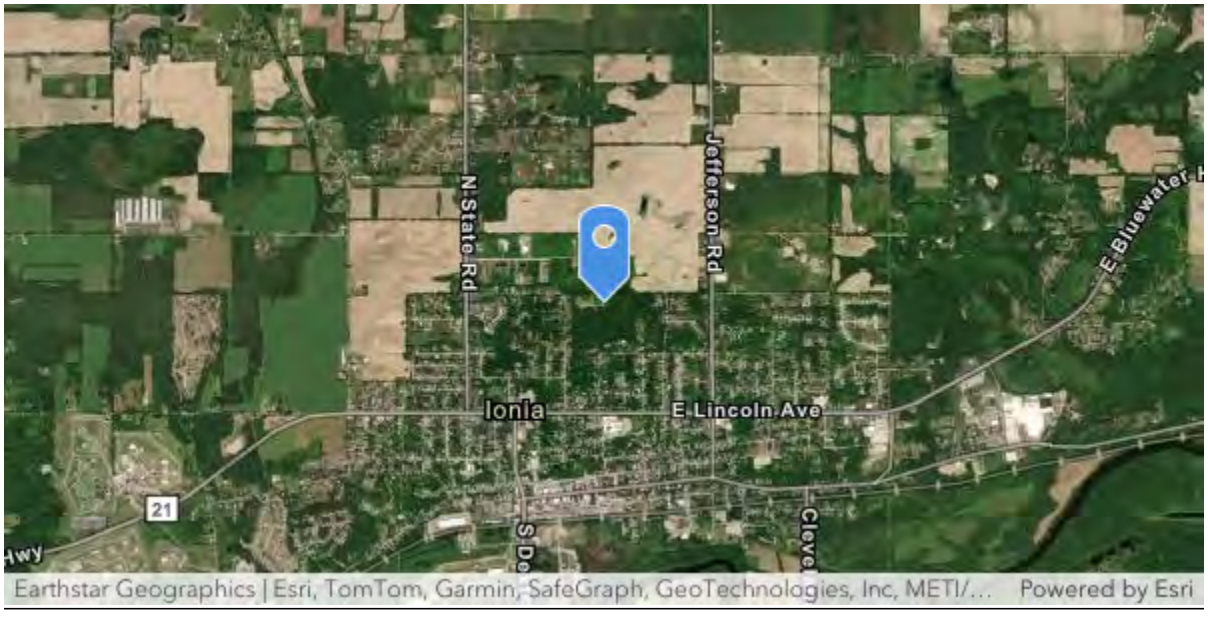
You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, Brandon Ryan at RyanB5@Michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **12**

Date Assessed: **February 26, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000006523**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**24**
PCM Points Deducted:	**0**
Geologic Sensitivity SWAS(G):	**6**
Geologic Sensitivity Rating:	**moderate**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**0**
Well Age Points:	**0**
Casing Depth Points:	**5**

Pumping Rate Points:	**5**
Well Construction SWAS(W):	**10**
Total SWAS(W) Points:	**10**

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	**0**
Inorganics:	**0**
SOC:	**0**
VOC:	**0**
Radionuclides:	**10**
Tritium:	**No**
Total SWAS© Points:	**10**

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**0** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**0** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**75**

Control of Isolation Area

Isolation Points: **0**

Source Water Assessment Score (SWAS)

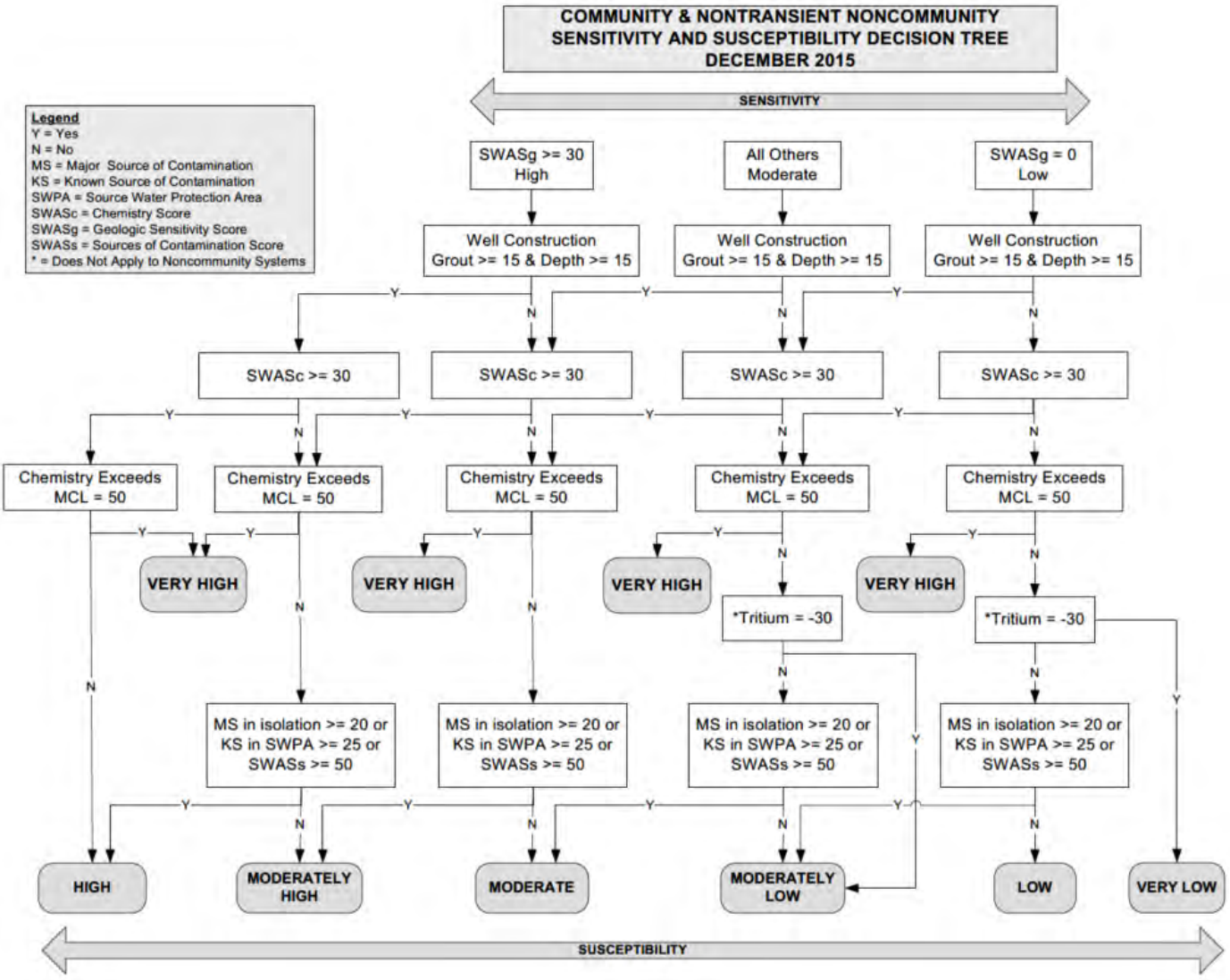
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **6** + SWAS(W) **10** + SWAS(C) **10**+ SWAS(S) **75**+ Isolation Points **0** = SWAS **101**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderate**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

City of Ionia - WL13A

720 Wells Street, Ionia, MI 48846

SUBJECT: **City of Ionia - WL13A** – County: **Ionia** WSSN: **03370** Source ID: **13**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by Brandon Ryan.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

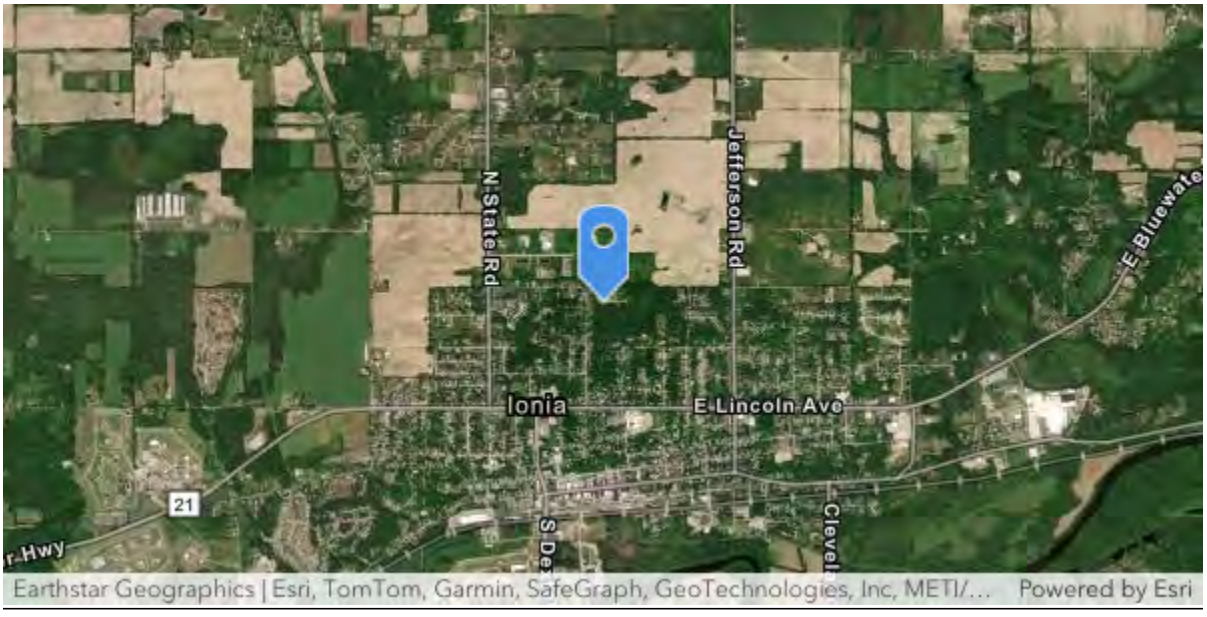
You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, Brandon Ryan at RyanB5@Michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **13**

Date Assessed: **February 26, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000004430**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**6**
PCM Points Deducted:	**30**
Geologic Sensitivity SWAS(G):	**0**
Geologic Sensitivity Rating:	**low**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**0**
Well Age Points:	**0**
Casing Depth Points:	**5**

Pumping Rate Points:	10
Well Construction SWAS(W):	15
Total SWAS(W) Points:	15

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	0
Inorganics:	0
SOC:	0
VOC:	0
Radionuclides:	10
Tritium:	No
Total SWAS© Points:	10

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**5** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**1** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**135**

Control of Isolation Area

Isolation Points: **0**

Source Water Assessment Score (SWAS)

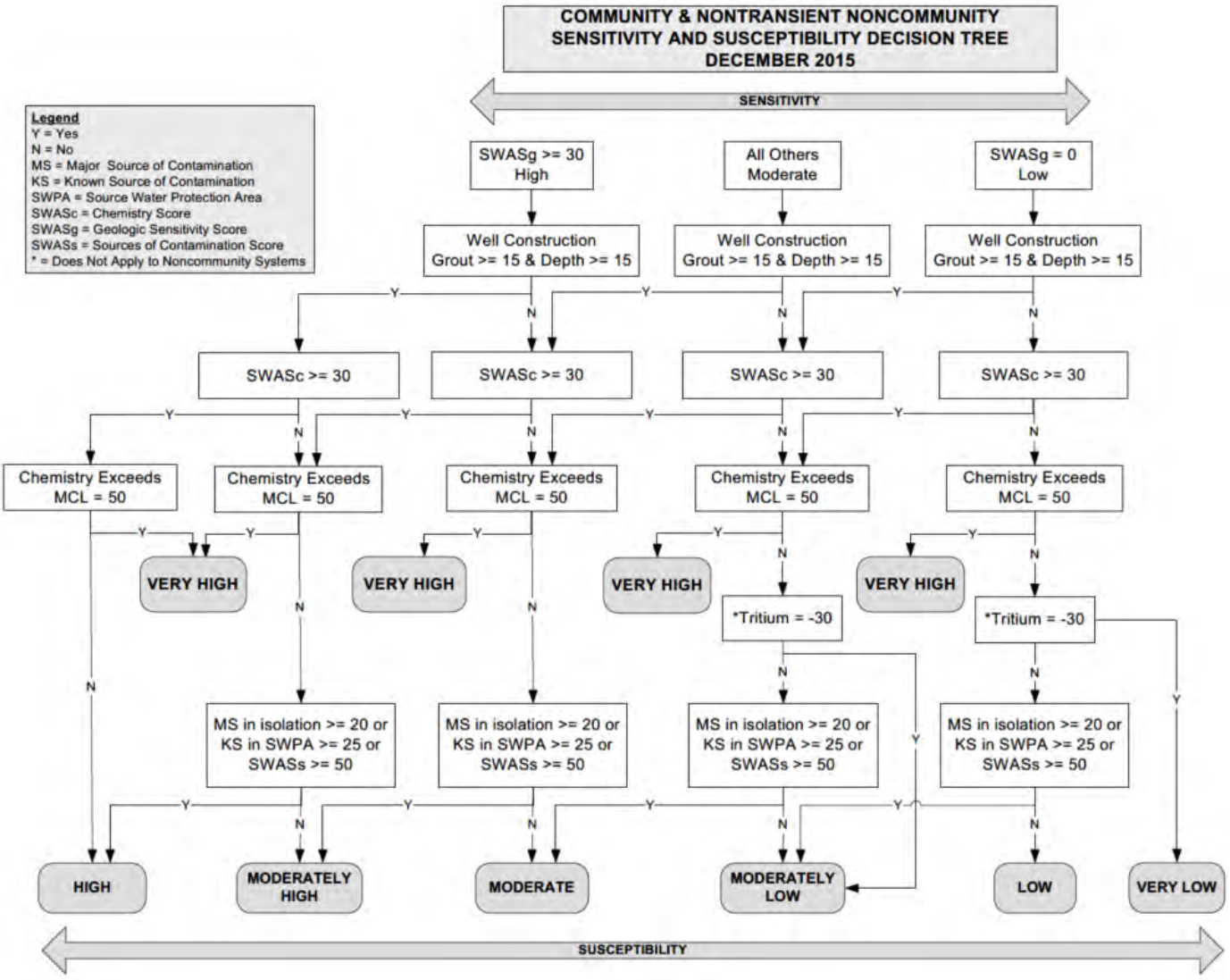
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **0** + SWAS(W) **15** + SWAS(C) **10**+ SWAS(S) **135**+ Isolation Points **0** = SWAS **160**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderately Low**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

IONIA - WL14A

Joe Lafler, 720 Wells St., PO Box 496, Ionia, MI 48846

SUBJECT: **IONIA - WL14A** – County: **Ionia** WSSN: **3370** Source ID: **14**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by Danner Molnar.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

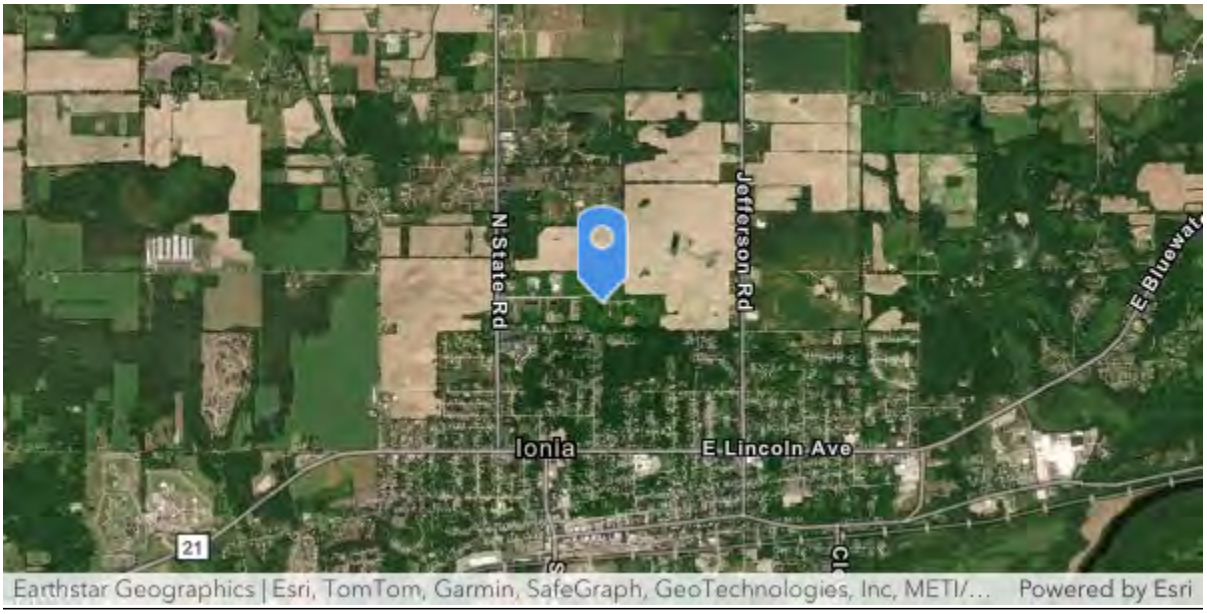
You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, Danner Molnar at MolnarD2@Michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **14**

Date Assessed: **February 27, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000002452**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**30**
PCM Points Deducted:	**9**
Geologic Sensitivity SWAS(G):	**0**
Geologic Sensitivity Rating:	**low**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**5**
Well Age Points:	**0**
Casing Depth Points:	**5**

Pumping Rate Points:	10
Well Construction SWAS(W):	20
Total SWAS(W) Points:	20

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	0
Inorganics:	0
SOC:	0
VOC:	0
Radionuclides:	10
Tritium:	No
Total SWAS© Points:	10

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**1** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**0** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**85**

Control of Isolation Area

Isolation Points: **0**

Source Water Assessment Score (SWAS)

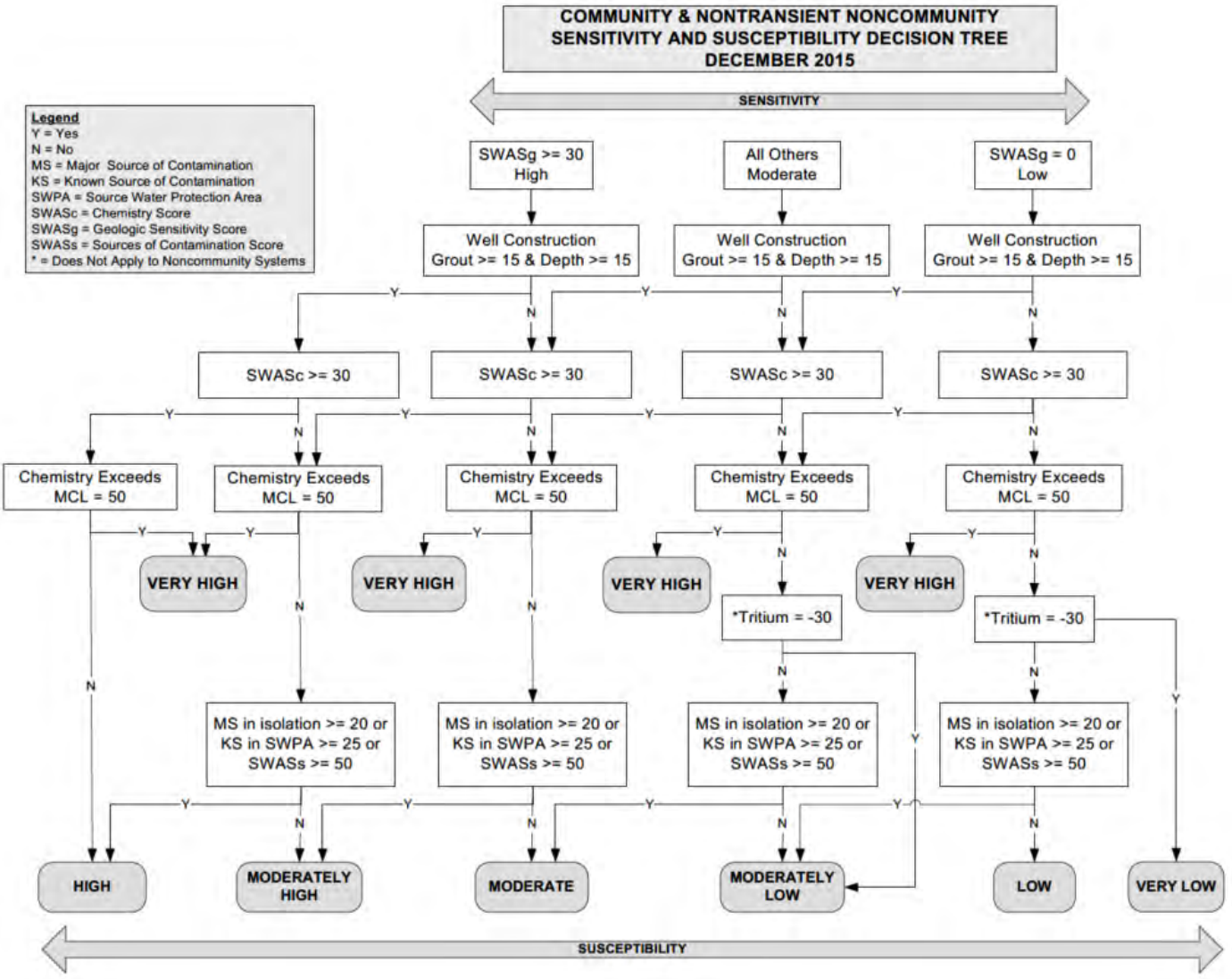
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **0** + SWAS(W) **20** + SWAS(C) **10**+ SWAS(S) **85**+ Isolation Points **0** = SWAS **115**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderately Low**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

IONIA - WL015

Joe Lafler, 720 Wells St., PO Box 496, Ionia, MI 48846

SUBJECT: **IONIA - WL015** – County: **Ionia** WSSN: **3370** Source ID: **15**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by Danner Molnar.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

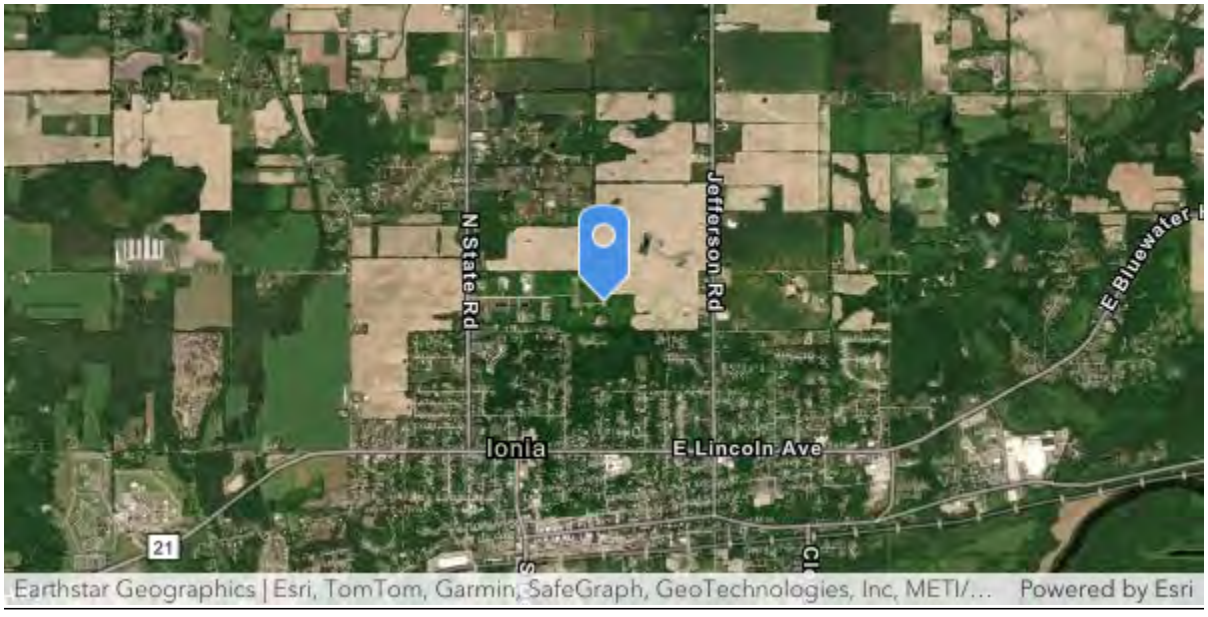
You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, Danner Molnar at MolnarD2@Michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **15**

Date Assessed: **February 27, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000000514**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**30**
PCM Points Deducted:	**0**
Geologic Sensitivity SWAS(G):	**0**
Geologic Sensitivity Rating:	**low**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**5**
Well Age Points:	**0**
Casing Depth Points:	**5**

Pumping Rate Points:	10
Well Construction SWAS(W):	20
Total SWAS(W) Points:	20

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	0
Inorganics:	0
SOC:	0
VOC:	0
Radionuclides:	10
Tritium:	No
Total SWAS© Points:	10

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**1** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**0** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**85**

Control of Isolation Area

Isolation Points: **0**

Source Water Assessment Score (SWAS)

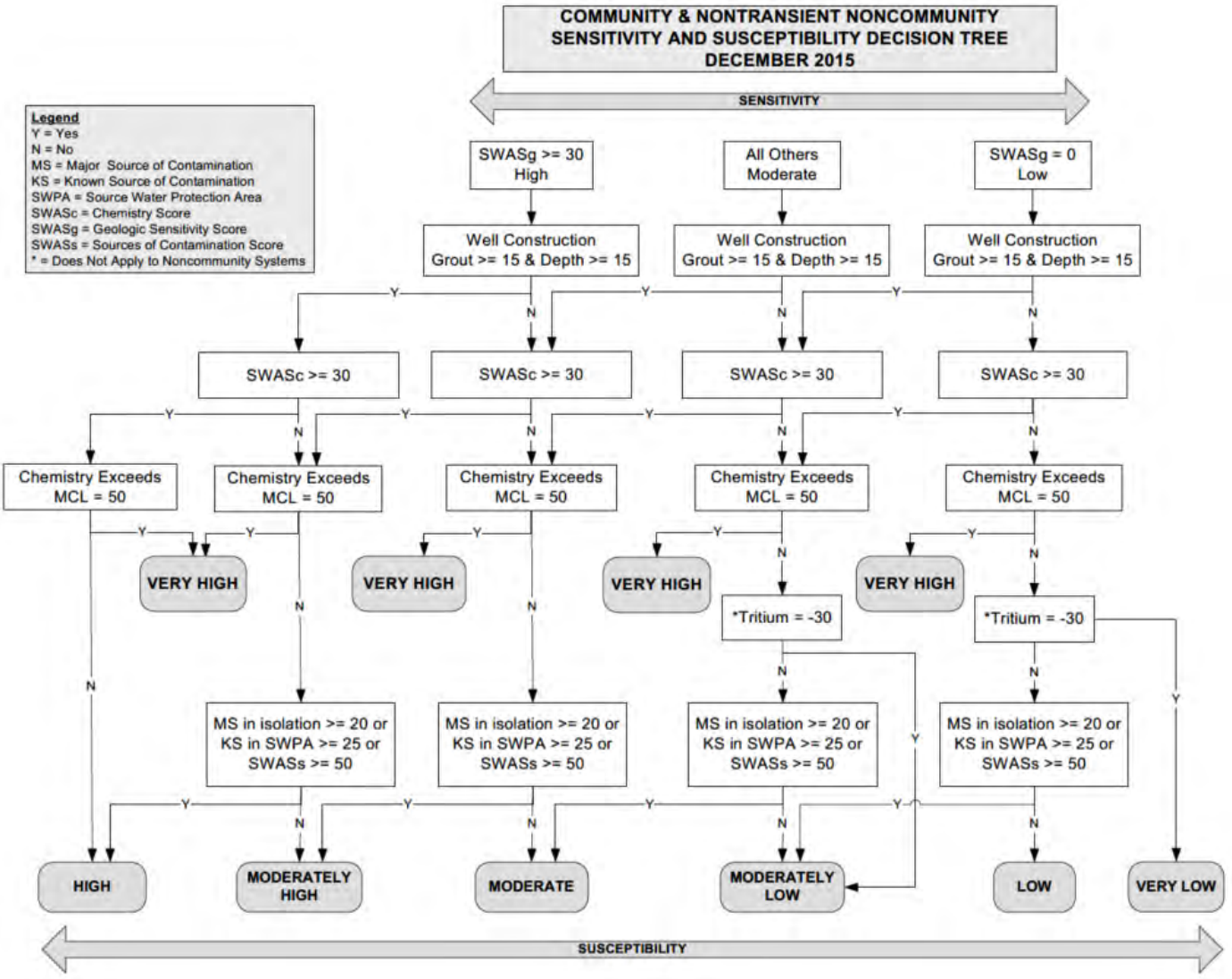
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **0** + SWAS(W) **20** + SWAS(C) **10**+ SWAS(S) **85**+ Isolation Points **0** = SWAS **115**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderately Low**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

Community Water Supply
Source Water Assessment

IONIA - WL16A

Joe Lafler, 720 Wells St., PO Box 496, Ionia, MI 48846

SUBJECT: **IONIA - WL16A** – County: **Ionia** WSSN: **3370** Source ID: **16**

Provided is the Source Water Assessment (SWA) Report generated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Drinking Water and Environmental Health Division (DWEHD), for an active well providing water to your community water supply. This well was assessed by Danner Molnar.

The 1996 amendments to the Federal Safe Drinking Water Act require each state to develop and implement a Source Water Assessment Program to assess the susceptibility of all public water supply sources to contamination. This program requires EGLE to analyze source sensitivity, delineate source water areas, inventory contaminant sources, determine susceptibility, and assure the public is notified of this determination. EGLE, in cooperation with your local health department, has recently updated the information in your SWA. It is intended to assist owners and regulatory agencies in making decisions affecting their drinking water systems, future sampling, and groundwater protection efforts.

The susceptibility determination is noted at the end of your SWA Report. We encourage you to evaluate your current practices and to take action to increase water supply protection through best-management practices.

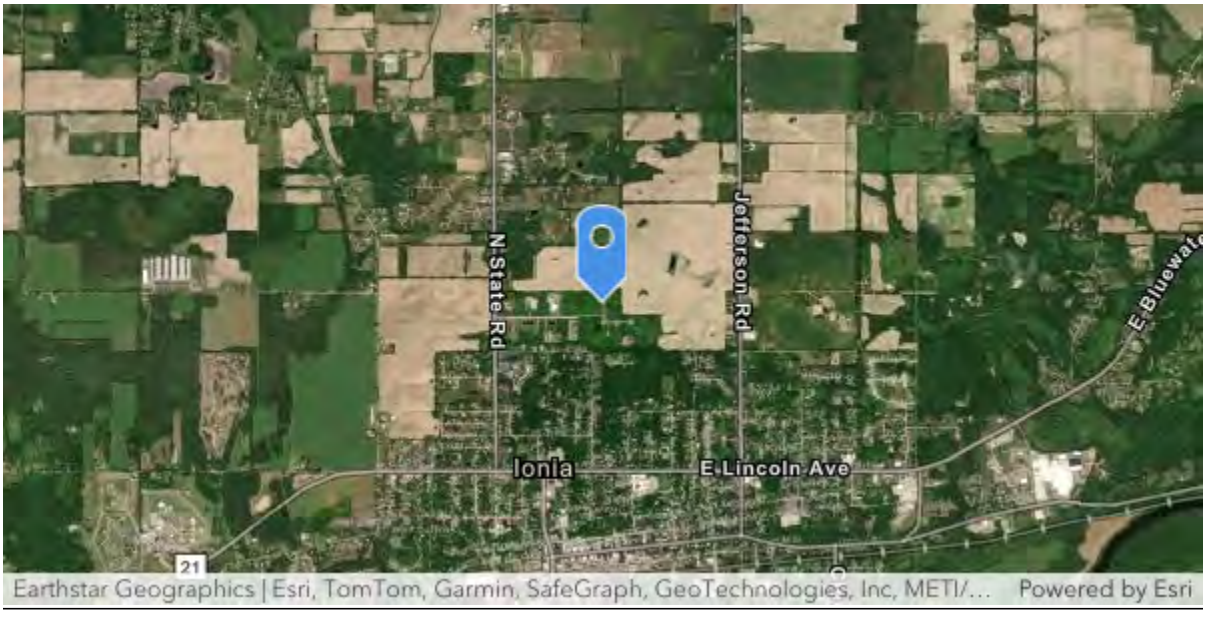
You are not required to take any specific action at this time. Our purpose is to notify you of your updated assessment. We encourage all public water supplies to implement source

water protection activities and hope this assessment serves as a tool to safeguard this valuable drinking water resource.

If you wish to discuss the scoring of your water source, you may contact your assessor, Danner Molnar at MolnarD2@Michigan.gov, or Jason Berndt, Environmental Quality Specialist, Emerging Contaminants Unit, Environmental Health Section, DWEHD, at 517-203-9631; BerndtJ1@Michigan.gov; or you may contact us by mail at EGLE-DWEHD-Emerging Contaminants Unit, P.O. Box 30817, Lansing, Michigan 48909-8311.

Sincerely,

Ian Smith, Supervisor
Emerging Contaminants Unit
Drinking Water and Environmental Health Division



What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Source ID: **16**

Date Assessed: **February 27, 2025**

Well Record

A well record is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well record and submit it to the owner, local health department, and State since 1967. The lack of information from a well record may increase the SWAS.

Wellogic (Secure1.State.MI.US/Wellogic) is the State's online electronic database for well record information.

Wellogic ID: **34000005133**

Geologic Sensitivity

The score represents the degree of natural protection afforded by the materials overlying the water bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g., clay). CPCM stands for Continuous Partially Confining Material (e.g., mix of sand and clay). More points are deducted for a thick clay layer than a thick sand and clay layer or thinner clay layer. Point Range 0-30.

CCM Points Deducted:	**6**
PCM Points Deducted:	**0**
Geologic Sensitivity SWAS(G):	**24**
Geologic Sensitivity Rating:	**moderate**

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and pumping rate. Point range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Grouting Points:	**5**
Well Age Points:	**0**
Casing Depth Points:	**5**

Pumping Rate Points:	15
Well Construction SWAS(W):	25
Total SWAS(W) Points:	25

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents and fuel components), synthetic organic chemicals (pesticides and herbicides), or inorganics (metals, cyanide, arsenic). Point range 0-50.

(50 points = MCL exceedance).

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL)

Nitrates/ Nitrites:	0
Inorganics:	0
SOC:	0
VOC:	0
Radionuclides:	10
Tritium:	No
Total SWAS© Points:	10

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the Source Water Protection Area (SWPA), which is the ten-year time of travel capture zone (delineated area). Points are added if the water supply does not own or control the isolation area (or another EGLE approved area). Examples include standard sources such as septic tanks, sewer lines, and surface waters; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination.

Major Sources >= 2,000 ft. and in SWPA:	**1** x 10
Major Sources within 2,000 ft.:	**0** x 20
Standard Sources within 200 ft.:	**0** x 10
Known Sources within SWPA:	**3** x 25
Total SWAS(S) Points:	**85**

Control of Isolation Area

Isolation Points: **0**

Source Water Assessment Score (SWAS)

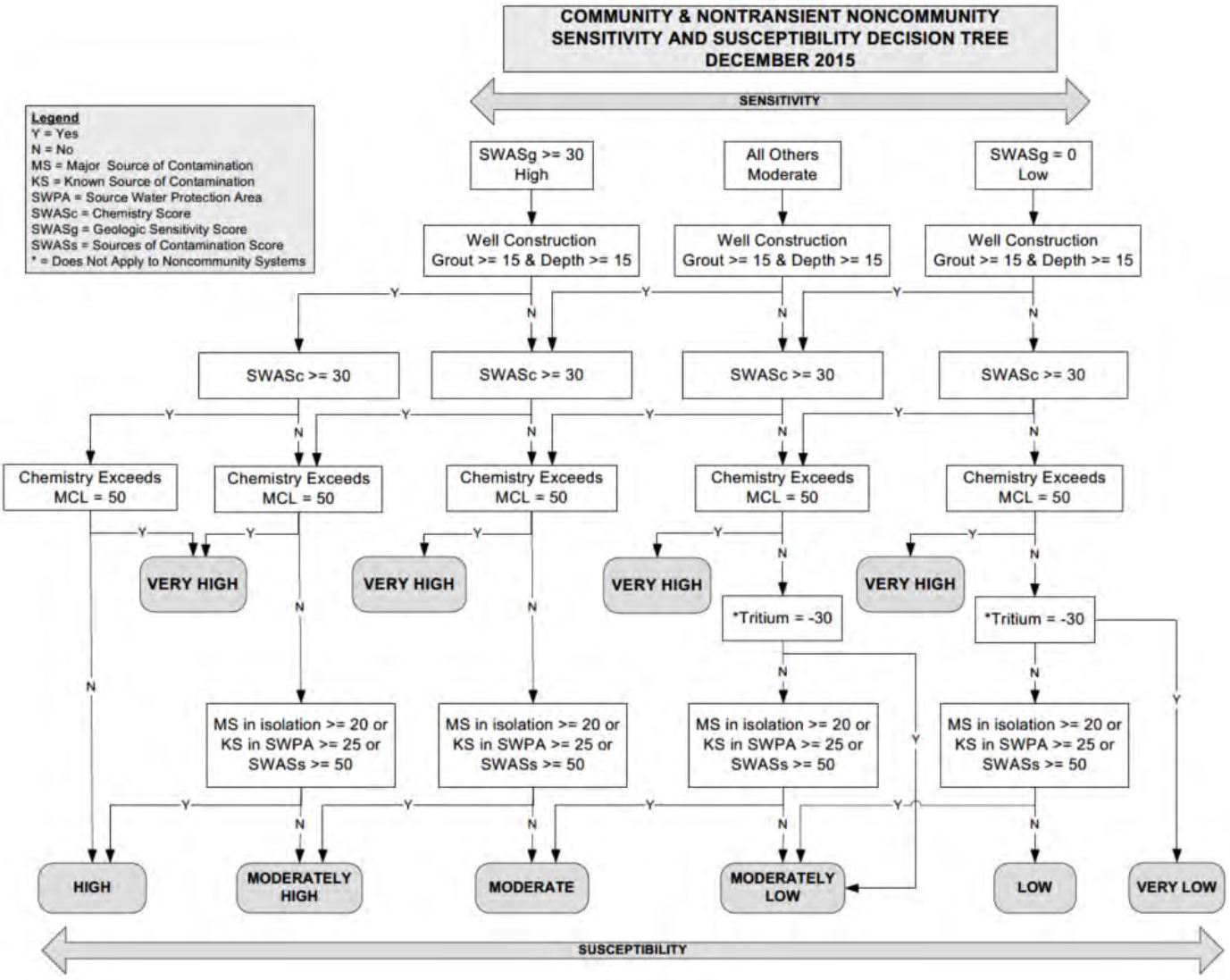
The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score: SWAS(G) **24** + SWAS(W) **25** + SWAS(C) **10**+ SWAS(S) **85**+ Isolation Points **0** = SWAS **144**

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, or following best management practices.

Susceptibility Determination: **Moderate**


COMMUNITY & NONTRANSIENT NONCOMMUNITY
SENSITIVITY AND SUSCEPTIBILITY DECISION TREE
DECEMBER 2015
Legend
Y = Yes
N = No
MS = Major Source of Contamination
KS = Known Source of Contamination
SWPA = Source Water Protection Area
SWASc = Chemistry Score
SWASg = Geologic Sensitivity Score
SWASs = Sources of Contamination Score
* = Does Not Apply to Noncommunity Systems
SENSITIVITY
SWASg >= 30 High
All Others Moderate
SWASg = 0 Low
Well Construction Grout >= 15 & Depth >= 15
SWASc >= 30
Chemistry Exceeds MCL = 50
VERY HIGH
*Tritium = -30
MS in isolation >= 20 or KS in SWPA >= 25 or SWASs >= 50
HIGH
MODERATELY HIGH
MODERATE
MODERATELY LOW
LOW
VERY LOW
SUSCEPTIBILITY

APPENDIX H

Contingency Plan &

Emergency Notification Form

City of Ionia

Contingency Plan
Water Supply System
WSSN 3370

Updated May 2025

A. Water Source

1 Well No.	Dia.(in.)	Treatment	Capacity (gpm)	Location
5A	12	Chlorine/Fluoride	600	S. Fargo between Union & Rich
9A	16	Chlorine/Fluoride	600	N. Fargo between Union & Rich
10A	12	Chlorine/Fluoride	500	N. Fargo between Union & Rich
11A	12	Chlorine/Fluoride	700	N. Fargo between Union & Cyrus
12A	12	Chlorine/Fluoride	500	W. Cyrus @ North
13A	16	Chlorine/Fluoride	600	W. Cyrus @ North
14A	16	Chlorine/Fluoride	700	W. Cyrus @ North
15	16	Chlorine/Fluoride	600	W. Cyrus @ North
16A	16	Chlorine/Fluoride	400	W. Cyrus @ North

2 Auxiliary Power Available

A. Type: Diesel engine driven generator with automatic transfer switch. Wells 9A, 10A, and 11A.

B. Type: Diesel engine driven generator. Located at wells 12A, and 13A.

C. Type: Diesel engine driven generator. Located at wells 14A, and 15.
D.

B. Treatment

Chlorination equipment is utilized at all wells.

C. Distribution

1 Storage type	Capacity (gal)	Location
Ground	1,000,000	N. Fargo between Rich and Union
Ground	500,000	W. Cyrus at Vohres
Elevated	500,000	W. Cyrus at North
Elevated	500,000	1745 W. Lincoln Ave.
Elevated	500,000	378 Tuttle Rd.

(1) Procedure to bypass storage facility-shut off valve at tank discharge.

(2) Materials, equipment and treatment chemicals not on inventory but available under Emergency conditions:
Limited distribution system materials are available from adjacent communities. Long Term chlorine solution supply available from Webb Chemical 1-(616) 733-2181.

D. Personnel

1. Personnel available during emergency conditions:

Cullen Badder (Backup Operator)
616-902-2886

Abe Butler
616-902-4524

Jake Trierweiler
616-902-6713

Joe Lafler (Utilities Dir.)
616-527-0370
Cell- 616-286-0512

Al Helmes
616-755-3051

Ryan Masengale
616-902-5117

Denis Martindale
616-633-9262

Shannon Courter
616-489-0362

Goeff Petersen (DPW Dir.)
616-745-2479

On-Call Phone: 517-526-1814

DPW Pager: 517-526-3937

2. Contractors available during emergency conditions:

Peerless-Midwest, Inc.
505 Apple Tree Dr.
Ionia, MI. 48846
Bob Masters
616 527-0050
Cell 616-690-8139

Clorwell Electrical Contractors
11094 S State St.
Ionia, MI. 48846
616-527-1110
Nathan Sprague
Cell 616-260-3442

R.S. Technical
13684 Beckwith Dr.
Lowell, MI. 49331
Bob Sief 616-437-6273
1-616-897-7041

Consumers Energy (Address for Power Outage)
1-800-477-5050 Low/Middle Area – 691 Townsend
High Area – 772 Cyrus

Williams Detroit Diesel
500 Gordon Ind. Court
Grand Rapids, MI. 49509-9507
616-878-7071

Standby Power, Inc.
7580 Expressway Drive S.W.
Grand Rapids, MI. 49548
1-616-281-2211
1-616-281-2212

AT&T
1-844-912-0202

Coffman Electric
1-800-852-7699
616-452-8708

Youngs Environmental
(Spill Cleanup)
1-810-789-7155 or
1-800-496-8647
(24-HR Hotline)

List of other telephone numbers which may be needed during emergencies: (OTHER THAN 911)

Michigan Department of Environment, Great Lakes, and Energy:
1-800-292-4706 should be notified after the Emergency situation is discovered.

Local Health Dept. 1-616-527-5341

Daily News (Greenville) 1-616-754-9301

WION Radio Station 1-616-523-9468

Village of Muir Water – 989-855-3546

E. Critical customers for whom the provision of a continuous supply of safe water be provided.

Ionia Maximum Correctional fac. @ 1576 Bluewater Highway (M-21 west) 1-616-527-6331 x 260

University of Michigan- Sparr Hospital @ 3565 S State St., 1-616-523-1400

Ventra Ionia Main, @ 14 Beardsley St., 1-616-597-3220

Matcor Automotive @ 314 Steele St., 1-616-527-4050

Ionia Middle School @ 438 Union St., 1-616-527-0040

Jefferson elementary school @ 420 N. Jefferson St. , 1-616-527—2740

Emerson elementary school @ 645 Hackett St., 1-616-527-8018

Ionia High School @ 250 Tuttle Rd. 1-616-527-0600

Rather Elementary School @ 380 E. Tuttle 1-616-527-1720

SKLD Recovery @ 814 E Lincoln 616-527-0080

Corewell Health @ 2776 S State Rd. 616-775-7500

Bellamy Creek Correctional Facility @ 1727 Bluewater Hwy., 616-527-2510

Green Acres of Ionia @ 2550 Commerce Ln., 616-527-3300

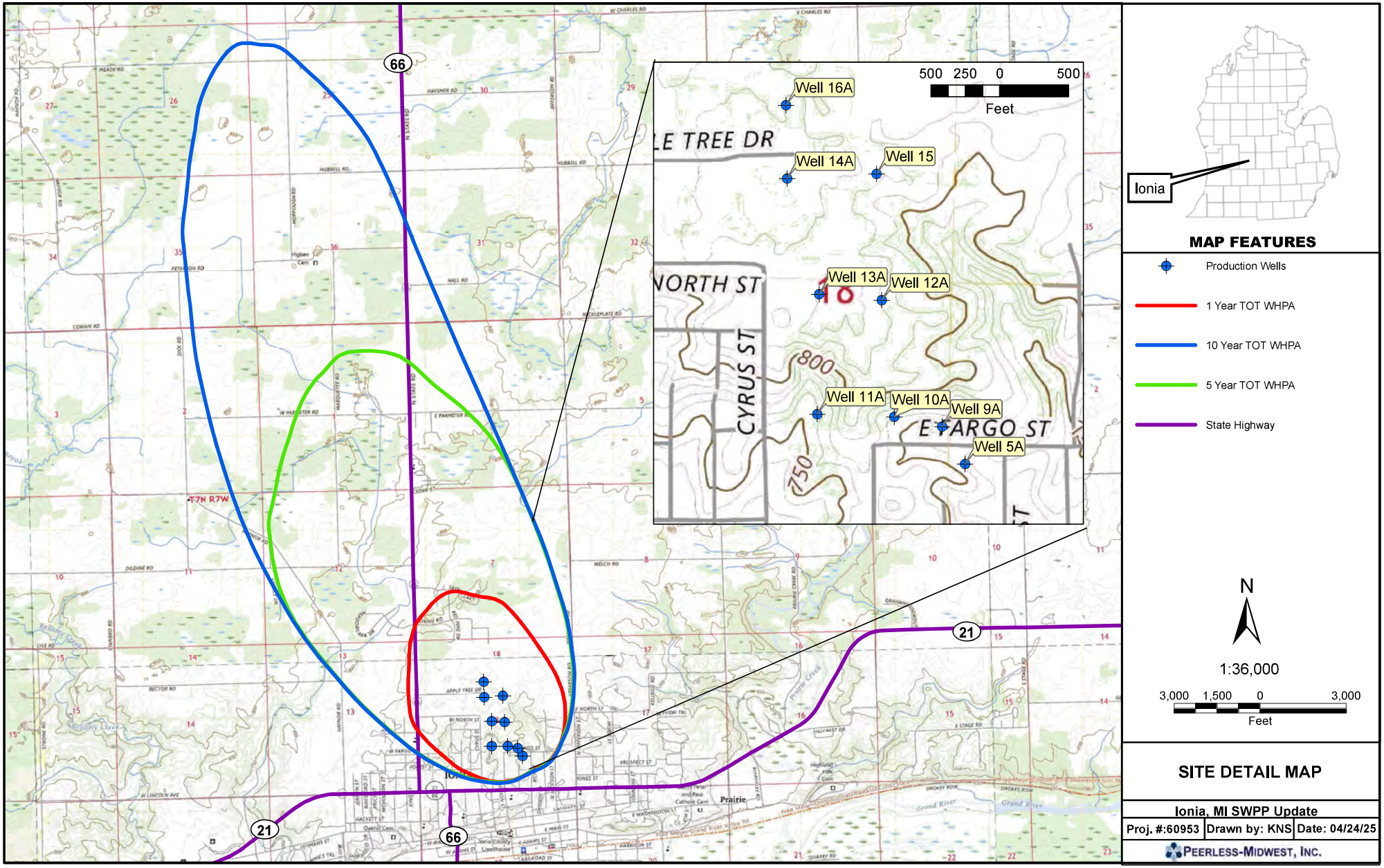
DaVita Dialysis @2622 Heartland Blvd., 833-347-1914

F. Means of notifying the public affected by an emergency:

Door to door	City Facebook Page/ Social Media
Telephone	City Website
Local Newspaper	City Text Notification System
Local Radio Station or TV stations	

*Central Dispatch (527-0400) should be notified of any distribution problems affecting fire protection.

Plan date: 2/1/01
Revised: 5/1/25



Proj2 (T)\Ionia\WHPA_info\2025 WHPP Update\gis\60953.106_Ionia_SWPPUpdate_Fig2

FIGURE 2

City of Ionia
Public Utilities Department
720 Wells Street
Ionia, MI 48846
(616) 527-0370

CITY OF IONIA WHPA

EMERGENCY NOTIFICATION FORM

"Hazardous Spills/Environmental Emergencies within WHPA"

Part A. Facts Related to the Emergency

1. Person calling in emergency:

2. Date/time call made:

3. Location and address of emergency (map also):

4. Nature of emergency (e.g., broken water main; chemical spill; lost pressure; etc.):

5. Condition at scene:

6. Types/quantities of chemicals released, based on initial observation:

7. Prelim. Environmental Damage Assessment (groundwater, soils, roadway only, etc.)

Part B. Emergency Action Taken

1. Emergency action taken:

2. Is immediate action: Permanent or Temporary

3. Additional action needed to bring water supply system back into operation:

Part C. **Persons/departments notified of emergency**

(Position/agency Name Phone Time)

- State Fire Marshal
- County Sheriff
- State Police
- Local police (911)
- PWSS superintendent
- Local elected official
- Drinking Water & Radiological Protection Division

MI Dept. of Environment, Great Lakes and Energy (EGLE)

- Pollution Emergency Alerting System (PEAS) 800-292-4706
- DWEHD (Justina Carver – 616-745-2982
- MDARD Emergency Hot Line 1-(800)-405-0101

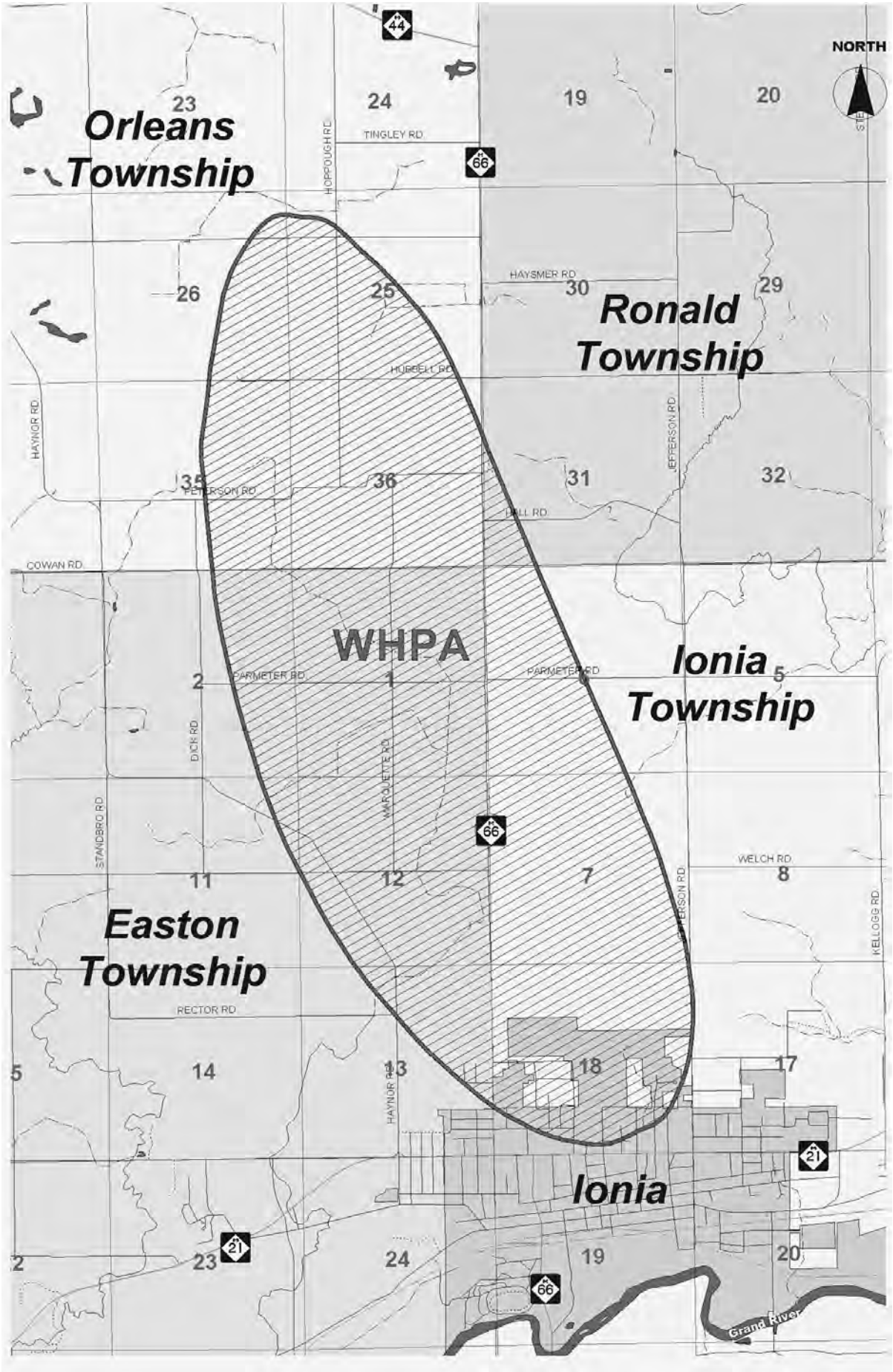
MI Dept. of Agriculture

- Chemical spill cleanup company
- Other personnel

_____ _____ _____

Signature Print Name Date

Attach additional pages and/or maps if needed.


NORTH
Orleans Township
Ronald Township
Ionia Township
Easton Township
Ionia
WHPA
TINGLEY RD
HOPPOUGH RD
HAYSMER RD
HUBBELL RD
HAYNOR RD
JEFFERSON RD
PETERSON RD
DELL RD
COWAN RD
PARMETER RD
DICK RD
MARQUETTE RD
STANDBRO RD
WELCH RD
KELLOGG RD
RECTOR RD
Grand River
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Appendix F

Projects Cost Estimate

Project 1 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Adams Street - Jackson to M-66

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Water Main					
1	Mobilization, Max 10%	1	ls	$401,000	$401,000
2	Water Main, 8-inch	3,900	ft.	$180	$702,000
3	Water Main, Valve and Box, 8-inch	15	ea.	$3,000	$45,000
4	Water Main, Cross, 8" x 8" x 8" x 8"	1	ea.	$3,500	$3,500
5	Water Main, Tee, 8" x 8" x 8"	2	ea.	$1,800	$3,600
6	Water Main, Tee, 12" x 8" x 8"	1	ea.	$2,250	$2,250
7	Water Main, Hydrant	12	ea.	$8,000	$96,000
8	Water Main, Connect to Existing	9	ea.	$5,000	$45,000
9	Water Main, 1-inch Service	45	ea.	$6,000	$270,000
10	Water Main, 1-inch Private Side Service	6	ea.	$4,500	$27,000
11	Water Main, Cut and Cap Existing	2	ea.	$15,000	$30,000

II. Road Reconstruction

9	Storm Structure Replacement	36	ea.	$3,500	$126,000
10	Storm Sewer Replacement	1,500	ft.	$100	$150,000
11	Storm Sewer Replacement, 24-inch	350	ft.	$150	$52,500
12	Storm Sewer Replacement, 36-inch	1,200	ft.	$200	$240,000
13	Road Replacement	4,100	ft.	$420	$1,722,000
14	Traffic Control	1	ls	$100,000	$100,000

Construction Estimate:	**$4,300,500**
Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$1,290,500**
Total Estimate:	**$5,591,000**
CWSRF Eligible (1/2 of Road Reconstruction):	$4,472,000
Not CWSRF Eligible (1/2 Road Reconstruction):	$1,119,000

Project 2 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Jackson Street - M-21 to Adams Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Water Main					
1	Mobilization, Max 10%	1	ls	$294,000	$294,000
2	Water Main, 8-inch	850	ft.	$180	$153,000
3	Water Main, 12-inch	1,300	ft.	$250	$325,000
4	Water Main, 16-inch	1,100	ft.	$325	$357,500
5	Water Main, Valve and Box, 8-inch	2	ea.	$3,000	$6,000
6	Water Main, Valve and Box, 12-inch	8	ea.	$4,500	$36,000
7	Water Main, Valve and Box, 16-inch	2	ea.	$15,000	$30,000
8	Water Main, Cross, 12" x 12" x 8" x 8"	3	ea.	$4,000	$12,000
9	Water Main, Tee, 8" x 8" x 8"	1	ea.	$1,800	$1,800
10	Water Main, Tee, 12" x 12" x 8"	2	ea.	$2,500	$5,000
11	Water Main, Tee, 12" x 12" x 12"	1	ea.	$3,000	$3,000
12	Water Main, Hydrant	8	ea.	$8,000	$64,000
13	Water Main, Pressure Reducing Valve Vault	1	ls	$40,000	$40,000
14	Water Main, Connect to Existing	12	ea.	$5,000	$60,000
15	Water Main, Bore and Jack under M-66	1	ls	$60,000	$60,000
16	Water Main, 1-inch Private Side Service	7	ea.	$4,500	$31,500
17	Water Main, 1-inch Service	44	ea.	$6,000	$264,000

II. Road Reconstruction

18	Storm Structure Replacement	11	ea.	$3,000	$33,000
19	Storm Sewer Replacement	800	ft.	$100	$80,000
20	Road Replacement	2,800	ft.	$360	$1,008,000
21	Brick Intersection Replacement	1	ls	$20,000	$20,000
22	Traffic Control	1	ls	$65,000	$65,000
				Construction Estimate:	**$2,948,800**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$885,200**
				Total Estimate:	**$3,834,000**
				DWSRF Eligible (Water Main and Services+ 3/4 of Road Construction):	$3,500,000
				Not DWSRF Eligible (1/4 Road Replacement)	$334,000

Project 3 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Jefferson Street - M-21 to Webber Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Water Main					
1	Mobilization, Max 10%	1	ls	$283,000	$283,000
2	Water Main, 8-inch	3,250	ft.	$180	$585,000
3	Water Main, Valve and Box, 8-inch	15	ea.	$3,000	$45,000
4	Water Main, Cross, 12" x 12" x 8" x 8"	1	ea.	$4,000	$4,000
5	Water Main, Tee, 8" x 8" x 8"	5	ea.	$1,800	$9,000
6	Water Main, Tee, 12" x 12" x 8"	2	ea.	$2,500	$5,000
7	Water Main, Hydrant	7	ea.	$8,000	$56,000
8	Water Main, Connect to Existing	13	ea.	$5,000	$65,000
9	Water Main, 1-inch Private Side Service	8	ea.	$4,500	$36,000
10	Water Main, 1-inch Service	41	ea.	$6,000	$246,000

II. Road Reconstruction

11	Storm Structure Replacement	20	ea.	$3,500	$70,000
12	Storm Sewer Replacement	1,200	ft.	$100	$120,000
13	Storm Sewer Replacement, 30-inch	375	ft.	$175	$65,625
14	Storm Sewer Replacement, 36-inch	300	ft.	$200	$60,000
15	Storm Sewer Replacement, 42-inch	50	ft.	$300	$15,000
16	Road Replacement	2,900	ft.	$370	$1,073,000
17	Brick Intersection Replacement	1	ls	$20,000	$20,000
18	Traffic Control	1	ls	$75,000	$75,000

Construction Estimate:	**$2,832,625**
Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$850,375**
Total Estimate:	**$3,683,000**

DWSRF Eligible (Water Main and Services+ 3/4 of Road Construction):	$3,328,000
Not DWSRF Eligible (1/4 Road Reconstruction):	$355,000

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Project 4 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Railroad Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Water Main					
1	Mobilization, Max 10%	1	ls	$20,000	$20,000
2	Water Main, 12-inch	500	ft.	$250	$125,000
3	Water Main, Valve and Box, 12-inch	2	ea.	$4,500	$9,000
4	Water Main, Hydrant	1	ea.	$8,000	$8,000
5	Water Main, Connect to Existing	2	ea.	$5,000	$10,000
6	Water Main, 1-inch Service	3	ea.	$7,000	$21,000
II. Road Reconstruction					
7	Road Replacement	1	ls	$10,000	$10,000
				Construction Estimate:	**$203,000**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$61,000**
				Total Estimate (DWSRF Eligible):	**$264,000**

Prein&Newhof

Project 5 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Webber Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Water Main					
1	Mobilization, Max 10%	1	ls	$33,000	$33,000
2	Water Main, 8-inch	575	ft.	$180	$103,500
3	Water Main, Valve and Box, 8-inch	2	ea.	$3,000	$6,000
4	Water Main, Hydrant	1	ea.	$8,000	$8,000
5	Water Main, Connect to Existing	2	ea.	$5,000	$10,000
6	Water Main, 1-inch Service	3	ea.	$7,000	$21,000
II. Road Reconstruction					
7	Road Replacement	650	ft.	$210	$136,500
8	Traffic Control	1	ls	$20,000	$20,000
				Construction Estimate:	**$338,000**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$102,000**
				Total Estimate:	**$440,000**
				DWSRF Eligible (Water Main and Services):	$396,000
				Not Eligible (1/4 Road Reconstruction):	$44,000

Prein&Newhof

Project 6 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Wellhouse Security Sites

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Security System					
1	Security System	1	ls	$50,000	$50,000
				Construction Estimate:	**$50,000**
				Construction Contingencies, Legal, Administrative, Engineering Costs (15%):	**$8,000**
				Total Estimate (DWSRF Eligible):	**$58,000**

Project 7 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
W. Main Street - M-66 to Yeomans Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Water Main					
1	Mobilization, Max 10%	1	ls	$198,000	$198,000
2	Water Main, 8-inch	2,600	ft.	$180	$468,000
3	Water Main, 6-inch	260	ft.	$150	$39,000
4	Water Main, 16-inch	150	ft.	$320	$48,000
5	Water Main, Valve and Box, 8-inch	10	ea.	$3,000	$30,000
6	Water Main, Valve and Box, 6-inch	3	ea.	$2,500	$7,500
7	Water Main, Valve and Box, 16-inch	3	ea.	$15,000	$45,000
8	Water Main, Tee, 16" x 16" x 8"	2	ea.	$4,000	$8,000
9	Water Main, Tee, 8" x 8" x 8"	4	ea.	$1,800	$7,200
10	Water Main, Tee, 8" x 8" x 6"	3	ea.	$1,500	$4,500
11	Water Main, Pressure Reducing Valve Vault	1	ls	$40,000	$40,000
12	Water Main, Hydrant	4	ea.	$8,000	$32,000
13	Water Main, Connect to Existing	6	ea.	$5,000	$30,000
14	Water Main, 1-inch Private Side Service	7	ea.	$4,500	$31,500
15	Water Main, 1-inch Service	20	ea.	$6,000	$120,000

Appendix G

Present Worth Analysis

CITY OF IONIA DWSRF PROJECT PLAN
PRESENT WORTH ANALYSIS

Project Description	*Project 1* Adams Street	*Project 2* Jackson Street	*Project 3* Jefferson Street	*Project 4* Railroad Street	*Project 5* Webber Street	*Project 6* Wellhouse Security Sites	*Project 7* W. Main Street	*Project 8* Cyrus Street
	FY2027	FY2027	FY2027	FY2027	FY2027	FY2027	Future	Future
Capital Costs (including ELAC)								
Structures	$3,472,000	$2,962,000	$2,816,000	$224,000	$335,000	$0	$1,997,000	$890,000
Equipment	$0	$0	$0	$0	$0	$49,000	$0	$0
Planning	$157,000	$134,000	$128,000	$10,000	$15,000	$2,000	$91,000	$40,000
Design / Construction Engineering	$473,000	$404,000	$384,000	$30,000	$46,000	$7,000	$272,000	$121,000
Project Cost	$4,102,000	$3,500,000	$3,328,000	$264,000	$396,000	$58,000	$2,360,000	$1,051,000
(A) 30-yr Present Worth of Capital Costs [1]	$2,073,608	$1,769,290	$1,682,342	$133,455	$200,183	$29,320	$1,193,007	$531,293
Operation, Maintenance & Replacement (OM&R)								
Energy Cost Savings	$0	$0	$0	$0	$0	$0	$0	$0
OM&R	$0	$0	$0	$0	$0	$0	$0	$0
Annual OM&R [2]	$0	$0	$0	$0	$0	$0	$0	$0
(B) 30-yr Present worth of OM&R [1]	$0	$0	$0	$0	$0	$0	$0	$0
(C) 30-yr Present worth of Energy Cost Savings	$0	$0	$0	$0	$0	$0	$0	$0
Salvage Value of Capital								
Salvage value at 30 years	$1,388,800	$1,184,800	$1,126,400	$89,600	$134,000	$0	$798,800	$356,000
(D) 30-yr Present worth of Salvage [1]	$702,054	$598,930	$569,408	$45,294	$67,739	$0	$403,803	$179,962
Total Present Worth (A + B + C - D)	$1,371,554	$1,170,360	$1,112,934	$88,161	$132,444	$29,320	$789,204	$351,330
Equivalent Annual Cost (based on Total Present Worth)	$63,795	$54,437	$51,766	$4,101	$6,160	$1,364	$36,708	$16,341
Total Existing Residential Equivalent Units (REUs								
City of Ionia REUs:	4,096	4,096	4,096	4,096	4,096	4,096	4,096	4,096
Unit of Government Responsible for Payment for:	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6	Project 7	Project 8
City of Ionia	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
City of Ionia Annual Cost per REU	$15.57	$13.29	$12.64	$1.00	$1.50	$0.33	$8.96	$3.99
City of Ionia Monthly Cost per REU	$1.30	$1.11	$1.05	$0.08	$0.13	$0.03	$0.75	$0.33
Total Proposed Project Cost FY2027:	**$4,102,000**	**$3,500,000**	**$3,328,000**	**$264,000**	**$396,000**	**$58,000**	**$2,360,000**	**$1,051,000**
Total Present Worth FY2027:	**$1,371,554**	**$1,170,360**	**$1,112,934**	**$88,161**	**$132,444**	**$29,320**	**$789,204**	**$351,330**
Total Equivalent Annual Cost FY2027 [3]:	**$63,795**	**$54,437**	**$51,766**	**$4,101**	**$6,160**	**$1,364**	**$36,708**	**$16,341**
	Annual [3]	**Monthly [3]**						
Total City of Ionia Cost per REU (FY 2027 Projects):	$44.34	$3.70						
Total City of Ionia Cost per REU (Future Projects):	$12.95	$1.08						

Notes:

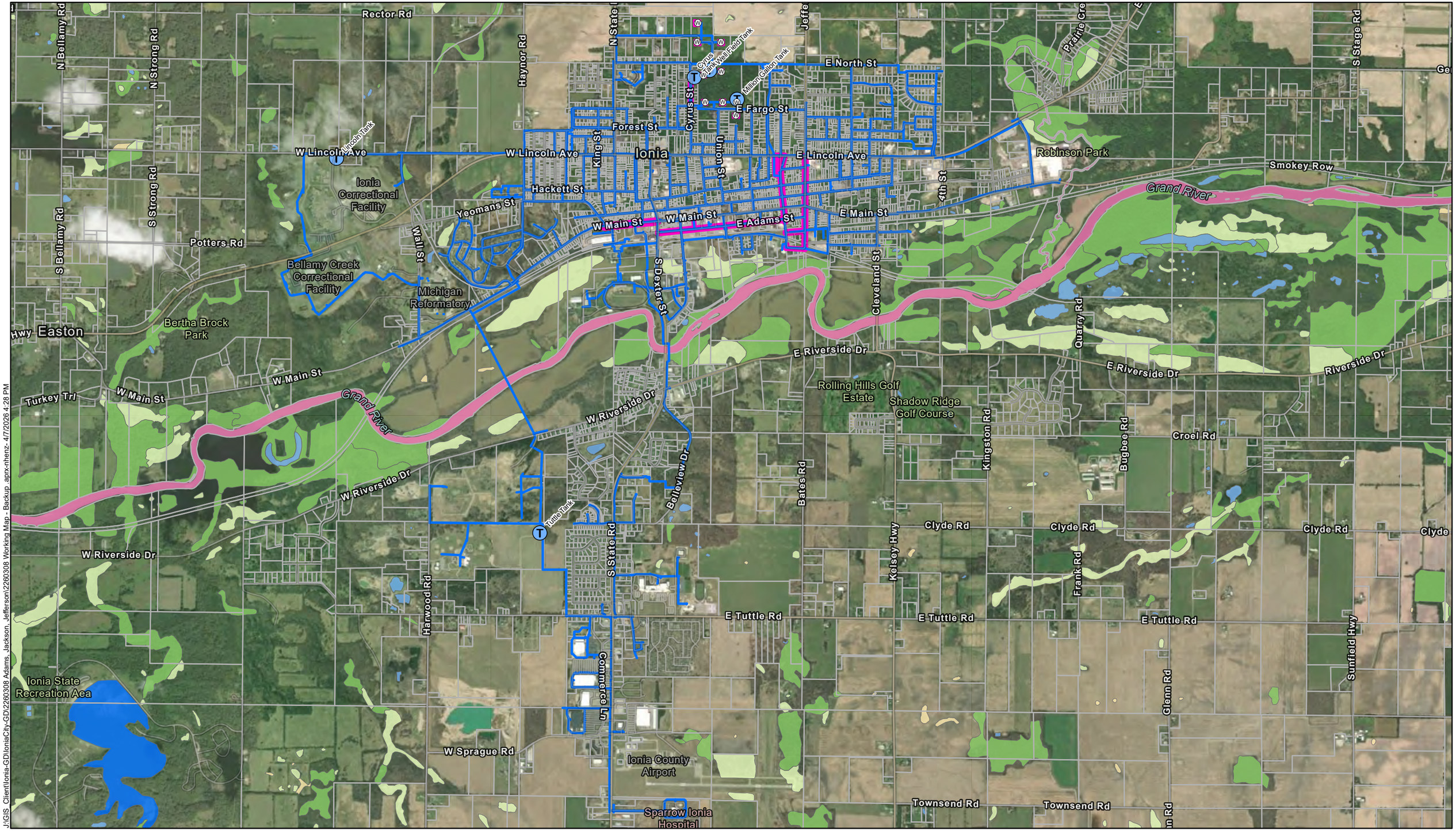
[1] U.S. EPA Discount rate for Year 2026 is 2.30%

[2] Negative value indicates reduction in Annual O&M

[3] Based on Total Present Worth

Appendix H

National Wetland Inventory Map



J:\GIS Client\Ionia-GD\IoniaCity-GD\2260308 Adams, Jackson, Jefferson\2260308 Working Map - Backup .aprx-nhenz- 4/7/2026 4:28 PM

SCALE: 1" = 2,500 '

LEGEND

- Water Main
- Wells
- Storage Tank
- Ionia County Tax Parcels
- DWSRF Project Extents
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

CITY OF IONIA

IONIA COUNTY, MICHIGAN

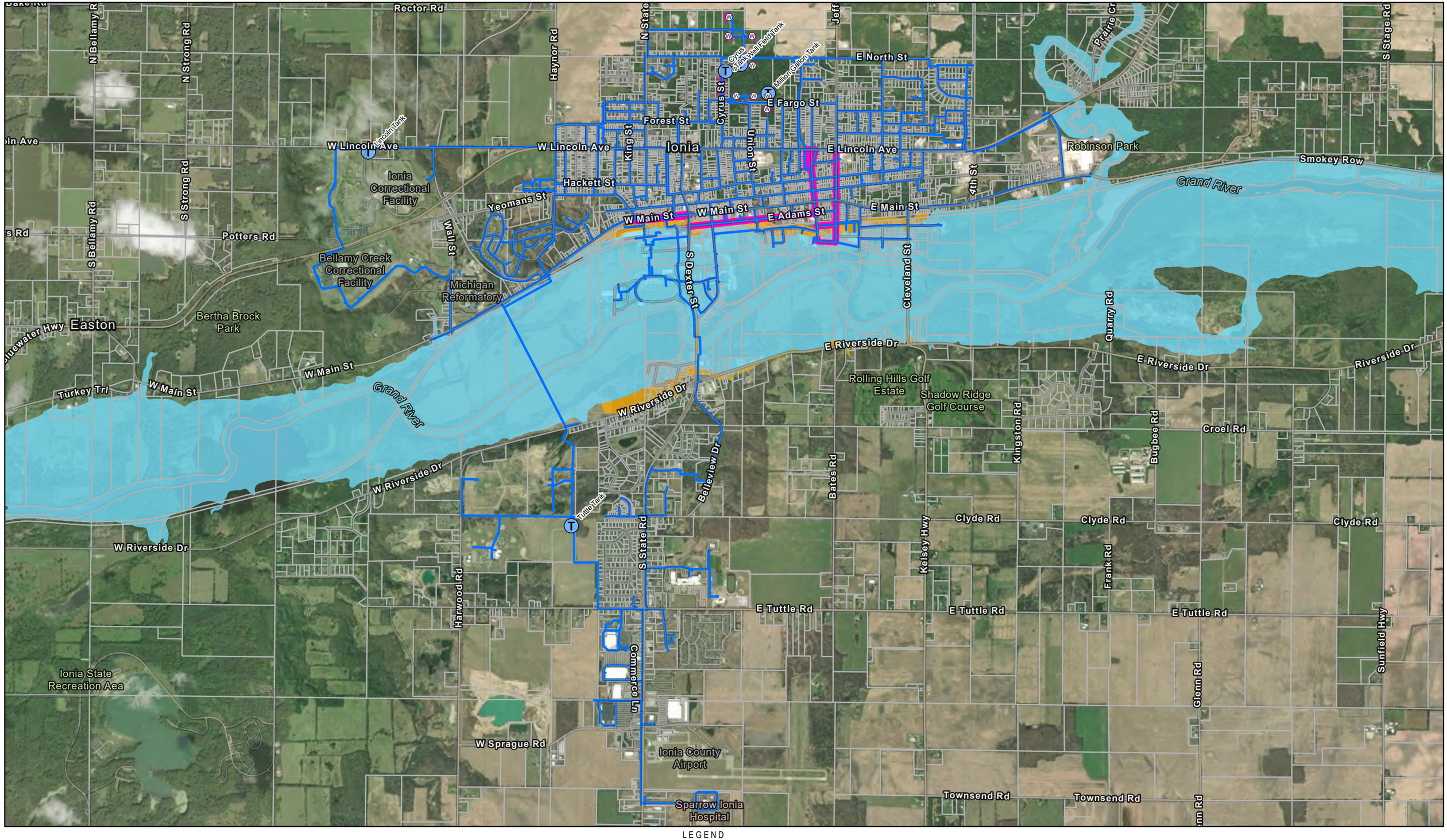
NATIONAL WETLAND INVENTORY

Prein&Newhof

2260308

Appendix I

FEMA Flood Hazard Map



J:\GIS_Client\Ionia-GD\IoniaCity-GD\2260308 Adams, Jackson, Jefferson\2260308 Working Map - Backup .aprx-nhenz- 4/7/2026 4:28 PM

LEGEND

- Storage Tank
- Water Main
- Wells
- Ionia County Tax Parcels
- 0.2% ANNUAL CHANCE FLOOD HAZARD (500 Year Flood)
- 1% ANNUAL CHANCE FLOOD HAZARD (100 YEAR FLOOD)
- DWSRF Project Extents

SCALE: 1" = 2,500 '

CITY OF IONIA

IONIA COUNTY, MICHIGAN

FEMA FLOOD HAZARDS

Prein&Newhof

2260308

Appendix J

Topography Map

J:\GIS_Client\Ionia-GD\IoniaCity-GD\2260308 Adams, Jackson, Jefferson\2260308 Working Map - Backup .aprx-nhenz- 4/7/2026 4:28 PM

Cyrus Tank

Well Field Tank

Million Gallon Tank

SCALE: 1" = 1,000 '

LEGEND

- Storage Tank
- Water Main
- Wells
- Ionia County Tax Parcels
- DWSRF Project Extents

CITY OF IONIA

IONIA COUNTY, MICHIGAN

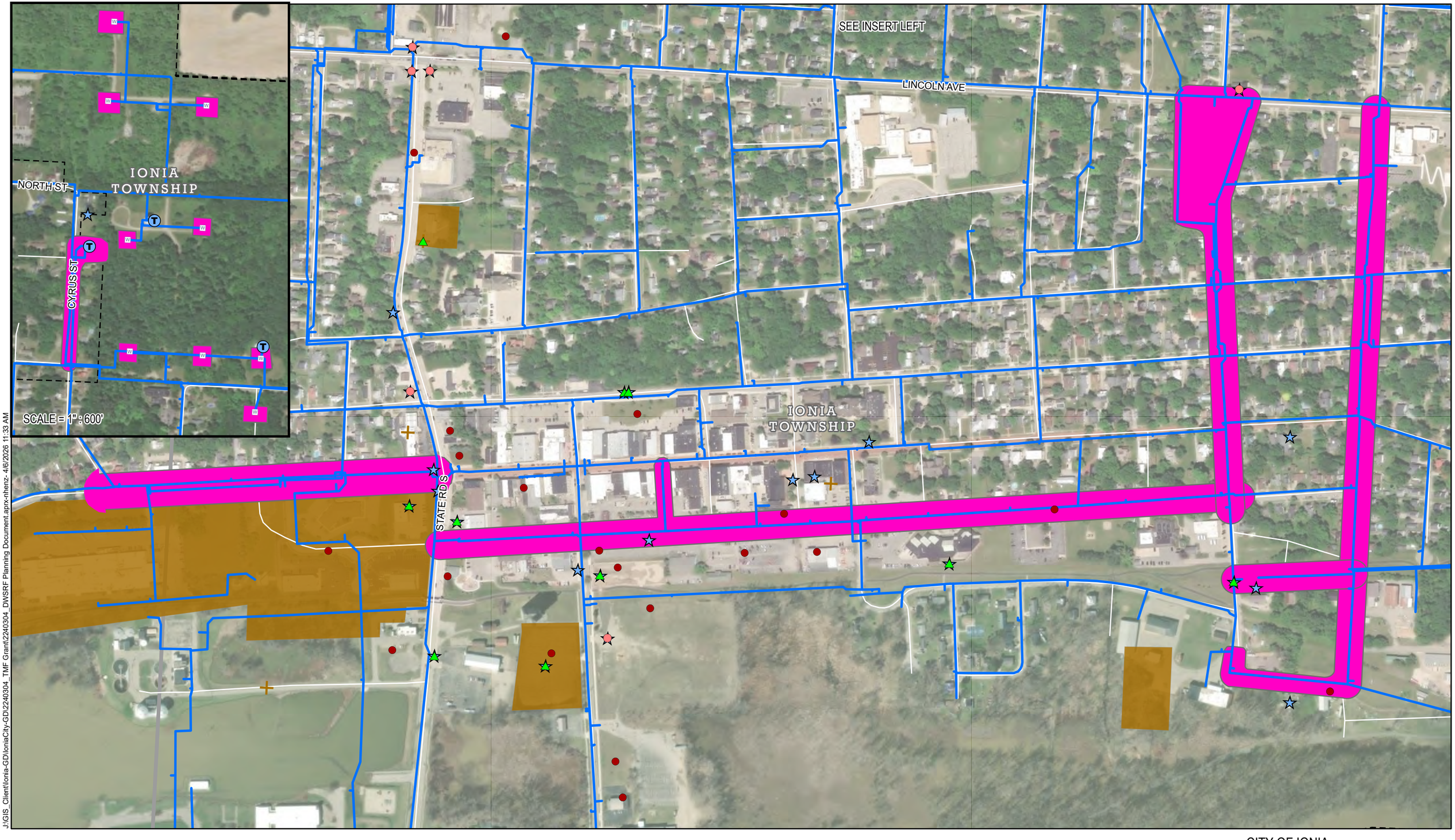
TOPOGRAPHY

Prein&Newhof

2260308

Appendix K

Known Contamination Site Map



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SCALE: 1" = 400 '

LEGEND

- Part 201 Environmental Contamination Site
- Leaking Underground Storage Tank (Part 213 Open)
- Leaking Underground Storage Tank (Part 213 Closed)
- Underground Storage Tank (Part 211 Active)
- Underground Storage Tank (Part 211 Closed)

Land Resource Use Restriction

- Restrictive Covenant
- DWSRF Project Extents

- Water Storage Tank
- Water Well
- Water Main
- City of Ionia Boundary

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WATER PROJECT PLANNING

KNOWN CONTAMINATION SITES

Prein&Newhof
2260308

Appendix L

Annual Cost Summary

CITY OF IONIA
IONIA COUNTY, MICHIGAN
DWSRF PROJECT PLANNING DOCUMENT
ANNUAL COST SUMMARY

No.	Project		DWRF Project Cost Estimate	Annual Debt Service*	Operation & Maintenance Increase/Decrease	Total Annual Cost
FY 2027 - DWSRF						
1.	Adams Street		$4,102,000	$202,575	$0	$202,575
2.	Jackson Street		$3,500,000	$172,845	$0	$172,845
3.	Jefferson Street		$3,328,000	$164,351	$0	$164,351
4.	Railroad Street		$264,000	$13,037	$0	$13,037
5.	Webber Street		$396,000	$19,556	$0	$19,556
6.	Wellhouse Security Sites		$58,000	$2,864	$0	$2,864
		Total FY 2027:	$11,648,000	$575,230	$0	$575,230
	Exisitng REU's					4,096
	Annual REU Cost**					$44.34
	Monthly REU Cost**					$3.70
FUTURE - DWSRF						
7.	W. Main Street		$2,360,000	$116,547	$0	$116,547
8.	Cyrus Street		$1,051,000	$51,903	$0	$51,903
		Total Future:	$3,411,000	$168,450	$0	$168,450
	Exisitng REU's					4,096
	Annual REU Cost**					$12.95
	Monthly REU Cost**					$1.08

*Annual debt service based on 30 year loan with a 2.75% interest rate.
**REU Cost based on total present worth

CITY OF IONIA

STAFF REPORT FOR COUNCIL AGENDA ITEM

Agenda Item: III.2

TO: Mayor Milewski and Councilmembers

FROM: Precia Garland, City Manager

DATE: April 28, 2026

RE: Public Hearing to receive comments on Resolution 2026-09, a resolution adopting a final project planning document for wastewater system improvements and designating an authorized project representative

Background:

With assistance from engineering firm Prein & Newhof, an application to the Clean Water State Revolving Fund (CWSRF) low interest loan program has been prepared. The estimated cost of implementing the proposed CWSRF Project Planning Document is $11,034,000. Year 1 (FY2027) of the CWSRF Project Planning Document will cost an estimated $9,392,000. Tyler DeNooyer from Prein & Newhof is present at today's meeting to provide a brief summary of the project application.

The purpose of the proposed wastewater collection system improvements is to provide a more reliable and resilient wastewater collection system, replace aging and structurally deficient sewer infrastructure, reduce stormwater infiltration and inflow, and provide accessibility for operation and maintenance. Project construction will involve replacement of approximately 10,700 feet of sanitary sewer and appurtenances on Jefferson Street, Jackson Street, Adams Street, and in alleys between Adams Street and W Main Street.

Based on preliminary scoring, it is anticipated the City may qualify for a low-interest loan at 2.75% interest. Unfortunately, parameters were changed with this round of the program, removing the City's previous status as "overburdened" and the opportunity for a portion of the project to be approved as a grant. As previously noted, Prein & Newhof estimates the FY2027 project cost at $9,392,000, with an annual debt retirement of $463,818 per year, assuming a 30-year amortization and 2.75% interest rate.

As part of its compilation process, the City of Ionia is required to advertise and then conduct a public hearing for the purpose of receiving input on the draft Project Planning Document. Notice of tonight's public hearing was published in the *Daily News* and also posted on the City of Ionia website. Authorization to submit the CWSRF application, following any potential modification based on public input would be provided through adoption of Resolution 2026-09.

Requested Action / Motion:

Following the public hearing to gather input, it is requested the Ionia City Council consider a motion

to approve Resolution 2026-09, which would authorize submission of a Clean Water State Revolving Fund application for the City of Ionia FY2027 Wastewater Services Replacement Project.

Motion By: **Seconded By:**

Roll Call Vote:	Lee	___	Winters	___
	Cook	___	Patrick	___
	Millard	___	Waterman	___
	Starr	___	Cowling	___
		Milewski	___	

CITY OF IONIA
NOTICE OF PUBLIC HEARING

Drinking Water State Revolving Fund (DWSRF) and
Clean Water State Revolving Fund (CWSRF) –
Project Planning Document

The City of Ionia will conduct a public hearing on April 28, 2026 at 6:30 PM, in the Council Chambers located at 114 North Kidd Street, Ionia, Michigan 48846, for the purpose of receiving comments from interested persons on proposed improvements and upgrades to its Water Distribution System and Wastewater Collection System. To finance these projects, the City will be applying for FY27 funding from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) CWSRF and DWSRF programs, in addition to applying for funding from the United States Department of Agriculture (USDA) Rural Development Program.

The purpose of the proposed water system improvements is to provide a more reliable and safe water distribution system. Project construction will involve replacement of approximately 15,500 feet of water main and appurtenances on Jefferson Street, Jackson Street, Adams Street, Railroad Street, Webber Street, Cyrus Street, and W Main Street. Approximately 30 lead/galvanized water services will be also be replaced within the project areas. Lastly, the security system at the City's drinking water wells will be upgraded and integrated with the City's Supervisory Control and Data Acquisition (SCADA) system.

The purpose of the proposed wastewater collection system improvements is to provide a more reliable and resilient wastewater collection system, replace aging and structurally deficient sewer infrastructure, reduce stormwater infiltration and inflow, and provide accessibility for operation and maintenance. Project construction will involve replacement of approximately 10,700 feet of sanitary sewer and appurtenances on Jefferson Street, Jackson Street, Adams Street, and in alleys between Adams Street and W Main Street.

Impacts of the proposed projects include those typical of utility and roadway construction, and temporary disruptions such as noise, dust, and traffic congestion caused by construction activities. The benefits to the water distribution system will be a more reliable system for City customers with fewer water main breaks, increased available fire flow, and lower potential for lead exposure through reduction of lead and galvanized service lines to customers' homes. The benefits to the wastewater system will be a more reliable and resilient wastewater collection system for City customers, replacement of failing sewers, and reduced risk of wastewater backups into adjacent buildings and the environment.

The estimated cost of implementing the proposed DWSRF Project Planning Document is $15,059,000. Year 1 (FY2027) of the DWSRF Project Planning Document will cost an estimated $11,648,000. The City is planning to increase water rates by approximately $24.00 per Residential Equivalent Unit (REU) per quarter, assuming no loan forgiveness or grant funding, to pay for the work.

The estimated cost of implementing the proposed CWSRF Project Planning Document is $11,034,000. Year 1 (FY2027) of the CWSRF Project Planning Document will cost an estimated $9,392,000. The City is planning to increase sewer rates by approximately $17.00 per Residential

Equivalent Unit (REU) per quarter, assuming no loan forgiveness or grant funding, to pay for the work.

Copies of both the DWSRF and CWSRF Project Planning Documents detailing the proposed projects are available for inspection at the following location:

City Clerk's Office
Ionia City Hall
114 North Kidd Street
Ionia, MI 48846

Electronic copies of the DWSRF Project Planning Documents can also be downloaded at https://bit.ly/IoniaDWSRF2027.

Electronic copies of the CWSRF Project Planning Documents can also be downloaded at https://bit.ly/IoniaCWSRF2027.

Written comments received before the hearing record is closed on April 28, 2026, will receive responses in the final project planning documents. Written comments should be sent to the City Clerk's Office at 114 North Kidd Street, PO Box 496, Ionia, Michigan 48846.

The City of Ionia complies with the "Americans with Disabilities Act." If auxiliary aids or services are required at a public meeting for individuals with disabilities, please contact Jonathan Bowman, City Clerk, at least three (3) business days prior to any such meeting.

_____

Jonathan T. Bowman, City Clerk
Ionia City Hall
114 North Kidd Street
Ionia, Michigan 48846
Telephone No: (616) 527-4170

CITY OF IONIA
COUNTY OF IONIA, MICHIGAN
CITY COUNCIL

A RESOLUTION ADOPTING A FINAL PROJECT PLANNING DOCUMENT FOR WASTEWATER SYSTEM IMPROVEMENTS AND DESIGNATING AN AUTHORIZED PROJECT REPRESENTATIVE

The following Resolution was offered for adoption by City Councilmember _____ and was supported by City Councilmember _____:

WHEREAS, the City of Ionia recognizes the need to make improvements to its existing wastewater collection system; and

WHEREAS, the City of Ionia authorized Prein&Newhof to prepare a Project Planning Document, which recommends the replacement of existing sanitary gravity main sewers and appurtenances in the City of Ionia; and

WHEREAS, said Project Planning Document was presented at a Public Hearing on April 28, 2026 at 6:30 P.M. and all public comments have been considered and addressed;

NOW, THEREFORE, BE IT RESOLVED, that the City of Ionia formally adopts said Project Planning Document and agrees to implement the selected FY 2027 projects based on the selected alternatives for those projects.

BE IT FURTHER RESOLVED, that the City Manager, a position currently held by Precia Garland, is designated as the authorized representative for all activities associated with the project referenced above, including the submittal of said Project Planning Document as the first step in applying to the State of Michigan for a Clean Water State Revolving Fund Loan to assist in the implementation of the selected alternative.

AYES:

NAYS:

ABSTAIN:

ABSENT:

RESOLUTION 2026-09 DECLARED ADOPTED

_____
Jonathan T. Bowman, City Clerk
Ionia City Hall
114 North Kidd Street
Ionia, Michigan 48846
Telephone No: (616) 527-4170

CERTIFICATION

I hereby certify that the foregoing is a true and complete copy of a Resolution adopted by the City Council of the City of Ionia, Ionia County, Michigan at a special meeting held on April 28, 2026, at 6:30 PM and that the public notices of said meeting were given pursuant to Act No. 267 of the Michigan Public Acts of 1976, including in the case of a special or rescheduled meeting notice of publication or posting at least eighteen (18) hours prior to the time set for the meeting.

_____
Jonathan T. Bowman, City Clerk
Ionia City Hall
114 North Kidd Street
Ionia, Michigan 48846
Telephone No: (616) 527-4170

Project Planning Document

City of Ionia FY2027
Clean Water Project Planning Document

DRAFT

Prepared for

City of Ionia

April 2026

2260308

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1 Project Background

This Project Planning Document is prepared on behalf of the City of Ionia, Ionia County, Michigan, for the purpose of obtaining a Clean Water State Revolving Fund (CWSRF) loan from the State of Michigan for the construction of improvements to the City of Ionia's wastewater system. The applicant is the City of Ionia (hereinafter the "City") and all the proposed work is in the City.

The City has approximately 3200 total residential and commercial/industrial customers of its wastewater system. The City's wastewater distribution system has almost 266,000 feet of gravity sewer, 5,700 feet of force main, 1,050 manholes and 5 pumping stations. These assets are owned solely by the City. A map of the sanitary distribution system can be found in Figure 1.

The City of Ionia does not have its own treatment plant. Its wastewater is treated by the Ionia Regional Utilities Authority (IRUA) Wastewater Resource Recovery Facility (WRRF). The WWRF is managed by staff of the City of Ionia.

In 2026, the City of Ionia completed an Asset Management Plan (AMP) for its wastewater collection system to evaluate the condition and needs of its wastewater collection system, develop a system for prioritizing repairs and rehabilitation of the system, and to make recommendations for funding the needs identified (Appendix A). Approximately thirty (30) percent of the system is approaching 80 years old and is in need of repair or replacement or will need it in the next few decades. The City used the asset management process to generate recommendations for the City's Capital Improvement Plan (CIP) to address needs withing the wastewater collection system. The CIP was used as a basis to identify the project areas contained in this Project Planning Document and listed below:

1. Adams Street Sanitary Sewer Replacement
2. Jackson Street Sanitary Sewer Replacement
3. Jefferson Street Sanitary Sewer Replacement
4. Adams Street Alley (City Lot) Sanitary Sewer Replacement
5. Adams Street Alley (West Section) Sanitary Sewer Replacement
6. W. Main Street Sanitary Sewer Replacement

The CWSRF program was identified as one method of funding the capital improvements identified in the Asset Management Plan (AMP). The improvements discussed herein are primarily a result of the AMP process. All improvements will help make infrastructure more efficient and reduce the chance of impacting water quality in the area by failing wastewater assets. All projects are specifically to

replace existing aging infrastructure that has high maintenance and operation cost and potential for failure. None of the projects or projected 20-year needs include projects to extend infrastructure to new areas in or outside of the City.

The purpose of this report is to present a comprehensive plan and evaluation of alternatives for improving the existing wastewater collection system. The evaluation includes an analysis of cost, technical feasibility, and environmental impacts for projects that are needed over the next 20 years.

Funding will be pursued through Michigan's Clean Water State Revolving Fund (CWSRF). CWSRF is a low interest loan financing program that assists qualified local municipalities with the construction of needed water pollution control facilities.

2 BACKGROUND

2.1 Study Area

The study area comprises the service area of the City of Ionia wastewater collection system. The proposed projects will improve the reliability of the wastewater collection system in the service area. Figure 1 shows the study area, and the existing sanitary sewer distribution system, pump stations, and WWTF. Figure 2 shows the project areas of the selected wastewater system improvements. According to the U.S. Census Bureau, the City has a total area of 5.48 square miles, of which 5.35 square miles is land and 0.13 square miles is water. Ionia is between Michigan's capital, Lansing, and its second largest city, Grand Rapids.

2.1.1 Land Use

The City's existing land use is diverse with significant residential areas and some commercial, industrial and public recreation areas as shown on the Zoning Map (Appendix B). This map is made publicly available on the City's website as it was updated October 2025. The city is mostly built out with a general sprawl from the central business district outward with general business and medium or low-density housing. The western extents of town are largely zoned for the Fair District and State of Michigan Prisons and the eastern extents are largely zoned for the Technology Innovation Business District. Future land use is expected to not change or be similar to existing land use in most cases. There are no major projected changes in the land use of the study area that would significantly impact wastewater flows beyond the current average day wastewater flows.

2.1.2 Population Data

The City of Ionia is the largest city in Ionia County, Michigan. The city contains two major highways, M-21 and M-66. The population of the city at the time of the 2020 United States (U.S.) Census was estimated to be 13,378. This population counts the incarcerated population within the city which is estimated to be 6,742 at the time of the census. Additional details about the population of the city and its projections can be found in Table 1.

The median household income in City of Muskegon $63,978 according to data provided on the EGLE CWSRF website, which is taken from the United States Census Bureau. The Taxable Value or property per capita is listed as $11,344.

2.2 Overburdened Communities

Refer to overburdened worksheet, included in Appendix C. Based on the preliminary determination, the City of Ionia does not meet the classification of significantly overburdened or overburdened status.

2.3 Wastewater System Flows

The City of Ionia provides sanitary sewer collection to residents within the service area. Nearly the entire system consists of gravity mains except for five pump stations and approximately 1 mile of the 51.7 miles of sewer pipes being force mains. A 2025 Wastewater Asset Management Plan was prepared for the IRUA WRRF and analyzed the current flows within the regional treatment system. The current capacity of the WRRF is 2.1 million gallons per day (mgd) of average day flow, 4.0 mgd of maximum day flow, and 8.0 mgd of flow during peak wet weather. The current average daily flow at the WRRF collected from the City and outlying areas is approximately 1.6 mgd. Therefore, the current flows would have to increase but about one-third to reach the treatment plant capacity. The project population over the next twenty years as seen in Table 1 would indicate that the projected demands of the WRRF would not change beyond the current capacity, which is in agreement with the conclusions from the 2025 Wastewater Asset Management Plan for the WRRF.

2.4 Existing Facilities

2.4.1 Wastewater Treatment

The City of Ionia does not own or operate any wastewater treatment facilities. All wastewater from the City of Ionia is pumped to the WRRF located in Ionia, Michigan. The WRRF is managed by the IRUA and serves the greater Ionia area, including four municipal users. The municipal users include the City of Ionia, Ionia Township, Easton Township, and Berlin Township. Wastewater from Berlin Township and the City of Ionia is pumped through a three-quarter mile of forcemain from the south side of the Grand River, under the Grand River, to the treatment site.

Wastewater flow to the WRRF averaged approximately 1.6 million gallons per day in 2024. The City of Ionia represented approximately 93% of the daily flow in 2024, averaging 1.5 mpg. The treatment system has ample treatment capacity, as the rated capacity is 2.1 mgd average day.

2.4.2 Residuals

The City of Ionia does not own or operate any wastewater treatment facility; therefore, it does not generate any residuals or have a Residuals Management Program.

2.4.3 Pump Stations

Five pump stations serve areas within the collection system that cannot be served by gravity. Pump Station 5 on the southern extents of the Berlin Township sewer system is owned by Walmart Corporation and located on their property of M-66. The most recent assessment of the pump stations was conducted prior to the 2025 evaluation of the WRRF. The condition of all five pump stations was concluded to be good, and no immediate action was required.

2.4.4 Sewers and Force Mains

The City of Ionia wastewater system includes gravity sewers and force mains serving the majority of lands within the City corporate limits, as well as small adjacent areas beyond the City corporate limits as shown on Figure 1.

The top two major industrial water users are the Department of Corrections, and Ventra Ionia Main. The Department of Corrections operates 4 different correctional facilities on the

western extents of town, Ventra Ionia is a manufacturer of automotive parts that specializes in plastics, metals, and mechanical assemblies.

A summary of the inventory and condition assessments is briefly reviewed below.

2.4.4.1 Inventory

An inventory of manholes, gravity sewer pipes, and force mains was updated for the asset management plan with available records and institutional knowledge from the City. The inventory contains information on size, material and installation years of sewer pipes and force mains. The City is currently updating its inventory of manholes as annual maintenance takes place.

The City of Ionia wastewater collection system includes approximately 267,000 lineal feet of gravity sewer pipes ranging from 2 to 24 inches in diameter, 5,800 lineal feet of force main pipes ranging from 2 to 12 inches in diameter, and 1,050 manholes. A detailed summary of gravity and force main inventory including age and material is included in the Wastewater Asset Management Plan in Appendix A.

The gravity sewer pipe materials are primarily vitrified clay pipe estimated to be installed between the 1930's and 1980's and PVC pipe installed since the 1990's. Additional population of material data for the older sanitary sewer within the City of Ionia is actively taking place as the City continues populating the inventory data during operations and maintenance efforts including sewer cleaning and manhole inspections. When completed, the field inventory data collection will be used to update the inventory in the GIS database. The City has completed various sanitary sewer replacement projects since 2015 in an effort to replace aging and deteriorated sewer mains.

2.4.4.2 Condition Assessment

An assessment of the physical condition of force main and gravity sewer pipes was made to evaluate the probability of failure during the asset management plan development. The probability of failure for gravity sewer pipe assets was determined based on institutional knowledge and CCTV data, if available. The remaining gravity main and force main pipes were assessed based on their age. The City is currently collecting condition assessment data through visual inspection of the manholes within the system during

routine maintenance activities, which will be integrated into the GIS inventory when completed. The City has inspected over half of their manholes in the last three years and plans to continue to do so to maintain the most up to date records of the system.

Closed Circuit Televising (CCTV) inspections were completed for all projects within the planning document that are being proposed for FY2027 using remotely operated video cameras that travel through the sewer. The CCTV inspection provides up close visual detail through the entire length of pipe from manhole to manhole.

NASSCO defines a set of standards for documenting sewer pipe conditions with PACP. PACP provides a standard method for documenting the location, type, and severity of sewer defects. The type of each defect is categorized as either a structural defect or an operations and maintenance defect. Structural defects include cracks, holes, sags, and corrosion. Operations and maintenance observations include roots, deposits, infiltration, and grease. Each defect is assigned a condition rating of 1-5, with 5 being the most severe defect.

The PACP standard was followed for sewer pipe condition assessments from CCTV inspections. All sewer pipes proposed for rehabilitation or replacement for structural reasons were inspected in this manner. Further details of the PACP inspection methods are provided in Section 2.4.5.

Approximately 34% of the sanitary system has been inspected with the CCTV method since 2007. Approximately 5% of the sanitary system has been inspected with the CCTV method since 2024.

Structural defects including cracked pipes, broken pipes, pipes with holes, sags, and corrosion were observed in a variety of locations. The most significant cases are described further in Section 2.5.4. The City is monitoring the remaining known structural defects thought the system with follow-up inspections and fixing defects with spot repairs, where necessary.

Roots and debris typical for sewer systems were observed in many locations. Some sewers with roots and the most severe debris were cleaned and inspected with the CCTV method. While clay sewers are resistant to corrosion, they are highly susceptible to root

infiltration. The City maintains an extensive cleaning and root cutting program in order to manage root growth and avoid backups.

2.4.5 NASSCO PACP/MACP

EGLE's CWSRF Project Plan Preparation Guidance eligibility criteria for sewers replaced due to structural deficiencies states only those structural deficiencies placing the sewer pipe and/or manhole in imminent danger of failure. Sewer pipes and/or manholes must be reviewed in accordance with NASSCO's (National Association of Sewer Service Companies) Pipe Assessment Certification Program (PACP) and Manhole Assessment Certification Program (MACP). The PACP and MACP must be used to grade and define the severity of the pipe and manhole defects. The defects found in the pipe segments and manholes must have a grade of either Significant (Score 4) or Most Significant (Grade 5) to be considered eligible for funding under EGLE's State Revolving Loan Fund. Additionally, the assessment of the defects should also consider other factors such as pipe age, sewer depth, type of pipe, diameter of pipe, type of soils, and location (i.e. under buildings, railways, rivers, heavy traffic, or in environmentally sensitive locations) all of which could impact the priority of the classification.

NASSCO's PACP and MACP were established to provide the industry with the ability to accurately to assess sanitary sewer environments against a national standard using common tools.

During the PACP segment of the evaluation, sewers are televised using closed circuit television (CCTV) equipment. As the sewer segments are televised or during post televising review, the NASSCO PACP-certified user identifies defects in the sewer pipe segments that could cause potential pipe failures. It is possible that multiple defects occur at the same location. Examples of multiple defects at the same location could be active infiltration or evidence of past infiltration at or near a defect such as a broken pipe. These are two separate but identifiable PACP/MACP defects.

The inspection method for manholes under NASSCO's MACP is done in a manner similar to sewer segment evaluation except that detailed photographs of the manholes can take the place of actual CCTV inspections.

Once the inspections are completed and the defects identified, detailed PACP survey reports for each segment are prepared. The reports identify the following:

- The distance (in feet) of the defect from the starting manhole
- The PACP defect code
- The description of the defect code
- Identify continuous defects (defect continues for more than three feet)
- Percentage of flow capacity restriction
- PACP/MACP grade

Once the detailed reports are completed, detailed PACP conditions for each segment are located and plotted on a map of each segment.

Once the inspections are completed and the defects identified, NASSCO's PACP/MACP grading methodology gives each defect code an assigned condition grade value of 1 through 5. Conditional grades are assigned based on the following:

- Significance of the defect
- Extent of damage
- Location of the defect
- Percentage of flow capacity restriction
- Amount of wall loss due to deterioration

NASSCO's PACP/MACP goes one step further and estimates the potential timing of pipe/manhole failure based on the associated conditional score. The table below defines NASSCO's Defect Scoring system utilizing PACP/MACP as well as the estimated time to failure.

PACP/MACP Grade	Description	Estimated Time to Failure
1	Acceptable Structural Condition	Unlikely in Foreseeable Future
2	Minimal Failure Risk	20 Years or More
3	Fair - Failure Unlikely In Near Future	10 to 20 Years
4	Poor - Failure Likely In Foreseeable Future	5 to 10 Years
5	Immediate Attention - Failed or Failure Eminent	Has Failed or Will Likely Fail Within the Next 5 years

The PACP/MACP condition grading system alone is inadequate for determining if a pipe segment should be rehabilitated or replaced. Many other factors in addition to the internal

condition of the segment should be considered. The fact that a segment or manhole has a significant Grade 4 or Grade 5 defects does not necessary mean the pipe segment or manhole will have an immediate catastrophic failure. Other factors such as pipe age, sewer depth, type of pipe, diameter of pipe, type of soils, and location (i.e. under buildings, railways, rivers, heavy traffic) should also be evaluated to determine the likelihood of the failure and the timing of the method for repair.

Pipe and manhole defects defined under NASSCO's PACP as "Critical Priorities" are as follows:

- Cracks and Fractures in the pipe segments or manhole walls. (Grade 4 or 5 depending on the severity).
- Broken pipe segments or manhole walls. (Grade 5).
- Holes in the pipe or manhole walls. (Grade 4 or 5 depending on location).
- Collapsed pipe or manhole that has lost more than 40 percent of its original cross sectional area. (Grade 5).
- Deformed pipe or manhole that has lost more than 10 percent of its original cross sectional area. (Grade 4 or 5 depending on cross-sectional area).
- Offset joints when offset is greater than or equal to pipe wall thickness multiplied by 1.5. (Grade 4).
- Missing aggregate from concrete pipe due to corrosion or poorly manufactured manholes and pipe. (Grade 4 or 5).
- Pipe and manhole corrosion due to hydrogen sulfide. (Grade 4 or 5 depending on the severity).
- Sags and dips located in the pipe segments where the water surface level in the pipe is greater than 50 percent of the cross sectional area. (Grade 4 or 5 depending on the severity).

Appendix D provides a PACP inspection index and reports for the structurally deteriorated sewers that were inspected using PACP within the project areas as well as the sewers within the project areas that are between two grade 4 or 5 pipes and are being proposed for replacement.

2.5 Summary of Project Need

As described in the previous sections, a detailed inventory and condition assessment of the wastewater collection system was recently updated within the Asset Management Plan

development. Condition assessments included visual inspection of manholes and PACP inspection of sewers. The condition assessment effort was used to assess a Risk of Failure (RoF) and Consequence of Failure (CoF) value for each asset. This practice of asset management allows for data-driven decision making and is used to prioritize asset rehabilitation and replacement by assessing the criticality of the assets and their potential failure.

Using the Level of Service (LoS) goals developed in their Wastewater Asset Management Plan, an updated Capital Improvement Plan (CIP) was created. The projects described in this section were determined through the asset management process as part of a 2026 Capital Improvement Plan update and represent the current highest priority wastewater collection system needs.

2.5.1 Standards Compliance, Resiliency, and Reliability

The City of Ionia is in compliance with existing regulations pertaining to wastewater collection systems. However, the system is aging and as assets in the collection system fail, they have the potential to degrade surface and ground water, which are prevalent in and around the City. Approximately 30% of the existing sewer infrastructure in the study area is believed to be installed prior to 1950, and many of the sewers and manholes are more than 80 years old.

Furthermore, an estimated 43% of the sewers in the City are clay pipes which are brittle and highly susceptible to root intrusion and infiltration through the joints. As a result of the increasing rate of sewer failures and backups, the City of Ionia Department of Public Works (DPW) is often stretched thin and forced to be reactionary to sewer calls rather than proactive with preventative maintenance. Specific details of the major known problems within the study area are discussed further in Section 2.5.4.

All City of Ionia wastewater is treated by the IRUA WRRF, which was placed online in 1965. The facility uses a system of clarifiers and biological treatment to treat wastewater from the Ionia area communities (City of Ionia, Ionia Township, Easton Township, and Berlin Township). The WRRF is currently in compliance with its NPDES discharge permit issued in fall of 2021 and is awaiting approval of their new permit submitted in fall of 2025.

2.5.2 Orders of Enforcement Action

There are currently no orders of enforcement in place for the City of Ionia's wastewater system.

2.5.3 Water Quality Problems

Over half of the City of Ionia's wastewater collection system was constructed as far back as the early 1930's. The gravity sewers constructed between the 1910's and 1990's were mainly constructed out of vitrified clay, with some reinforced concrete pipe and cast iron pipe. Sewers installed since the 1990's have primarily been constructed out of Polyvinyl Chloride (PVC) or ductile iron material. Several trunk sewers within the City of Ionia collection system were determined to have structurally deficient sewers with NASSCO PACP methods.

As the wastewater collection system continues to age, the infrastructure continues to structurally deteriorate. Some collection system assets are in failing condition and have reached or exceeded their useful lives. The majority of the problems in the system are a result of structural failures in the sewer pipes, as detailed further in Section 2.5.4. Many of these structural failures have the potential to cause backups within the sewer system which could cause sanitary sewer overflows into nearby buildings and the natural environment including surface waters such as the Grand River or Prairie Creek. As pipe assets continue to age, the potential for further failure and water quality incidents will only increase which will raise the chance of a sanitary sewer overflow to local surface waters. All of these problems need to be addressed within the 20-year design period in order to reduce the risk of sanitary sewer backups and subsequent water quality problems.

Residents within the service area are connected to the sanitary sewer system, therefore leaking septic tank systems are not an issue. The recommended improvements provided in this Project Planning Document pertain to replacing existing collection system components rather than extending the system into unsewered areas.

2.5.4 Projected Needs for the Next 20 Years

The City of Ionia Wastewater Collection System has various projected needs over the 20-year design period. All project areas described below are roadways and alleyways within the City that have vitrified clay sewers that are estimated to have been installed in the 1930s (or

prior). Adams Street, Jackson Street, Jefferson Street, and both Adams Street Alley sewers were inspected using PACP scoring (see reports in Appendix D). The remaining project area (W. Main Street) has not been inspected using PACP scoring as it is being presented in this Project Planning Document as a future project.

Based on the City's experience with recent sewer PACP inspections, and its historical wastewater collection system maintenance, they have witnessed that 1930s vintage clay sewers remaining within the City have reached their useful life and are in need of replacement or rehabilitation to reduce the risk of overflows to the natural environment and waters of the State. The City's older, clay sewers are brittle and highly susceptible to cracking, fractures, breaks, holes, joint defects, sags, and significant root intrusions at the joints and at lateral taps. Furthermore, sewers below the groundwater table are not water-tight and are susceptible to infiltration and inflow through the joints and structural failures within the pipes. Additionally, the old clay laterals connected to the sewers have similar structural and O&M problems.

The project areas below require action because the approximately 100-year-old clay sewers within them have reached the end of their useful life. Project area needs in addition to the excessive age of the sewers are discussed in detail below. The project areas are shown in Figure 2. The proposed projects will provide reliable and safe sewer systems to the residents of the City of Ionia in the affected areas.

2.5.4.1 Project No. 1 – Adams Street

The sanitary sewer on Adams Street is a trunk sewer collecting wastewater from the downtown area and all neighboring residents upstream to the north. An 8-inch sewer flows from Jackson Street to the east to the S. Jefferson Street Sewer. This sewer is broken at the Jefferson Street intersection, which will be addressed in Project No. 3 (Jefferson Street). The remaining 8-inch to 18-inch sewer on Adams Street that flows from S. Jackson west to M-66 is structurally deteriorated. PACP results show that these sewers on Adams Street have various breaks, holes with soil and voids visible, fractures, cracks, and joint offsets. A project is needed to address the structural deterioration of the Adams Street Sewer.

2.5.4.2 Project No. 2 – Jackson Street

The 1930s era clay sanitary sewers on Jackson Street between Lafayette Street and E. Adams Street are in failing condition. The sewers have holes (one with soil visible), a break, many large cracks and fractures, and joint offsets common in clay pipe. Furthermore, the three dead end sewers do not have upstream manholes for maintenance. Without the upstream manholes, it makes it difficult for operations and maintenance. CCTV inspections could not fully inspect any of the three sewers because the camera couldn't make it past mid-pipe diameter changes and the presence of deposits within the pipe. It is assumed that the condition of the sewers beyond what was unable to be inspected is consistent with the failing condition witnessed in the portions of the sewers that were accessible by CCTV. A project is needed to address the aging and deteriorating clay sewers, and the inability for maintenance and inspection to be conducted.

2.5.4.3 Project No. 3 – Jefferson Street

The current Jefferson Street Sewer from M-21 south to Webber Street is a 700-foot section of 8-inch sewer from M-21 to Lafayette Street and an approximately 2000-foot section of 12-inch sewer that collects sanitary flow from much of the northern and eastern extents of town and discharges to the 24-inch pipe along the river. The sewer on Jefferson Street was inspected using PACP scoring and found to have significant structural failures throughout. Structural failures include multiple cracks and fractures, joint offsets and separations, breaks, holes with soil visible, and sags. Furthermore, the sewer has root intrusions at various joints, and the upstream end of the sewer has significant infiltration (runners, weepers, and infiltration stains). A project is needed to address the aging and failing clay sewer and reduce the risk of failure for a critical sewer within the collection system, especially given its proximity to the Grand River.

2.5.4.4 Project No. 4 – Adams Street Alley (Eastern Extents)

All the commercial businesses and buildings along the downtown stretch of Main Street within the City are served by sanitary sewer through an alley behind the parcels south of Main Street, east of Steele and north of Adams Street. The eastern extent of the 8-inch sewer flows from S. Depot Street west to the 12-inch sewer on Steele Street. This 8-inch sewer passing through the City-owned lot south of Main Street was rated using PACP to confirm structural failure concerns. The sewer is structurally deficient and has multiple

sags, multiple breaks with soil visible, multiple holes with soil visible, and cracks and fractures throughout. Furthermore, the downstream portion of the sewer passes under or directly adjacent to the foundation of 343 W. Main Street before entering Steele Street. The location of this sewer next to a building creates a risk to the building if a failure were to occur, and makes emergency response to be extremely difficult. A project is needed to reroute the structurally deficient and inaccessible sanitary sewers from the alleyways into the City-owned parking lot in order to reduce the risk of sewer backups, regain accessibility, and to meet the needs of the 20-year design period.

2.5.4.5 Project No. 5 – Adams Street Alley (Western Extents)

All the businesses and buildings along the core stretch of Main Street within Ionia are served by sanitary sewer through an alley behind the parcels between Main Street, west of Steele Street, and Adams Street. The Western extents of the sewer has sewers that flow separate directions. The eastern 8-inch sewer flows east to the 12-inch sewer on Steele Street. This sewer main is located south of the buildings on W. Main Street and west of S. Steele Street and flows under several building foundations. The western 8-inch sewer shares an upstream manhole with the eastern sewer and flows to the west out to M-66. The sewer passes next to or under the foundation of 439 W. Main Street. The consequence of failure of these pipes is high given the location of these sewer pipes under building foundations. A failure in these pipes under the building would be impossible to access for repair and puts the buildings above the sewer at a significant risk for damage.

Furthermore, both of the 8-inch sewers were assessed using PACP and found to have significant structural deficiencies including medium and large joint offsets, fractures, and breaks with soil visible. A project is needed to reroute the structurally deficient and inaccessible sanitary sewers from the alleyways into the City-owned parking lot in order to reduce the risk of sewer backups, regain accessibility, and to meet the needs of the 20-year design period.

2.5.4.6 Project No. 6 – W. Main Street (Future)

The W. Main Street Sewer contains a combination of 8-inch to 12-inch sewer between Yeomans Street and M-66. This sewer collects much of the neighborhood west of M-66

and south of M-21. There are two 10-inch sewers flowing from both Yeomans Street and Kimball Street that flow into the W. Main sewer and ultimately to the WRRF south of W. Main Street. This 1930s era clay gravity sewer is reaching the end of its usable life and is suspected to have significant structural issues based on institutional knowledge and the City's experience with clay pipes approaching 100 years old within the collection system. This section of W. Main Street is being proposed as a project for future funding years and not a part of the FY2027 proposed project. When CWSRF funding is requested for this sewer, sewer eligibility will be confirmed using PACP ratings.

2.5.4.7 Other System Needs over Next 20 Years

The previous six project need areas were determined through asset management practices and developed from the City's CIP. They represent the highest priority needs for the system. Wastewater projects incorporated in the CIP did not present any additional projects than the ones previously mentioned.

As outlined in the City's Wastewater Asset Management Plan (Appendix A), the City will continue to update their wastewater system inventory and condition assessments over time. As system conditions change, the City may reprioritize current projects and/or include additional projects. By proactively managing their wastewater system through asset management, the City can ensure reliable and sustainable wastewater service at the lowest life cycle cost for the community.

2.5.5 Future Environment without Proposed Projects

Without the construction of the proposed projects, the water quality of local streams, creeks and rivers, and the basements served by the wastewater collection system could be degraded or severely harmed during failure of the structurally deteriorated sewers.

3 Analysis of Alternatives

3.1 Identification of Potential Alternatives

3.1.1 Optimum Performance of Existing Facilities

As outlined in Section 2.5.4, the problems plaguing the City's wastewater collection system are all structural in nature as these assets have met or exceed their expected useful life.

Optimizing the performance of existing facilities will not fix the structural deterioration and reliability concerns present within the system. Therefore, this option was not considered further.

3.1.2 Regional Alternatives

The issues within the system are not regional issues, they are City specific issues. The project areas are located within the boundary of the City and are not nearby any other communities' sewer systems. The City of Ionia has adequate regional system integration with Ionia's Wastewater Collection System which does not have any known capacity or conveyance issues within the study area. Therefore, regional alternatives are not discussed further.

3.1.3 Water and Energy Efficiency

Water and energy efficiency is important when considering alternatives for wastewater treatment plant processes and lift stations. However, the projects outlined in this plan are needed based on structural pipe deficiencies and involve sewer rehabilitation and replacement. Gravity and force main sewers themselves do not use water or energy during their daily operation, they merely convey wastewater. Therefore, this consideration was not discussed further for the projects in this report.

3.2 Identification of Principal Alternatives

3.2.1 Project 1: Adams Street

3.2.1.1 No Action

No action could potentially result in sanitary sewer overflows due to the additional debris blockages. The unreliable structural condition of the 1930's era clay sewers exacerbate the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW.

The no action alternative would not address the structural deficiencies of the sewer found within the CCTV documentation of the Adams Street sewer system.

The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the No Action alternative was not considered further.

3.2.1.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch to 18-inch gravity sewer on Adams Street. While this would lower the risk of failure of the pipes, lining would require the laterals to be replaced after lining is complete, leaving the road with an approximately 20-foot-wide trench for every service lateral along the length of the pipe. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating manholes, or the deteriorating laterals. Therefore, the Rehabilitation alternative was not considered further.

3.2.1.3 Replacement

This alternative would involve replacing the gravity sewer by using the open-cut method. The section of 8-inch to 18-inch sewer flowing from Jackson Street west towards M-66 will also be replaced in kind with all appurtenances. Various storm sewer catch basin leads would need to be replaced within the project area due to the sanitary sewer replacement. However, the mainline storm sewer that did not have notable issues shown on zoom camera inspections would not need to be replaced under this alternative. All sanitary sewer conflicts with the storm sewer system would be attempted to be removed, if grades allow. If the grades of the sewers make it impossible, the sanitary sewers in conflict would be replaced with new sewers in such a way that would significantly reduce the risk of sanitary sewer failure within the storm system.

3.2.2 Project 2: Jackson Street

3.2.2.1 No Action

No action could potentially result in sanitary sewer overflows due to the various structural deficiencies found within the sewer. Maintenance efforts such as flushing and condition assessment efforts via CCTV are nearly impossible for these three sections of sewers within Jackson Street due to the lack of upstream manholes. The unreliable structural condition of the 1930's – 1950's era clay sewers exacerbate the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the

natural environment, and adjacent homes and businesses. Therefore, the No Action alternative was not considered further.

3.2.2.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch and 10-inch gravity sewers on Jackson Street. While this would lower the risk of failure of the pipes, lining would require the laterals to be replaced after lining is complete, leaving the road with an approximately 20-foot-wide trench for every service lateral along the length of the pipe. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe, the deteriorating manholes, or the deteriorating laterals. Additionally, lining these pipes would not address the lack of an upstream manhole on the three sewers lines presented within Jackson Street for replacement leaving maintenance efforts nearly impossible. Therefore, the Rehabilitation alternative was not considered further.

3.2.2.3 Replacement

This alternative would involve replacing the 8-inch and 10-inch gravity sewers on Jackson Street by using the open-cut method. The sewer would be replaced in kind with all appurtenances as well as the additional of upstream manholes based on standard sewer installation practice. Eligible storm sewers in conflict with the sanitary gravity sewer replacement would be replaced within the project area.

3.2.3 Project 3: Jefferson Street

3.2.3.1 No Action

No action could potentially result in sanitary sewer overflows due the structurally failing sanitary sewer. The unreliable structural condition of the 1930's era clay sewer exacerbate the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the No Action alternative was not considered further.

3.2.3.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch and 12-inch gravity sewer on Jefferson Street. Lining would require the laterals to be replaced after lining is complete, leaving the road with an approximately 20-foot-wide trench for every service lateral along the length of the pipe and CIPP lining would also not solve joint offset defects typical within the older clay pipe or the deteriorating laterals. Therefore, the Rehabilitation alternative was not considered further.

3.2.3.3 Replacement

This alternative would involve replacing the 8-inch gravity sewer on Jefferson from M-21 to Lafayette Street and 12-inch gravity sewer on Jefferson Street from Lafayette Street to Webber Street by using the open-cut method. Eligible storm sewers in conflict with the sanitary gravity sewer replacement would be replaced within the project area.

3.2.4 Project 4: Adams Street Alley (Eastern Extents)

3.2.4.1 No Action

No action could potentially result in sanitary sewer overflows due to the significant structural deficiencies found when CCTV inspection was conducted. The unreliable structural condition of the 1930's era clay sewers exacerbate the risk of failure and backups in this area. The sewer passing under the building provides an additional risk if a failure occurs. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the No Action alternative was not considered further.

3.2.4.2 Rehabilitation

The sewer rehabilitation alternative would consist of CIPP lining the sewers within the Adams Street East Alley that have significant structural deficiencies. This alternative would decrease the risk of failure of the sewers in the alley and extend their expected useful life. However, lining does not solve the operation and maintenance issue, nor does

it improve the accessibility of the sewers in the event of a failure. Therefore, investing in the sewers in their current location through rehabilitation was not considered further.

3.2.4.3 Replacement

The sewer replacement alternative involves rerouting the structurally deficient sewers within the alleyway south into the City-owned parking lot between Main Street and Adams Street that is east of Steele Street. The new sewer would be installed such that the sewer lateral lengths would be minimized while installing the sewer main sufficiently far enough away from the foundations of the existing buildings.

3.2.5 Project 5: Adams Street Alley (Western Extents)

3.2.5.1 No Action

No action could potentially result in sanitary sewer overflows due to the large structural deficiencies found when CCTV inspection was conducted. The unreliable structural condition of the 1930's era clay sewers exacerbate the risk of failure and backups in this area. The sewer passing under buildings provides an additional risk if a failure occurs. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the No Action alternative was not considered further.

3.2.5.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch gravity sewer within the alley that flows west and east. While this would lower the risk of failure of the pipes, lining would not solve the joint offsets found in the sewer during CCTV inspection and reconnecting new laterals to the lined pipe would be impossible as the pipe passes under or next to building foundations. Additionally, CIPP lining would also not solve joint offset defects typical within the older clay pipe. Therefore, the Rehabilitation alternative was not considered further.

3.2.5.3 Replacement

This alternative would involve abandoning the existing 8-inch sewer in place and replacing the sewer within the Adams Street West Alley with an 8-inch sewer that serves all adjacent parcels using the open-cut method and is routed to the south where it will connect to the Adams Street trunkline sewer. The sewer would be replaced in this manner to eliminate the sewer currently under existing foundations of several buildings.

3.2.6 Project 6: W. Main Street

3.2.6.1 No Action

No action could potentially result in sanitary sewer overflows due to the large structural deficiencies found when CCTV inspection was conducted. The unreliable structural condition of the 1920's era clay sewers exacerbate the risk of failure and backups in this area. If no action were taken, these sewers would continue to require excessive operation and maintenance attention from the City DPW. The sewers would continue to structurally deteriorate, adding unnecessary risk of contamination of the natural environment, and adjacent homes and businesses. Therefore, the No Action alternative was not considered further.

3.2.6.2 Rehabilitation

This alternative would involve CIPP lining the 8-inch, 10-inch, and 12-inch gravity sewer on W. Main Street. Lining would require the laterals to be replaced after lining is complete, leaving the road with an approximately 20-foot-wide trench for every service lateral along the length of the pipe. CIPP lining would also not solve joint offset defects typical within the older clay pipe or the deteriorating laterals. Therefore, the Rehabilitation alternative was not considered further.

3.2.6.3 Replacement

This alternative would involve replacing the 8-inch to 12-inch gravity sewer and all appurtenances on W. Main Street from M-66 to Yeomans Street using the open-cut method. Eligible storm sewers in conflict with the sanitary gravity sewer replacement would be replaced within the project area.

3.3 Pipe Material

Polyvinyl chloride (PVC) and ductile iron are the two pipe materials most commonly used for construction of new sewers less than 48-inch diameter.

3.3.1 Polyvinyl Chloride (PVC) Pipe / Polyethylene Pipe

PVC pipe and Polyethylene pipe are manufactured from petroleum derivatives, chlorine gas, and vinyl chloride. PVC pipe and polyethylene pipe are sensitive to impacts like ultraviolet light exposure and temperature. According to UNIBELL – the nationally recognized authority on PVC pipe and Polyethylene pipe – the impact resistance of PVC pipe and Polyethylene pipe is reduced by approximately 20 percent when exposed to ultraviolet light for extended periods of time. However, PVC and polyethylene materials are resistant to hydrogen sulfide corrosion which makes them optimal materials for sanitary sewer construction.

As flexible pipe, PVC and Polyethylene are sensitive to the type of materials used for bedding in the trench. The strength of flexible pipe largely comes from the soil supporting the pipe from the centerline of the pipe and below. This requires close attention to proper compaction of the granular backfill. Without proper compaction, flexible pipe can deflect under the static load of the soil column to the point of bursting. Since PVC pipe and polyethylene pipe are sensitive to installation compared to ductile iron, the cost associated with installation can be higher than ductile iron.

Fittings connecting the PVC pipe materials for pressure application occasionally have separated over time, which can cause breaks and sewage flooding.

PVC and polyethylene pipe are more difficult to locate because current locating technologies rely on magnetic properties of the pipe material. Locating PVC pipe and polyethylene pipe materials requires installation of a tracing wire. It is possible that this wire can be cut or corrode over time, which may make locating the pipe more difficult.

In most new gravity sewer construction, PVC sewer pipe is an acceptable and cost effective material. Due to the above concerns with fittings, PVC pipe materials will not be considered for force main projects. Polyethylene pipe only will be considered for pressure application if

it is high density pipe with butt fusion fittings, flanged and mechanical joint adapters or mechanical restraint.

3.3.2 Ductile Iron Pipe

The cost of installing ductile iron pipe may be slightly less than PVC since ductile iron pipe is less dependent on the surrounding soils for its strength. The materials for manufacturing ductile iron pipe are more environmentally friendly than PVC pipe and Polyethylene pipe since it is made from recycled steel.

In select situations, there are numerous advantages to using ductile iron pipe over PVC pipe and Polyethylene pipe. Therefore, ductile iron pipe will be considered in the forcemain applications.

3.4 Method of Construction

3.4.1 Open Cut

Traditional open cut methods of excavation are used extensively in the West Michigan area for installation of most underground public utilities. Although the City of Ionia is a more urban setting, the traffic volumes on many of the roads are not excessive enough to warrant the generally more expensive trenchless technologies currently used today. Open cut construction allows the greatest control of sewer grades in sanitary sewer installation. Many of the projects require slopes far less than traditional trenchless technologies can meet. Open cut will be the preferred method of construction for most applications.

3.4.2 Directional Drill

Directional drilling is the process of using a small, steer-able steel pipe that is guided under the soil to create a pilot hole. The pipe is guided by above-grade monitoring equipment that tracks the depth and location. Once the guided head reaches its location, the host pipe is attached and pulled back through the pilot hole.

Successful directional drilling in gravity sanitary sewer applications requires pipe slopes close to or exceeding one percent. The equipment guidance systems are not accurate enough to install gravity lines with shallower pipe slopes consistently. All projects proposed require minimum slopes much less than 1%.

Installing larger diameter pipes via directional drilling methods can be exceedingly costly when compared to traditional open cut construction. Horizontal directional drilling will only be considered for construction of forcemain where grade is less critical.

3.4.3 Bore and Jack

Bore and Jack is a sewer installation method that involves horizontal boring. A hole is drilled between sending and receiving pits without disturbing the ground surface. A bore machine simultaneously 'jacks' casing while rotating augers remove the soil back to the sending pit.

The bore and jack method of construction is much slower and more costly than traditional open cut methods. However, the bore and jack process can be effective when crossing under areas where surface disruption needs to be minimized. For example, bore and jack can be beneficial when crossing under railroads, heavily trafficked roads, and/or nearby other surface conditions that would be costly to restore. There is no section of sanitary sewer within the project areas that crosses a heavy traffic road where the bore and jack method would be considered within the project. The sanitary sewers within the project areas described are entirely located within residential or lower trafficked commercial neighborhoods. Therefore, the bore and jack method of construction will not be considered as a sewer installation method for the projects in this planning document.

3.4.4 Pipe Burst

Pipe bursting is a trenchless method of pipe replacement where a new pipe of the same or larger diameter is pulled through the existing host pipe while "bursting" the deteriorating pipe. Two pits would need to be excavated on both ends of the pipe. A hydraulic machine would then pull a the new pipe back toward the receiving pit behind the bursting head, which breaks up the brittle host pipe to make space for the new one. Pipe bursting is often used to replace brittle pipes such as cast iron, clay, asbestos cement and concrete. It is common practice to be able to upsize the pipe up to two standard diameter sizes (e.g. 6-inch to 10-inch, 10-inch to 15-inch, etc.) in most cases. Pipe bursting follows the existing pipe alignment and slope.

Pipe bursting is more cost effective when there are fewer lateral connections, when additional capacity is needed, and when ground surface restoration costs are high. Significant bypassing is required for this method. Any sags in the pipe will not be removed with this method. All of

the proposed sanitary sewer replacement projects are located within residential neighborhoods and lower trafficked commercial areas where ground surface restoration costs are relatively low and sanitary sewer lateral connections are high. Therefore the pipe bursting method will not be considered as a sewer replacement method for the sewer replacement projects described in this report.

3.5 Analysis of Principal Alternatives

3.5.1 The Monetary Evaluation

Detailed cost estimates for each alternative are included in Appendix E. EGLE requires a present worth analysis for each project and its alternatives. The present worth analysis seeks to show a monetary comparison of costs for all viable alternatives and the direct impact to sewer users. Factors that are included in the analysis are:

- Capital Costs
- Capitalized Interest Costs
- Operation, Maintenance, and Replacement (OM&R) Costs
- Energy Cost Savings
- Salvage Value of Capital
- Discount Rate Set by the EPA

Several of the factors above are fixed known costs (Capital, Interest, and Salvage Value). Several other factors are variable and are estimated based on best available data (OM&R and Energy Cost Savings). It is anticipated that with improvements to the system, OM&R will be reduced for most sewers. Estimates are used but actual costs will not be known until the work has been completed and real data is available. The reduction in the OM&R on these sewers will allow the City DPW to focus on other locations throughout the City.

Appendix E shows the present worth analysis for each option discussed. Only CWSRF eligible costs are included in the present worth analysis. The cost estimates include all costs associated with engineering, construction, and mitigation cost if necessary.

3.5.2 The Environmental Evaluation

3.5.2.1 Cultural and Historic Resources

If the project is determined by EGLE to be an equivalency project, the City will contact all the local tribal organizations and confirm there are no known cultural resources which may be impacted within the project areas. Additionally, the City is in the process of preparing to submit a section 106 application to the Michigan State Historic Preservation Office (SHPO). A historical evaluation will be performed by Orbis Environmental Consulting who is a State of Michigan approved consultant for this work as well. It is not anticipated that the construction will impact cultural and historic resources because the proposed projects involve the replacement of existing sanitary sewers in previously developed areas.

3.5.2.2 Air Quality

There are no proposed project activities which will affect air quality.

3.5.2.3 Wetlands

There are no wetlands that exist within the proposed project areas (see map in Appendix F).

3.5.2.4 Great Lakes Shorelands, Coastal Zones, and Coastal Management Areas

There is no proposed project work which will affect these areas.

3.5.2.5 Floodplains

Although some of the street improvements being proposed are within Grand River floodplain areas, no cut or fill activities are proposed so there will be no impact to the floodplain. Projects 1 and 3 are in the 100-year floodplain. Floodplains within the project area are shown in Appendix G.

3.5.2.6 Natural or Wild and Scenic Rivers

There is no proposed project work which will affect natural or Wild and Scenic Rivers.

3.5.2.7 Major Surface Waters

There is no proposed project work which will affect the Grand River or other major surface waters.

3.5.2.8 Topography

The elevation of the existing wastewater collection system is lowest through the center surrounding the Grand River where it drops to approximately 630 feet above elevation. The norther portion of the service area reaches up to approximately 830 feet above sea level and the southern portion extending into Berlin, Ionia, and Orange Townships reaches up to approximately 810 feet above sea level. There are no proposed topographical changes in any of the proposed projects. A topographic map of the City can be seen in Appendix H.

3.5.2.9 Geology

The bedrock below the service area consists of Red Beds of Jurassic Age and the Saginaw Formation of Pennsylvanian Age. The Saginaw Formation underlies the Red Beds and consists of sandstone and shale containing limestone, coal, and gypsum.

3.5.2.10 Soil Types

Local soils consist primarily of sand and loam, with the loam concentrated primarily near the Grand River. Minimal import or export of soils are anticipated for the proposed project.

3.5.2.11 Agricultural Resources

All the proposed improvements to the wastewater collection system will be within Ionia City's urban area and is not anticipated to impact any farmlands.

3.5.2.12 Fauna and Flora

The proposed project work is located within and directly adjacent to the existing road right-of-way in previously developed urban areas and is not anticipated to impact fauna or flora within the project areas. Although the Karner Blue *Plebejus samuelis* (Threatened) have the potential to be encountered, the primary threat to this species is a loss of habitat. Karner Blue larvae eat wild lupine only, which thrive in oak savannas,

sand prairies, and pine barrens. Because replacing the water services will be contained to previously disturbed urban areas, the work is unlikely to affect the Karner Blue's habitat.

Although the habitats of the Indiana bat (endangered) and the Northern long-eared bat (threatened) have the potential to be encountered as they typically roost under bark or in crevices in trees, no tree removals or trimming are planned as part of the project. If tree removal or trimming is required, tree cutting will be limited to the time periods between October 1 and March 31, to protect young bats that are not able to fly. If tree cutting is required to be performed outside of this season, surveys of the trees will be performed to determine whether they are roost trees for the endangered Indiana bat or the threatened Northern long-eared bat prior to tree cutting. No other habitat impacts are anticipated.

3.5.2.13 Contaminated Sites

The City of Ionia has some past and present industries that have contaminated the soil and groundwater in various areas throughout the City. A map of the project areas in Appendix I highlight all the known contamination sites throughout the City that are proximate to the proposed project sites.

Potential contamination appears to be concentrated near the Adam Street project (Project 1). Contaminated areas will be reviewed in more detail during the design process of these projects. If contamination is suspected when soil borings are collected or during construction, groundwater samples will be taken to identify if contamination is present at the location. Pretreatment of dewatering or discharge into the sanitary sewer may be required depending on the situation. EGLE will be consulted so as to not cause the contamination to spread.

3.5.2.14 Navigable Waters

None of the proposed work is located in navigable waters under the jurisdiction of the United States Army Corps of Engineers (USACE).

4 Selected Alternative

4.1 Description of the Selected Alternative

Figure 2 shows the selected wastewater system improvement locations in the City's wastewater collection system. A summary of the selected alternatives including brief descriptions and cost estimates is included in Table 2.

General scopes of work were developed in this project planning document and are included in the project cost estimates to make a preliminary determination of project eligibility. Detailed scopes of work and bases of design were not developed as part of this planning document. Detailed bases of design, including existing and proposed flows and capacities will be provided for all projects when a funding source has been identified and when design engineering has been authorized.

4.1.1 Project No. 1: Adams Street – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 4,800 feet of sanitary sewer and all appurtenances along Adams Street within the right-of way. The project extents are from M-66 to Jackson Street intersection. The City is also proposing to replace the roadway within the project area using CWSRF FY2027 funding.

The estimated project cost is $5,591,000.

The estimated CWSRF eligible project cost is $4,472,000.

4.1.2 Project No. 2: Jackson Street – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 650 feet of sanitary sewer and all appurtenances along Jackson Street from Lafayette Street to Adams Street. This includes upstream manholes for maintenance on all three sections of sewers being replaced in Jackson Street. The City is also proposing to replace the roadway within the project area using CWSRF FY2027 funding.

The estimated project cost is $1,024,000.

The estimated CWSRF eligible project cost is $889,000.

4.1.3 Project No. 3: Jefferson Street – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 2,900 feet of sanitary sewer all appurtenances along Jefferson Street from Webber Street to M-21. The City is also proposing to replace the roadway within the project area using CWSRF FY2027 funding.

The estimated project cost is $3,177,000 (CWSRF eligible).

4.1.4 Project No. 4: Adams Street Alley (Eastern Extents) – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 550 feet of sanitary sewer and all appurtenances within the alley south of Main Street, north of Adams Street, east of Steele Street, and west of Depot Street. This sewer will need to be routed away from the Main Street building foundations and into the City parking lot for maintenance purposes and tied into the existing sewer on S. Steele Street. The area of the parking lot that is disturbed due to sewer installation will be patched and replaced using CWSRF FY2027 funding.

The estimated project cost is $499,000 (CWSRF eligible).

4.1.5 Project No. 5: Adams Street Alley (Western Extents) – FY2027

Design Parameters

Alternative No. 1. The proposed project will replace approximately 570 feet of sanitary sewer within the alley north of Adams Street, south of W. Main Street, west of Steele Street, and east of M-66. The existing sewer that flows under building foundations and will be abandoned in place and replaced with an 8-inch sewer that is rerouted south through the an easement withing the parking lot to connect to the

Adams Street trunk sewer. The area of the parking lots that are disturbed due to sewer installation will be patched and replaced using CWSRF FY2027 funding.

The estimated project cost is $355,000 (CWSRF eligible).

4.1.6 Project No. 6: W. Main Street - Future

Design Parameters

Alternative No. 1. This proposed project is being proposed as a future project within this planning document. The proposed project will replace approximately 1,650 feet of sanitary sewer and all appurtenances along W. Main Street from Yeomans Street to M-66. The City is also proposing to replace the roadway within the project area using future CWSRF funding.

The estimated project cost is $1,858,000.

The estimated CWSRF eligible project cost is $1,642,000.

4.2 Project Schedule

The table below is a schedule for the proposed wastewater collection system improvement project intended for Projects No. 1 through 5. They would be funded under the fourth quarter of fiscal year 2027. The projects may be phased over multiple construction seasons.

CWSRF Project (4th Quarter 2027)
Proposed Project Schedule

Milestone	Date
Public Advertisement	April 13, 2026
Hold Public Hearing	April 28, 2026
Submit Final Project Plan to EGLE	May 1, 2026
Receive Approval of Project Plan	September 2026
Plans and Specifications Approved	May 2027
Receive Construction Permit	May 2027
Receive Construction Bids	June 2027
CWSRF Loan Closing	August 2027
Begin Construction	September 2027
Construction Complete	August 2030

Project No. 6 (W. Main Street) is being planned as future project with the exact schedule to be determined.

4.3 Cost Estimates

Appendix E contains cost estimates for the proposed wastewater system improvements. The project costs include construction costs and approximately 30% for construction contingencies, legal, administrative, and project engineering costs.

4.4 Implementability

Implementation of the proposed project is based on the assumption that the project will be financed by a low-interest loan from the CWSRF program. City of Ionia has the necessary legal, institutional, financial, and managerial resources available to ensure the construction, operation and maintenance of the proposed facilities.

4.5 Users Costs

Project plan document process requires the applicant to perform a Present Worth analysis of the various options. The Present Worth analysis (Appendix J) uses discount factors that reduce the annual expenses compared to what the annual bond payment would be. Appendix K contains the annual cost summary and provides the worst-case scenario where the proposed bond payment will not be reduced by any anticipated discounts related to salvage value, reduction in OM&R, energy savings, and principal forgiveness.

The City anticipates funding the FY2027 projects with an estimated $9,392,000 CWSRF loan. Assuming a 2.75% interest rate for a 30-year period, the expected annual debt service for the load will be approximately $463,818 per year. This translates to an annual cost of about $35.67 per REU or $2.97 per REU per month in the City based on total present worth.

In combination with the City's recent asset management planning efforts, the City has been working on financial plans to address needed capital improvement projects over the next several years. A more detailed rate analysis will be conducted if these projects are funded through the DWSRF program. The City is anticipating increasing sewer rates by approximately $17.00 per REU per quarter to pay for the work. Payments on CWSRF loans are expected to be covered through rate adjustments. Consideration will also be given to making sure rates are as affordable as possible.

4.6 Useful Life

The City of Ionia intends to pay back the CWSRF loan on a 30-year amortization schedule. EGLE guidance requires that the loan terms must not exceed the useful life of the project. All projects are involve sanitary gravity main sewer replacement. The expected useful life for new sanitary sewer mains, laterals, and manholes is approximately 75 years. For all of these projects, the useful life far exceeds the length of the loan terms.

5 Evaluation of Public Health and Environmental Impacts

5.1 General

The anticipated environmental impacts resulting from the construction of the selected plan include beneficial and adverse, short and long-term, and irreversible and irretrievable. The following is a discussion of the anticipated environmental impacts of the selected plan.

5.1.1 Beneficial Impacts

- Construction activities associated with the wastewater system would occur primarily within existing road rights-of-way and alleys; construction will be confined to the section of sanitary sewer being replaced minimizing disturbance to residents.
- Construction and equipment manufacturing related jobs would be generated.
- Local contractors would have an equal opportunity to bid on the construction contracts.
- Preservation of existing water quality.
- No construction of new roads or development.
- Allow City DPW to refocus operation and maintenance efforts toward previously neglected activities.
- New sewer infrastructure will be maintainable.
- New sewer infrastructure will be accessible in the event of an emergency.
- Improvement of existing roads.
- No increased stormwater runoff.
- Improvement of stormwater quality.
- No disruption to fish and wildlife.
- No detrimental impacts on air quality.

- Improved soil erosion control.
- No negative impact on the surrounding groundwater.
- Lower consumption of energy and natural resources due to reduced I/I.
- No impact on historic sites, archaeological sites, cultural sites, or recreational areas.
- No impact on threatened or endangered species.
- More reliable wastewater collection system.

5.1.2 Adverse Impacts

- Noise and dust would be generated during construction of the project.
- Traffic disruptions.
- Use of energy and natural resources.

5.1.3 Short and Long-Term Impacts

The short-term adverse impacts associated with construction activities would be minimal, and mitigable, in comparison to the resulting long-term beneficial impacts.

5.1.3.1 Short Term Adverse Impacts

- Traffic disruption.
- Dust and noise.
- Use of energy and natural resources.
- Construction safety hazards – the projects will be designed with the overall health and safety of construction workers and operators in mind, although construction site safety is the Contractor's responsibility.

5.1.3.2 Short Term Beneficial Impacts

- Construction activities associated with the wastewater collection system would occur primarily within existing road and alley rights-of-way or easements and outside of the road pavement minimizing disturbance to residents.
- No disruption to fishing and recreational boating
- No disruption to fish and wildlife
- Roads would be reconstructed where they are impacted by the replacement of the existing sewers.

- Construction and equipment manufacturing related jobs would be generated.
- Local contractors would have an equal opportunity to bid on the construction contracts.
- No detrimental impacts on air quality.
- No negative impact on the surrounding groundwater.
- No impact on prime or unique agricultural lands.

5.1.3.3 Long Term Adverse Impacts

- None

5.1.3.4 Long Term Beneficial Impacts

- A more reliable and resilient wastewater collection system.
- A wastewater system with appropriate pipe capacities.
- Lower operation and maintenance costs for new manholes and sewers.
- Reduced infiltration and inflow.
- Increased manhole and sewer accessibility.
- Reduced risk of sanitary sewer overflows and contamination of surface waters.
- No increased stormwater runoff.
- No impact on historical sites, archaeological sites, cultural sites, or recreational areas.
- No impact on threatened or endangered species.
- Recycle and reuse natural resources.

5.2 Analysis of Impacts

5.2.1 Direct Impacts

Based strictly on the location of the six projects (Figure 2), it is not expected that there will be long-term impacts to wetlands or floodplains. There is a potential to impact endangered species depending on their presence within the project areas. Impact to the endangered species will be avoided were possible. If impact is unavoidable, it will be minimized and mitigated, if necessary, and all permits will be obtained.

5.2.1.1 Wetlands

It is anticipated that none of the projects will impact any wetlands.

5.2.1.2 Floodplains

All projects will be landward of the ordinary high-water mark. Some of the project work will take place within the 100-year floodplain, however, all soil removed will be replaced to existing grade. When it becomes time for this project to be designed, regulated wetlands and floodplains will be delineated, if necessary, and all required permits will be applied for.

5.2.1.3 Other Resources

The construction of the proposed project should have no effect on historic, archaeological, geographic, cultural or recreational areas, as most construction activities would be confined to existing developed sites and within road rights-of-way or existing sewer easements. Previously referenced figures show the proposed construction locations for the project. No residences or businesses would be relocated.

The projects will not detrimentally affect the water quality or air quality in the area, Water quality can be protected during construction via turbidity curtains and proper bank stabilization.

The CWSRF program requires competitive bidding for all projects exceeding $50,000. This will allow a larger number of contractors to bid on the projects compared to projects that would be solicited to a short list of contractors. Construction-related jobs may be created due to the amount of work anticipated to be completed in the next few years.

The proposed projects are not intended to extend or construct new road to previously undeveloped lands within the work areas. The proposed work is to replace or improve an existing wastewater collection system to better serve its existing customers.

In most cases, portions of existing road will be replaced since the proposed sewer main may be located in segments of the road pavement. This reconstruction of existing roads would bring them into current standards of road construction and improve safety.

5.2.2 Indirect Impacts

The proposed wastewater facilities are sized to provide service for 20 years of future growth in the study area, based on current trends. Future growth in the study area will not greatly alter the character of the area. Future growth would be subject to conformance with the land use and zoning plans of City of Ionia.

5.2.3 Cumulative Impacts

Providing a more reliable wastewater collection system with new updated equipment and structures to the customers of the system would be the primary cumulative impact anticipated from the construction of the project.

6 Mitigation

6.1 Short Term Construction Related Mitigation

Standard procedures used in the construction industry will be included in the construction contract documents to mitigate construction activities.

6.1.1 Traffic Disruption

All projects are located in road and alley rights-of-way and in sewer easements where streets, parking areas and pedestrian facilities may be impacted. All components of the project will be coordinated carefully with residences and businesses in the area, and construction methods will be selected to minimize disruptions.

Standard traffic and safety control devices such as barricades and lighted barrels will be in place to warn and protect residents during construction activities.

6.1.2 Dust and Noise

Dust control methods such as water and/or brine will be used to keep dust to a minimum. All haul roads and public roadways will be swept daily and maintained to assure residents access to the area. Construction equipment will be maintained in good condition to decrease noise.

6.1.3 Soil Erosion

Soil erosion and sedimentation control measures such as straw bales, sedimentation basins, and silt fence, will be part of the construction activities to prevent soil release and protect streams and wetlands.

6.1.4 Wastewater Service Disruption

During construction of the wastewater projects, residents and businesses existing sewer services must be transferred to the sewer mains. This typically will require the use of bypass pumping.

6.1.5 Working in Floodplains

Although some of the service replacements are within Grand River floodplain areas, no cut or fill activities are proposed so there will be no impact to the floodplain. Floodplains within the project area are shown in Appendix G.

6.1.6 Working in Wetlands

It is anticipated that none of the projects will impact any wetlands. Appendix F shows wetlands within the City of Ionia in relation to the proposed project areas.

6.1.7 Potential Loss of Wildlife / Habitat

The proposed projects are located in urbanized, highly developed areas. The majority of construction would occur within road and alley right-of-ways. Therefore it is unlikely that construction would impact habitats of the endangered and threatened species within the study area. During the design phase of the projects, appropriate investigation will be performed and permits will be obtained in order to ensure that all endangered or threatened species are protected.

If trees are required to be cut down for any project, tree cutting activities will be limited to the time periods between October 1 and March 31, if possible. If tree cutting is performed outside of this season, surveys of the trees will be performed in order to determine whether they are roost trees for the endangered Indiana bat or the threatened Northern long-eared bat.

6.2 Mitigation of Potential Long-Term Impacts

General construction activities in the wastewater system improvements will prohibit the disposal of soils in wetlands, floodplains, or other sensitive areas. Catch basins will be protected on the distribution system where earth changing activities will take place.

6.2.1 Permits

All Part 41 construction permits will be obtained. It is not anticipated that permit applications will be required from EGLE for wetlands (Part 303) or inland lakes and streams (Part 301). An EGLE permit for construction within the 100-year floodplain (Part 31) will be submitted and permits obtained for Projects 1 and 3. Permit applications for soil erosion and sedimentation control (SESC) will be submitted and permits obtained Ionia County Drain Commission.

6.2.2 Use of Natural Resources

As a result of the sewer main construction, natural resources such as gravel, sands, oil, and fuels will be utilized and consumed. To minimize the impact on the natural resources a number of mitigation techniques will be utilized during the construction.

The use of erosion control measures will be composed of recycled or natural products that do not use or use less synthetic materials made from oil.

6.2.3 Energy Use

The use of energy is inevitable in operating wastewater lift stations, maintaining sewer infrastructure, and producing materials used for construction. Using recycled or natural eco-friendly products as part of the construction process will use less energy compared to using nonrenewable resources. The use of the recycled and/or eco-friendly products will not completely mitigate the use of all energy but it will offset a small percent.

An additional benefit of the Project Planning Document is that the volume of I&I is likely to decrease due to the replacement of leaky, structurally deficient sewers throughout the City. This will result in reduced energy demand for pumping and treating the wastewater.

6.3 Mitigation of Indirect Impacts

There are no major projected changes in the land use of the study area that would significantly impact wastewater flows. A copy of the zoning and land use maps for the City are included in Appendix B. All of the projects are proposed in order to replace existing sewer and infrastructure. None of the proposed projects are located in areas where significant growth or land use changes are projected to occur.

All of the community's ordinances can be found on their website. General rules are the same as EGLE permits require, such as storm water containment, and soil erosion and sedimentation control.

Tables

Table 1 **Historical and Projected Population**

Table 2 **Summary of Selected Alternatives**

Table 1 - Historical and Projected Population

	Actual Census Figures			Forecasted Population					
Location	**2000**	**2010**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
City of Ionia*	6,172	6,132	6,582	6,658	6,734	6,810	6,886	6,962	7,038
Ionia County**	63,905	64,064	66,804	66,713	66,622	65,876	65,129	63,261	61,392

*Ionia City Population Projections through 2050 are from the City of Ionia's current Master Plan.

**Ionia County Population Projections through 2050 are from the Michigan Department of Technology, Management and Budget.

Table 2 - Summary of Selected Alternatives

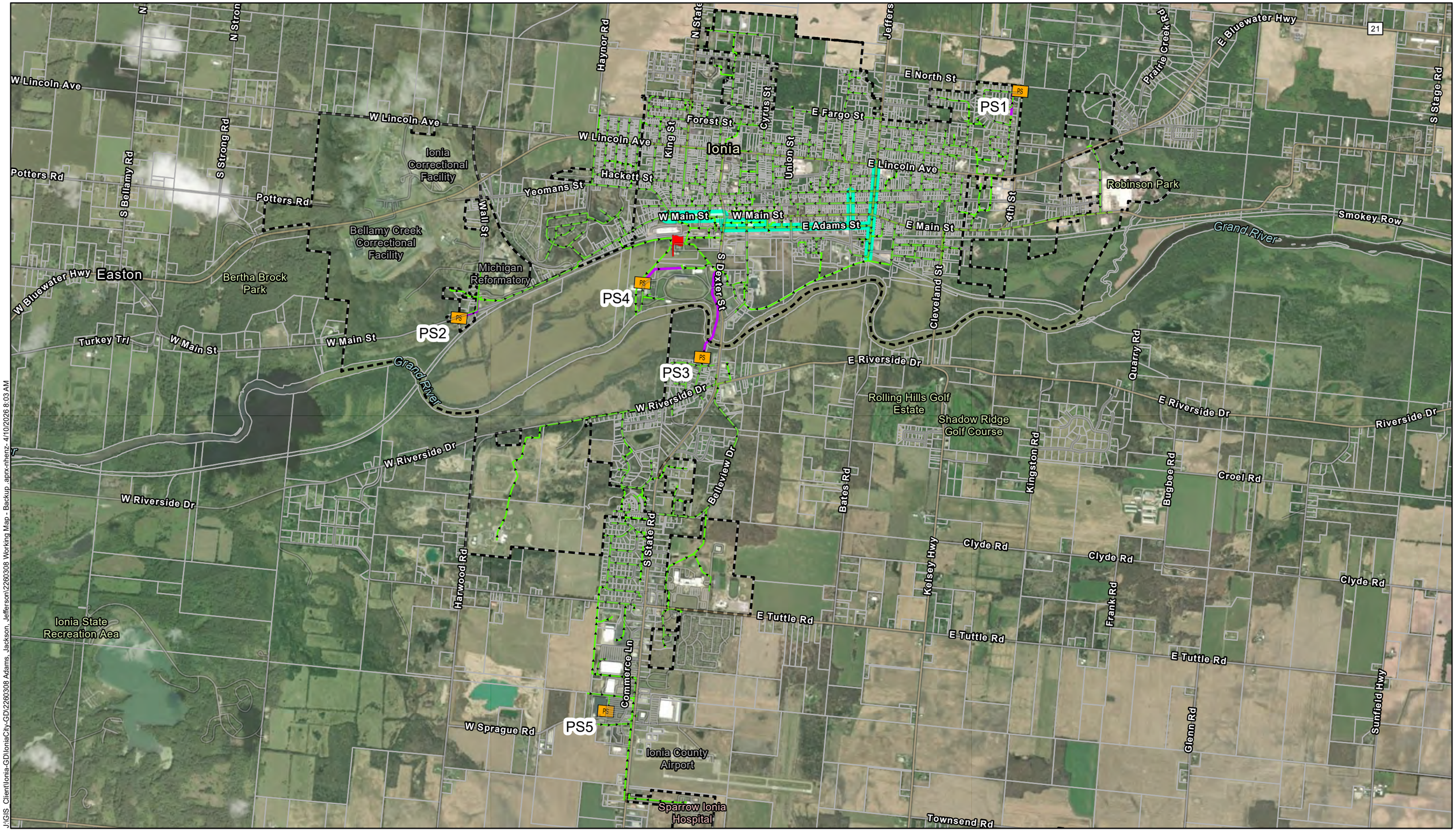
Project #	Year	Project Title	Project Description	Summary of Project Need	CWSRF Eligible Cost Estimate	Total Project Cost Estimate
1.	FY27	Adams Street	The proposed project will replace approximately 4,800 feet of sanitary sewer and all appurtenances along Adams Street within the right-of way. The project extents are from M-66 to Jackson Street intersection.	The sewer on Adams Street that flows from S. Jackson west to M-66 is structurally deteriorated. PACP results show that these sewers on Adams Street have various breaks, holes with soil and voids visible, fractures, cracks, and joint offsets. A project is needed to address the structural deterioration of the Adams Street Sewer.	$ 4,472,000	$ 5,591,000
2.	FY27	Jackson Street	The proposed project will replace approximately 650 feet of sanitary sewer and all appurtenances along Jackson Street from Lafayette Street to Adams Street. This includes upstream manholes for maintenance on all three sections of sewers being replaced in Jackson Street.	The three dead end sewers do not have upstream manholes for maintenance. Without the upstream manholes, it makes it difficult for operations and maintenance. CCTV inspections could not fully inspect any of the three sewers because the camera couldn't make it past mid-pipe diameter changes and the presence of deposits within the pipe. It is assumed that the condition of the sewers beyond what was unable to be inspected is consistent with the failing condition witnessed in the portions of the sewers that were accessible by CCTV. A project is needed to address the aging and deteriorating clay sewers, and the inability for maintenance and inspection to be conducted.	$ 889,000	$ 1,024,000
3.	FY27	Jefferson Street	The proposed project will replace approximately 2900 feet of sanitary sewer all appurtenances along Jefferson Street from Webber Street to M-21. This includes replacing the sewer on the southern extents of the project with the necessary slope to continue flow to the 24-inch trunkline sewer near the river.	The sewer on Jefferson Street was inspected using PACP scoring and found to have significant structural failures throughout. Structural failures include multiple cracks and fractures, joint offsets and separations, breaks, holes with soil visible, and sags. Furthermore, the sewer has root intrusions at various joints, and the upstream end of the sewer has significant infiltration (runners, weepers, and infiltration stains). A project is needed to address the aging and failing clay sewer and reduce the risk of failure for a critical sewer within the collection system, especially given its proximity to the Grand River.	$ 3,177,000	$ 3,177,000
4.	FY27	Adams Street Alley (Eastern Extents)	The proposed project will replace approximately 550 feet of sanitary sewer and all appurtenances within the alley south of Main Street, East of Steele Street. This sewer will need to be routed farther from the Main Street building foundations for maintenance purposes and tied into the existing sewer on S. Steele Street.	All the businesses and buildings along the core stretch of Main Street within Ionia are served by sanitary sewer through an alley behind the parcels south of Main Street, east of Steele and north of Adams Street. The eastern extents span between S. Depot Street and connect to the 12-inch sewer to the west on Steele Street. This 8-inch sewer passing through the City-owned lot south of Main Street was CCTV inspected to confirm structural failure concerns. The sewer is structurally deficient and has multiple sags, multiple breaks with soil visible, multiple holes with soil visible, and cracks and fractures throughout.	$ 499,000	$ 499,000
5.	FY27	Adams Street Alley (Western Extents)	The proposed project will replace approximately 570 feet of sanitary sewer within the alley west of Steele Street and south of Main Street. This sewer flows under building foundations and will need to be abandoned in place and replaced with an 8-inch sewer that is routed south through the parking lot to connect to the Adams Street trunk sewer.	The Western extents of the sewer have two sections. This section of sewer is located south of the buildings on W. Main Street and west of S. Steele Street and flows under several foundations. The western extent of this 8-inch sewer shares an upstream manhole with the eastern extent and flows to the west out to M-66. The sewer passes next to or under the foundation of 439 W. Main Street. The eastern 8-inch sewer flows east to the 12-inch sewer on Steele Street. This sewer main is located south of the buildings on W. Main Street and west of S. Steele Street and flows under several building foundations. Furthermore, both of the 8-inch sewers were assessed using PACP and found to have significant structural deficiencies including medium and large joint offsets, fractures, and breaks with soil visible. The location of this sewer causes routine maintenance and any emergency response to be extremely difficult. The clay sewer has structural deficiencies such as fractures, holes, sags, and breaks.	$ 355,000	$ 355,000
6.	Future	W. Main Street	The proposed project is being proposed as a future project within this planning document. The proposed project will replace approximately 1650 feet of sanitary sewer and all appurtenances along W. Main Street from Yeomans Street to M-66.	This 1930s era clay gravity sewer is reaching the end of its usable life and is suspected to have significant structural issues based on institutional knowledge and the City's experience with clay pipes approaching 100 years old within the collection system.	$ 1,642,000	$ 1,858,000
					Total FY2027 Cost:	**$ 9,392,000**	**$ 10,646,000**
					Total Future Cost:	**$ 1,642,000**	**$ 1,858,000**

Note: The City has also applied for DWSRF funding for water main and water service replacement within project areas for projects 1, 2, 3, & 6. Drinking water improvement costs are not included in the CWSRF eligible cost estimates or the total cost estimates shown above.

Figures

Figure 1: Existing Wastewater Collection System Map

Figure 2: Selected Improvements Map



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SCALE: 1" = 2,500 '

LEGEND

- Sanitary Gravity Main
- Sanitary Force Main
- Sanitary Pump Station
- WWTP
- Ionia County Tax Parcels
- CWSRF Project Extents
- City of Ionia Boundary

CITY OF IONIA

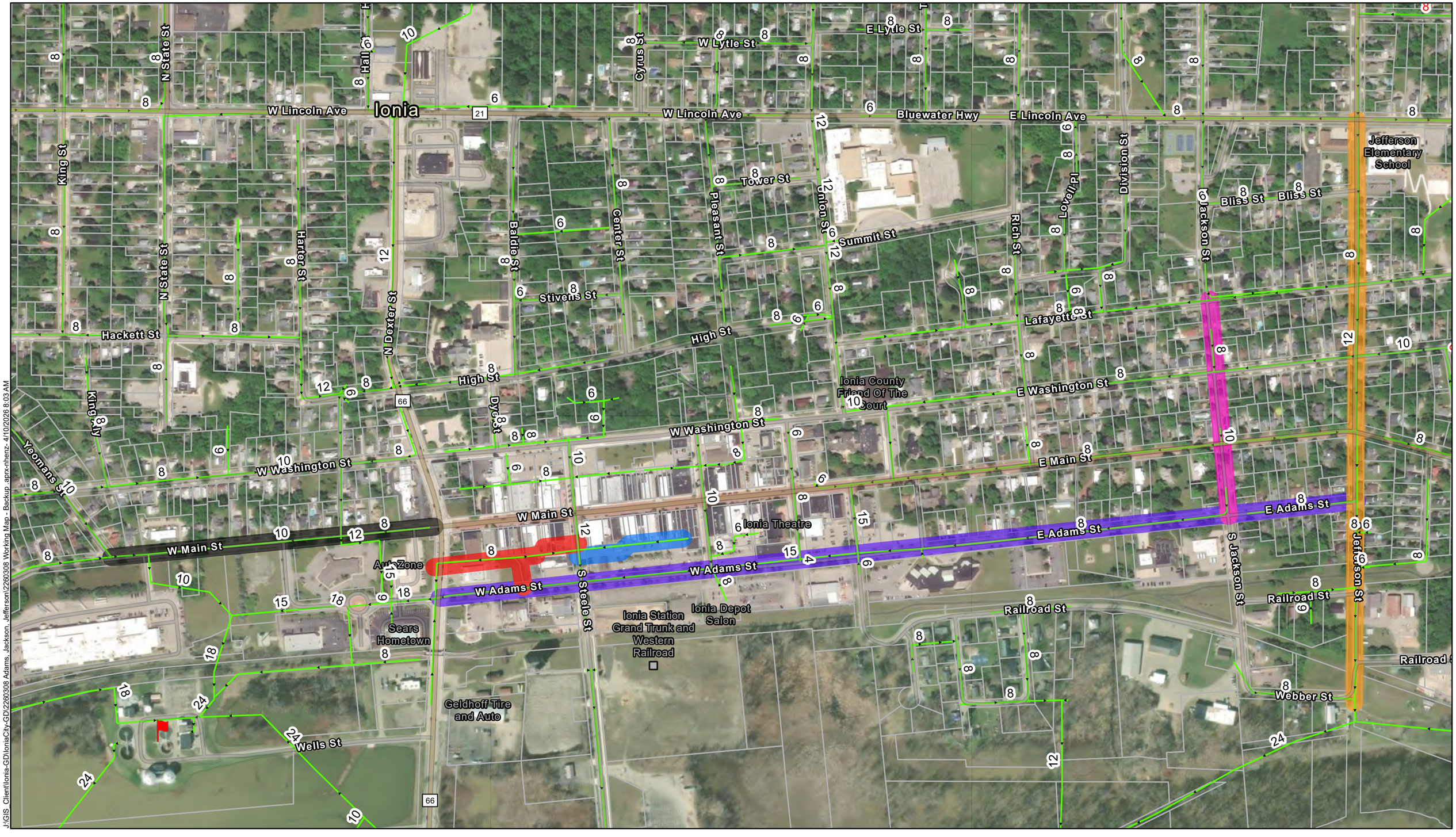
IONIA COUNTY, MICHIGAN

EXISTING WASTEWATER COLLECTION SYSTEM

FIGURE 1

Prein&Newhof

2260308



SCALE: 1" = 400 '

LEGEND

- WWTP
- Sanitary Gravity Main
- Ionia County Tax Parcels
- Project 1: Adams Street
- Project 2: Jackson Street
- Project 3: Jefferson Street
- Project 4: Adams Street Alley (Eastern Extents)
- Project 5: Adams Street Alley (Western Extents)
- Project 6: W. Main Street

CITY OF IONIA

IONIA COUNTY, MICHIGAN

SELECTED IMPROVEMENTS

FIGURE 2

Prein&Newhof

2260308

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Appendix A

Wastewater Asset Management Plan



WASTEWATER ASSET MANAGEMENT PLAN

City of Ionia, MI

April 2026

DRAFT

CITY OF IONIA

INTRODUCTION

Our Mission

The City of Ionia operates a wastewater collection system, which pumps to a County owned wastewater treatment plant that serves several other municipal entities near the city. The City of Ionia is committed to supporting public health and safety through the ongoing management of the public wastewater system we operate and to providing this essential public service for citizens served by the system in a sustainable way. We plan to pursue this mission by implementing asset management.

Asset Management

Asset management is the way to achieve sustainable infrastructure. All infrastructure deteriorates with age and requires proactive management to operate, maintain, repair, and eventually replace each physical component, or asset. This progression over time, from routine operation and maintenance through repairs and eventual replacement, is the asset's life cycle. Waiting to perform maintenance or make repairs can save money in the short term but may decrease the life expectancy of an asset. On the other hand, replacing an asset before it fails may not take full advantage of the asset's value. It is this balance which puts the decisions for operations, maintenance, repair, and replacement actions at the heart of asset management.

Asset management is an evaluation of needed actions after considering the condition of an asset, the consequences of an asset failure, and the action alternatives available. The solution that provides the lowest life cycle cost at the desired level of service is implemented.

Our Wastewater System

The City of Ionia wastewater system includes a network of underground pipes, structures, and lift stations, which collects wastewater from homes, businesses and other sewer customers and pumps to a treatment plant owned by the county of Ionia that also treats wastewater from several other communities before discharging to surface water and/or ground water. The system consists of approximately 51 miles of gravity sewer and one mile of force main, 1,052 manholes, five pump stations, and a Water Resource Recovery Facility (WRRF), with a capacity of 4 million gallons per day (mgd). The WRRF is owned and managed by the Ionia Regional Utilities Authority.

About this Document

This document is our Wastewater Asset Management Plan. It outlines our wastewater system goals and summarizes how we will apply the principles of asset management to achieve the goals. As we implement asset management, we will periodically update our Wastewater Asset Management Plan to ensure a continuing renewal of our commitment to best management practices for our community.

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Appendix A - Maps

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- **Map 6: Consequence of Failure**
- **Map 7: Criticality**
- **Map 8: Pipe Ownership**

Appendix B – Water Main Inventory and Statistics

Appendix C – Capital Improvement Plan

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A MICHIGAN FIRM, WORKING FOR MICHIGAN

[2260308]

PART 1: DEFINING OUR GOALS

WHAT IS OUR DESIRED LEVEL OF SERVICE?

Our mission is to process our wastewater and recycle the fresh water in it for release into the environment. We will proactively manage our wastewater collection and treatment assets to meet our desired LoS goals.

Our community, as owners, must decide the LoS we want. Many factors play into this determination including: compliance with regulations, public health, aesthetics, service reliability, stable rates, etc. We have established these primary goals:

Goal 1: Minimize Service Interruptions

Service interruptions are an inevitable part of operating a wastewater system and can be caused by many factors such as equipment failure, power outages, clogging, excessive flows, as well as repair and replacement operations. Our goal is to minimize service interruptions by proactively managing and investing in our system. We plan to periodically review records of service interruptions to identify possible preventative actions.

Goal 2: Meet Regulatory Discharge Requirements

The City of Ionia's wastewater collection system discharges to the Water Resource Recover Facility. The WRRF is managed by the Ionia Regional Utilities Authority who is ultimately responsible for a permit or final discharge to waters of the State. However, it is our goal to eliminate unauthorized or accidental discharges to surface waters by maintaining our collection system in good working order.

Goal 3: Minimize Public Hazards

Sewer breaks can cause significant damage, not only to the streets above them but also to adjacent utilities and property. Sewer breaks/blockages may cause sewer backups which are a health concern and often damage property. Our goal is to have fewer than 5 sewer breaks and 10 backups a year.

To minimize the potential for breaks, sewers or equipment at risk of failure will be improved or replaced as part of our capital improvement and operation and maintenance programs. To minimize the potential for damage from breaks and/or backups, the City of Ionia will continue to maintain staffing levels to provide emergency response services 24 hours per day, 7 days per week.

Goal 4: Manage Storm Water Inflow and Ground Water Infiltration

Storm water inflow through sources like roof drains and catch basins can cause sewer overflows and backups. Groundwater infiltration, if severe enough, can cause backups. Both inflow and infiltration (I/I) take up flow/treatment capacity. I/I reduces our capacity to collect and treat wastewater. It also increases our treatment costs. We will find and cut out sources of I/I wherever it is cost-effective to meet the Federal EPA guidelines for I/I and to minimize the potential for sewer overflows and back-ups. Reducing the I/I can also reduce costs to transport and treat the wastewater. We also will remove identified storm water connections.

Goal 5: Provide Capacity for Community Growth

We will maintain our wastewater assets to offer adequate capacity for existing development and will plan for improvements to allow growth. We will control expansion by balancing needs for community redevelopment/infill and desires for new development.

Goal 6: *Minimize Life Cycle Costs*

The best financial decisions are those which achieve the lowest life cycle costs. This means we consider the full life cycle of each time we evaluate improvements to our system. Short term fixes, while they may have low immediate costs, may not be the best long-term financial decision. Likewise, not spending money on maintenance and repairs can give short term cost savings but result in asset failure, increasing life-cycle costs. We intend to manage our system to always to pursue the lowest life cycle cost possible for each system asset while maintaining our desired level of service.

Goal 7: *Partner Communities*

Our wastewater system serves not only our residents but also the community of Berlin Township. This makes us all co-owners. As co-owners, we must work together to manage our wastewater system. We set up regularly scheduled coordination efforts with our utility partners to facilitate communications regarding O&M, capital improvements, and rates.

PART 2: INVENTORY

WHAT DO WE OWN?

Program Status

An inventory of wastewater system assets is currently being updated. This includes manhole inventory of material, size, rim elevations, and structural installation year. Current manhole locations and sizes are populated within the GIS inventory based on record drawings.

System inventory data is maintained in our Geographic Information System (GIS). The GIS provides convenient access to system inventory information through digital maps which can be accessed both by administrators and maintenance crews.

Our Wastewater System

Our wastewater system dates back to the early 1900's. The majority of our collection sewers were installed prior to the mid-1900's and consist of clay tile pipe. Pipes installed after the mid-1980's are predominately PVC (plastic).

Our system includes 272,944 feet of gravity sewer pipes ranging from 2-inch to 24-inch in diameter, 5,800 feet of force main pipes ranging from 2-inch to 12-inch diameter, and 1,120 manholes. Five grinder pump stations serve areas that cannot be served by gravity. The wastewater collection system convenes at the Ionia Regional Utilities Authority.

Our Plan

We will keep our system inventory current by storing records of our wastewater system in our Geographic Information System (GIS). A GIS contains maps of all collection system assets, lift stations, and the treatment plant along with an inventory of non-pipe assets (equipment, buildings, etc.) and asset data pertinent to Operations, Maintenance, and Replacement.

Our Program

When the wastewater system is altered, either by construction of new assets or rehabilitation/replacement of existing assets, we will maintain records of each water project in our GIS system.

Distribution System

We will maintain data on pipe materials, installation dates, sizes, and any other pertinent information which will assist with our asset management program. Pipe locations will be determined based on record drawing information.

This current information on our system is shown on the following maps provided in Appendix A:

Map 1: Diameter

Map 2: Year Installed
Map 3: Pipe Material

Statistics on the breakdown of size, age, and material are shown in Appendix B.

Assets within our pump stations will be tracked using spreadsheet based inventories that can be used to track conditions, schedule regular O&M activities and create financial projections for future replacement.

Wastewater Treatment

The wastewater treatment facility operated by IRUA is identified in our GIS system. Assets within our treatment facility will be tracked using spreadsheet based inventories that can be used to track conditions, schedule regular O&M activities and create financial projections for future replacement.

Other Assets

The City of Ionia maintains an equipment pool for all equipment and other assets such as such as trucks, loaders, generators, and backhoes, but these are not specifically assets of the water system. The city administration and the Department of Public Works tracks informational data such as manufacture date, purchase price, maintenance budget, and warranty information.

PART 3: PROBABILITY OF FAILURE

WHAT ARE THE CONDITIONS OF OUR ASSETS?

Program Status

An asset condition rating system has been developed for each type of asset in the system inventory. All assets are rated on a scale of 1-5 with 5 representing the worst condition, or highest risk of failure. Sewer pipes and manhole ratings are based on inspections of the assets. Force main ratings are estimated from the pipe age and material inventory, and local and industry break history correlations. Lift station ratings are based on visual inspection and performance testing.

Condition rating information is incorporated into the GIS with the asset inventory. A variety of pipe materials including vitrified clay pipe (heat-treated clay) and concrete pipe were the main choices for collection sewers in North America for many decades. Clay pipes are brittle and may crack. Root intrusion at joints is a significant problem. Concrete pipe succumbs to hydrogen sulfide corrosion over time under certain conditions. Both pipes come in short lengths and may leak at the joints. In recent decades, plastic sewer pipe is common in new sewer construction. Although plastics have good corrosion resistance, they are vulnerable to poor installation practices. Many of the gravity mains in the City of Ionia are vitrified clay pipe and root intrusion and cracking has been witnessed in many of these pipes. Backups may occur due to root intrusion.

A system wide assessment of the current condition of assets (collection system and lift stations) is being compiled.

Our Wastewater System

Our current maintenance program shows almost all of our manholes and sewers in good condition. Some gravity sewer pipes, primarily the old clay sewers, have structural defects such as cracks/fractures, breaks, and/or multiple sags. Forty-six (46%) percent of our gravity sewer pipes have a Probability of Failure rating of 3 or worse on a scale of 1 (excellent) to 5 (poor). The 5 pump stations are in fair to good shape overall.

Our Plan

We will keep our condition assessments current by making recurring inspections and/or assessments of the assets at intervals frequent enough to document reasonably expected condition changes. These intervals will vary by asset type and expected asset life cycle. Once evaluation are completed, assets will be ranked based on the likelihood / risk of failure. All Probability of Failure ratings will be on a scale of 1-5 with 5 being the highest Probability of Failure.

Our Program

Sewer pipes will be inspected with closed circuit television cameras on a recurring basis. Some sewers, including trunk lines or sewers with moderate deterioration to monitor, may be inspected more frequently. Other sewers, including those which are newer, or are currently in very good condition, may not be re-inspected for a longer time. We plan to use our inventory and condition assessment information to make data driven plans for sewer pipe re-inspection, targeting an

average 10 to 15 year recurrence interval. We may inspect higher CoF assets more often. Condition information for manholes and lift stations can be kept up to date in our GIS system whenever changed conditions are observed as part of routine maintenance and operations activities.

The following maps in Appendix A show information used to develop the probability of failure ratings.

Map 2: Year Installed
Map 4: CCTV Inspections

The final probability of failure rating is based on the highest of these three ratings, which are shown on Map 5 in Appendix A.

Higher consequence of failure items may be inspected or assessed more frequently.

PART 4: CONSEQUENCE OF FAILURE

WHAT HAPPENS WITH A FAILURE?

Program Status

In a sewer system, if part of the system fails, the consequences would most commonly be wastewater backup into basements, a discharge of untreated wastewater to the environment, or a pipe collapse with a sink hole in the street or lawn above. These kinds of events would represent a failure to achieve our goals outlined in Part 1 of this Asset Management Plan.

A rating system has been developed to establish a way for comparing the severity of potential consequences of sewer system failures. All assets are rated on a scale of 1-5 with 5 representing the most severe consequences. Underground pipes are rated considering their size, any major traffic routes above the sewer, nearby infrastructure consequences, and the approximate density of adjoining land use. Redundancy within the system is also considered. Lift stations are rated considering the flow rates and available response time. Rating information is incorporated into the GIS with the asset inventory.

A system wide assessment of the potential failure consequences has been performed and all assets have been rated.

Our System

It is important we understand the severity of consequences which may occur if any asset in our system fails. Functional failure consequences can occur when pumps stop working, valves cannot open or close, and when sewers become broken or blocked. Physical failure consequences can occur when we have sewer main breaks or catastrophic equipment failures.

Our Plan

We will evaluate the Consequences of Failure of each asset, from both a functional and physical failure perspective. We will maintain redundancy on assets with a high Consequence of Failure. All Consequence of Failure ratings will be on a scale of 1-5 with 5 being the highest Consequence of Failure. We plan to use our consequence of failure ratings as part of a prioritization process, called “Criticality”, when considering potential system improvements.

Our Program

It is important that we understand the severity of consequences that may occur if any asset in our system fails. Functional failure considerations include potential health risks, service interruption, and damage to connected assets. Physical failure considerations include damage to adjacent infrastructure, environmental damage, and property damage. Each of these factor will be considers separately and then compiled into a single Consequence of Failure (CoF) rating for each asset. The rounded average of the CoF of each pipe based on its diameter (scored 1-5) and its location (scored 1-5) and service area (scored 1-5) determined the final CoF value.

	Consequence of Failure (Location)	Consequence of Failure (Size)	Consequence of Failure (Service Area)
5	Unacceptable Impacts	24-inch Pipes	Unacceptable Impacts
4	Critical Impacts	18-inch Pipes	Critical Impacts
3	Significant Impacts	15-inch Pipes	Significant Impacts
2	Minor Impacts	12-inch Pipes	Minor Impacts
1	Little to No Impacts	10-inch Pipes and Smaller	Redundant System or No Impacts

For the distribution system water mains, all data for the CoF factors will be maintained in the GIS database. For other assets, CoF factors are being developed using a spreadsheet based database.

Map 6 in Appendix A shows the current CoF ratings for pipe in our distribution system. We are in the process of developing CoF ratings for non-pipe assets as we develop our listing of non-pipe assets including treatment plant, storage, and pumping facilities.

PART 5: CRITICALITY

HOW DO WE PRIORITIZE OUR ACTIONS?

Program Status

We must prioritize our actions to meet our Level of Service (LoS) goals while managing our work loads, utility rates, and minimizing life cycle costs. Consequence of Failure and Criticality should not be confused. Criticality is the product of an asset's Risk of Failure (RoF) and Consequence of Failure (CoF). Criticality drives an asset's action priority.

Our Plan

Criticality Ratings will be used to guide the priority of needed improvements and development of the Capital Improvement Plan. Criticality of assets within our system will be determined by multiplying each asset's Probability of Failure rating (1-5) by an asset's Consequence of Failure rating (1-5) to establish the Criticality Rating (1-25).

Our Program

The condition of the asset, and therefore its Probability of Failure, will change over time. Additionally, the Consequences related to failure may also change. We will review the criticality of our assets on a one-to-five-year frequency, depending on asset replacement, and make adjustments to account for these changes. As with all the components of the Asset Management program, the criticality analysis is an on-going process. We will keep our criticality assessments current after performing repairs, improvements, or inspections. When evaluating the criticality of an asset, we also consider redundancy as this can significantly reduce the Consequence of Failure of an individual asset. We will use our criticality assessments when establishing priorities regarding maintenance, repairs, and capital improvements.

Map 7 in Appendix A shows the current Criticality ratings for our distribution system.

PART 6: CAPACITY

DO WE HAVE ENOUGH, NOW AND FOR THE FUTURE?

Our Wastewater System

Our system must meet service demands both now and into the future based on current and future land use. Over time, flows fluctuate with changes in property use and population. System analysis shows we are currently meeting peak flow needs but we must make improvements to replace outdated and aging equipment and to continue this level of service. Our system has capacity for additional future flows.

Our Plan

We will maintain our wastewater assets to provide adequate capacity for existing development and will plan for system improvements which allow our community to grow. We will manage system

expansion by balancing needs for community redevelopment/infill and desires for new development.

Our Program

We will plan our wastewater system to provide enough capacity for existing and future community development based on current and future land use plans.

The most critical system improvement needs identified are shown in our Capital Improvement Plan.

We plan to monitor land use for compatibility with the sewer system capacity master plan. As land development and new customer connections occur, we plan to continue monitoring the system flows.

We plan to coordinate any needed capacity improvements with sewer rehabilitation/replacement projects to maximize the life cycle of our existing assets and ensure long-term capacity needs are met with the construction of any replacement assets.

PART 7: OPERATIONS AND MAINTENANCE

KEEPING UP WITH ROUTINE WORK

Program Status

Our asset inventory and condition assessments now give us the ability to build on our historical knowledge, gained through maintenance experience, by using system data to develop more proactive plans for scheduled maintenance activities.

Our Plan

The plan developed for the operations and maintenance of our system assets is described below.

Gravity Sewers: Pipe Cleaning

We plan to continue following a scheduled cleaning interval for each sewer to optimize our cleaning efforts. We will use information gathered from video camera inspections, history of backups, and observations made while cleaning, to make decisions on how often to clean sewers. We will use our software systems to manage this data and keep our planned cleaning routines up to date.

On average, we plan to clean gravity sewers once every 10 years, on a rolling annual cycle, such that approximately one tenth of the system is cleaned each year. Certain sewers with known history of collecting debris will be cleaned more frequently.

Gravity Sewers: Roots Management

We plan to manage gravity sewers with known roots problems by cleaning those lines more regularly. Where roots in the sewer have grown large enough, we will use root cutting and/or chemical application if necessary to slow the regrowth of the roots. We will continue these activities to extend the useful life of these sewers until the roots have developed to a point where rehabilitation or replacement of the sewer would be more cost effective over the long term.

Gravity Sewers: Routine Manhole Verification

We plan to continue regular visual inspections of any manholes that have a history of problems. In doing so, we will monitor the structural condition, verify that wastewater is flowing, and achieve early identification of potential backup conditions.

Force Mains

No cost effective maintenance routines have been identified for our force mains. The City of Ionia remains ready to respond in the event of a force main failure. We plan to proactively replace force mains based on their risk of failure and criticality assessments.

Lift Stations

We will continue operating these facilities and perform maintenance as dictated by site specific operations and maintenance plans. This includes inspecting lift stations twice per

year and assets within the treatment plant during scheduled maintenance. We will keep O&M manuals on file to document and schedule recommended maintenance. Asset cleaning frequency and status data will be kept in our asset management spreadsheets.

Management Systems

We will monitor the break history of the sewers and record the date and locations of breaks using the GIS. We will track maintenance activities to identify assets requiring higher than expected maintenance levels.

We will perform O&M activities to extend the useful life of these assets until full rehabilitation or replacement is more cost effective. We will maintain regularly scheduled O&M activities, plan/schedule appropriate replacements, and coordinate activities with work on other assets sharing common space (i.e. within the same road right-of-way).

Maintenance Equipment

Equipment needed to support the ongoing maintenance functions described above will be maintained by the City of Ionia and used to support the maintenance of the wastewater system. The wastewater system does not own the equipment itself.

Staffing Levels

The City of Ionia plans to make staffing level determinations based on the time commitment needed to perform the maintenance functions described above.

Repairs

We plan to continue making miscellaneous system repairs (fixes which are small enough to be accomplished without engineered plans, MDEQ permits, or project specific budgeting) on an as-needed basis. Such repairs may include adjusting manhole cover castings, correcting broken cleanouts, sealing leaks, replacing lift station equipment and patching manholes. We will continue budgeting for such repairs based on prior years' expenses and known system repair needs. When making decisions on system repairs, we will consider the criticality assessments as well as planned rehabilitation and replacement projects.

PART 8: CAPITAL IMPROVEMENTS

CONTINUING SYSTEM RENEWAL

Our System

A Water System Capital Improvement Plan (CIP) for our water system has been prepared and is based on our most recent ROF and COF ratings developed under asset management as well as the City's published CIP from the past year for all City improvements.

Our Plan

The Wastewater CIP Capital improvement projects are prioritized considering the criticality ratings of the assets, cost and practicality. Projects should be coordinated with road projects and other private utility projects where possible. Project timing will also be driven by availability of outside funding sources such as loans and grants, and other infrastructure projects that are planned in the same areas. The resulting Capital Improvement Plan for 2026 through 2031 is included in Appendix C.

Our Program

Planning for capital improvements is a continual management process. Our Wastewater System Capital Improvement Plan shows our foreseeable project priorities based on the information we have available now. We expect the plan will continue to be shaped by the following influences:

- Outside funding sources (grants and loans) may become available for certain types of projects from time to time. When this happens, we will reprioritize to make best use of available funds.
- New information about the condition of our assets may be learned through the ongoing condition assessments (see Part 3 of the Asset Management Plan).
- Changing economic conditions may affect how quickly we can accomplish the capital improvement projects. Economic conditions can affect the pace of new development which increases our system revenues, as well as the rate of inflation which affects the construction costs we pay to implement the projects.
- Coordination with road work and other utility work may require adjustments in timing of the projects. Roadway conditions can dramatically change with severe weather seasons. As roadway conditions change and paving plans are revised, the wastewater system plans may need to be adjusted.

We will keep the Capital Improvement Plan up to date by taking the following steps periodically:

- Adjust the cost estimates for capital projects based on current market pricing
- Reconsider capital improvements priorities based on any updated criticality assessments
- Reconsider implementation years for upcoming capital projects to coordinate with changing conditions of roads and other utilities

- Adjust our financial forecast based on number of users, current rates, and cash balances
- Adjust the utility rates according to these changed conditions, to stay consistent with established long term financial strategy.
- We will make miscellaneous system repairs which are small enough to be accomplished without engineered project plans or project specific budgeting on an as-needed basis. We will continue budgeting for such repairs based on prior year expenses and known system repair needs. When making decisions on system repairs, we will consider the criticality assessments as well as planned rehabilitation and replacement projects. We will perform proactive repairs with in-house staff and equipment as to the ability of staff and the available resources. Proactive repairs outside the available staff resources or abilities will be contracted out.

PART 9: FINANCIAL STRATEGY

RATE PLANNING AND STABILITY

Our System

All system costs are funded through our wastewater system billings.

Our Plan

We intend to maintain a life cycle forecast of anticipated costs, income from rates, and cash balances. We will use this forecast to establish sustainable and stable utility rates. This in turn helps our residential, business, and industrial owners in their individual, long-term financial planning.

We intend to fund system O&M on a cash basis through the rate structure and intend to maintain minimum cash balance equal to approximately 6 months of standard O&M. This will also allow us to cash fund emergency repairs and minor unanticipated asset replacements.

We intend to also cash fund planned system repairs and replacements if that can be accomplished with a stable rate structure and appropriate cash balances. Significant expenditures may be bond financed to stabilize rate impacts and maintain reasonable cash balances.

Our Program

We will maintain a life cycle forecast of anticipated costs, income from rates, and cash balances. The early years of the forecast are tabulated from our Capital Improvement Plan cost estimates while the later years of the forecast are projected from the system inventory and life cycle data. We will use this forecast to establish sustainable and stable utility rates.

We will fund system operations and maintenance on a cash basis through the rate structure and will maintain a minimum cash balance as set by the system goals.

We will also cash fund planned system repairs and replacements if that can be accomplished with a stable rate structure and cash balances not exceeding our base cash balance by a factor of 2.5. Significant expenditures may be bond financed to stabilize rate impacts and maintain reasonable cash balances. We will maintain and update our CIP plan annually to confirm rates and cash balances are acceptable.

We will also implement standard, annual rate changes that, at a minimum, parallel inflation so as to foster a stable rate structure.

To keep the financial strategy on track with changing conditions, we plan to make the following updates periodically:

- Update all spending and income projections • Adjust or reaffirm the long term financial strategy
- Review user rates.

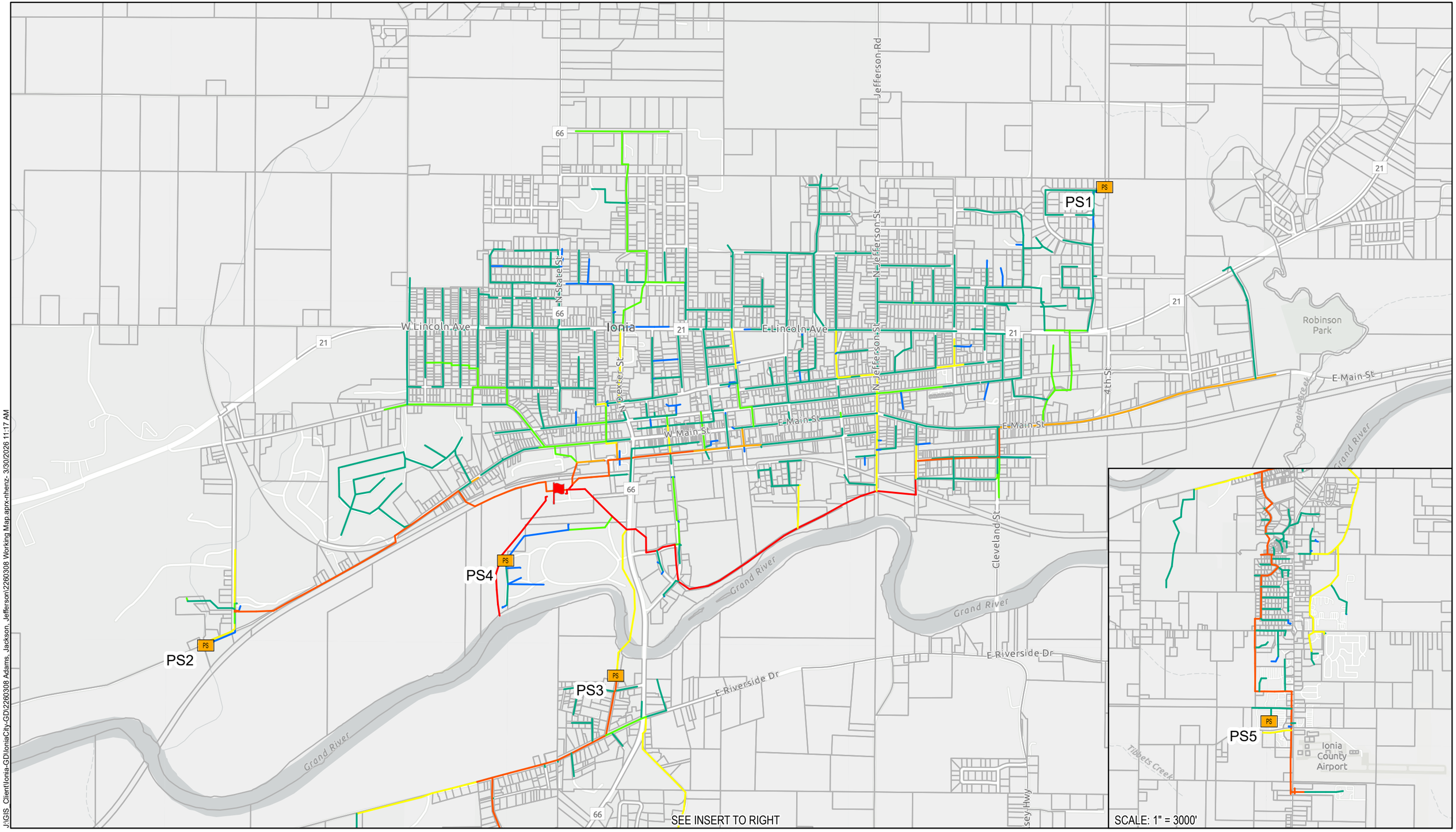
SUMMARY

Our Asset Management Program outlines how we will achieve our Asset Management Plan goals. We will adjust it from time to time as new/improved tools, software, and evaluation techniques are developed. Regardless of those changes, we will incorporate Asset Management into our everyday activities, including system improvements and master planning. By proactively managing our wastewater system, we can meet our desired Level of Service goals at the lowest possible long term cost.

Our non-pipe inventory and risk evaluations will be prepared during the first half of 2026. This plan and our CIP will also be refined and reviewed with the City of Ionia Commission during the first half of 2026.

Appendix A – Maps

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SEE INSERT TO RIGHT

SCALE: 1" = 3000'

SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer (Diameter)
- 6 Inch or Less
- 8 Inch
- 10 Inch
- 12 Inch
- 15 Inch
- 18 Inch
- 24 Inch
- Ionia County Tax Parcels

WWTP

PS Sanitary Pump Station

CITY OF IONIA

IONIA COUNTY, MICHIGAN

WASTEWATER ASSET MANAGEMENT PLAN

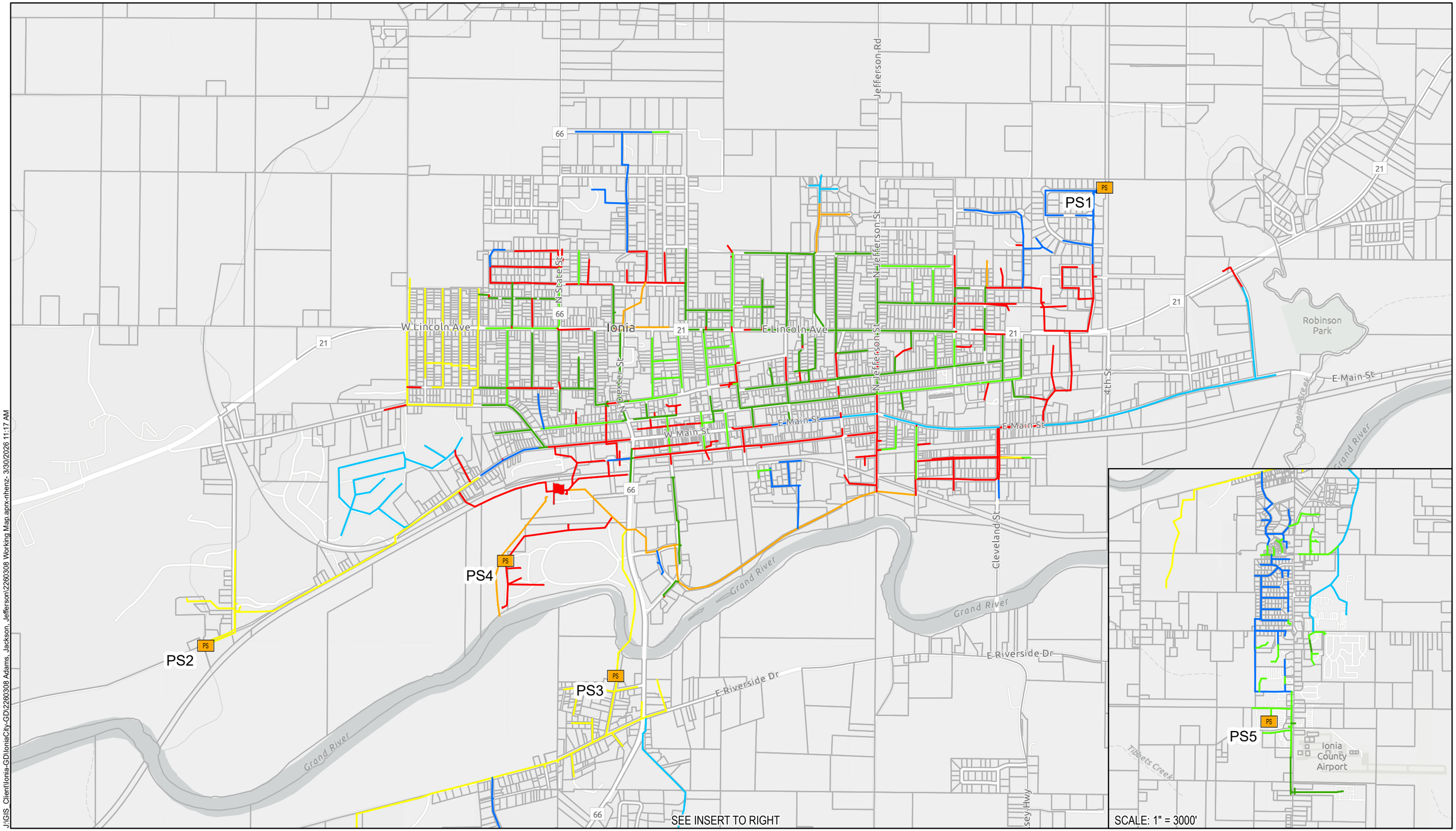
MAP 1: DIAMETER

MARCH 30, 2026

Prein&Newhof

2260308

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SCALE: 1" = 3000'

SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer Installation Year
- 1930
- 1950s-1960s
- 1970s
- 1980s
- 1990s; 1997
- 2000s
- 2010-Present

WWTP

PS Sanitary Pump Station

Ionia County Tax Parcels

CITY OF IONIA

IONIA COUNTY, MICHIGAN

WASTEWATER ASSET MANAGEMENT PLAN

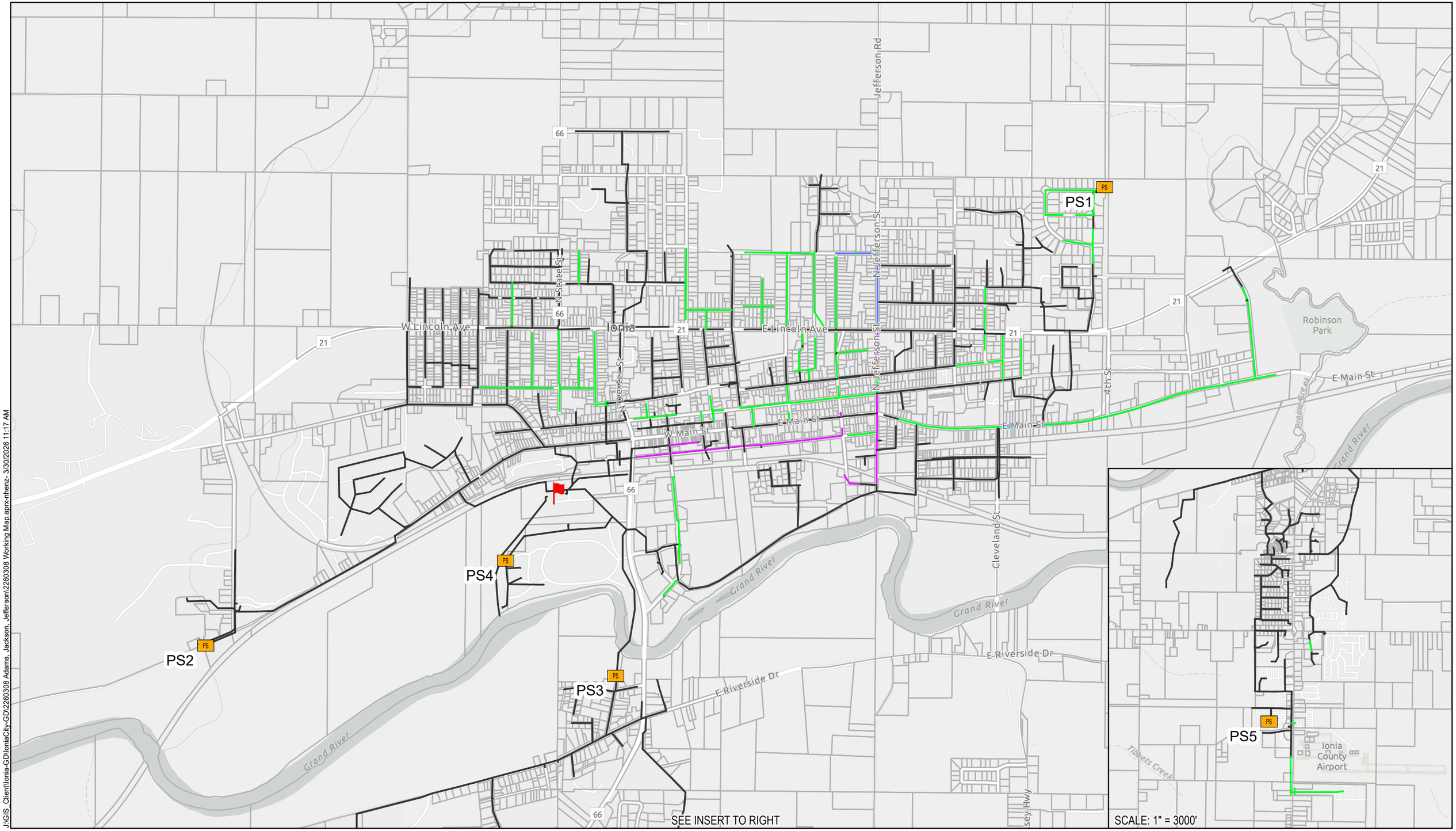
MAP 2: YEAR INSTALLED

MARCH 30, 2026

Prein&Newhof

2260308

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SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer (Material)
- Concrete Pipe
- DIP
- HDPE
- PVC
- RCP
- Truss
- VCP
- Unknown
- PS Sanitary Pump Station
- WWTP
- Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WASTEWATER ASSET MANAGEMENT PLAN

MAP 3: MATERIAL

MARCH 30, 2026

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2260308

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PS1

PS2

PS3

PS4

PS5

Ionia

W Lincoln Ave

E Lincoln Ave

N State St

N Dexter St

N Jefferson St

Jefferson Rd

W Main St

E Main St

4th St

Cleveland St

E Riverside Dr

Grand River

Prairie Creek

Robinson Park

Tibbets Creek

Ionia County Airport

Sey Hwy

66

21

SEE INSERT TO RIGHT

SCALE: 1" = 3000'

SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer (CCTV)
- Unknown
- 2007
- 2008
- 2010
- 2011
- 2013
- 2014
- 2015
- 2019
- 2024
- 2026

PS Sanitary Pump Station

WWTP

Ionia County Tax Parcels

CITY OF IONIA

IONIA COUNTY, MICHIGAN

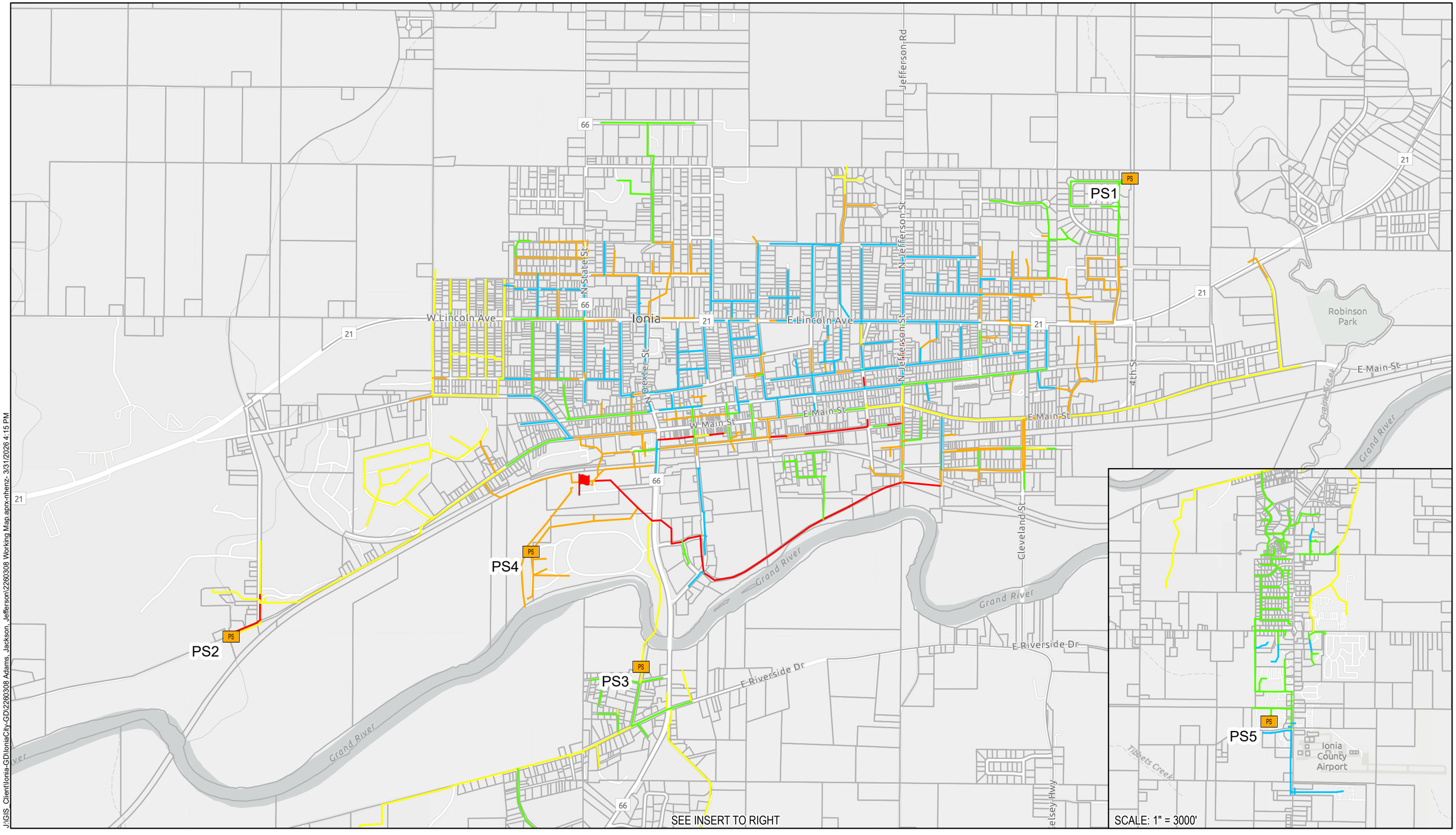
WASTEWATER ASSET MANAGEMENT PLAN

MAP 4: CCTV YEAR

MARCH 30, 2026

Prein&Newhof

2260308



SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer (POF)
- 1
- 2
- 3
- 4
- 5

- Sanitary Pump Station
- WWTP
- Ionia County Tax Parcels

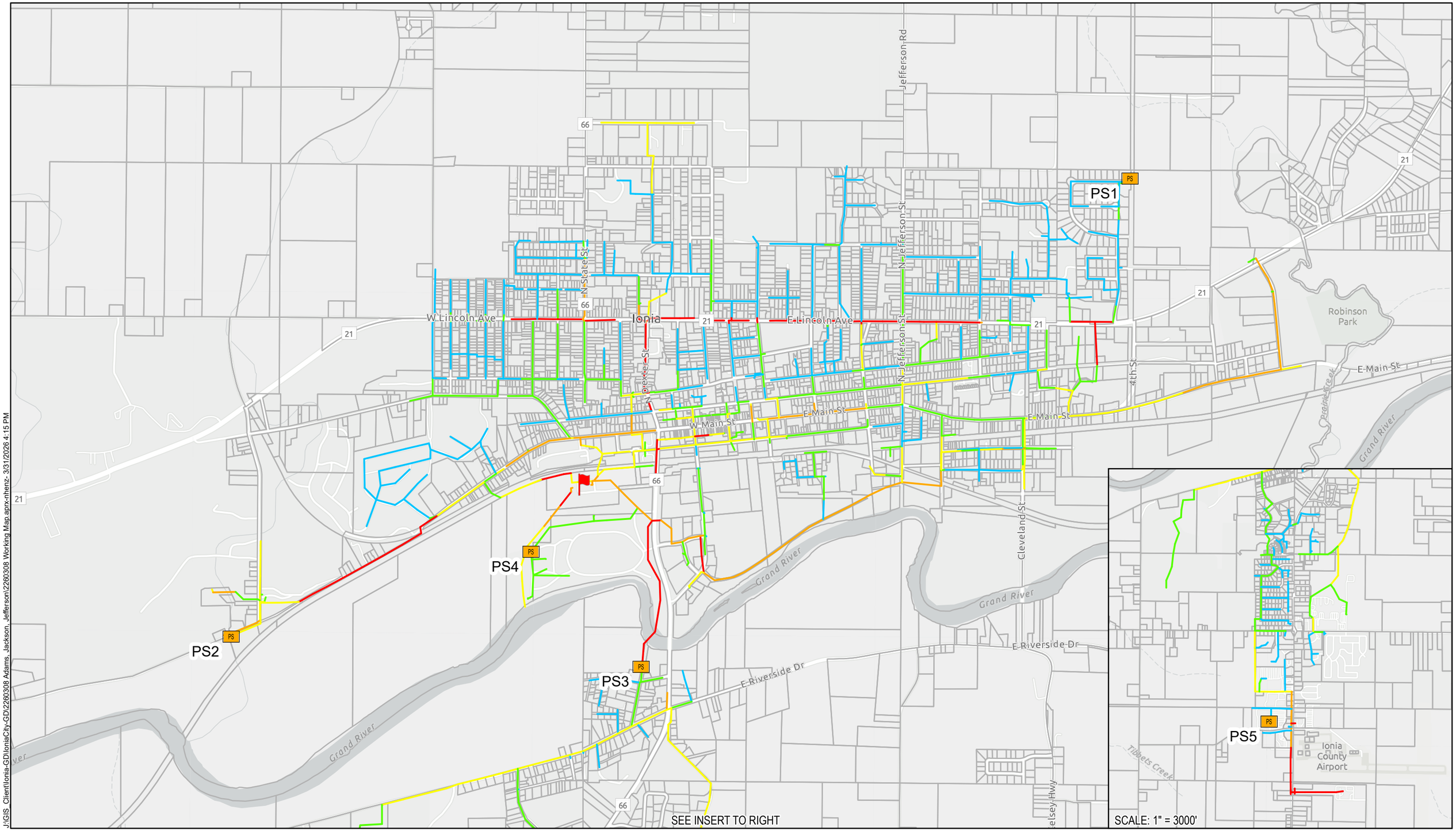
CITY OF IONIA
IONIA COUNTY, MICHIGAN
WASTEWATER ASSET MANAGEMENT PLAN

MAP 5: PROBABILITY OF FAILURE

MARCH 30, 2026

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SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer (COF)
- 1
- 2
- 3
- 4
- 5

- Sanitary Pump Station
- WWTP
- Ionia County Tax Parcels

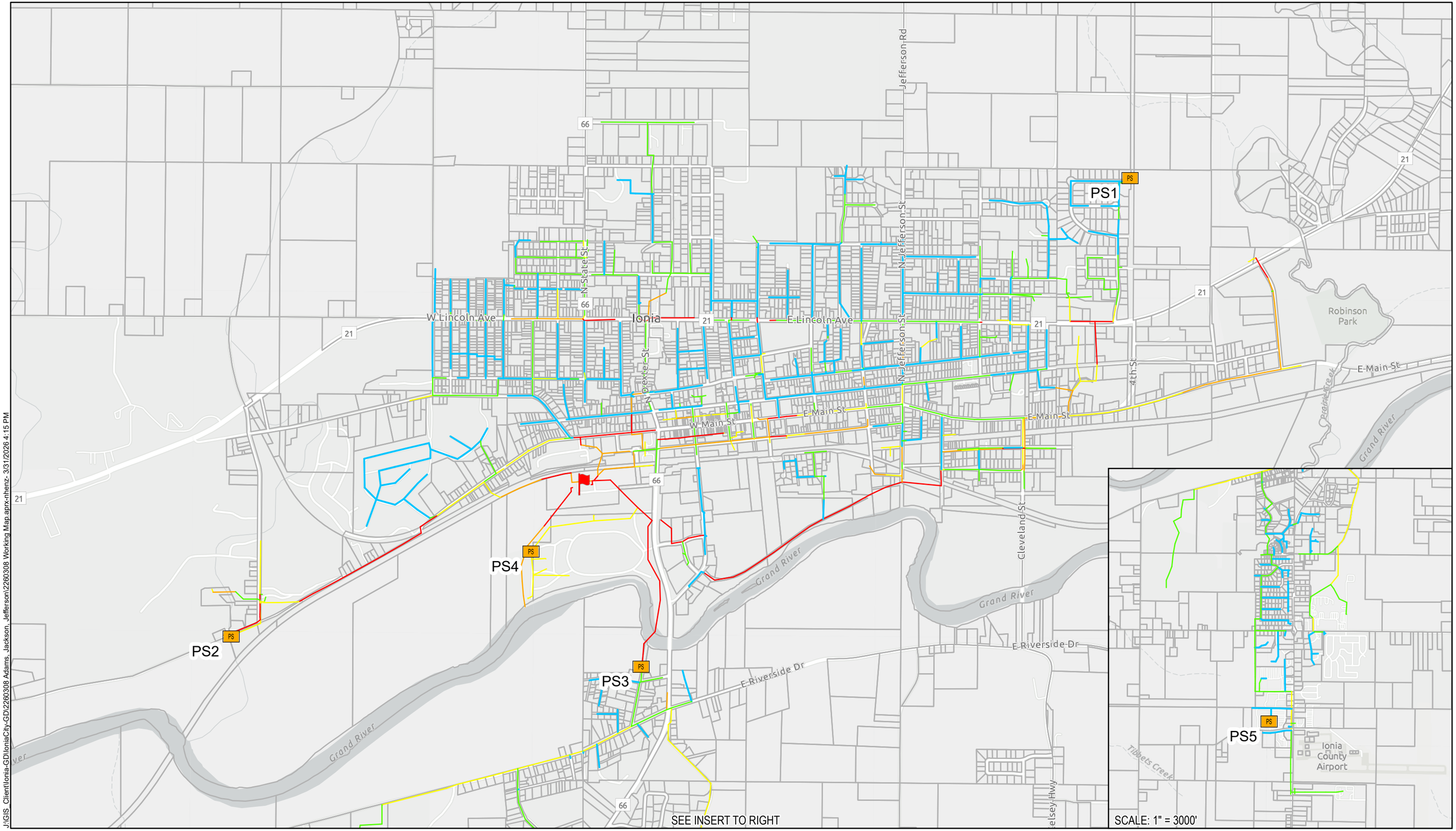
CITY OF IONIA
IONIA COUNTY, MICHIGAN
WASTEWATER ASSET MANAGEMENT PLAN

MAP 6: CONSEQUENCE OF FAILURE

MARCH 30, 2026

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SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer (Criticality)
- 1-3
- 4-6
- 7-9
- 10-15
- 16-25

PS Sanitary Pump Station

WWTP

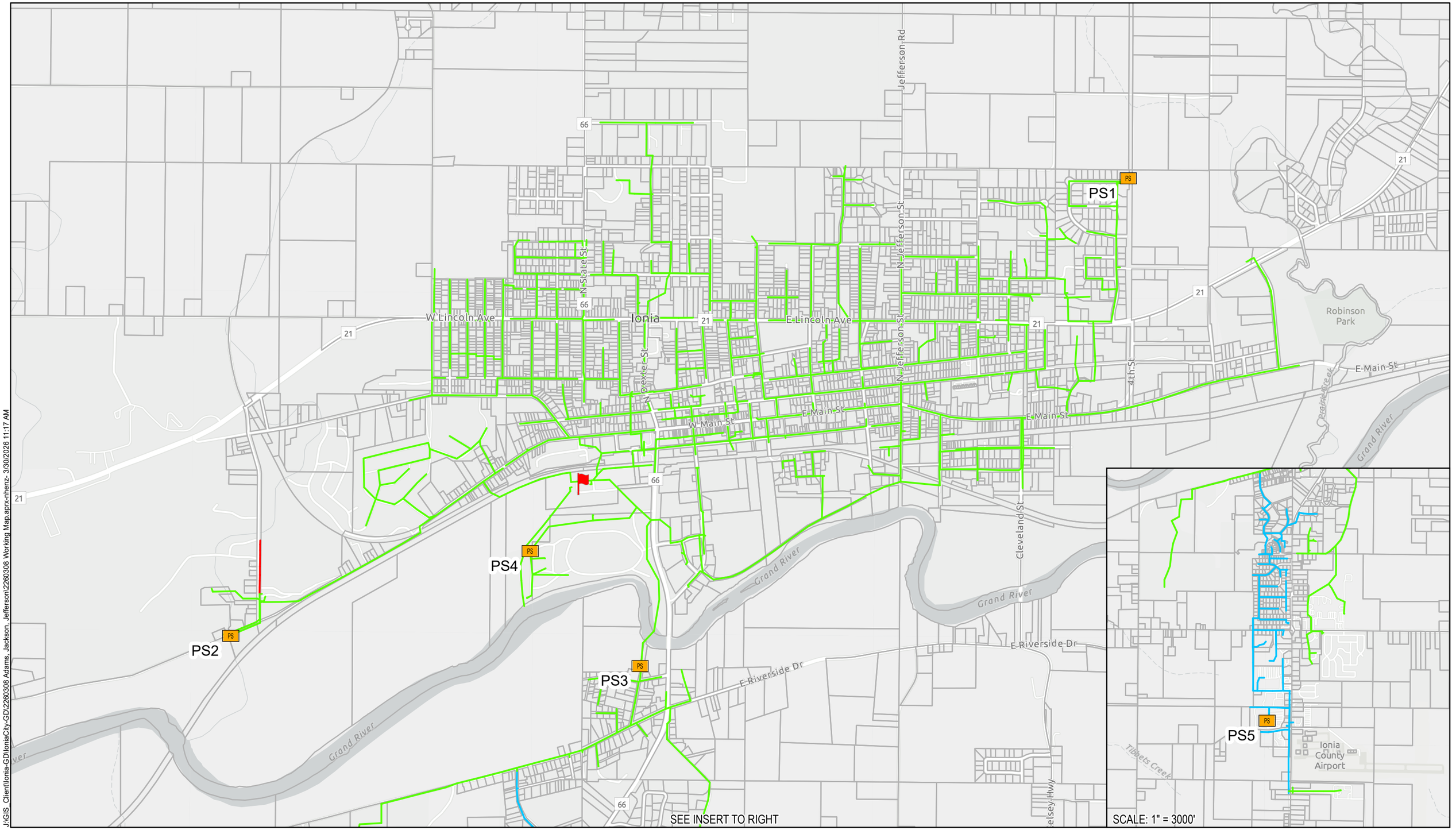
Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WASTEWATER ASSET MANAGEMENT PLAN

MAP 7: CRITICALITY

MARCH 30, 2026

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SCALE: 1" = 1,500 '

LEGEND

Sanitary Sewer (Ownership)
- Berlin Township
- City of Ionia
- Michigan Reformatories

PS Sanitary Pump Station

WWTP

Ionia County Tax Parcels

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WASTEWATER ASSET MANAGEMENT PLAN

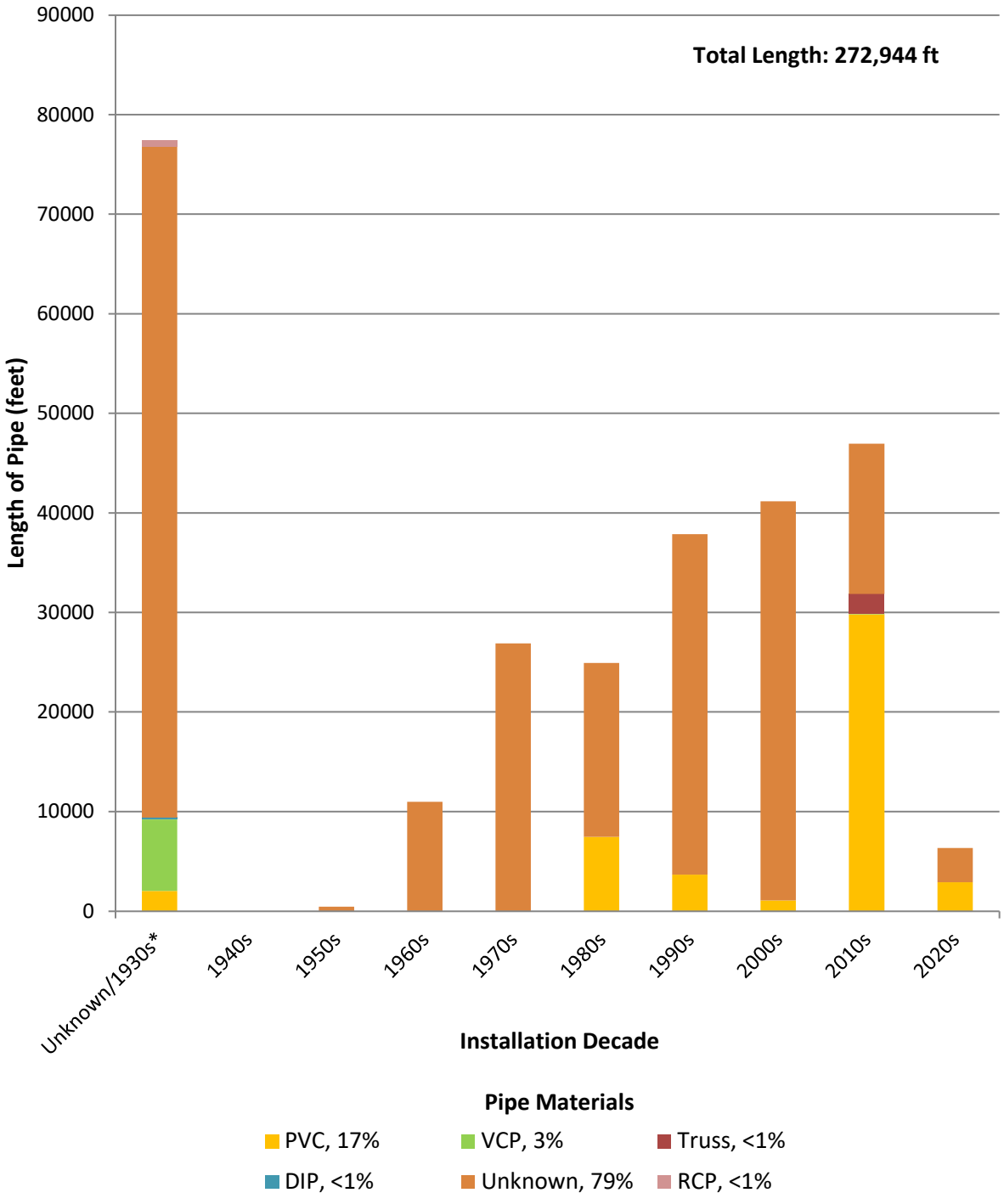
MAP 8: PIPE OWNERSHIP

MARCH 30, 2026

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2260308

Appendix B – Inventory and Statistics

Sanitary Sewer Main Inventory Summary



The graph above is a representation of the pipe year and pipe material breakdown that are populated within the GIS system. Majority of the pipe installation years and pipe materials have not been verified with record plan drawings or field verification. Many of the attributes can be populated using City institutional knowledge. Further work on improving the accuracy of the asset inventory in the GIS is recommended.

Includes publicly ownedsanitary sewer main pipe. Does not include sanitary laterals.

Pipe Age

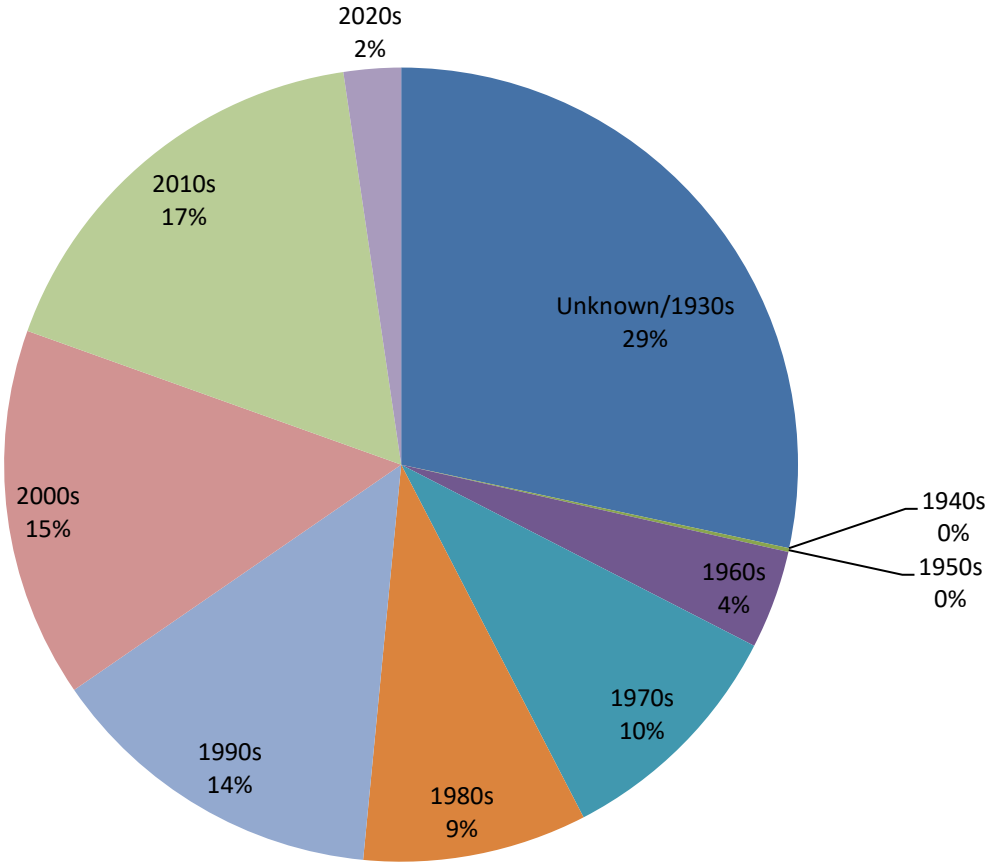


Table 1. Sanitary Sewer Main Sizes

Diameter (in)	Length (ft)	Length (mi)	Percent of Total (%)
2	911	0.17	0.3%
3	1,300	0.25	0.5%
4	1,686	0.32	0.6%
6	9,746	1.85	3.6%
8	160,766	30.45	58.9%
10	24,803	4.70	9.1%
12	25,932	4.91	9.5%
15	7,272	1.38	2.7%
18	30,017	5.69	11.0%
24	10,506	1.99	3.8%
Total	272,941	51.7	100.0%

Table 2. Sanitary Sewer Main Age

Install Year	Length (ft)	Length (mi)	Percent of Total (%)
Unknown/1930s*	77,420	14.7	28.4%
1940s	0	0.0	0.0%
1950s	429	0.1	0.2%
1960s	10,963	2.1	4.0%
1970s	26,878	5.1	9.8%
1980s	24,910	4.7	9.1%
1990s	37,857	7.2	13.9%
2000s	41,156	7.8	15.1%
2010s	46,943	8.9	17.2%
2020s	6,344	1.2	2.3%
Total	272,900	51.7	100.0%

Table 3. Sanitary Sewer Main Material

Material	Length (ft)	Length (mi)	Percent of Total (%)
PVC	46,917	8.9	17.2%
VCP	7,231	1.4	2.6%
Truss	1,990	0.4	0.7%
DIP	190	0.0	0.07%
RCP	600	0.1	0.22%
Unknown	215,973	40.9	79.1%
Total	272,900	51.7	100.0%

Table 4. Sanitary Sewer Type

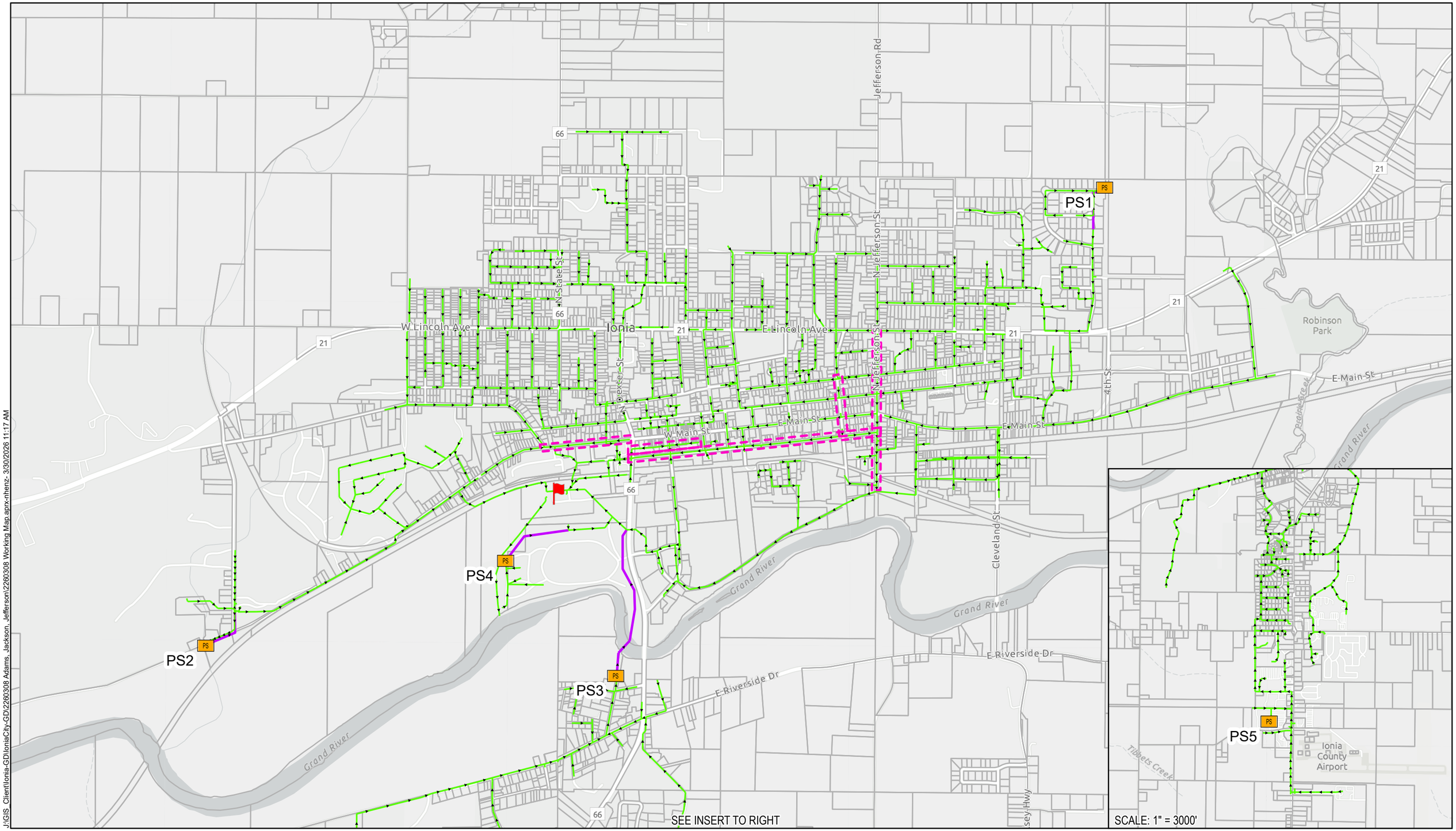
Material	Length (ft)	Length (mi)	Percent of Total (%)
Gravity Main	267,103	50.6	97.9%
Force Main	5,797	1.1	2.1%
Total	272,900	51.7	100.0%

Appendix C – Capital Improvement Plan

City of Ionia Wastewater System

Future Costs
(not including annual operations and maintenance)

Year	Recurring Costs	NON-Sewer Pipe Assets Capital Improvements	Sewer Capital Improvements	Description of Major Items	Total
2028		3,000,000	3,500,000	Adams Street Water Main / Sewer Improvements	6,500,000
2029		2,500,000	500,000	Jackson Street Water Main / Sewer Improvements	3,000,000
2029			550,000	Adams Street Alley 1 Sewer Improvements	550,000
2029			260,000	Adams Street Alley 2 Sewer Improvements	260,000
2030		2,600,000	1,400,000	Jefferson Street Water Main / Sewer Improvements	4,000,000
2031		1,000,000	1,000,000	W. Main Street Water/Sewer System Improvements	2,000,000
					-
					-
					-
					-
					-



SCALE: 1" = 1,500 '

LEGEND

- WWTP
- Gravity Main
- Force Main
- PS Sanitary Pump Station
- Ionia County Tax Parcels

CIP Timeline

- 5-Year

CITY OF IONIA

IONIA COUNTY, MICHIGAN

WASTEWATER ASSET MANAGEMENT PLAN

CAPITAL IMPROVEMENT PLAN

MARCH 30, 2026

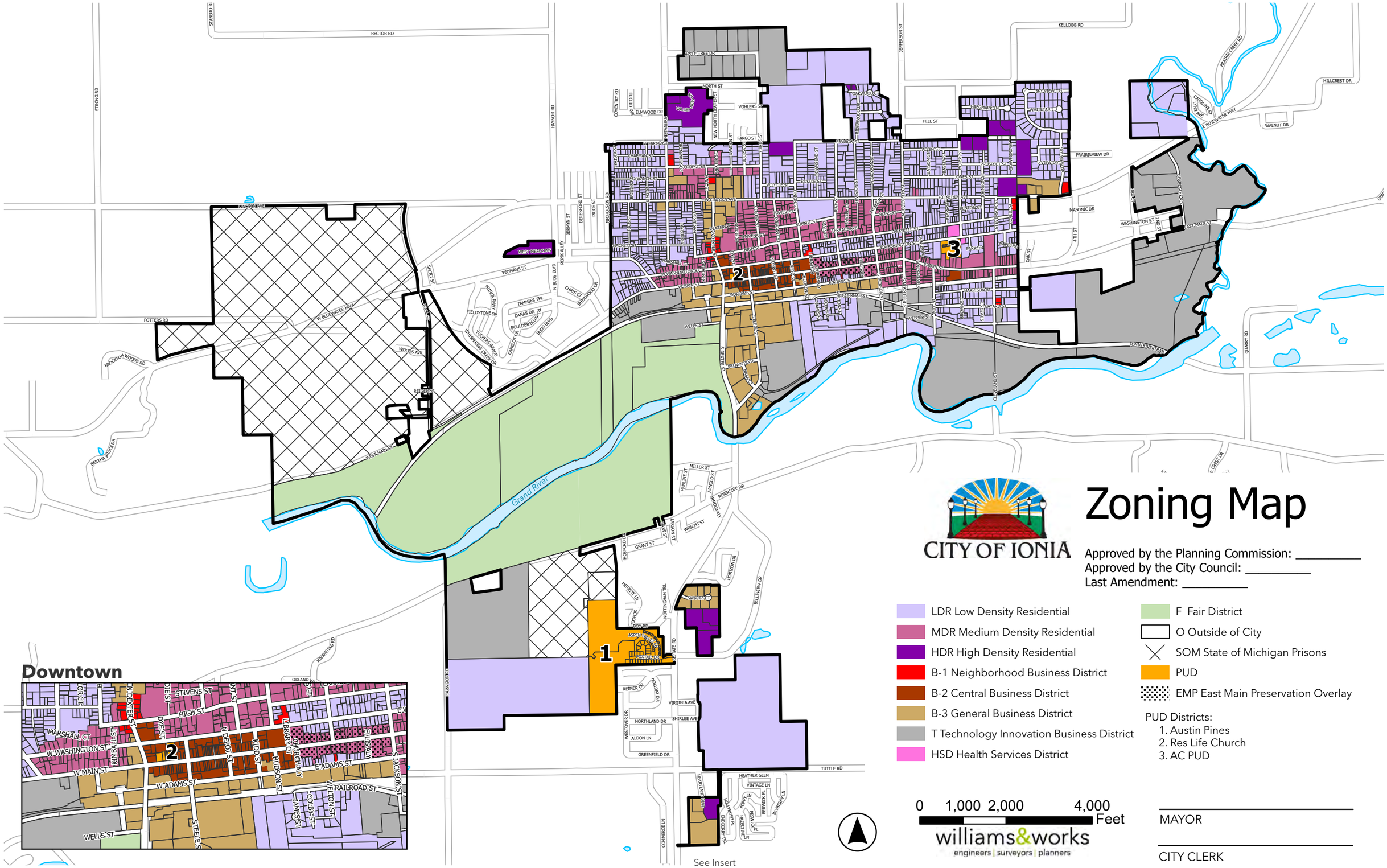
Prein&Newhof

2260308

J:\GIS_Client\Ionia-GD\IoniaCity-GD\2260308 Adams, Jackson, Jefferson\2260308 Working Map.aprx-nhenz- 3/30/2026 11:17 AM

Appendix B

City of Ionia Zoning Map



Zoning Map

CITY OF IONIA

Approved by the Planning Commission: _____
Approved by the City Council: _____
Last Amendment: _____

- LDR Low Density Residential
- MDR Medium Density Residential
- HDR High Density Residential
- B-1 Neighborhood Business District
- B-2 Central Business District
- B-3 General Business District
- T Technology Innovation Business District
- HSD Health Services District
- F Fair District
- O Outside of City
- SOM State of Michigan Prisons
- PUD
- EMP East Main Preservation Overlay

PUD Districts:
1. Austin Pines
2. Res Life Church
3. AC PUD

0 1,000 2,000 4,000 Feet

williams&works
engineers | surveyors | planners

_____
MAYOR

_____
CITY CLERK

Appendix C

Overburdened Worksheet

Finance Division
Overburdened Preliminary Determination for FY27 State Revolving Fund Projects

Applicant Information

Applicant: City of Ionia
ITA Tracking Number: 1031-2344
Project Name: Jefferson Street Sewer Replacement, Jackson Street Sewer Replacement
Funding Source: CWSRF
Regional System: ☑ Yes ☐ No

Contact Information

Name of Applicant Contact and Title	Nicholas Henz
Email	nhenz@preinnewhof.com
Phone Number	(630) 277-1927

Summary of Determination

Preliminary Determination	Not Overburdened
SRF Loan Minimum to Maintain or Gain Overburdened Status	$

The table above displays the preliminary results of the application. If the box displays a significantly overburdened determination than the applicant has a preliminary determination of significantly overburdened for FY27. If the box displays overburdened, whether by calculation or not, the applicant has a preliminary determination of overburdened for FY27.

The following pages break down the information that was submitted and used for the preliminary determination. When a final determination has been made, the applicant will be notified of the result.

Preliminary

City of Ionia Blended Community Worksheet

Municipality Name	Percent of Flow	MAHI	TVPC	MAHI Contribution	TVPC Contribution
Berlin township- Ionia County	4	$74,250.00	$63,853.00	$2,970.00	$2,554.00
Easton township- Ionia County	3	$76,418.00	$32,697.00	$2,293.00	$981.00
Ionia township- Ionia County	2	$60,189.00	$32,445.00	$1,204.00	$649.00
Ionia city	91	$63,978.00	$11,344.00	$58,220.00	$10,323.00
Flow Total	100			Blended MAHI	Blended TVPC
				$64,687.00	$14,507.00

Initial Overburdened Screening

MAHI Threshold Qualification	Does Not Qualify
Overburdened Determination Without Need for Calculation	Not Overburdened

For determinations made using anticipated debt (i.e., determinations where the change in loan amount will change the applicant status from overburdened to not or vice versa), a final determination will be made based upon the final loan amount after bids/project scope is finalized and not the anticipated amount provided on this form.

If this applicant has applied for overburdened or significantly overburdened status in prior fiscal years, the numbers in the survey (i.e., breakdown of municipalities and their flow amounts, annual payments on existing debt, total OM&R, and REUs) will be compared to check for discrepancies as most of these numbers should be similar year to year. EGLE will contact the applicant if inconsistencies are found, and the final determination may change if the original numbers need to be updated.

I **Nicholas Henz** on behalf of **City of Ionia** hereby certify that the information in this form is complete, true, and correct to the best of my knowledge.

☑ Yes

03/16/2026

Preliminary

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278. EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

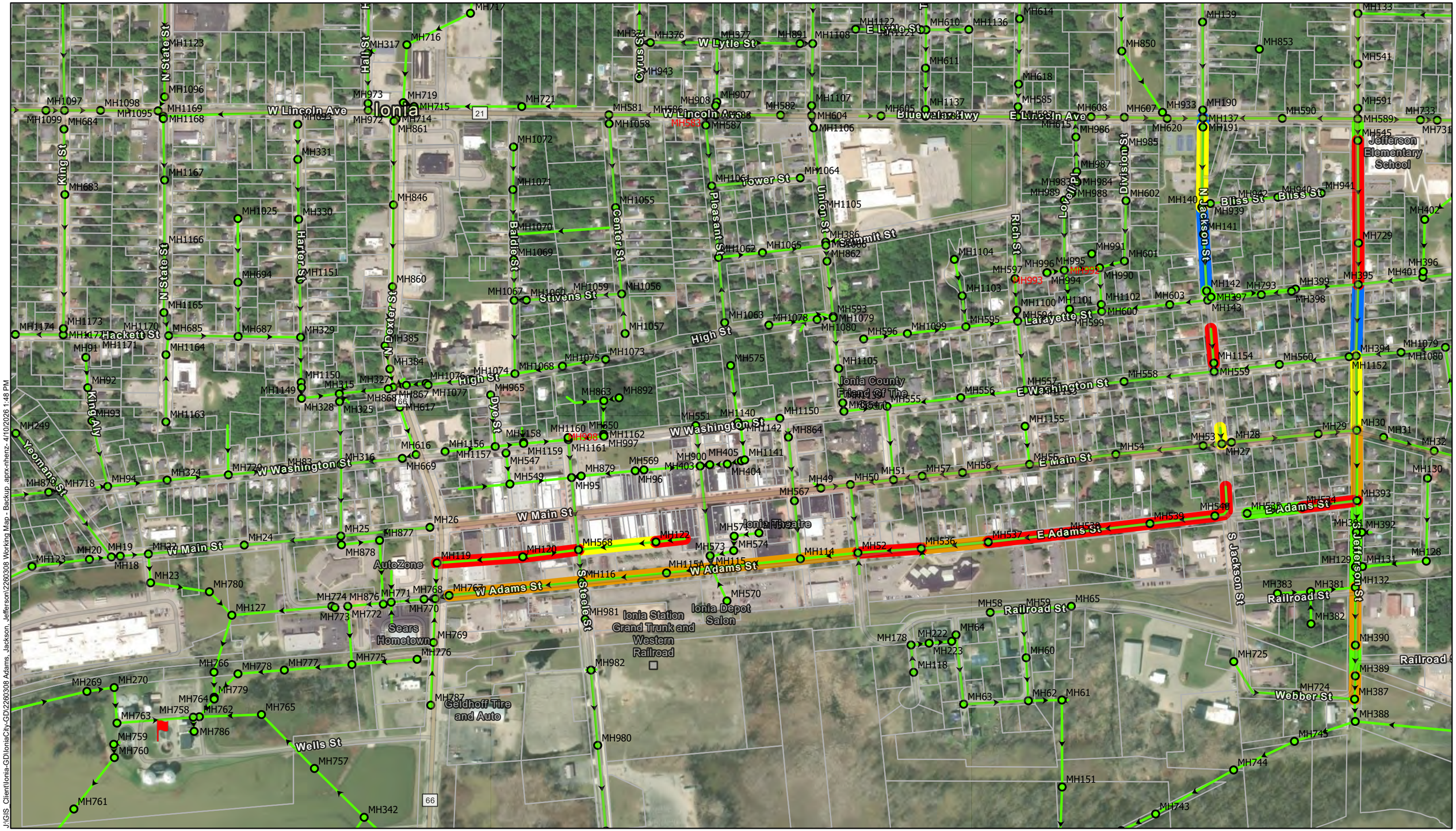
Preliminary

Appendix D

PACP Inspection Index

Appendix D - PACP Inspection Index

Heading	FROM MH	TO MH	Location Description	Structural Score
Project 1	MH116	MH767	Adams Street	4
	MH1182	MH116	Adams Street	4
	MH115	MH1182	Adams Street	4
	MH114	MH115	Adams Street	4
	MH52	MH114	Adams Street	4
	MH536	MH52	Adams Street	5
	MH537	MH536	Adams Street	4
	MH538	MH537	Adams Street	5
	MH539	MH538	Adams Street	5
	MH540	MH539	Adams Street	5
	-	MH540	Adams Street / Jackson Street Intersection	5
	MH535	MH534	Adams Street	3
	MH534	MH393	Adams Street to Jefferson Street Intersection	5
Project 2	-	MH540	Jackson Street / Adams Street Intersection	5
	-	MH1154	Jackson Street to E. Washington Street	5
	-	MH27	Jackson Street to E. Main Street Intersection	3
Project 3	MH545	MH729	Jefferson Street	5
	MH729	MH395	Jefferson Street	5
	MH395	MH394	Jefferson Street	2
	MH394	MH30	Jefferson Street	3
	MH30	MH393	Jefferson Street	4
	MH393	MH391	Jefferson Street	3
	MH391	MH129	Jefferson Street	3
	MH129	MH132	Jefferson Street	3
	MH132	MH390	Jefferson Street	4
	MH390	MH389	Jefferson Street	3
	MH389	MH387	Jefferson Street	4
Project 4	MH122A	MH122	Adams Street Alley (Eastern Lot)	5
	MH122	MH568	Adams Street Alley (Eastern Lot)	3
Project 5	MH129	MH568	Adams Street Alley (West Section)	5
	MH120	MH119	Adams Street Alley (West Section)	5



SCALE: 1" = 400 '

LEGEND

- WWTP
- PS Sanitary Pump Station
- Sanitary Manholes
- Gravity Sanitary Sewer
- Ionia County Tax Parcels

Televising Results

- 0
- 1
- 2
- 3
- 4
- 5

CITY OF IONIA

IONIA COUNTY, MICHIGAN

PACP SCORING MAP

Prein&Newhof

2260308

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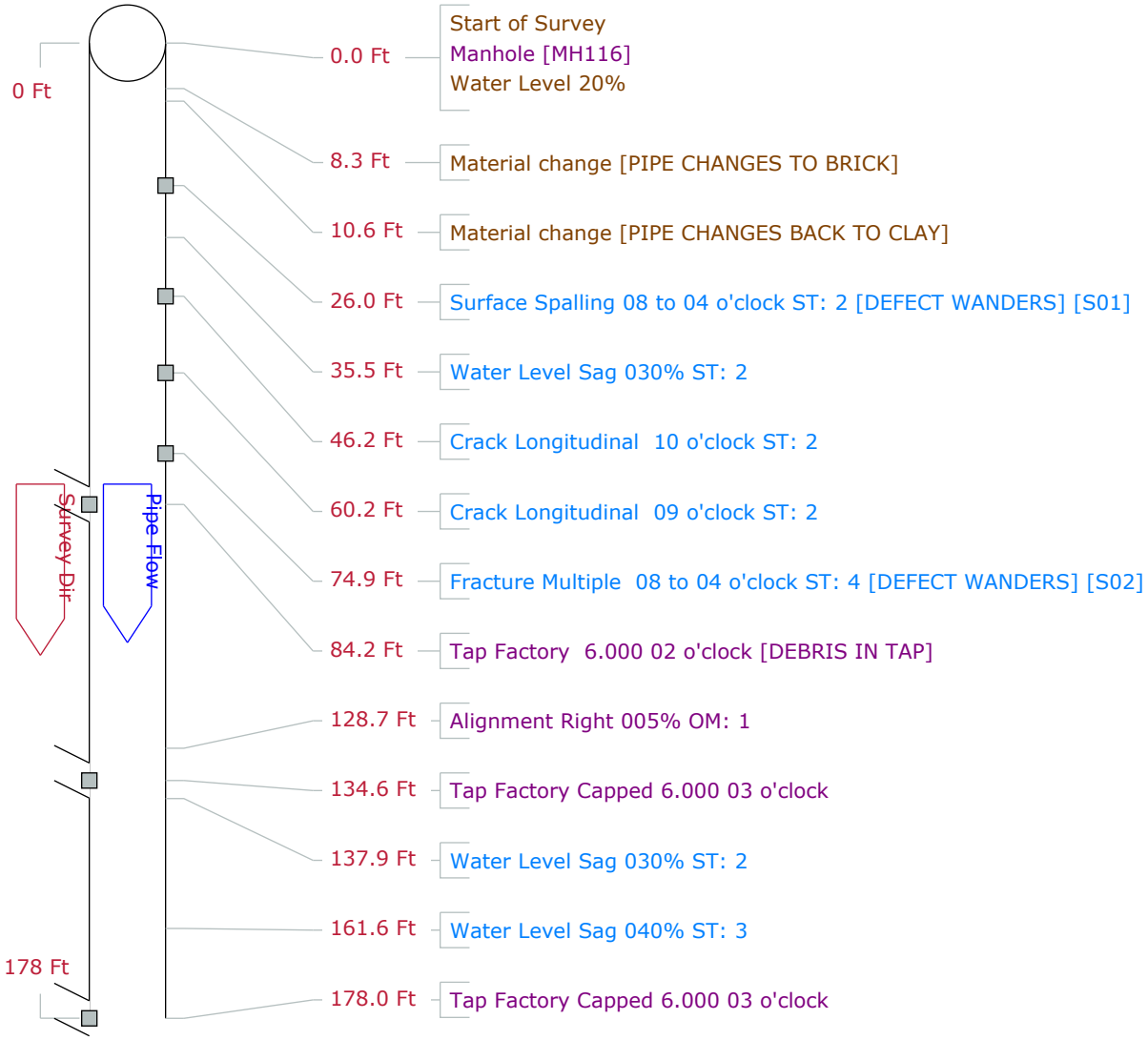
Pipe Graphic Report of PSR 887 for CITY OF IONIA

Setup	40	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/31	Time	12:39	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH116	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH767	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	18	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	612.4 Ft	Length Surveyed	612.40 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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Phone:616-877-3930

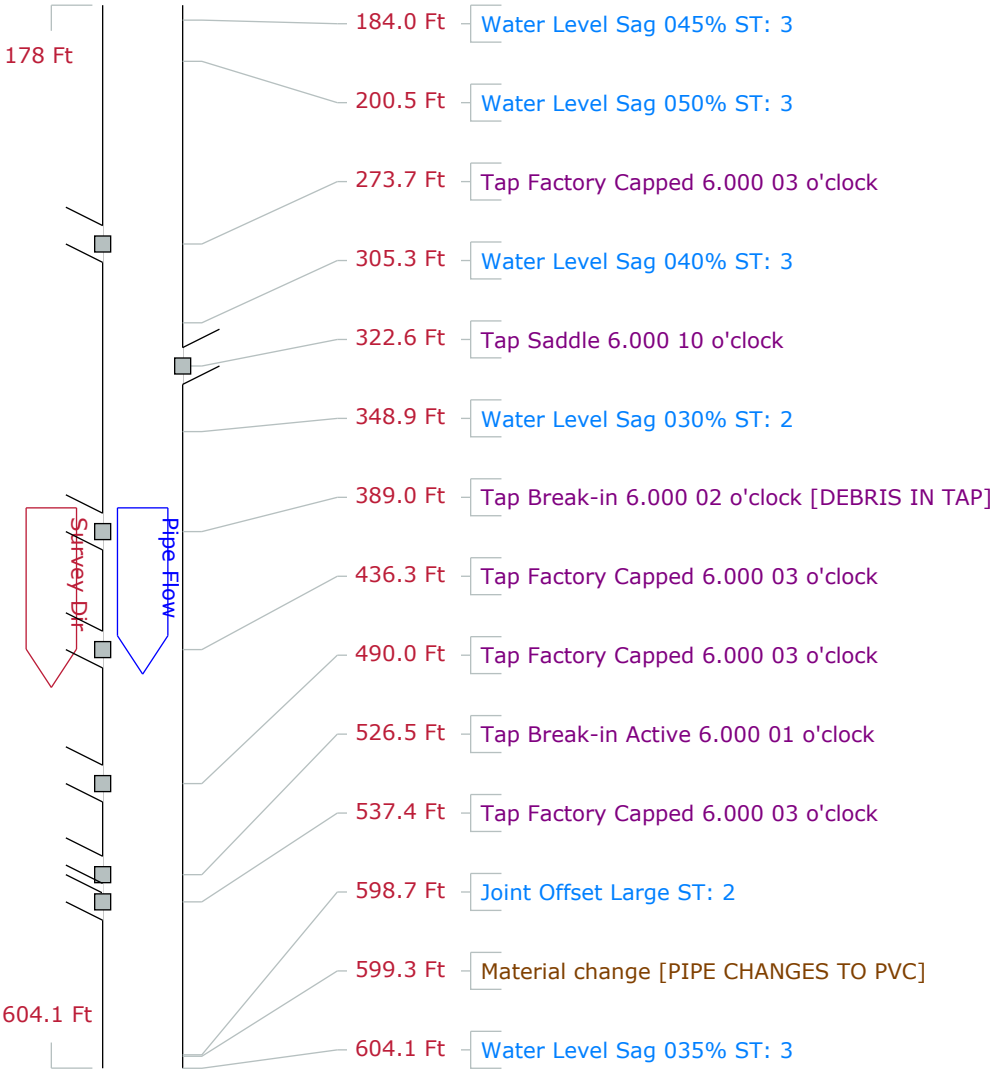
Pipe Graphic Report of PSR 887 for CITY OF IONIA

Setup	40	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/31	Time	12:39	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH116	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH767	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	18	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	612.4 Ft	Length Surveyed	612.40 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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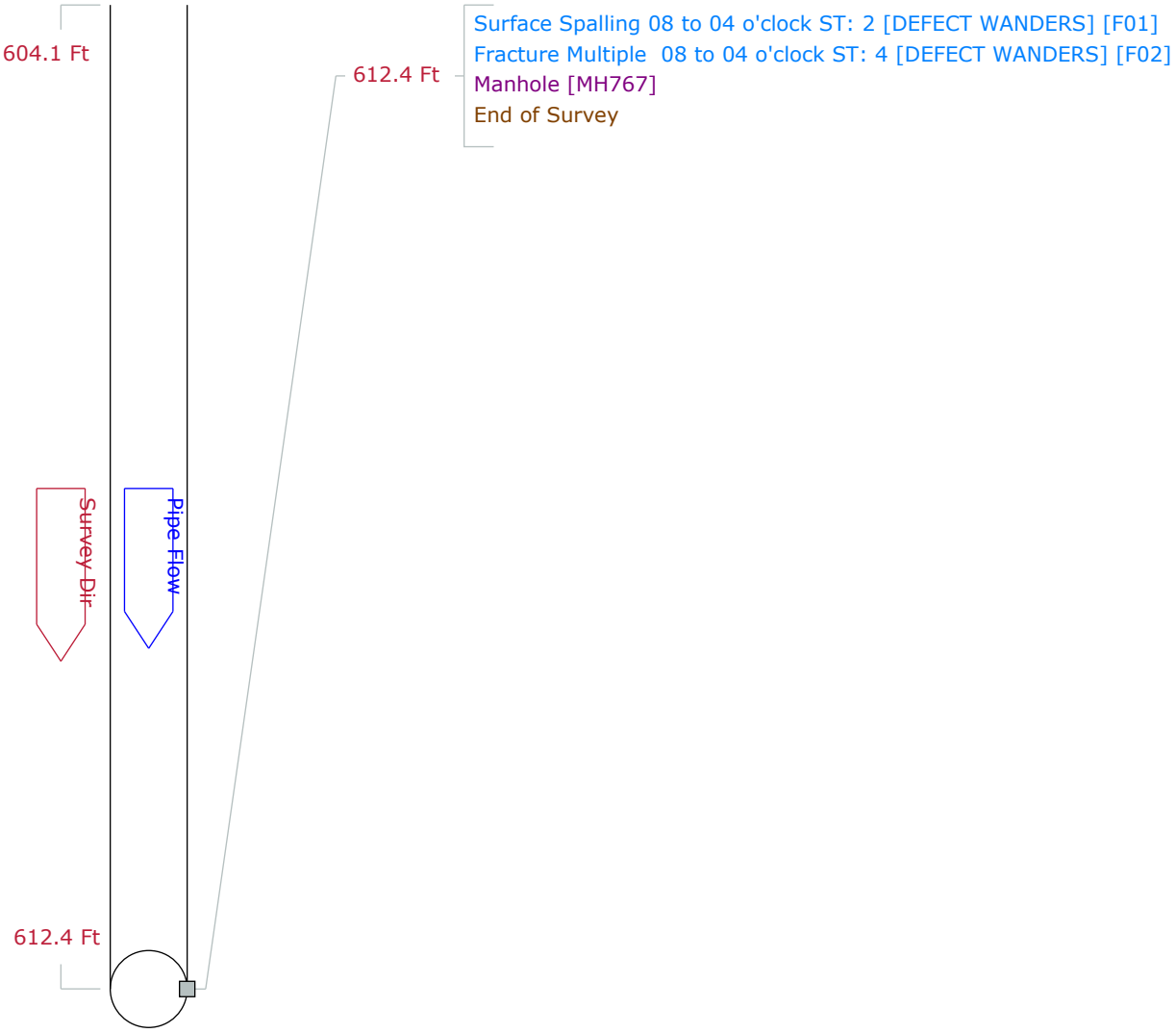
Pipe Graphic Report of PSR 887 for CITY OF IONIA

Setup	40	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/31	Time	12:39	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH116	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH767	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	18	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	612.4 Ft	Length Surveyed	612.40 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural		
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



Pipe Graphic Report of PSR 888B for CITY OF IONIA

Setup	38	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/31	Time	8:46	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH115A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH116	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	18	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	386.7 Ft	Length Surveyed	386.70 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Location Main Highway - Suburban/Rural

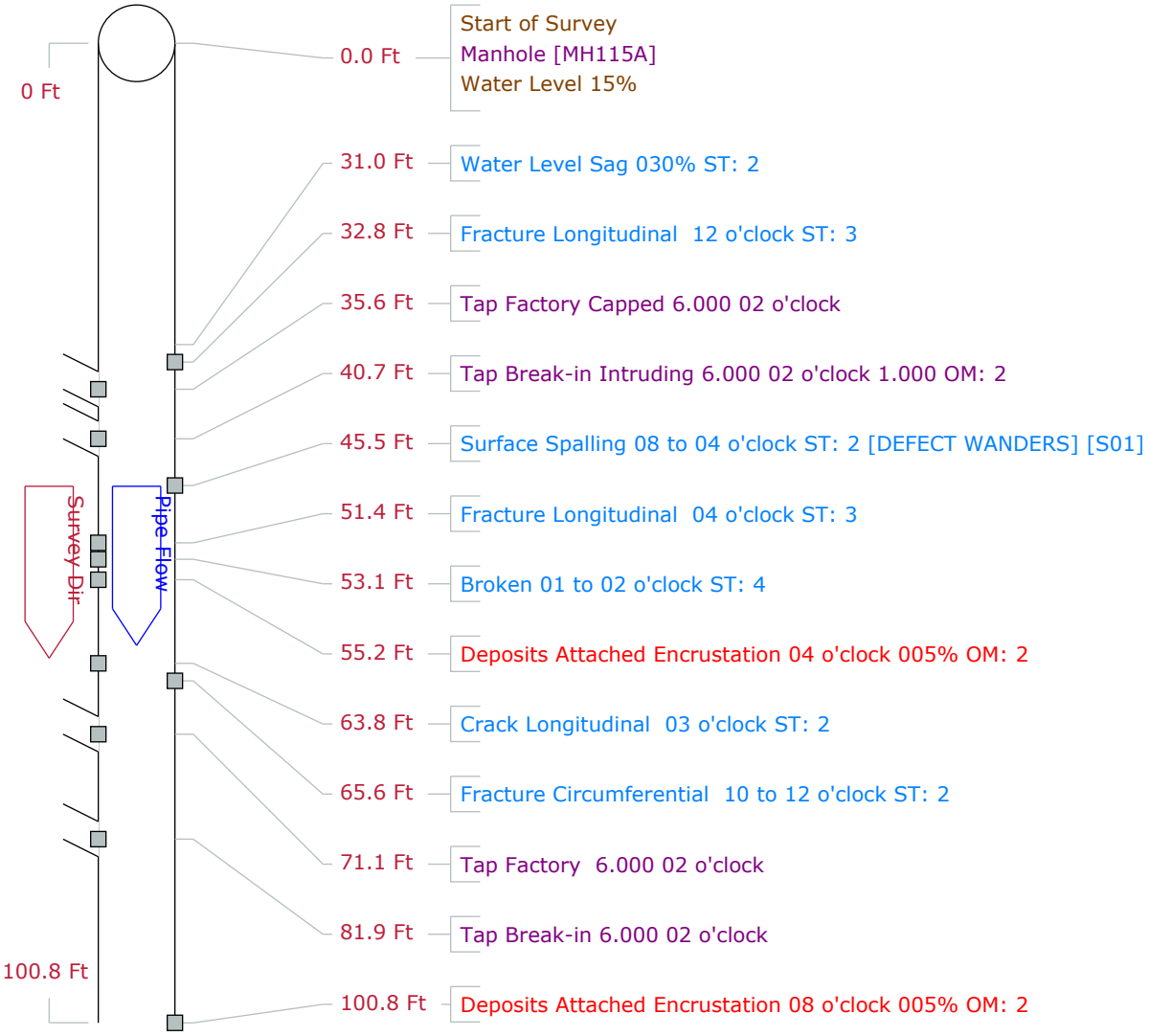
Project JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV

Work Order

Northing Easting Elevation

Coordinate System GPS Accuracy

Structural O & M Constructional
Miscellaneous Hydraulic



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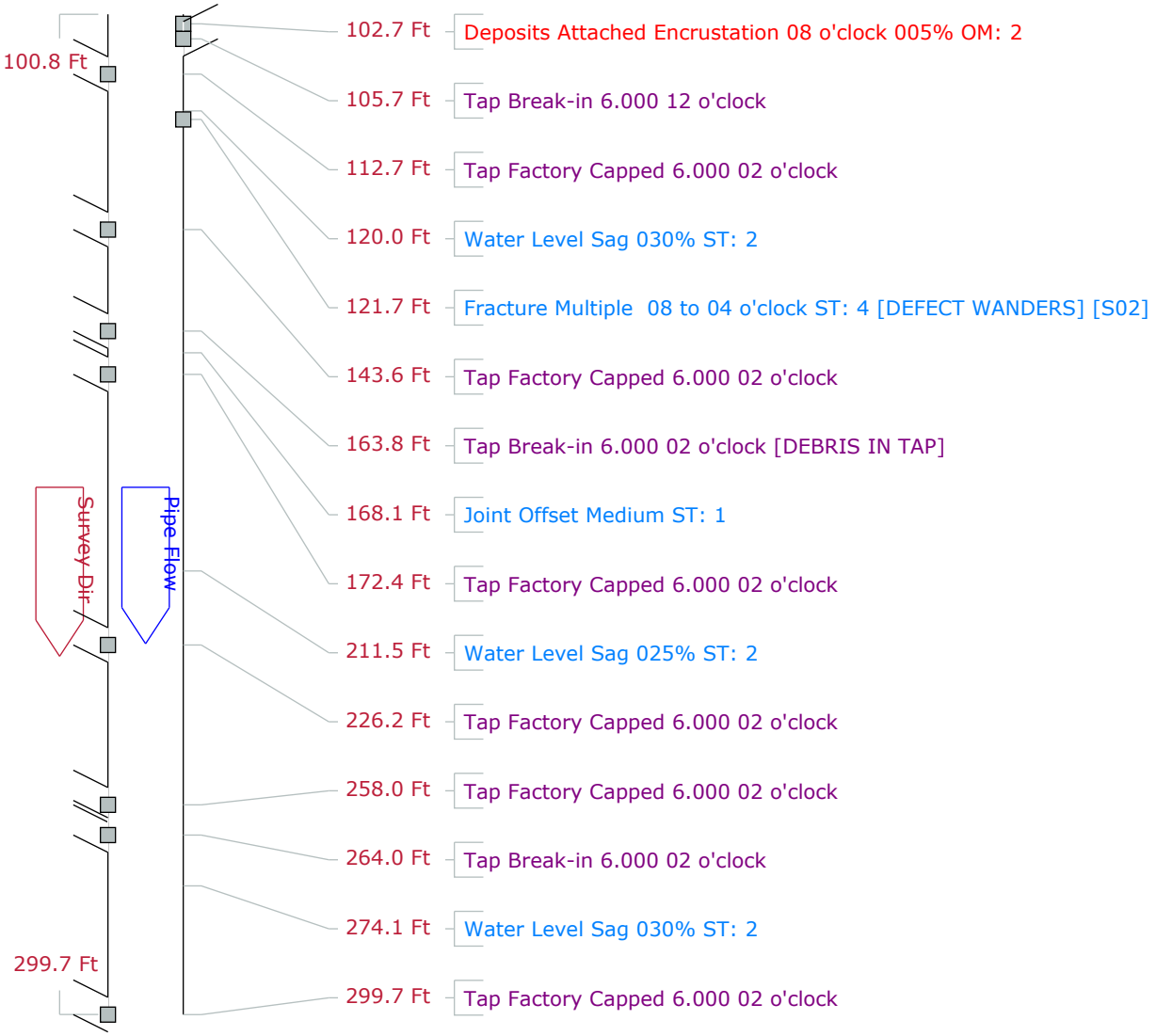
Pipe Graphic Report of PSR 888B for CITY OF IONIA

Setup	38	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/31	Time	8:46	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH115A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH116	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	18	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	386.7 Ft	Length Surveyed	386.70 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat				Date Cleaned	2024/07/26

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV		
Northing	Easting	Work Order	Constructional
Coordinate System		Elevation	
		GPS Accuracy	



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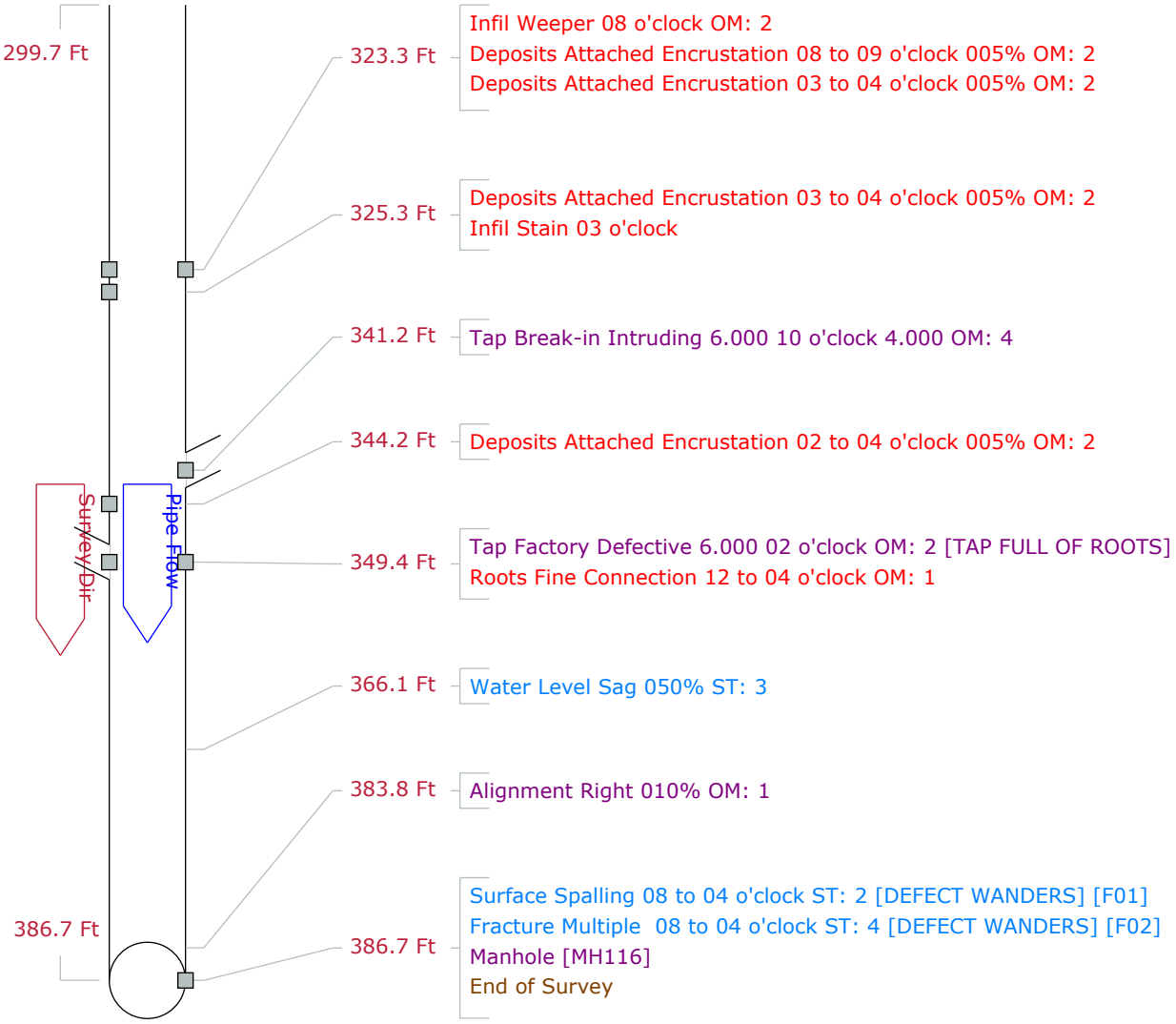
Pipe Graphic Report of PSR 888B for CITY OF IONIA

Setup	38	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/31	Time	8:46	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH115A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH116	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	18	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	386.7 Ft	Length Surveyed	386.70 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat				Date Cleaned	2024/07/26

Additional info			Structural	O & M	Constructional
Location	Main Highway - Suburban/Rural		Miscellaneous	Hydraulic	
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV		Work Order		
Northing	Easting		Elevation		
Coordinate System			GPS Accuracy		



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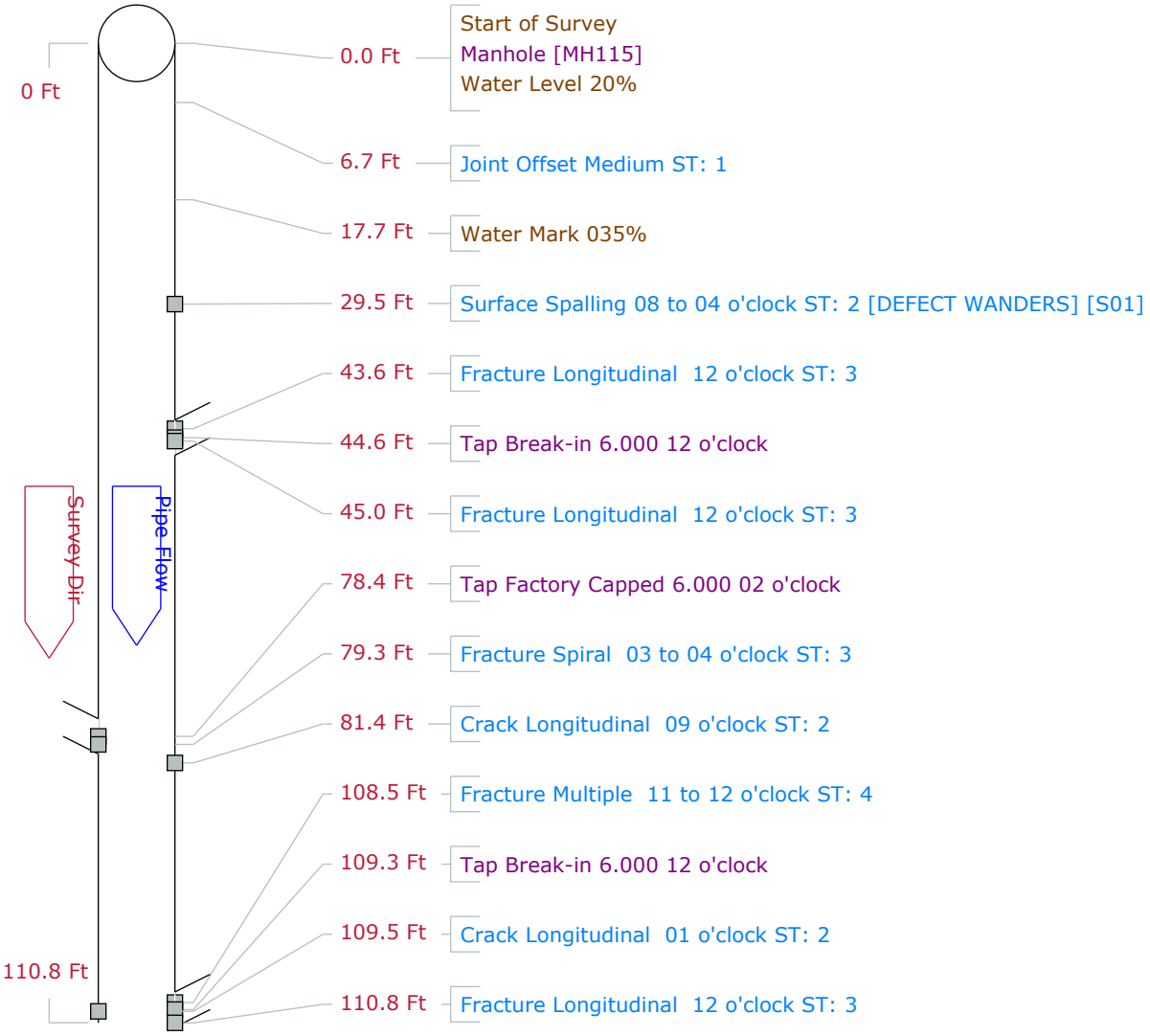
Pipe Graphic Report of PSR 888A for CITY OF IONIA

Setup	37	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/26	Time	14:36	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH115	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH115A	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	15	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	207.0 Ft	Length Surveyed	207.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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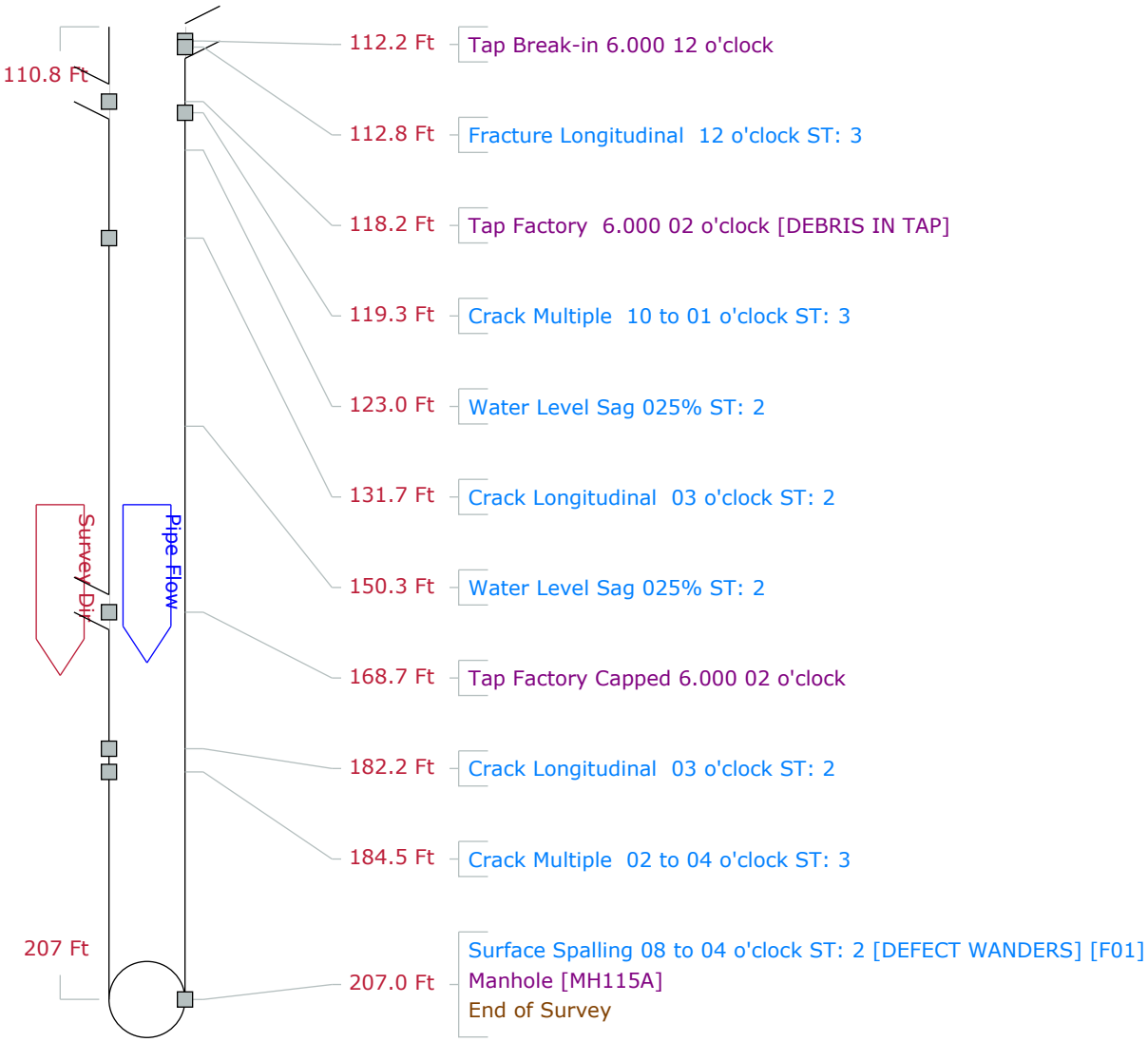
Pipe Graphic Report of PSR 888A for CITY OF IONIA

Setup	37	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/26	Time	14:36	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH115	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH115A	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	15	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	207.0 Ft	Length Surveyed	207.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info				Structural	O & M
Location	Main Highway - Suburban/Rural			Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV			Work Order	
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	



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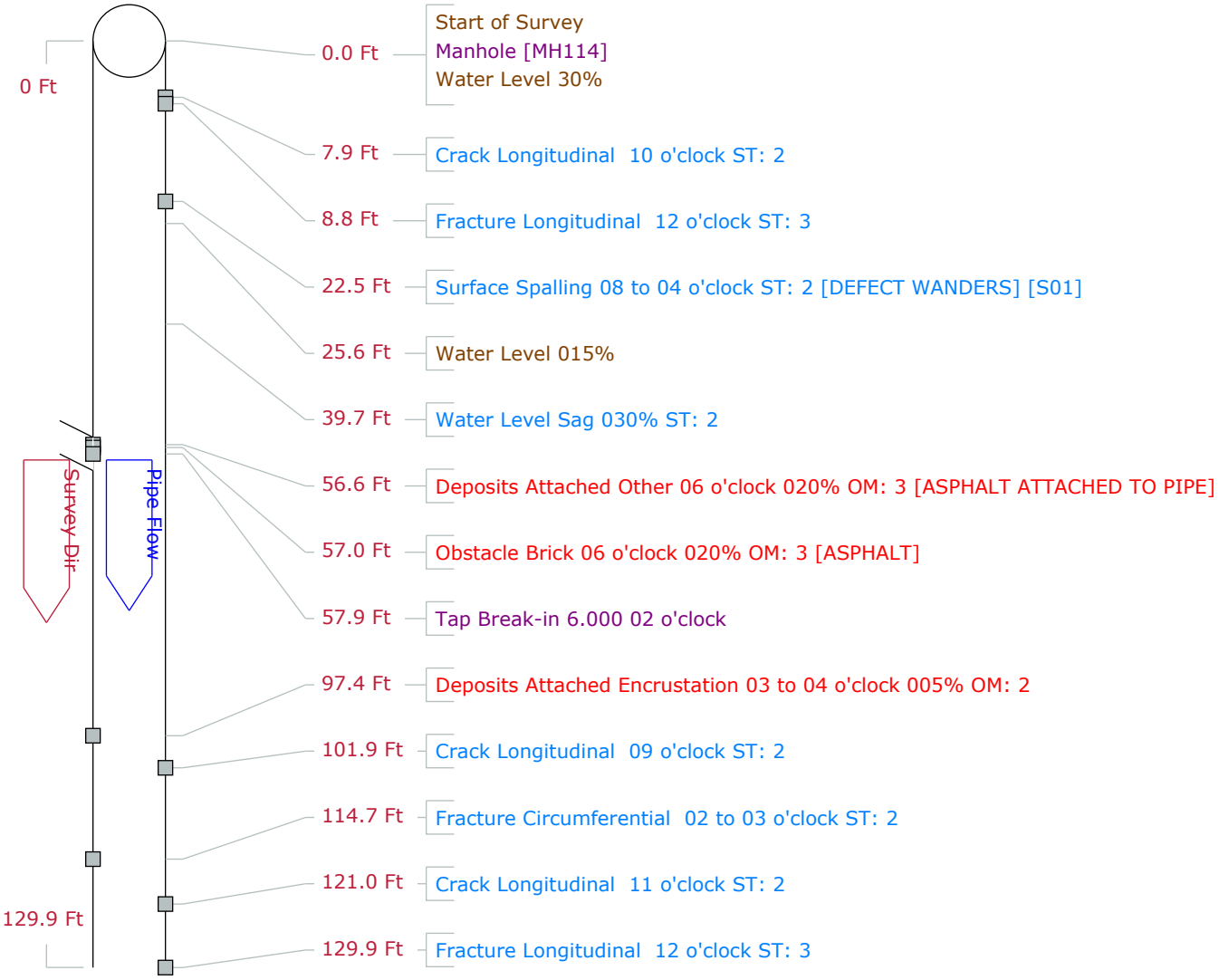
Pipe Graphic Report of PSR 891 for CITY OF IONIA

Setup	36	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/23	Time	11:04	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH114	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH115	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	15	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	408.1 Ft	Length Surveyed	408.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat				Date Cleaned	2024/07/23

Additional info			Structural	O & M	Constructional
Location	Main Highway - Suburban/Rural		Miscellaneous	Hydraulic	
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV		Work Order		
Northing	Easting		Elevation		
Coordinate System			GPS Accuracy		



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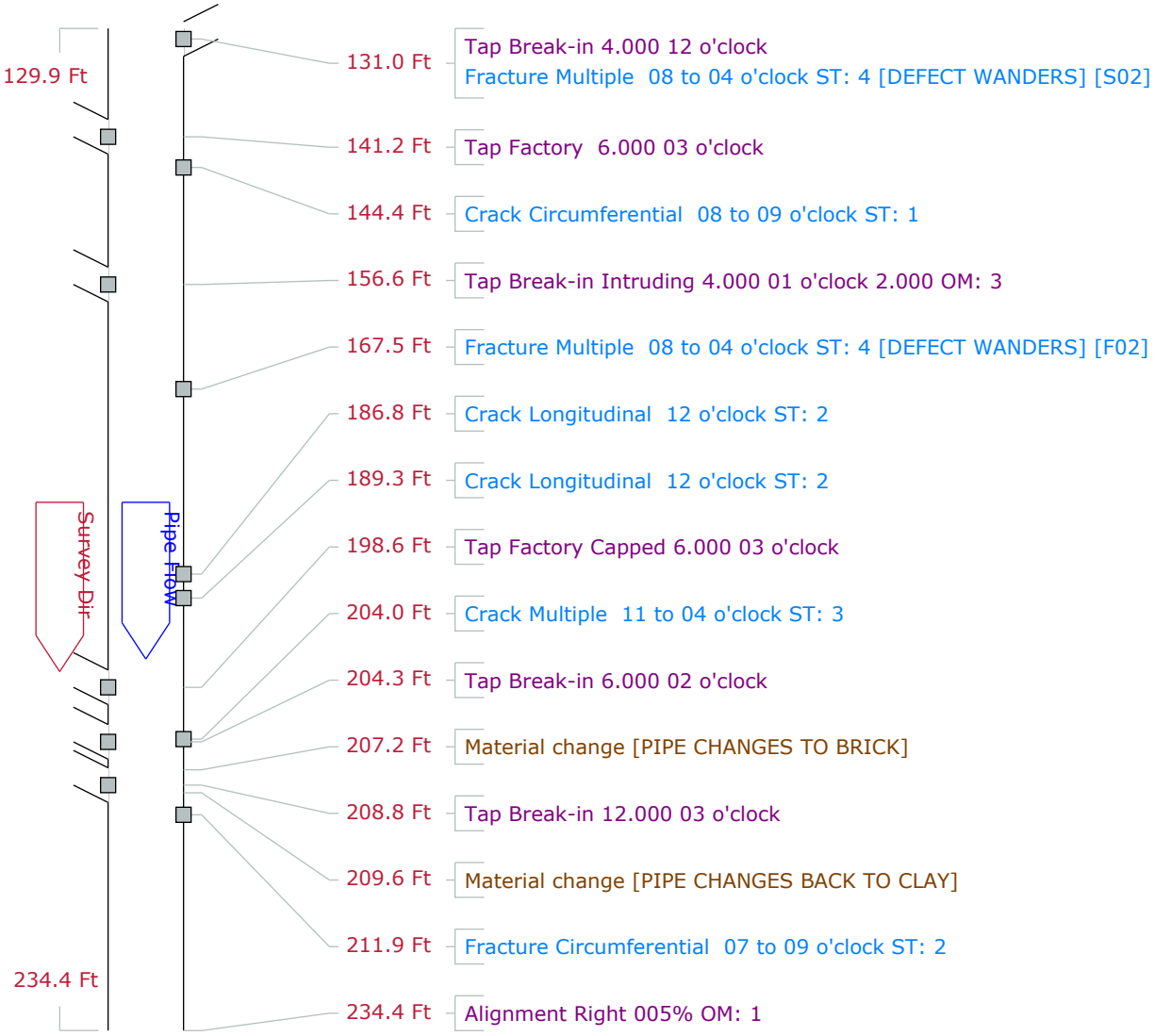
Pipe Graphic Report of PSR 891 for CITY OF IONIA

Setup	36	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/23	Time	11:04	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH114	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH115	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	15	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	408.1 Ft	Length Surveyed	408.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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Phone:616-877-3930

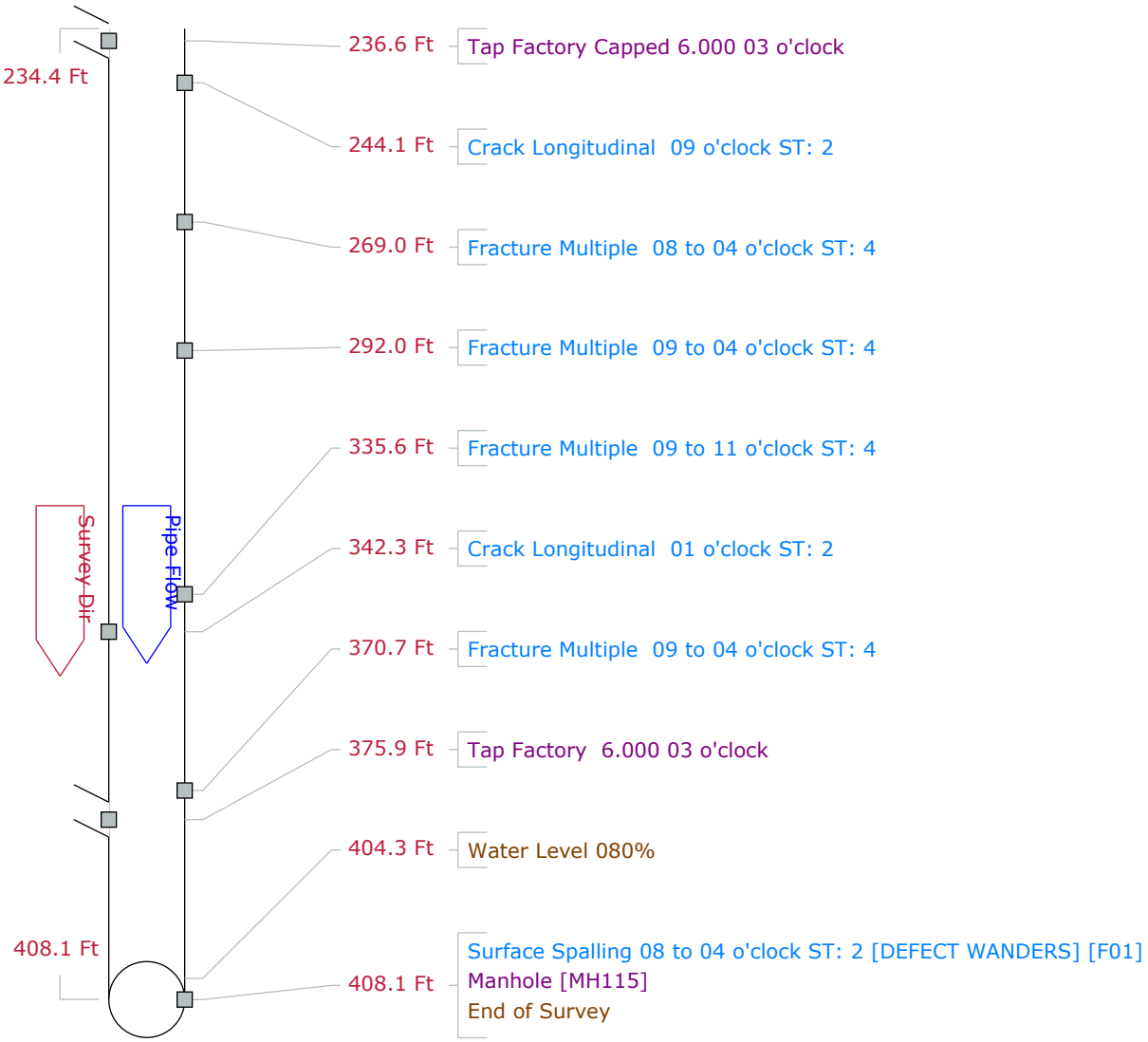
Pipe Graphic Report of PSR 891 for CITY OF IONIA

Setup	36	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/23	Time	11:04	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH114	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH115	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	15	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	408.1 Ft	Length Surveyed	408.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural		
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



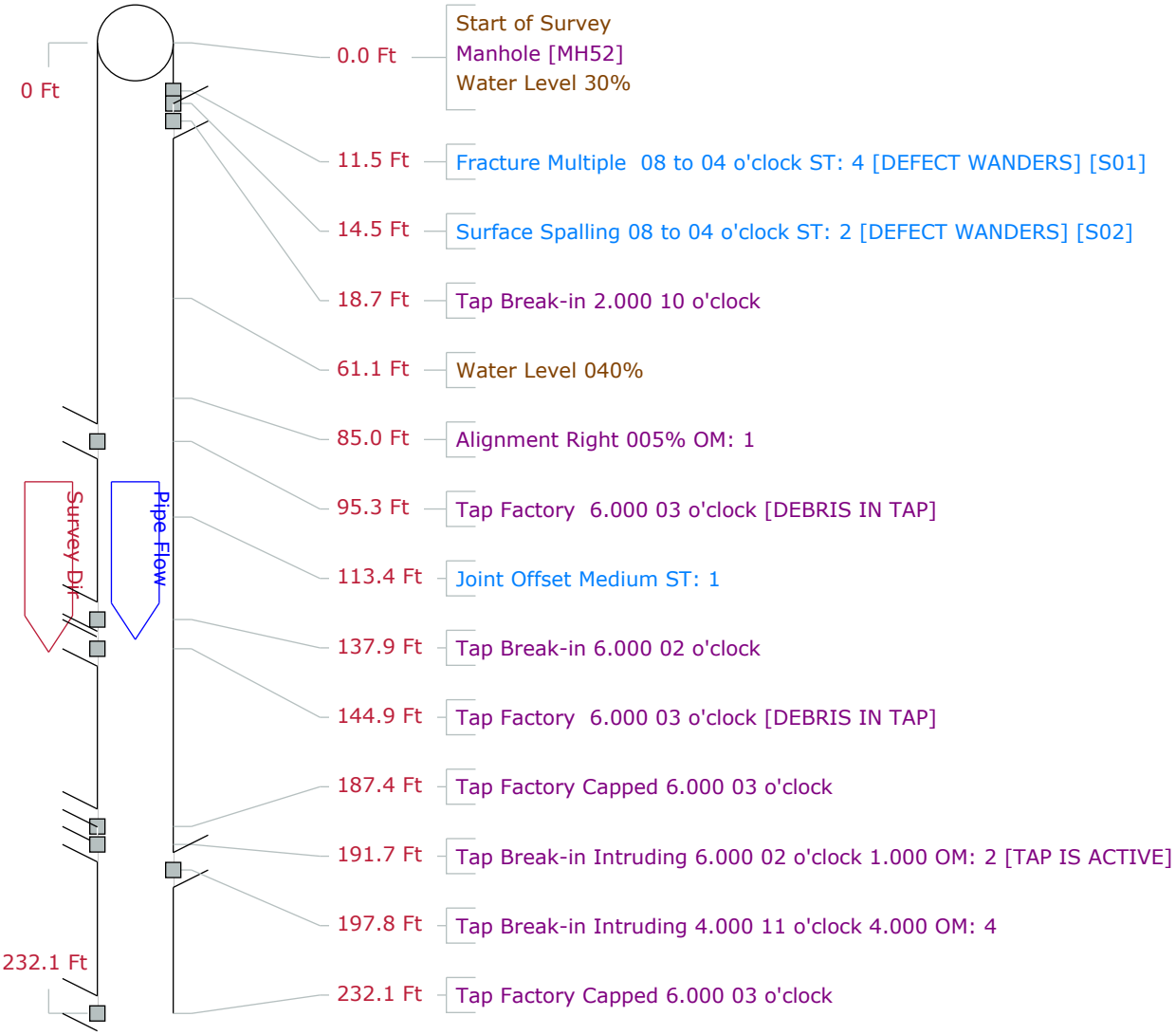
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Plummers Environmental Services
Phone:616-877-3930

Pipe Graphic Report of PSR 893 for CITY OF IONIA

Setup	35	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/23	Time	8:41	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH52	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH114	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	15	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	260.9 Ft	Length Surveyed	260.90 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



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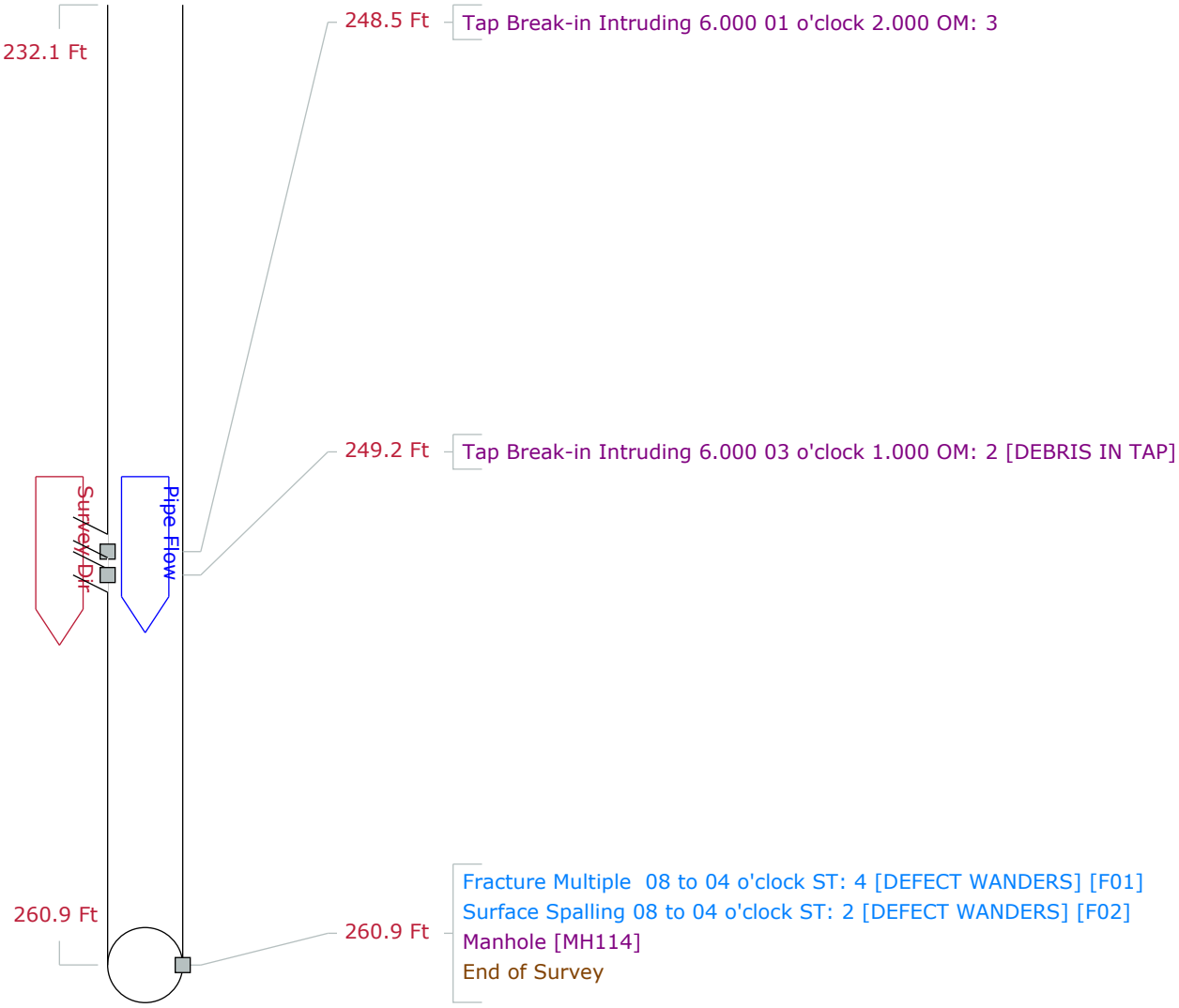
Pipe Graphic Report of PSR 893 for CITY OF IONIA

Setup	35	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/23	Time	8:41	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH52	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH114	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	15	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	260.9 Ft	Length Surveyed	260.90 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat				Date Cleaned	2024/07/23

Additional info			Structural	O & M	Constructional
Location	Main Highway - Suburban/Rural		Miscellaneous	Hydraulic	
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV			Work Order	
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	



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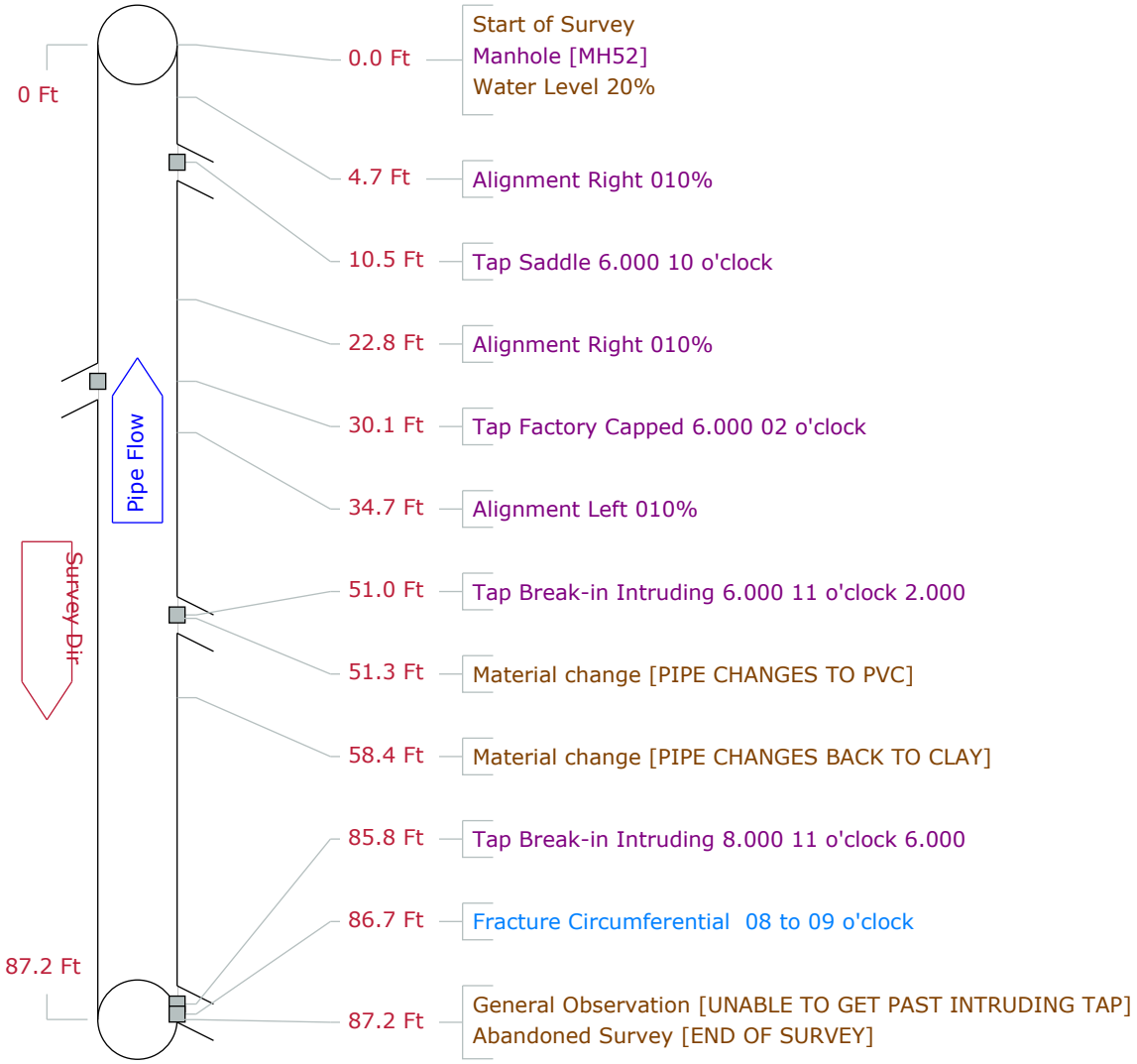
Pipe Graphic Report of PSR 894 for CITY OF IONIA

Setup	32	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/22	Time	11:55	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH536	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH52	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Upstream	Flow control		Media	No		
Shape	Circular	Height	15	Width	ins	Preclean	J	Date Cleaned	2024/07/22
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	87.20	Ft	
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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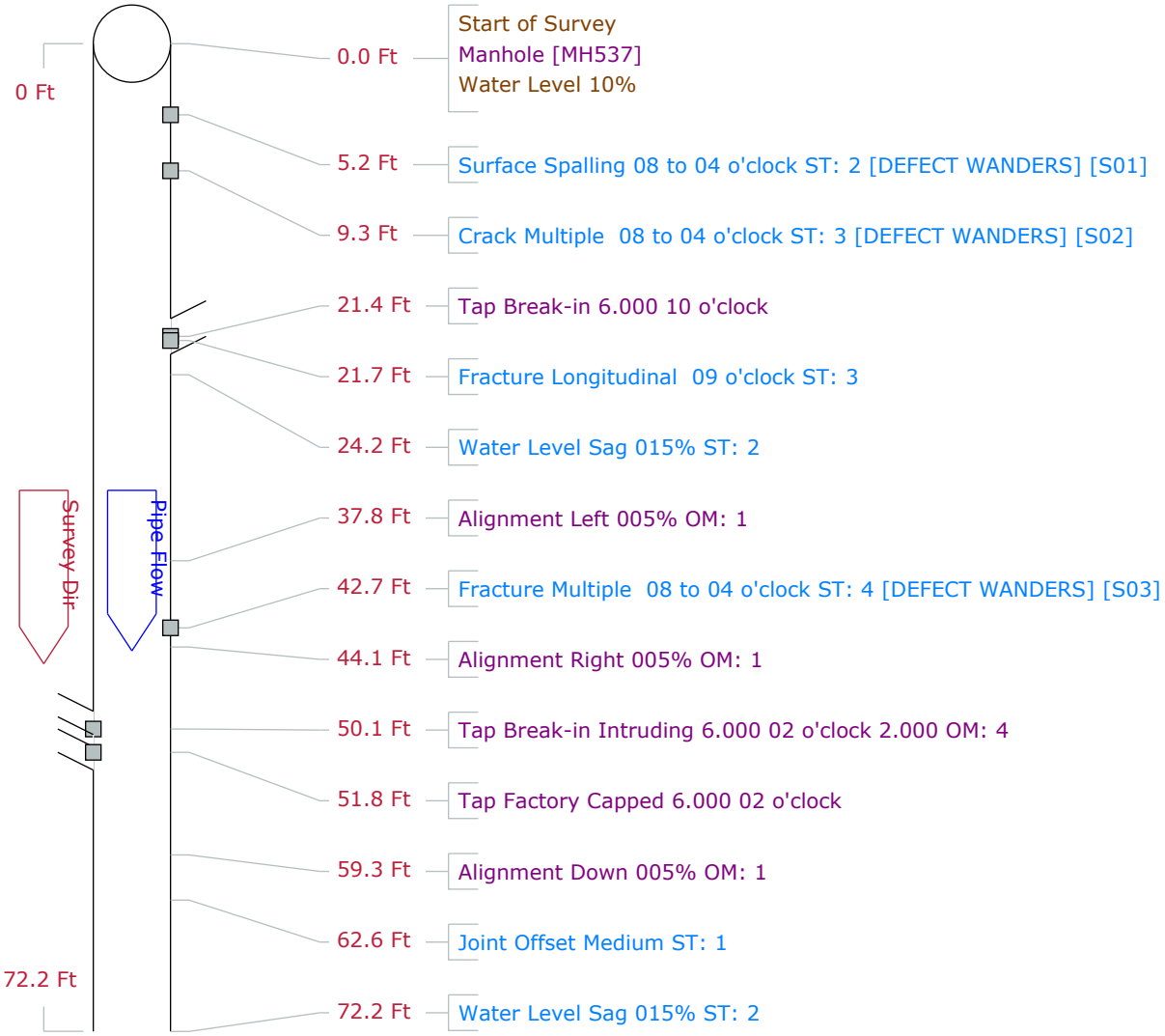
Pipe Graphic Report of PSR 426 for CITY OF IONIA

Setup	29	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	10:29	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH537	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH536	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean J	Date Cleaned 2024/07/18
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	292.7 Ft	Length Surveyed	292.70 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info		Structural	O & M / Constructional
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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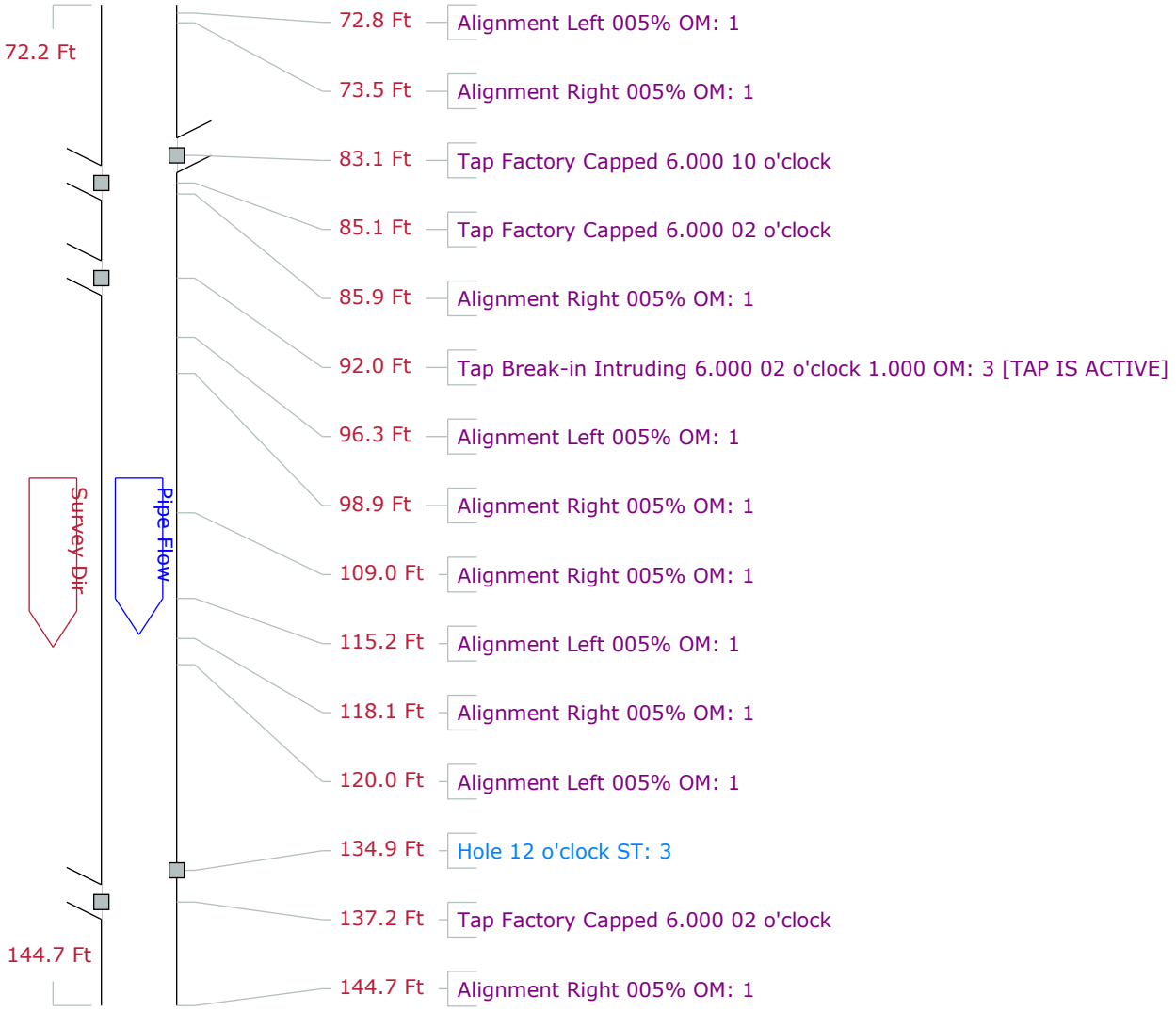
Pipe Graphic Report of PSR 426 for CITY OF IONIA

Setup	29	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	10:29	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH537	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH536	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	292.7 Ft	Length Surveyed	292.70 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat				Date Cleaned	2024/07/18

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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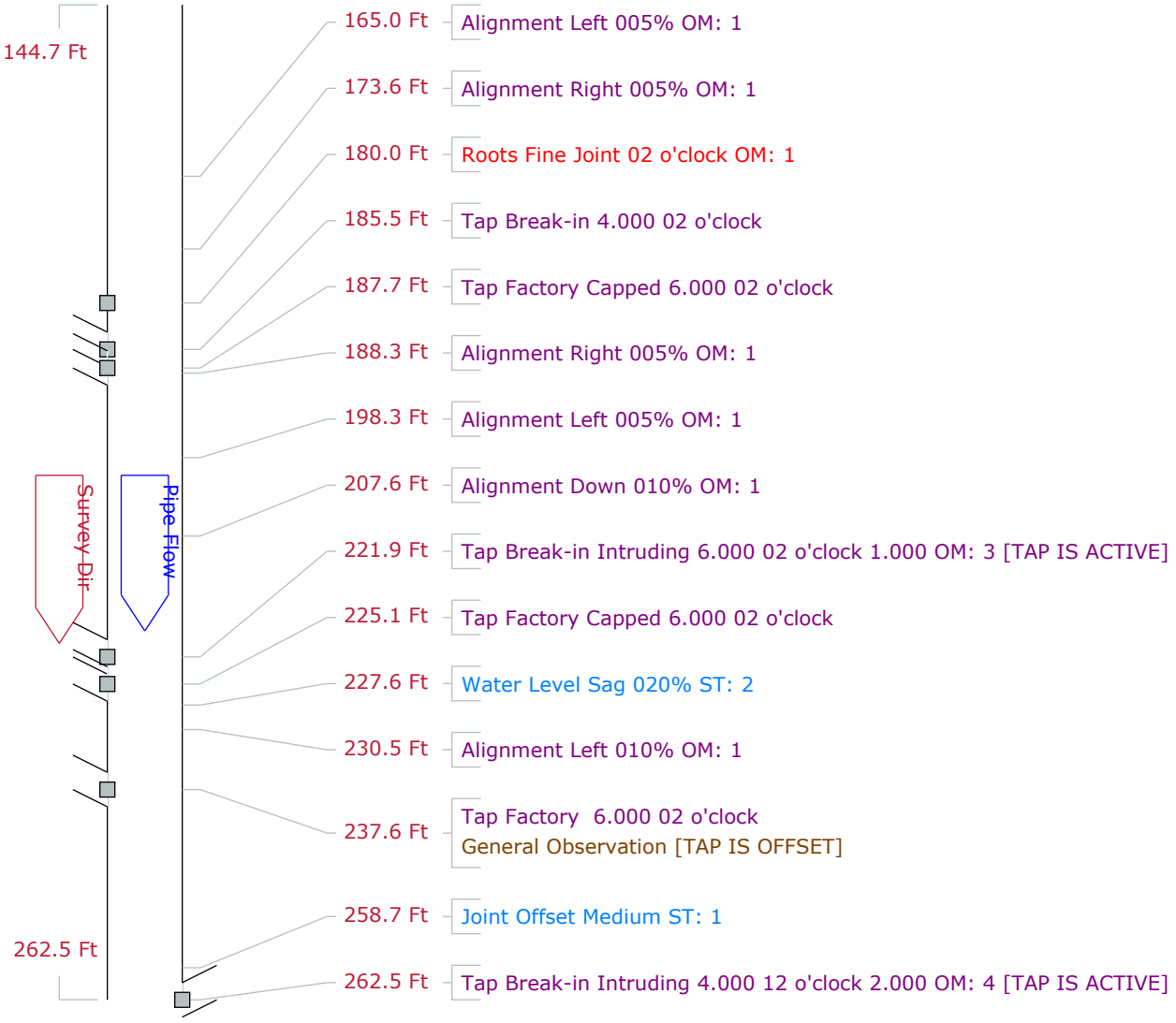
Pipe Graphic Report of PSR 426 for CITY OF IONIA

Setup	29	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	10:29	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH537	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH536	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	292.7 Ft	Length Surveyed	292.70 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural		
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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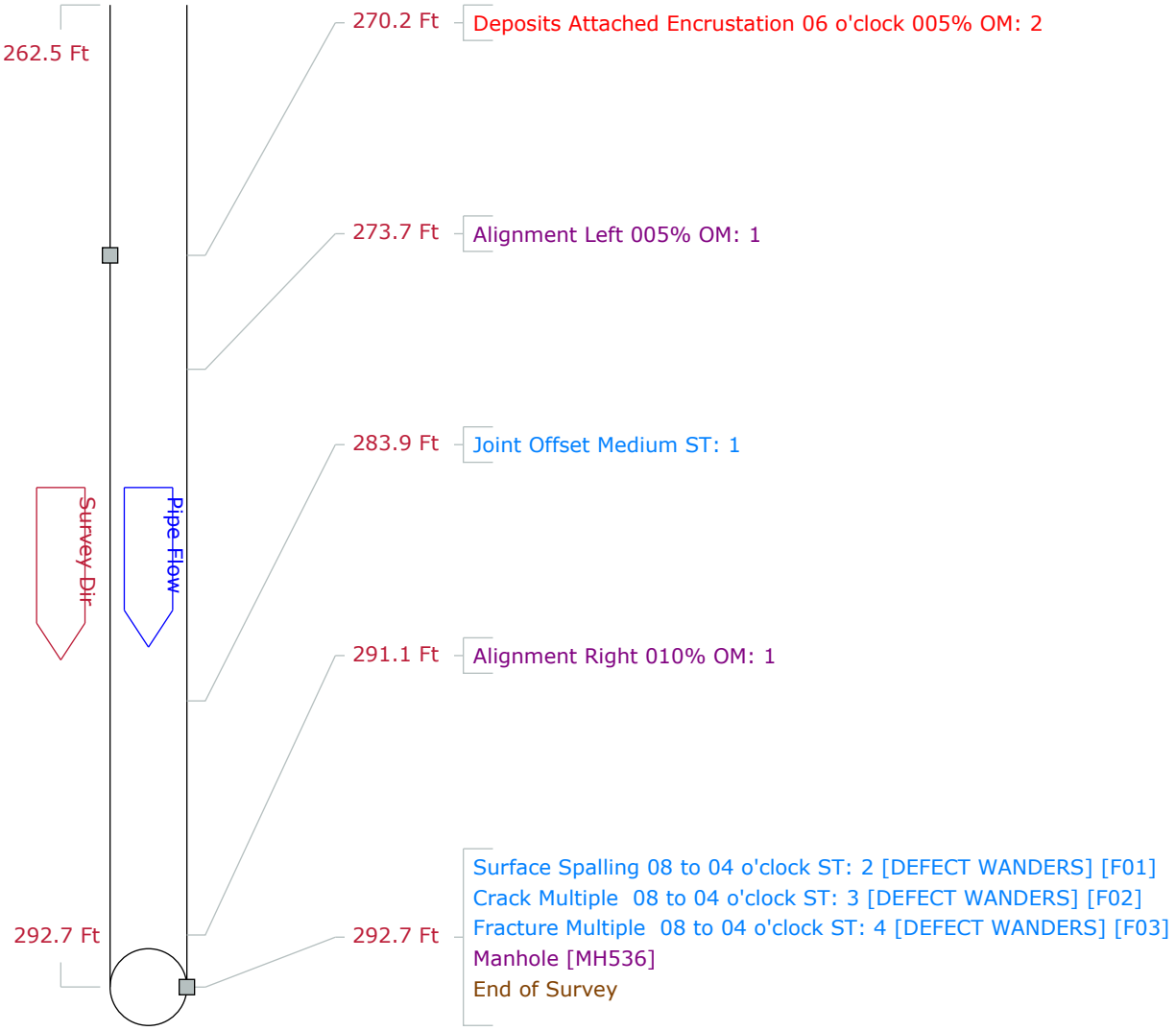
Pipe Graphic Report of PSR 426 for CITY OF IONIA

Setup	29	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	10:29	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH537	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH536	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	292.7 Ft	Length Surveyed	292.70 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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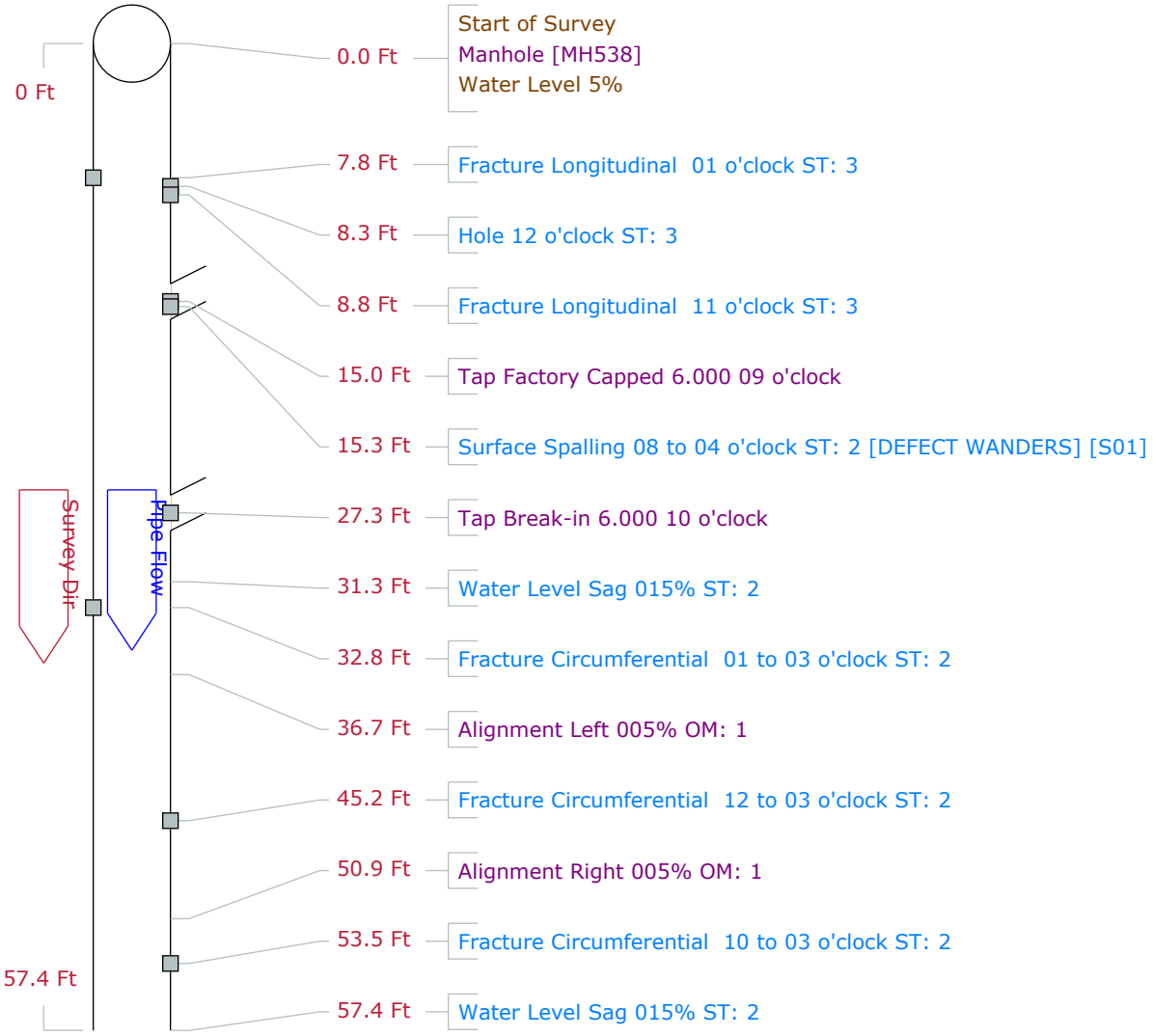
Pipe Graphic Report of PSR 425 for CITY OF IONIA

Setup	28	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	8:35	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH538	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH537	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	358.1 Ft	Length Surveyed	358.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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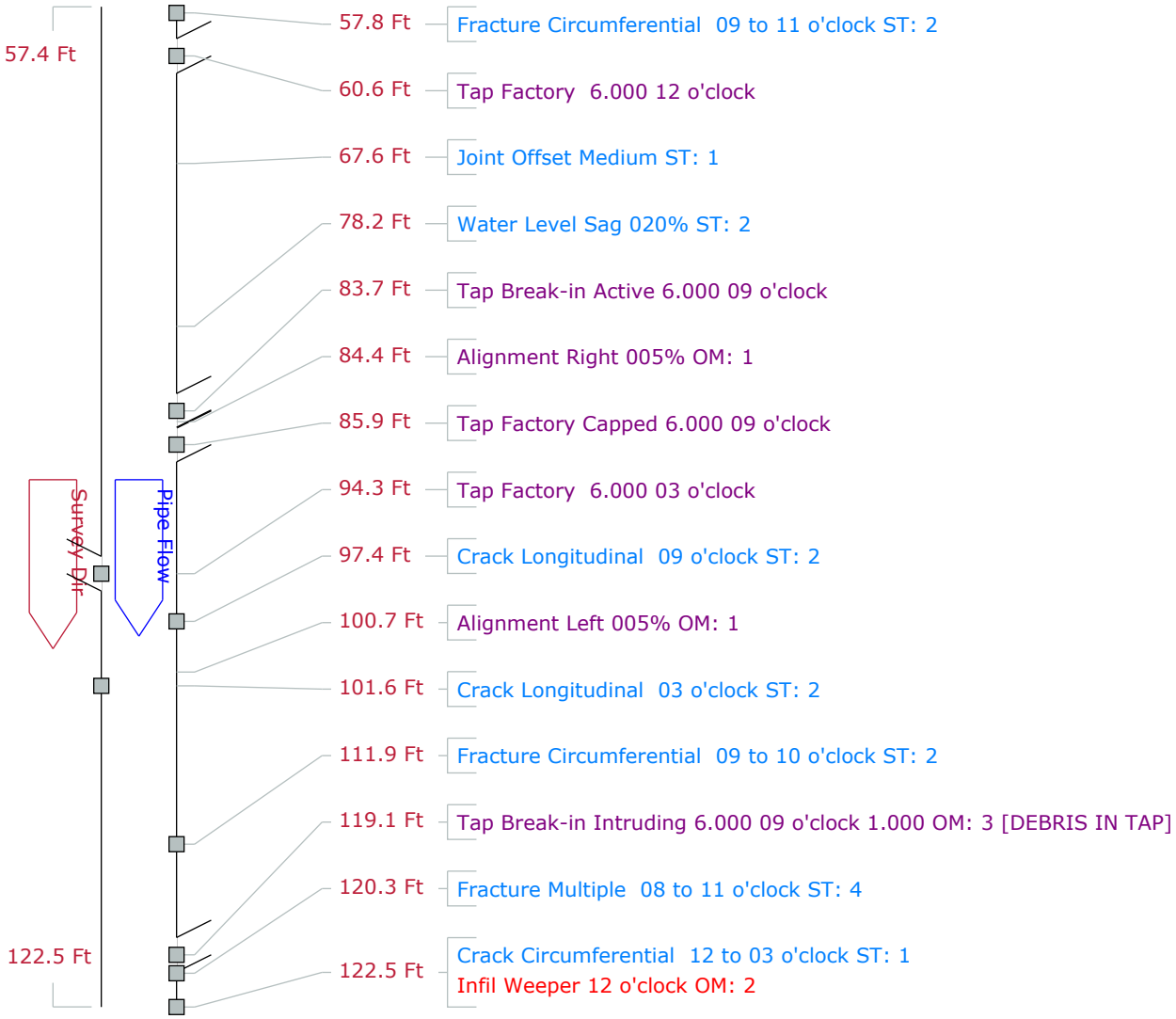
Pipe Graphic Report of PSR 425 for CITY OF IONIA

Setup	28	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	8:35	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH538	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH537	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	358.1 Ft	Length Surveyed	358.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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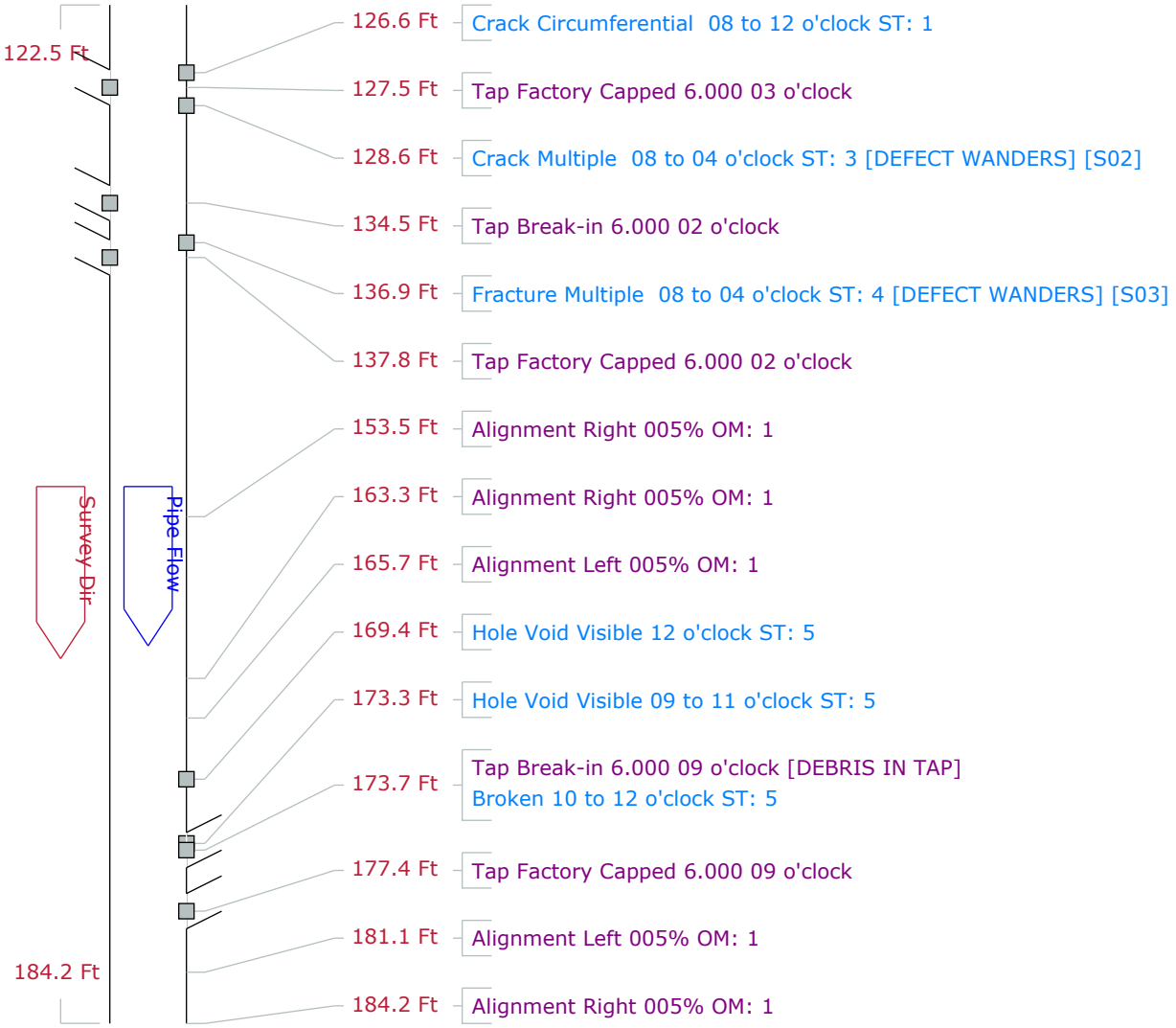
Pipe Graphic Report of PSR 425 for CITY OF IONIA

Setup	28	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	8:35	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH538	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH537	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	358.1 Ft	Length Surveyed	358.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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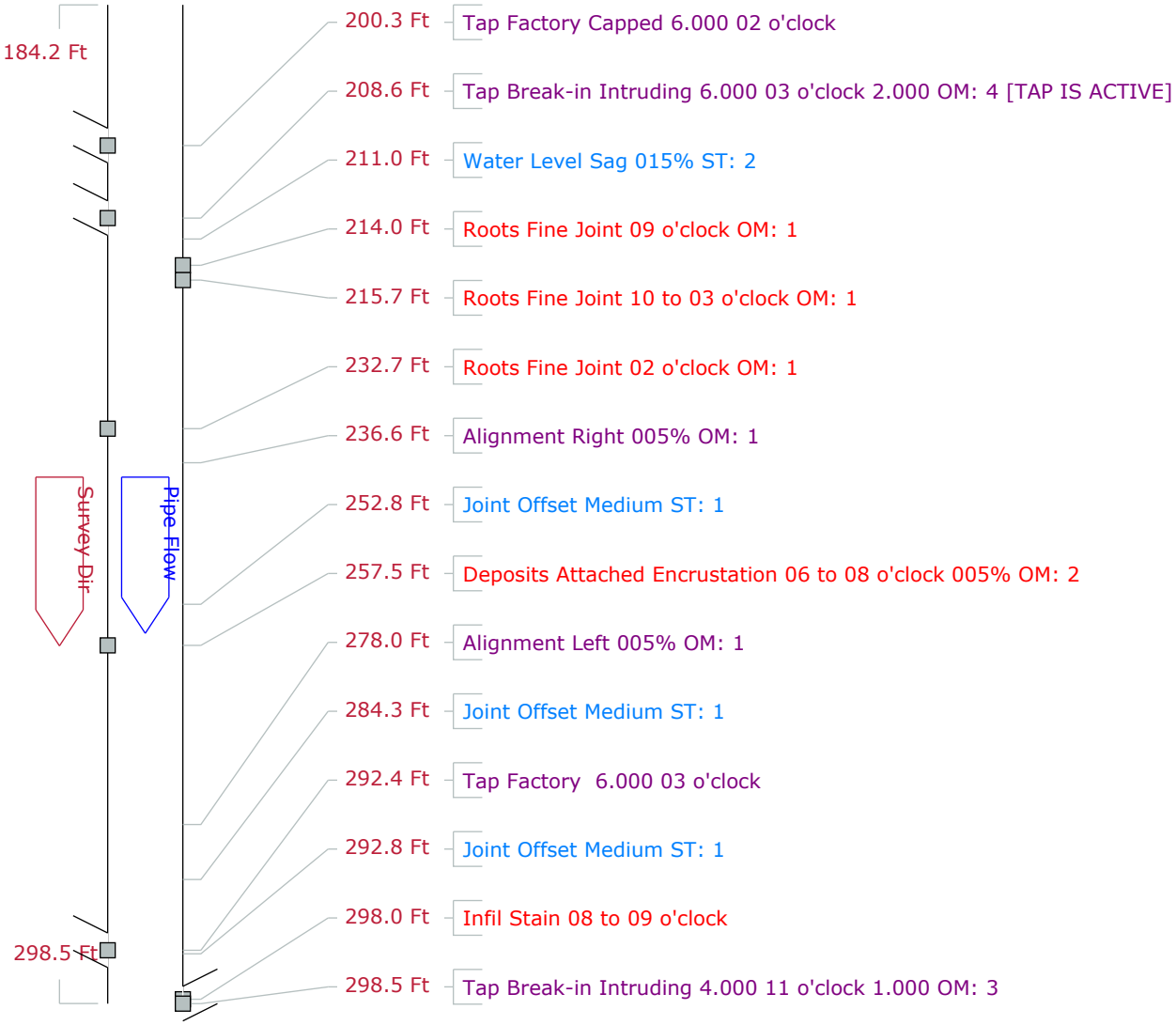
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Pipe Graphic Report of PSR 425 for CITY OF IONIA

Setup	28	Surveyor	NATE	Certificate #	P0043093-062023
System Owner					
Drainage		Survey Customer			
P/O #		Date	2024/07/18	Time	8:35
Street	E ADAMS ST.				
City	IONIA	Further location details			
Up	MH538	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH537	Rim to invert		Grade to invert	Rim to grade Ft
Use	Sanitary	Direction	Downstream	Flow control	Media No
Shape	Circular	Height	8	Width ins	Preclean J
Date Cleaned	2024/07/18				
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	358.1 Ft
Length Surveyed	358.10 Ft				
Lining		Year laid		Year rehabilitated	Weather Dry
Purpose		Cat			
Additional info					
Location	Main Highway - Suburban/Rural				
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV				
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic

Work Order



PLUMMER'S Environmental Services Inc.

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Pipe Graphic Report of PSR 425 for CITY OF IONIA

Setup	28	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/18	Time	8:35	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH538	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH537	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	358.1 Ft	Length Surveyed	358.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

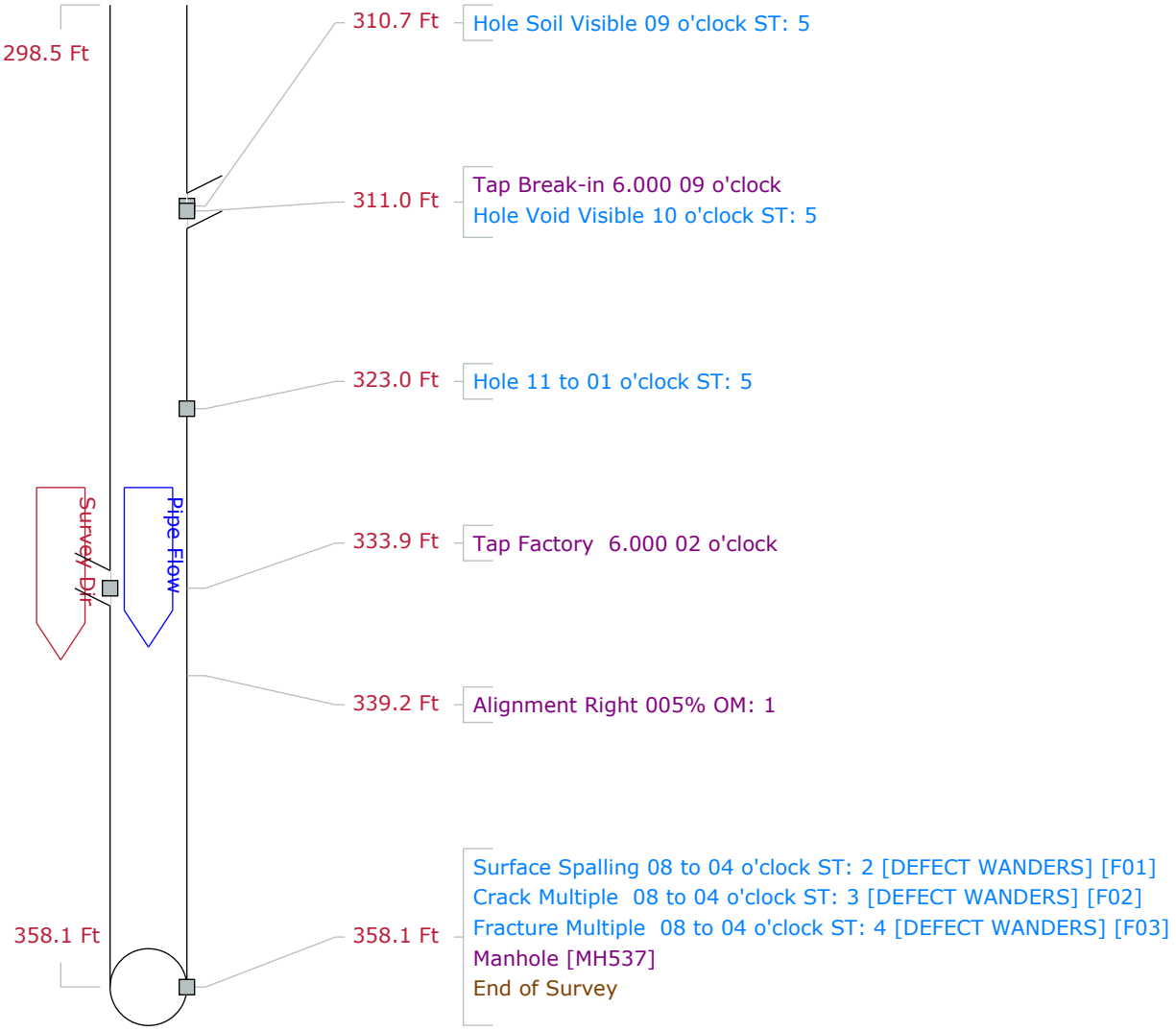
Structural O & M Constructional
Miscellaneous Hydraulic

Location Main Highway - Suburban/Rural

Project JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV Work Order

Northing Easting Elevation

Coordinate System GPS Accuracy



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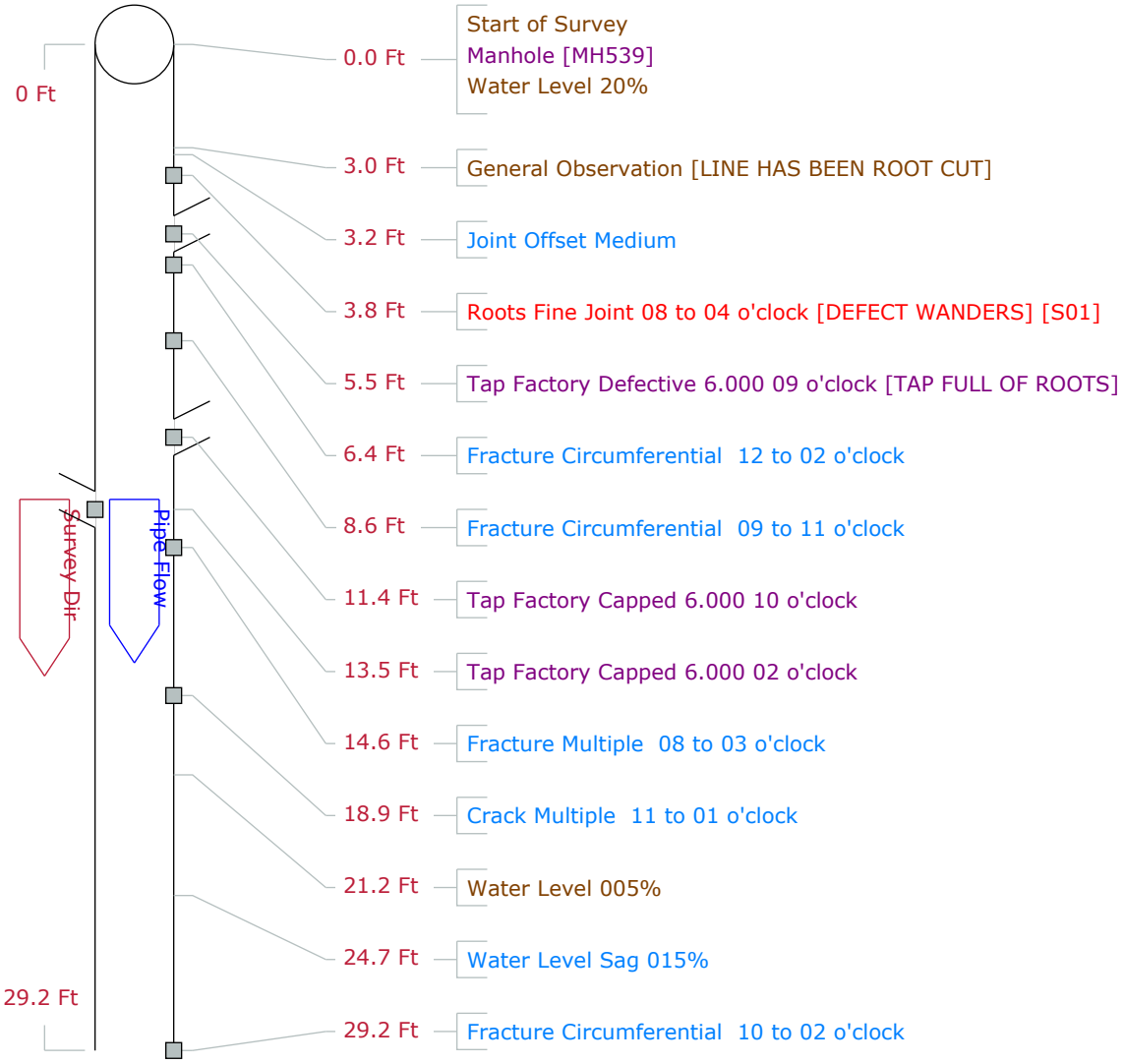
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Phone:616-877-3930

Pipe Graphic Report of PSR 423 for CITY OF IONIA

Setup	30	Surveyor	NATE	Certificate #	P0043093-062023
System Owner					
Drainage		Survey Customer			
P/O #		Date	2024/07/22	Time	8:22
Street	E ADAMS ST.				
City	IONIA	Further location details			
Up	MH539	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH538	Rim to invert		Grade to invert	Rim to grade Ft
Use	Sanitary	Direction	Downstream	Flow control	Media No
Shape	Circular	Height	8	Width ins	Preclean J
Date Cleaned	2024/07/22				
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	284.6 Ft
Length Surveyed	284.60 Ft				
Lining		Year laid		Year rehabilitated	Weather Dry
Purpose		Cat			
Additional info					
Location	Main Highway - Suburban/Rural				
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV				
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic

Work Order



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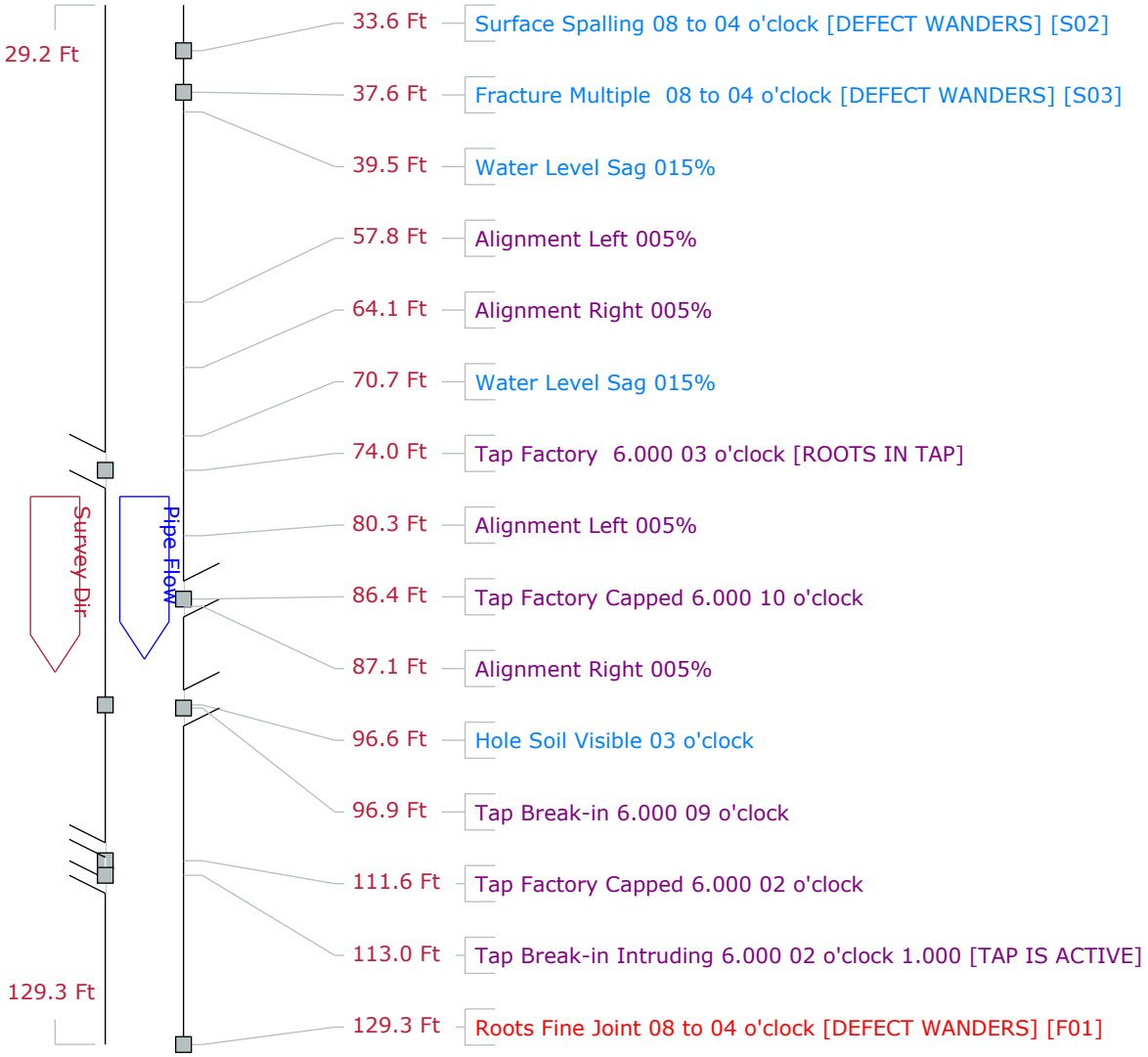
Pipe Graphic Report of PSR 423 for CITY OF IONIA

Setup	30	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/22	Time	8:22	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH539	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH538	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	284.6 Ft	Length Surveyed	284.60 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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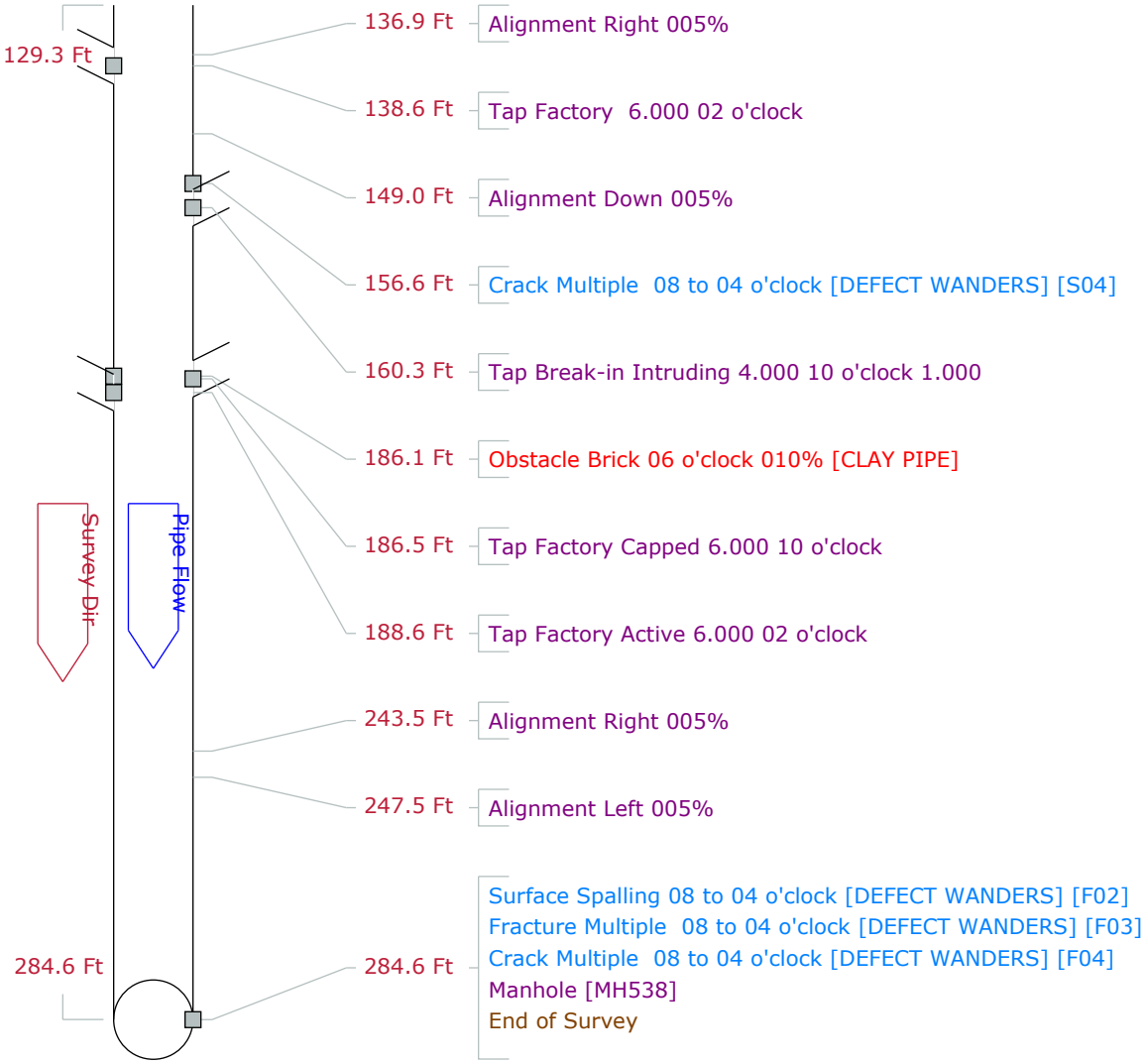
Pipe Graphic Report of PSR 423 for CITY OF IONIA

Setup	30	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/22	Time	8:22	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH539	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH538	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	284.6 Ft	Length Surveyed	284.60 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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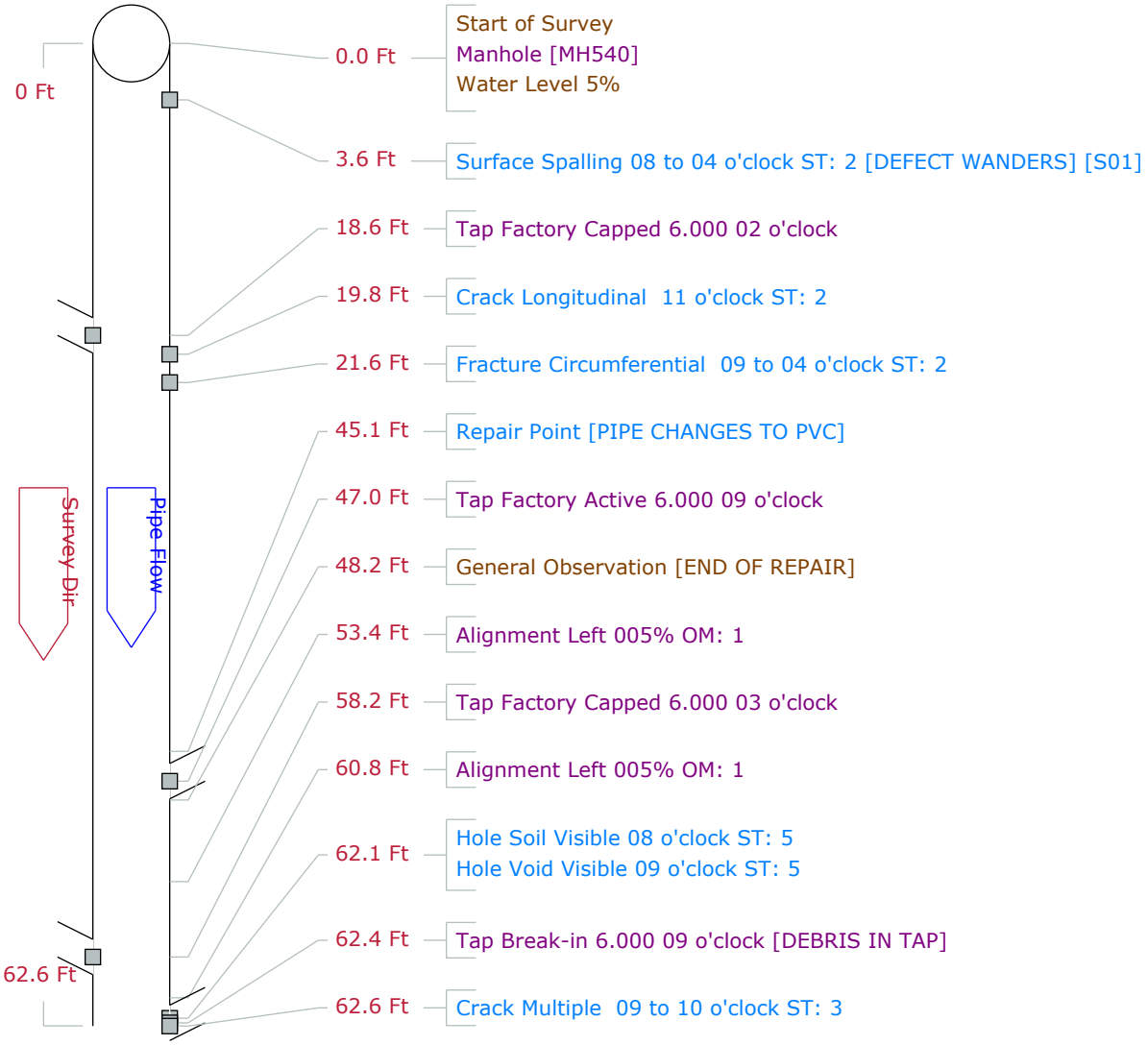
Pipe Graphic Report of PSR 424 for CITY OF IONIA

Setup	26	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	14:03	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH539	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media No			
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	291.40 Ft		
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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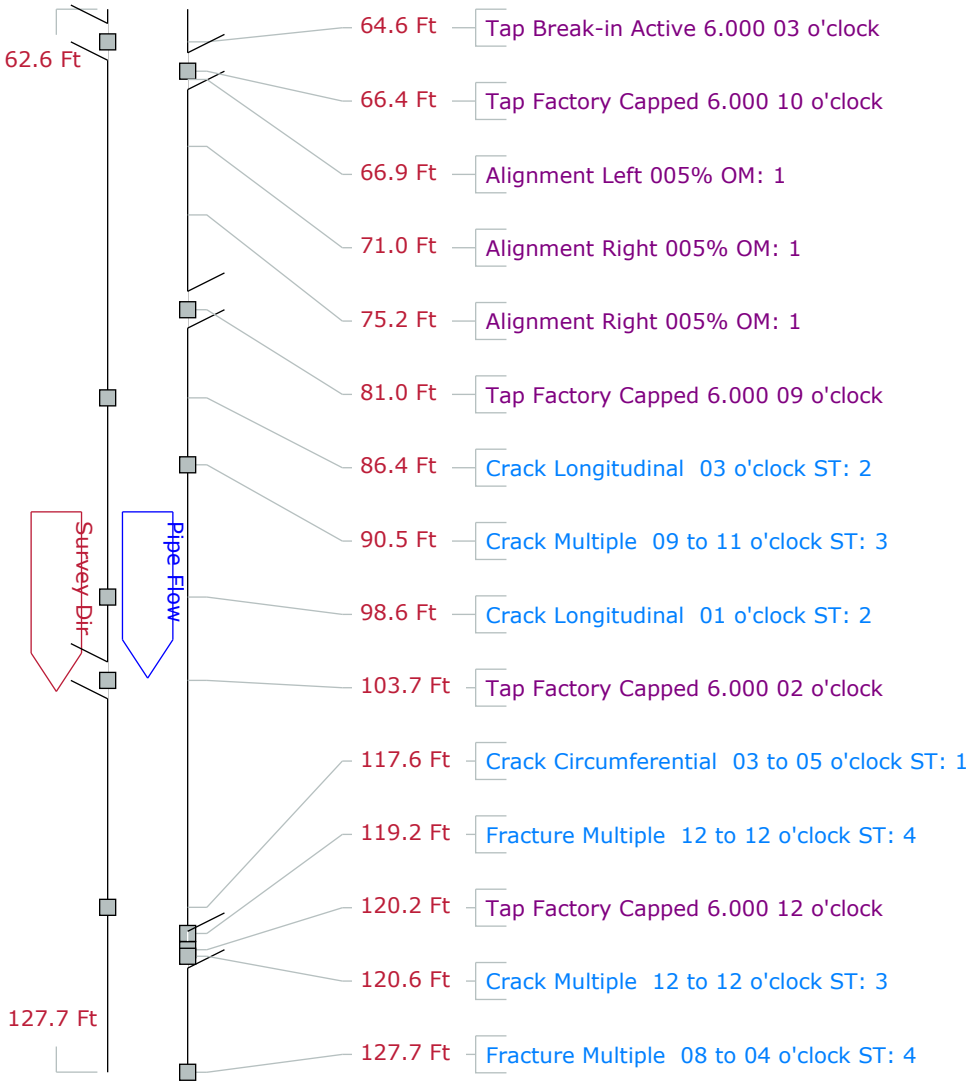
Pipe Graphic Report of PSR 424 for CITY OF IONIA

Setup	26	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	14:03	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH539	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No		
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	291.40 Ft		
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info				Structural	O & M
Location	Main Highway - Suburban/Rural			Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV			Work Order	
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	



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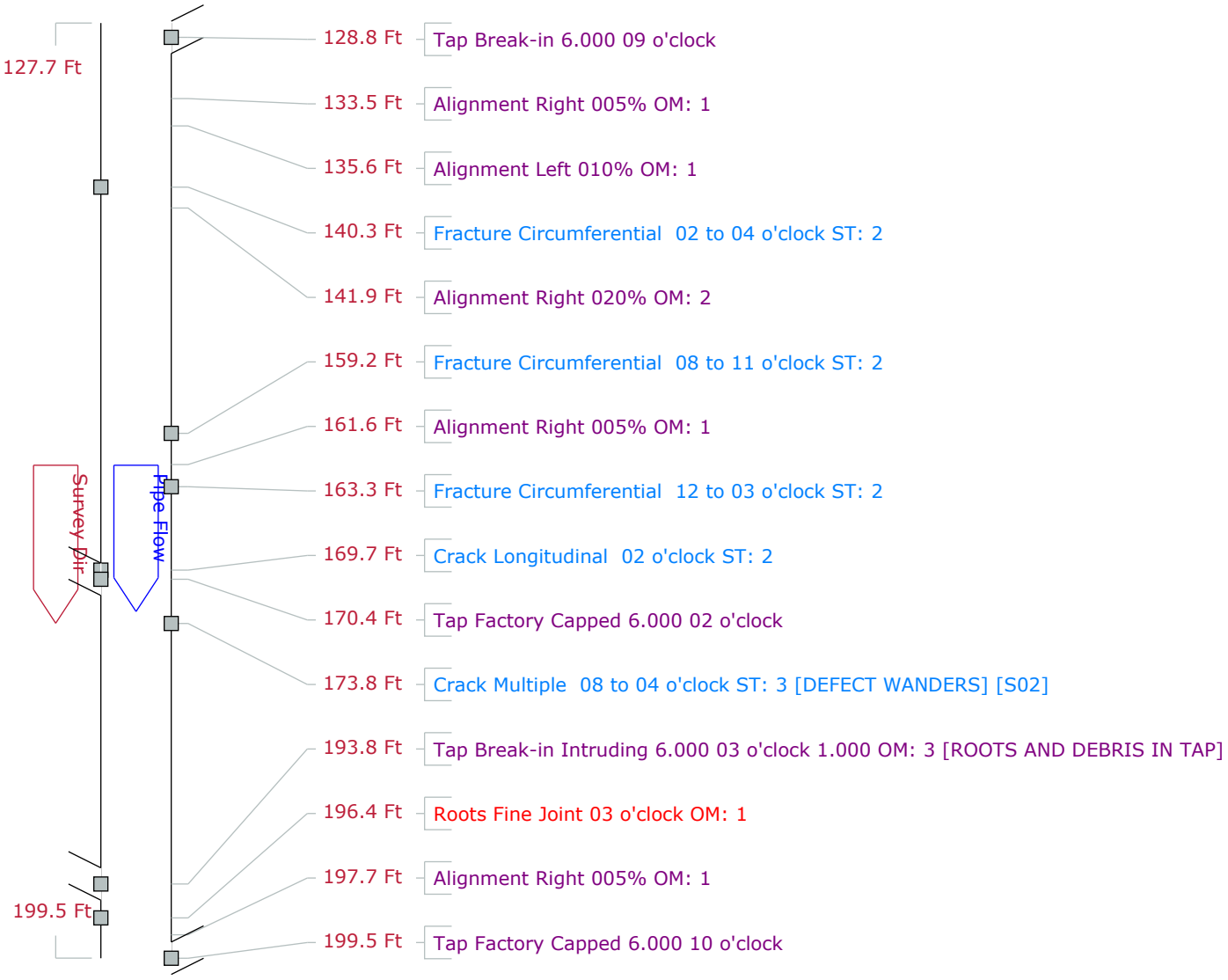
Pipe Graphic Report of PSR 424 for CITY OF IONIA

Setup	26	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	14:03	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH539	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No		
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	291.40 Ft		
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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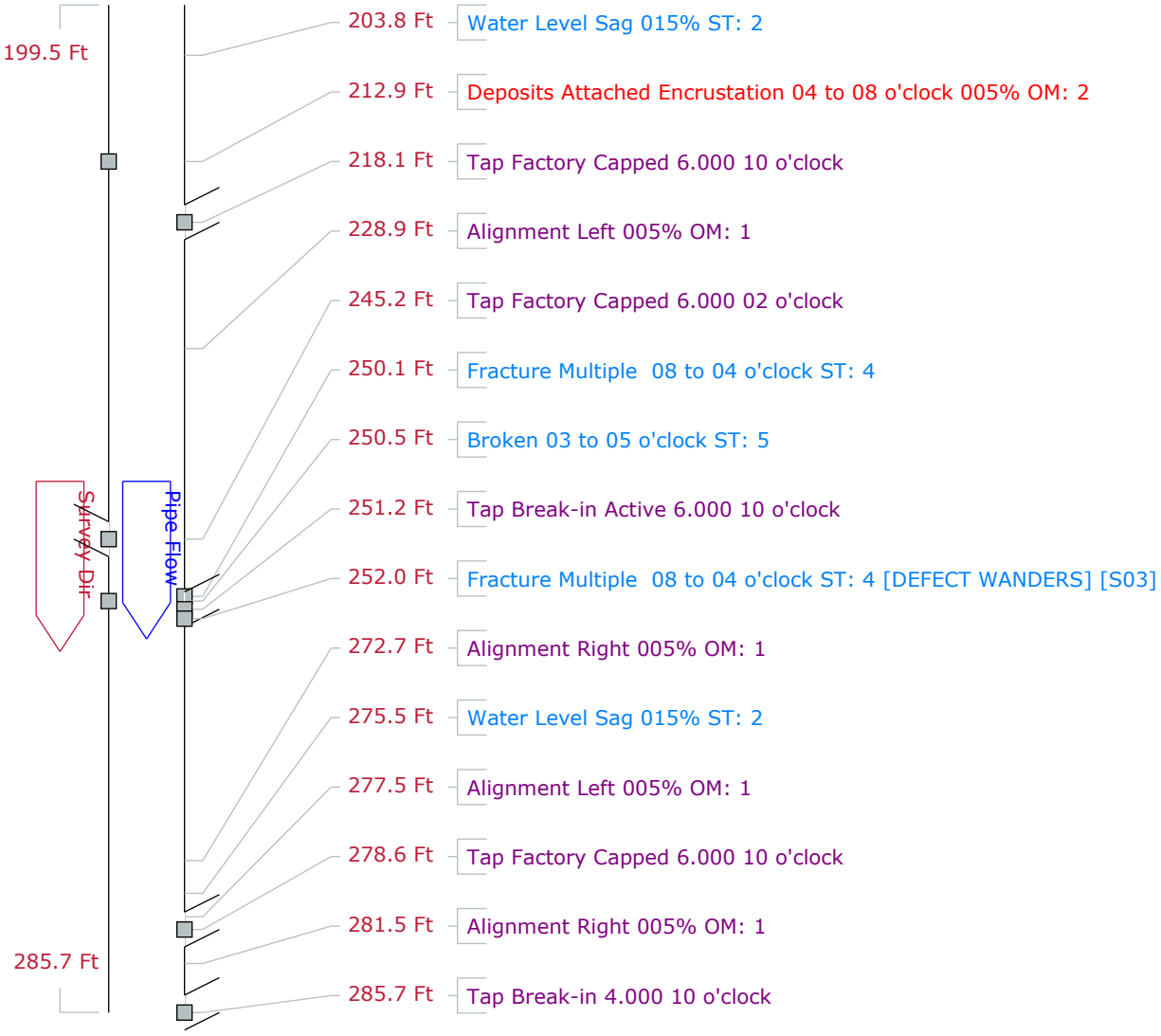
Pipe Graphic Report of PSR 424 for CITY OF IONIA

Setup	26	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	14:03	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH539	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media No			
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	291.40 Ft		
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info				Structural	O & M	Constructional
Location	Main Highway - Suburban/Rural			Miscellaneous	Hydraulic	
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV			Work Order		
Northing		Easting		Elevation		
Coordinate System				GPS Accuracy		



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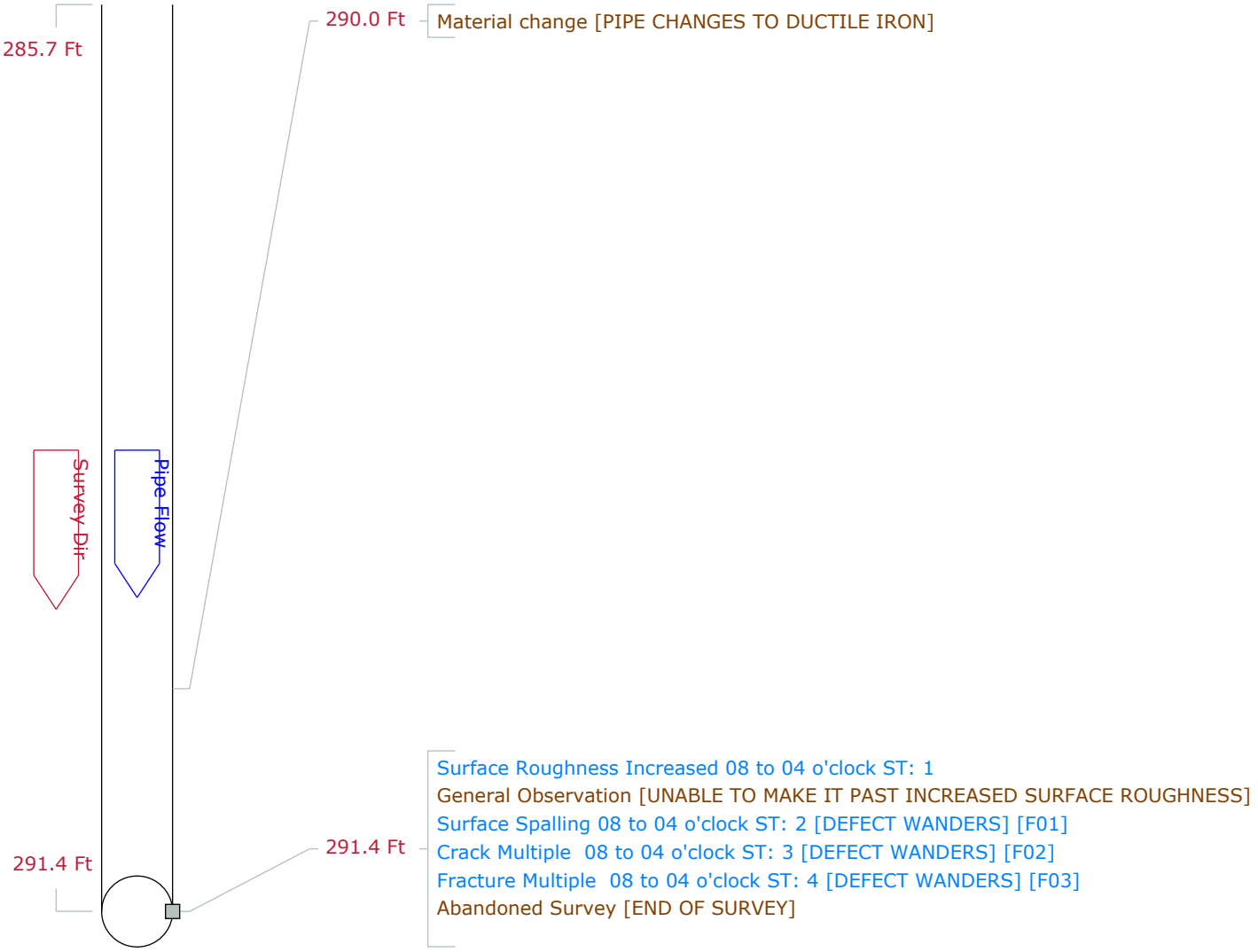
Pipe Graphic Report of PSR 424 for CITY OF IONIA

Setup	26	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	14:03	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH539	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No		
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	291.40 Ft		
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info			Structural	O & M	Constructional
Location	Main Highway - Suburban/Rural		Miscellaneous	Hydraulic	
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV		Work Order		
Northing		Easting	Elevation		
Coordinate System			GPS Accuracy		



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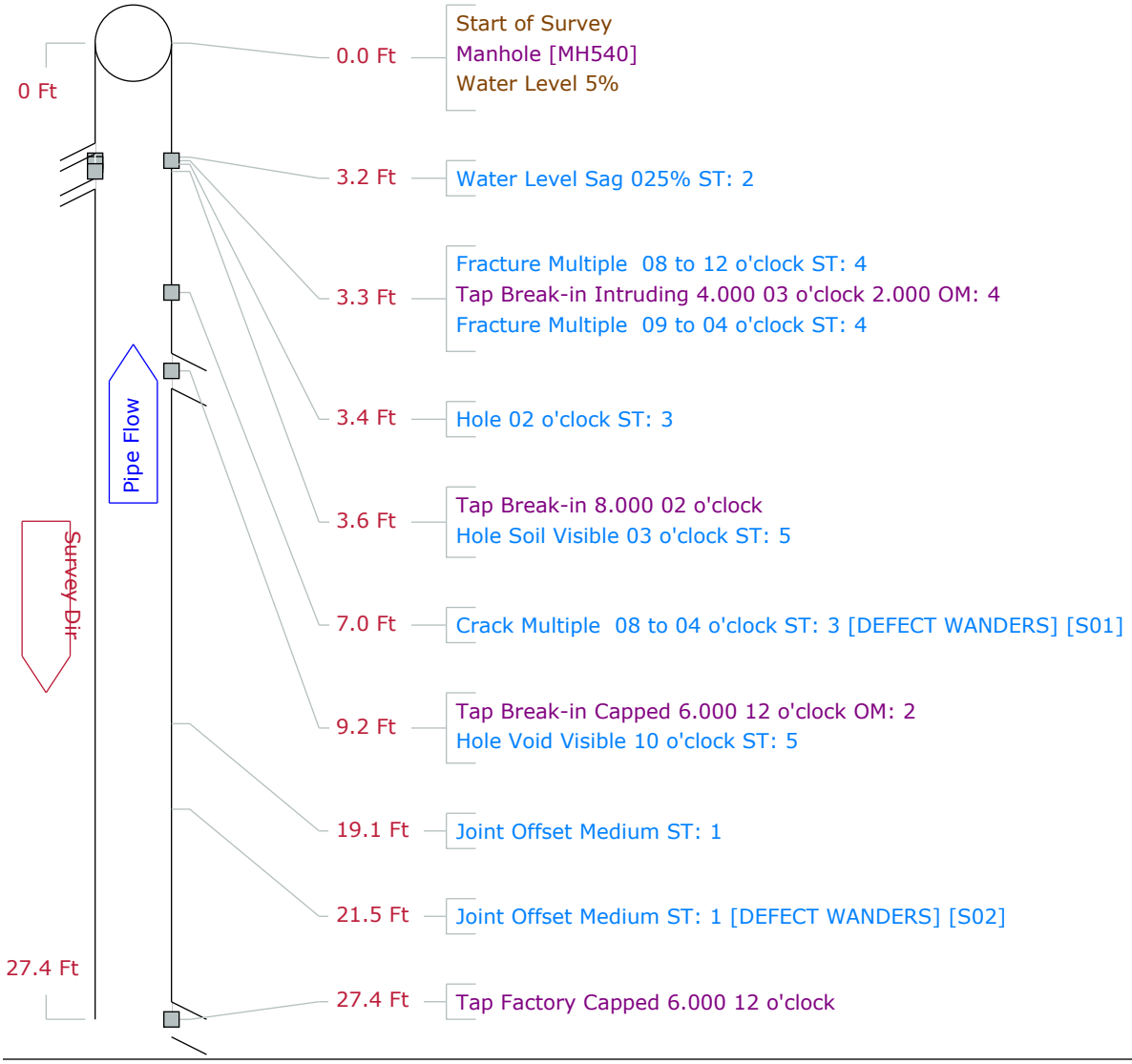
Pipe Graphic Report of PSR 422 for CITY OF IONIA

Setup	25	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	13:35	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH540A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH540	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Upstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	29.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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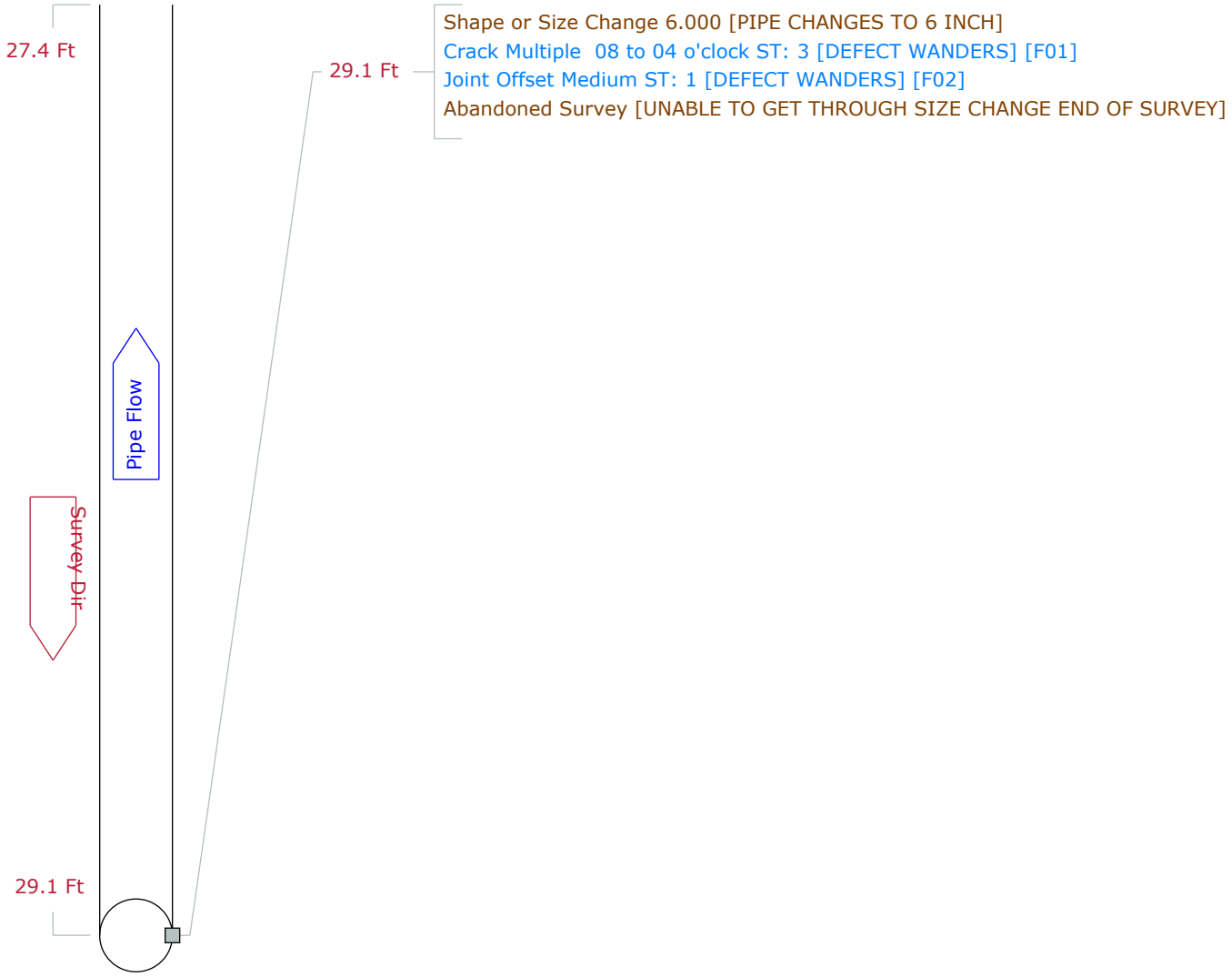
Pipe Graphic Report of PSR 422 for CITY OF IONIA

Setup	25	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	13:35	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH540	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Upstream	Flow control		Media	No		
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	29.10	Ft	
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info				Structural	O & M
Location	Main Highway - Suburban/Rural			Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV			Work Order	
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	



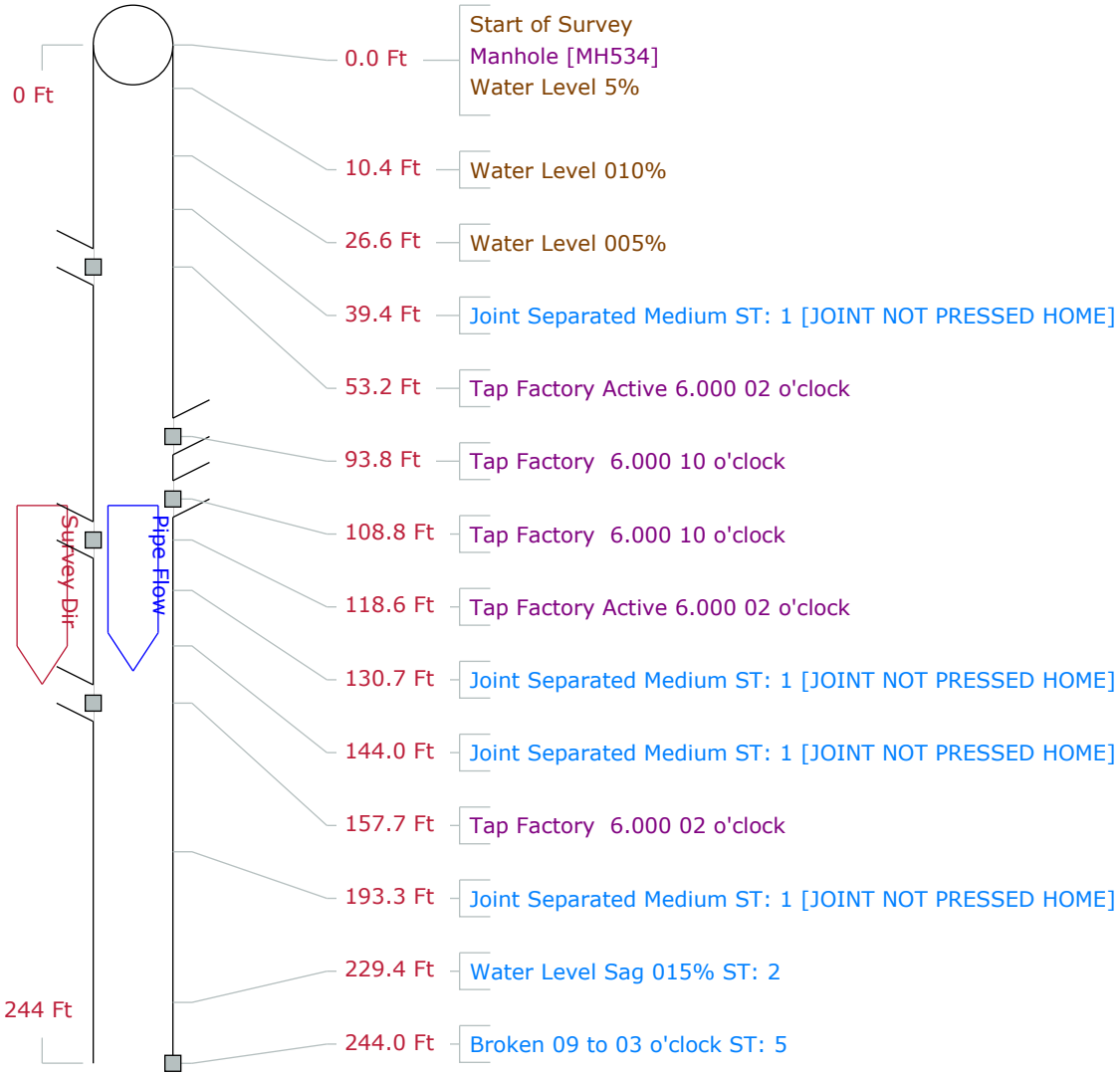
Pipe Graphic Report of PSR 429 for CITY OF IONIA

Setup	16	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	8:50	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH534	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH393	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Polyvinyl Chloride	Joint length	Ft	Total length	245.5 Ft	Length Surveyed	245.50 Ft
Lining		Year laid		Year rehabilitated		Weather	Damp
Purpose		Cat				Date Cleaned	2024/07/15

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	Constructional
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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Pipe Graphic Report of PSR 429 for CITY OF IONIA

Setup	16	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	8:50	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH534	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH393	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Polyvinyl Chloride	Joint length	Ft	Total length	245.5 Ft	Length Surveyed	245.50 Ft
Lining		Year laid		Year rehabilitated		Weather	Damp
Purpose		Cat					

Additional info

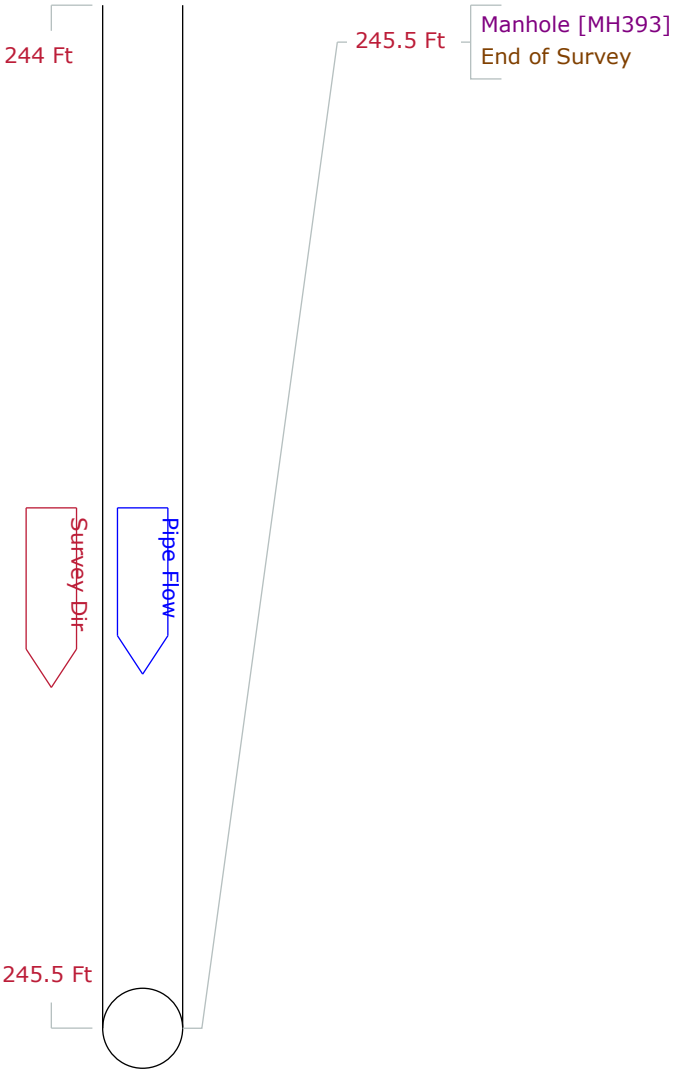
Structural O & M Constructional
Miscellaneous Hydraulic

Location Main Highway - Suburban/Rural

Project JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV Work Order

Northing Easting Elevation

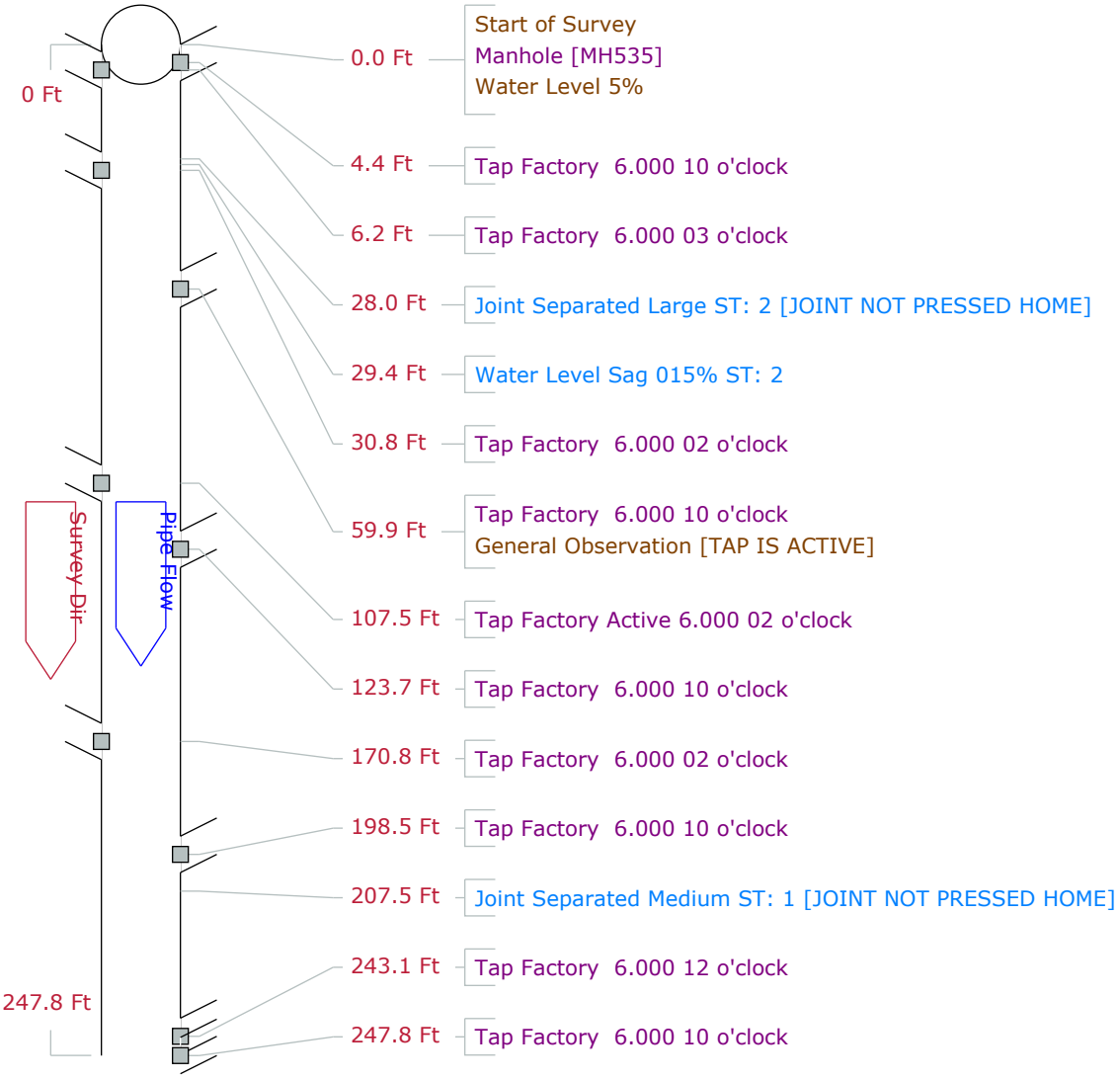
Coordinate System GPS Accuracy



Pipe Graphic Report of PSR 428 for CITY OF IONIA

Setup	15	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	8:28	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH535	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH534	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Polyvinyl Chloride	Joint length	Ft	Total length	258.3 Ft	Length Surveyed	258.30 Ft
Lining		Year laid		Year rehabilitated		Weather	Damp
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



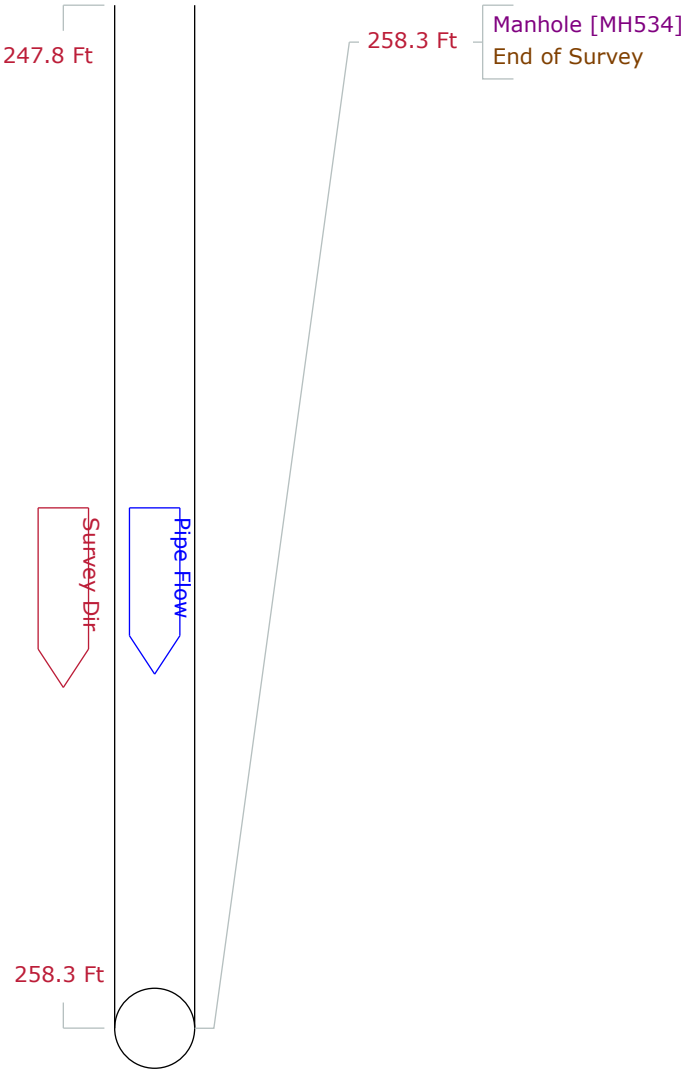
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Pipe Graphic Report of PSR 428 for CITY OF IONIA

Setup	15	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	8:28	Street	E ADAMS ST.
City	IONIA	Further location details					
Up	MH535	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH534	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Polyvinyl Chloride	Joint length	Ft	Total length	258.3 Ft	Length Surveyed	258.30 Ft
Lining		Year laid		Year rehabilitated		Weather	Damp
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



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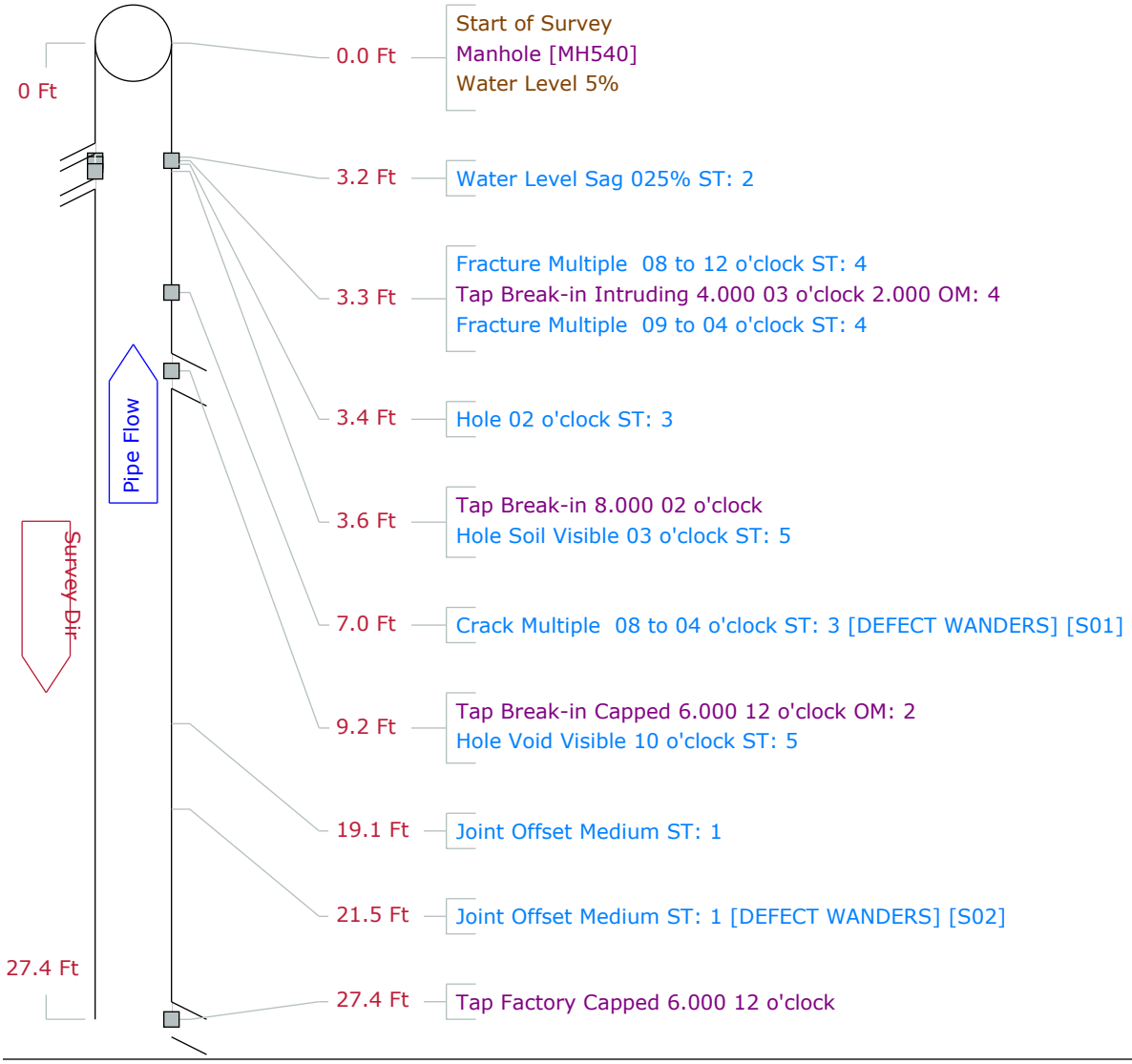
Pipe Graphic Report of PSR 422 for CITY OF IONIA

Setup	25	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	13:35	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH540	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Upstream	Flow control		Media	No		
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	29.10	Ft	
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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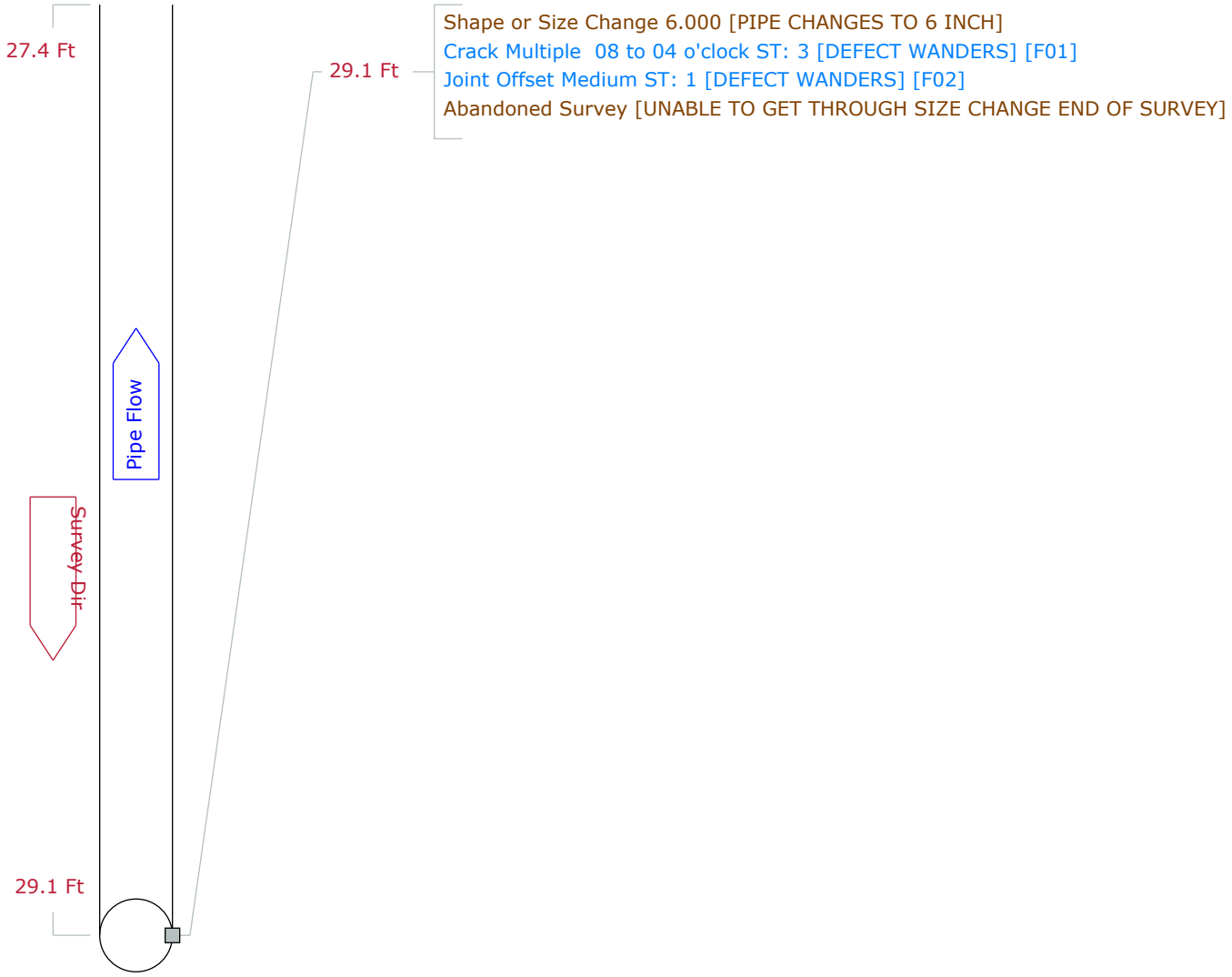
Pipe Graphic Report of PSR 422 for CITY OF IONIA

Setup	25	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	13:35	Street	E ADAMS ST.
City	IONIA	Further location details					

Up	MH540A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH540	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Upstream	Flow control		Media	No		
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	29.10	Ft	
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info				Structural	O & M
Location	Main Highway - Suburban/Rural			Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV			Work Order	
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	



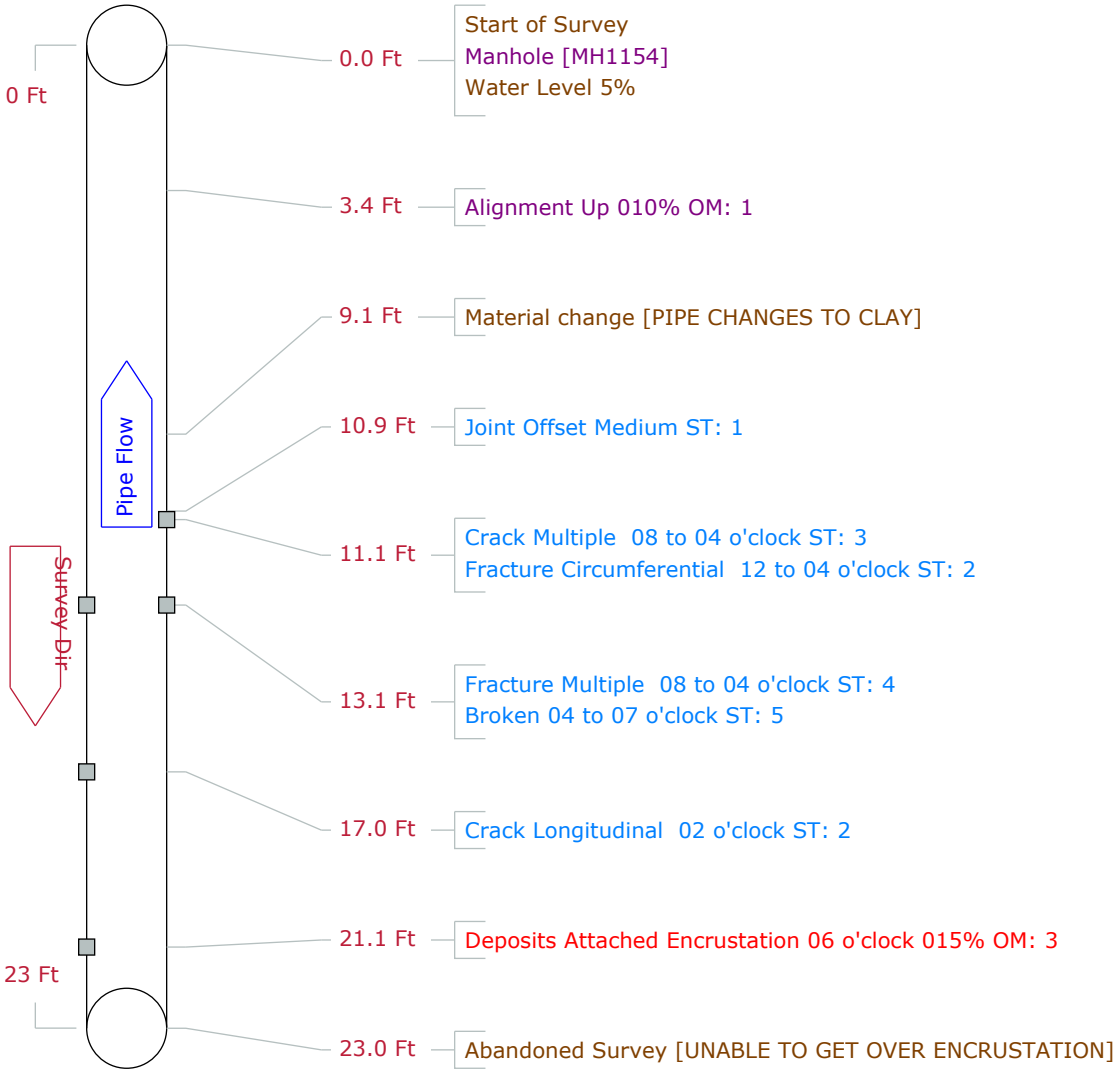
Pipe Graphic Report of PSR 402 for CITY OF IONIA

Setup	22	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	11:24	Street	N JACKSON ST.
City	IONIA	Further location details					

Up	MH1154 NORTH	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH1154	Rim to invert		Grade to invert	Rim to grade Ft

Use	Sanitary	Direction	Upstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Polyvinyl Chloride	Joint length	Ft	Total length	Ft	Length Surveyed	23.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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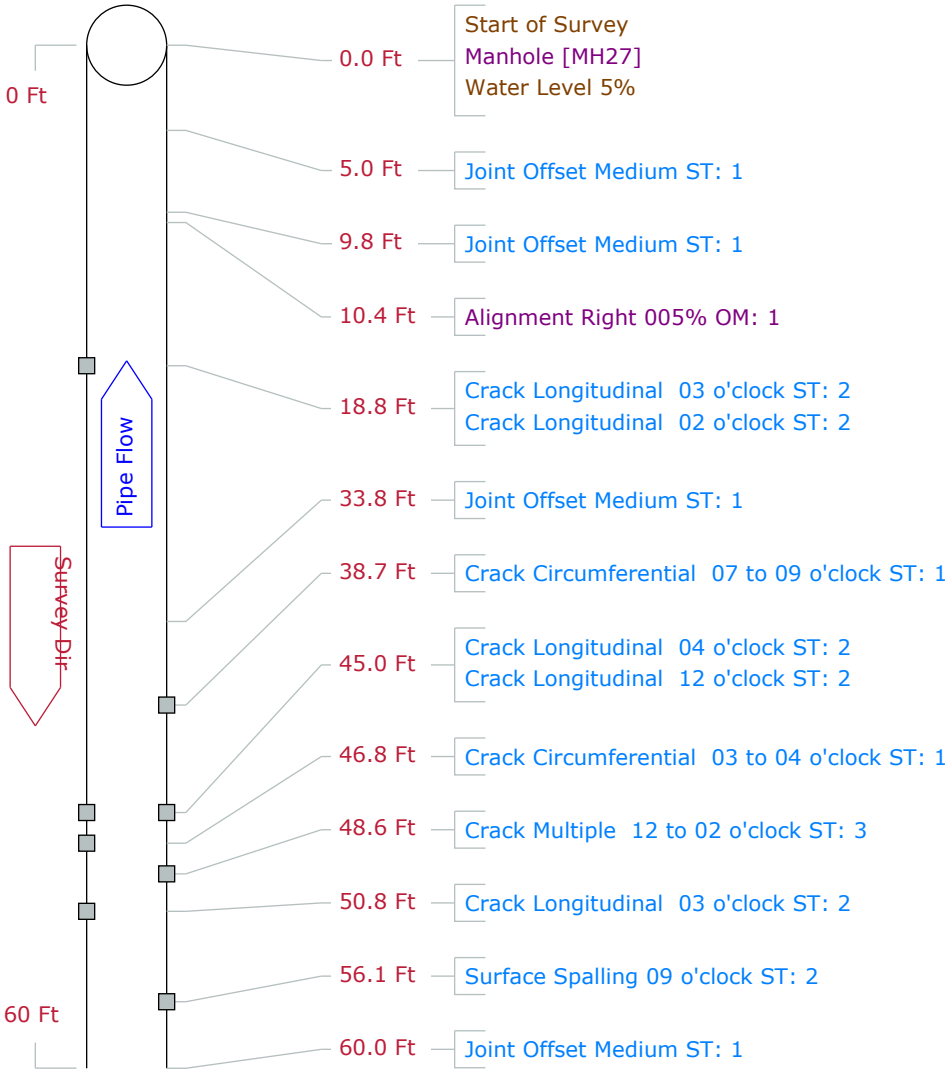
Pipe Graphic Report of PSR 991 for CITY OF IONIA

Setup	24	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	11:48	Street	N JACKSON ST.
City	IONIA	Further location details					

Up	MH27 NORTH	Rim to invert	Grade to invert	Rim to grade	Ft
Down	MH27	Rim to invert	Grade to invert	Rim to grade	Ft

Use	Sanitary	Direction	Upstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean J	Date Cleaned 2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	150.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info		Structural	O & M / Constructional
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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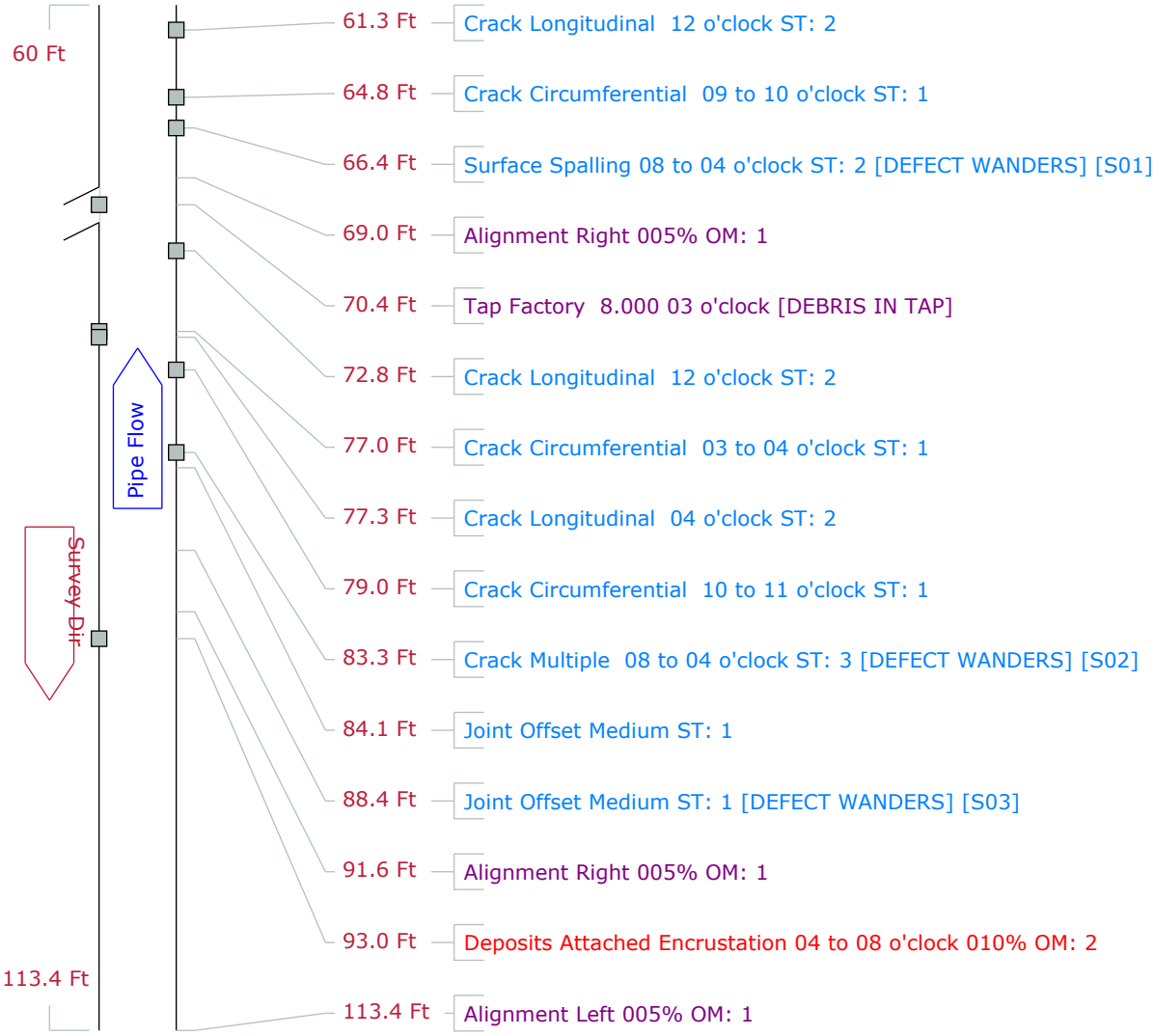
Pipe Graphic Report of PSR 991 for CITY OF IONIA

Setup	24	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	11:48	Street	N JACKSON ST.
City	IONIA	Further location details					
Up	MH27 NORTH	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH27	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Upstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	150.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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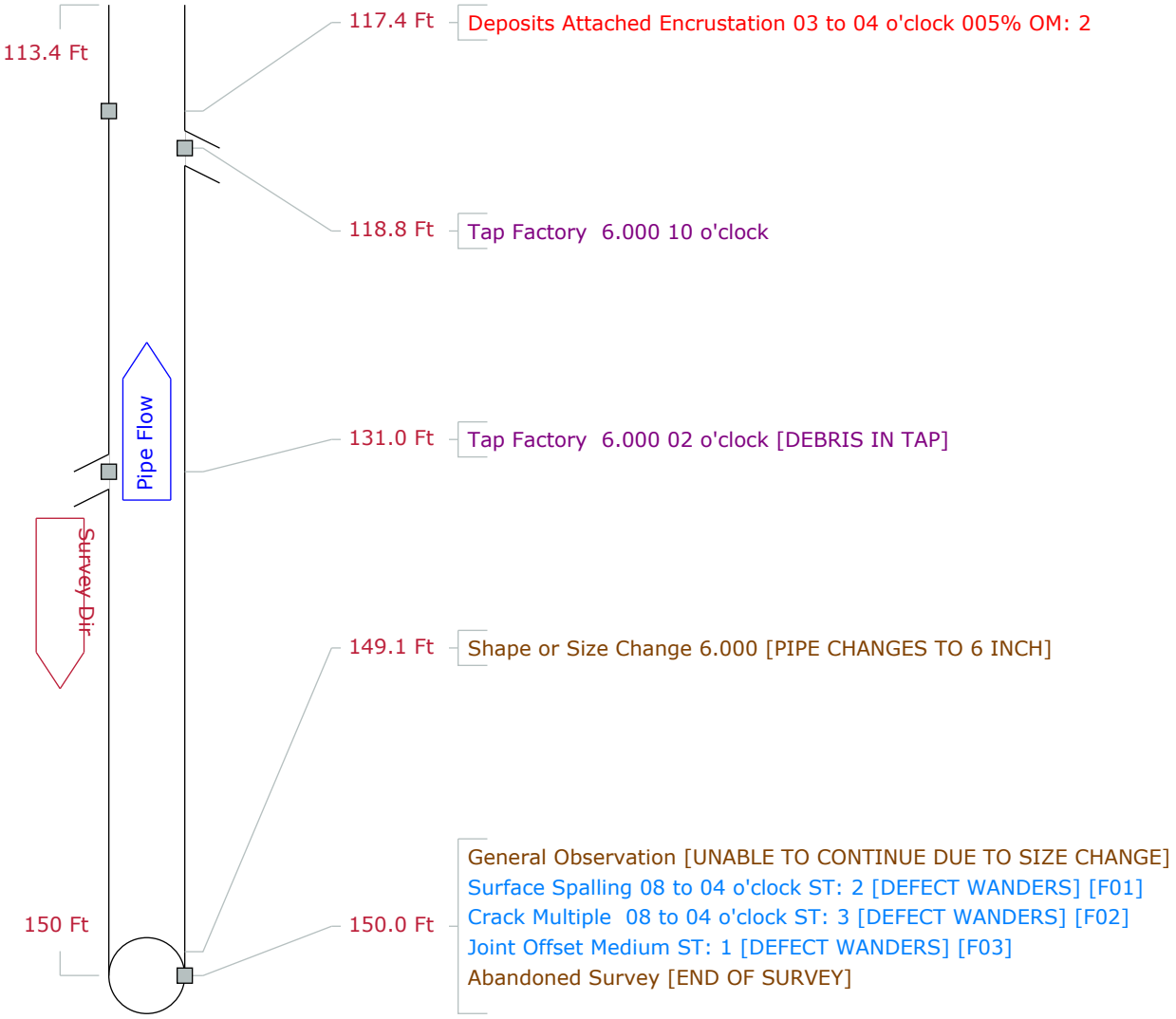
Pipe Graphic Report of PSR 991 for CITY OF IONIA

Setup	24	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/07/15	Time	11:48	Street	N JACKSON ST.
City	IONIA	Further location details					

Up	MH27 NORTH	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH27	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Upstream	Flow control		Media	No		
Shape	Circular	Height	8	Width	ins	Preclean	J	Date Cleaned	2024/07/15
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	150.00 Ft		
Lining		Year laid		Year rehabilitated		Weather	Dry		
Purpose		Cat							

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



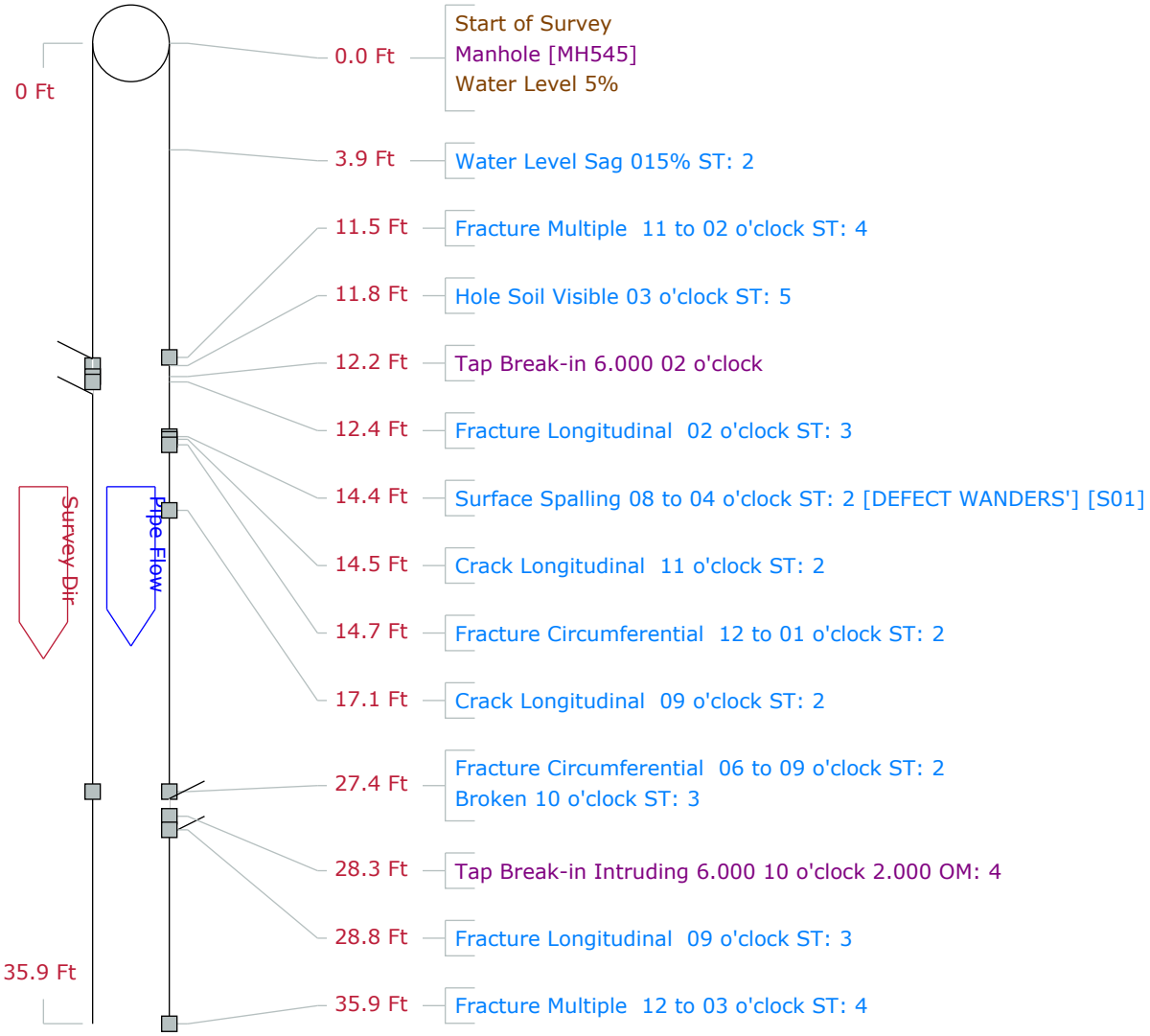
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Phone:616-877-3930

Pipe Graphic Report of PSR 235 for CITY OF IONIA

Setup	2	Surveyor	NATE	Certificate #	P0043093-062023
System Owner					
Drainage		Survey Customer			
P/O #		Date	2024/06/24	Time	10:30
Street	N JEFFERSON ST.				
City	IONIA	Further location details			
Up	MH545	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH729	Rim to invert		Grade to invert	Rim to grade Ft
Use	Sanitary	Direction	Downstream	Flow control	Media No
Shape	Circular	Height	8	Width	ins
Preclean	J	Date Cleaned	2024/06/24		
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft
Length Surveyed	202.20 Ft				
Lining		Year laid		Year rehabilitated	Weather Dry
Purpose		Cat			
Additional info					
Location	Main Highway - Suburban/Rural				
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV				
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic

Work Order



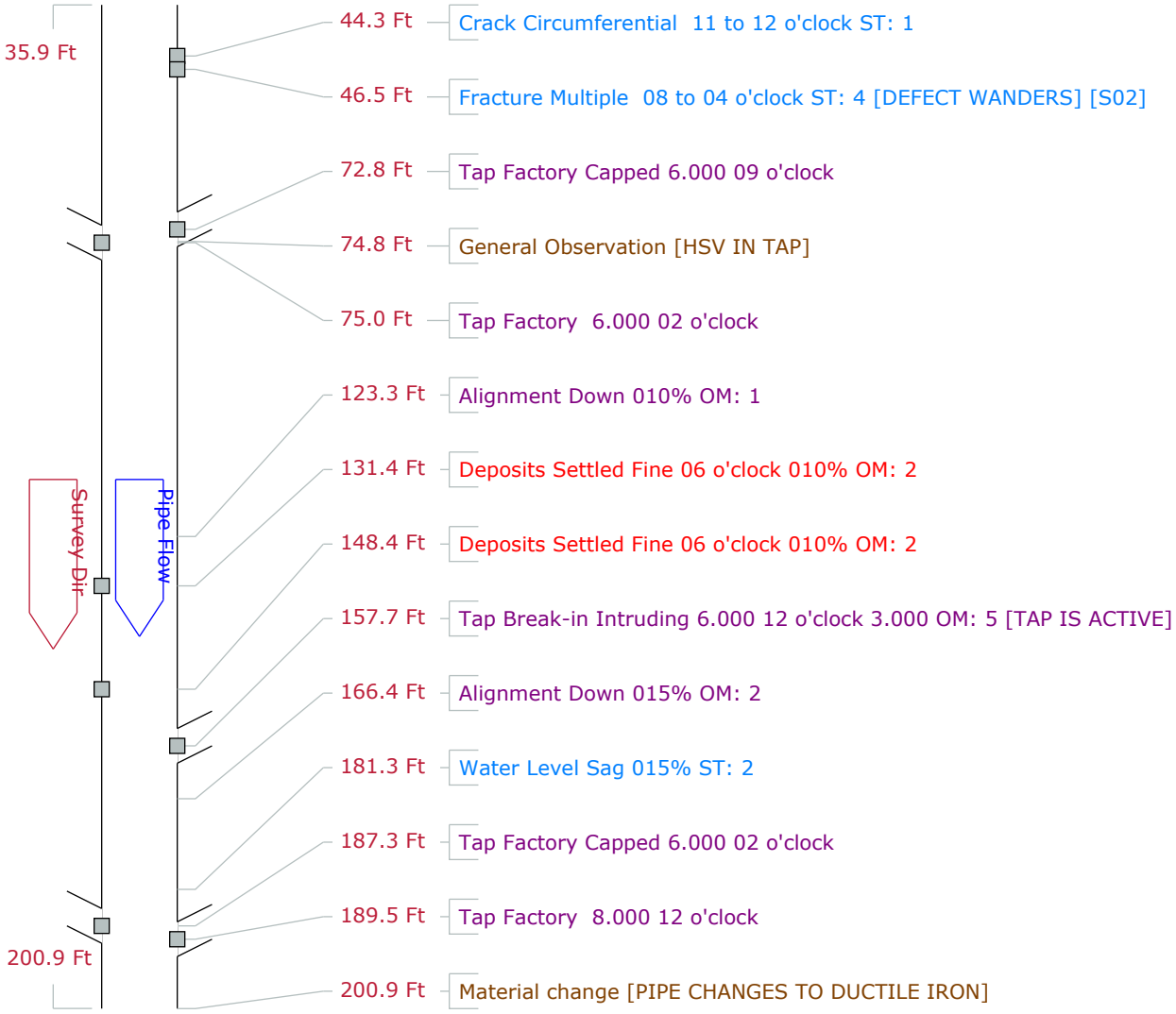
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Pipe Graphic Report of PSR 235 for CITY OF IONIA

Setup	2	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	10:30	Street	N JEFFERSON ST.
City	IONIA	Further location details					
Up	MH545	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH729	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	202.20 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



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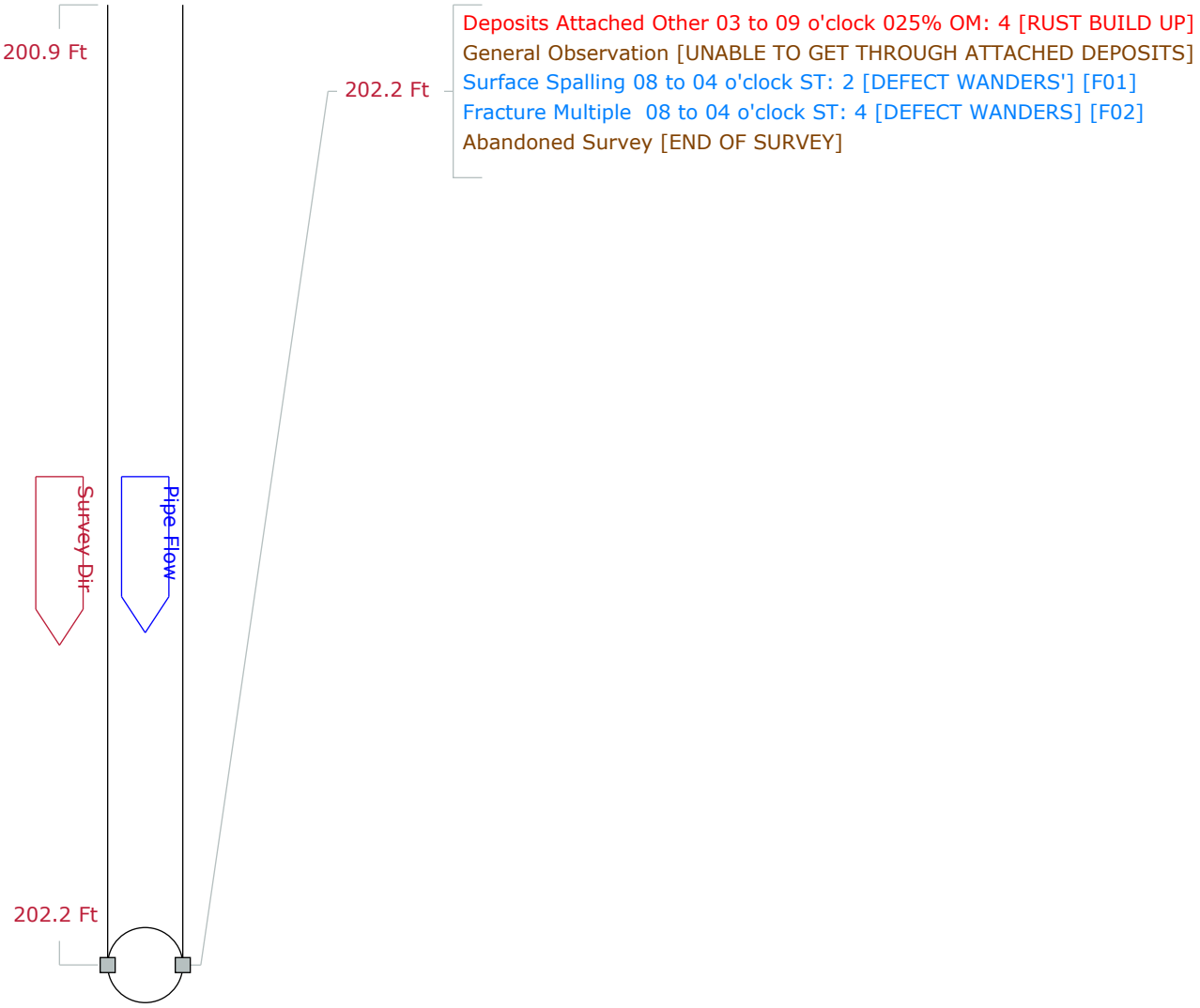
Pipe Graphic Report of PSR 235 for CITY OF IONIA

Setup	2	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	10:30	Street	N JEFFERSON ST.
City	IONIA	Further location details					

Up	MH545	Rim to invert	Grade to invert	Rim to grade	Ft
Down	MH729	Rim to invert	Grade to invert	Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	Ft	Length Surveyed	202.20 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat				Date Cleaned	2024/06/24

Additional info		Structural	O & M
Location	Main Highway - Suburban/Rural	Miscellaneous	Hydraulic
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



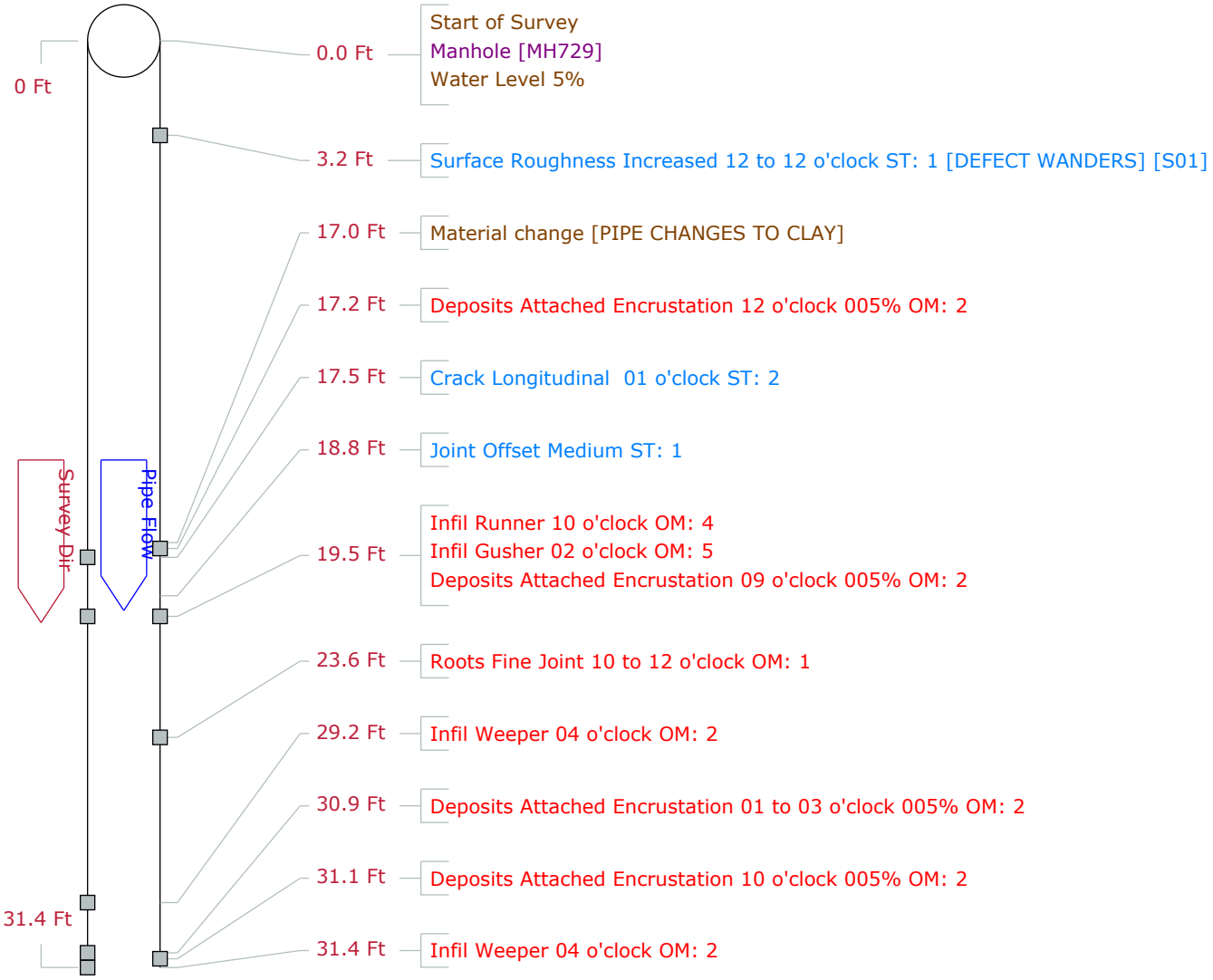
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Pipe Graphic Report of PSR 234 for CITY OF IONIA

Setup	4	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	11:30	Street	N JEFFERSON ST.
City	IONIA	Further location details					
Up	MH729	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH395	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Ductile Iron Pipe	Joint length	Ft	Total length	220.3 Ft	Length Surveyed	220.30 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



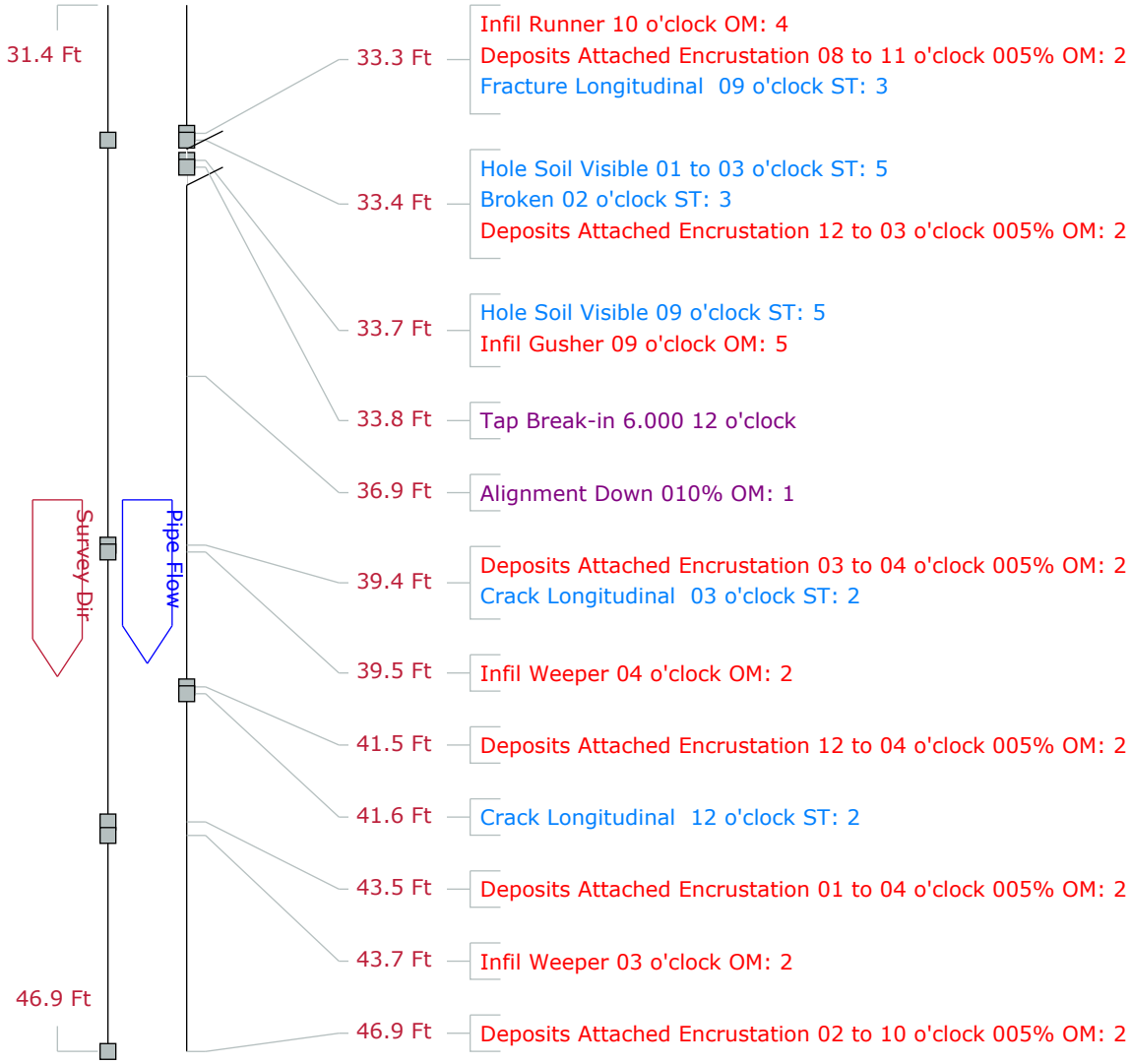
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Pipe Graphic Report of PSR 234 for CITY OF IONIA

Setup	4	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	11:30	Street	N JEFFERSON ST.
City	IONIA	Further location details					
Up	MH729	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH395	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Ductile Iron Pipe	Joint length	Ft	Total length	220.3 Ft	Length Surveyed	220.30 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



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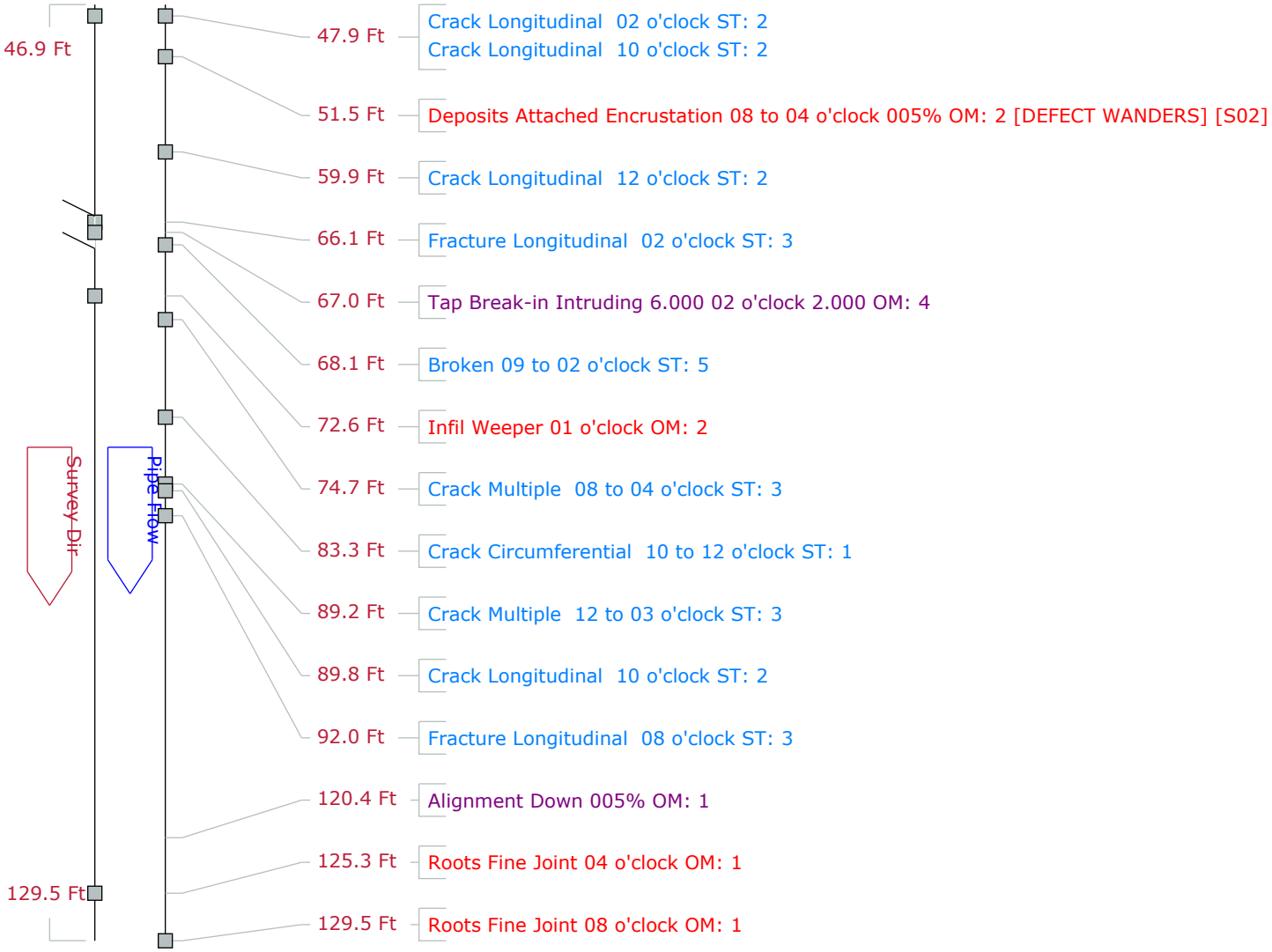
Pipe Graphic Report of PSR 234 for CITY OF IONIA

Setup	4	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	11:30	Street	N JEFFERSON ST.
City	IONIA	Further location details					
Up	MH729	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH395	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Ductile Iron Pipe	Joint length	Ft	Total length	220.3 Ft	Length Surveyed	220.30 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



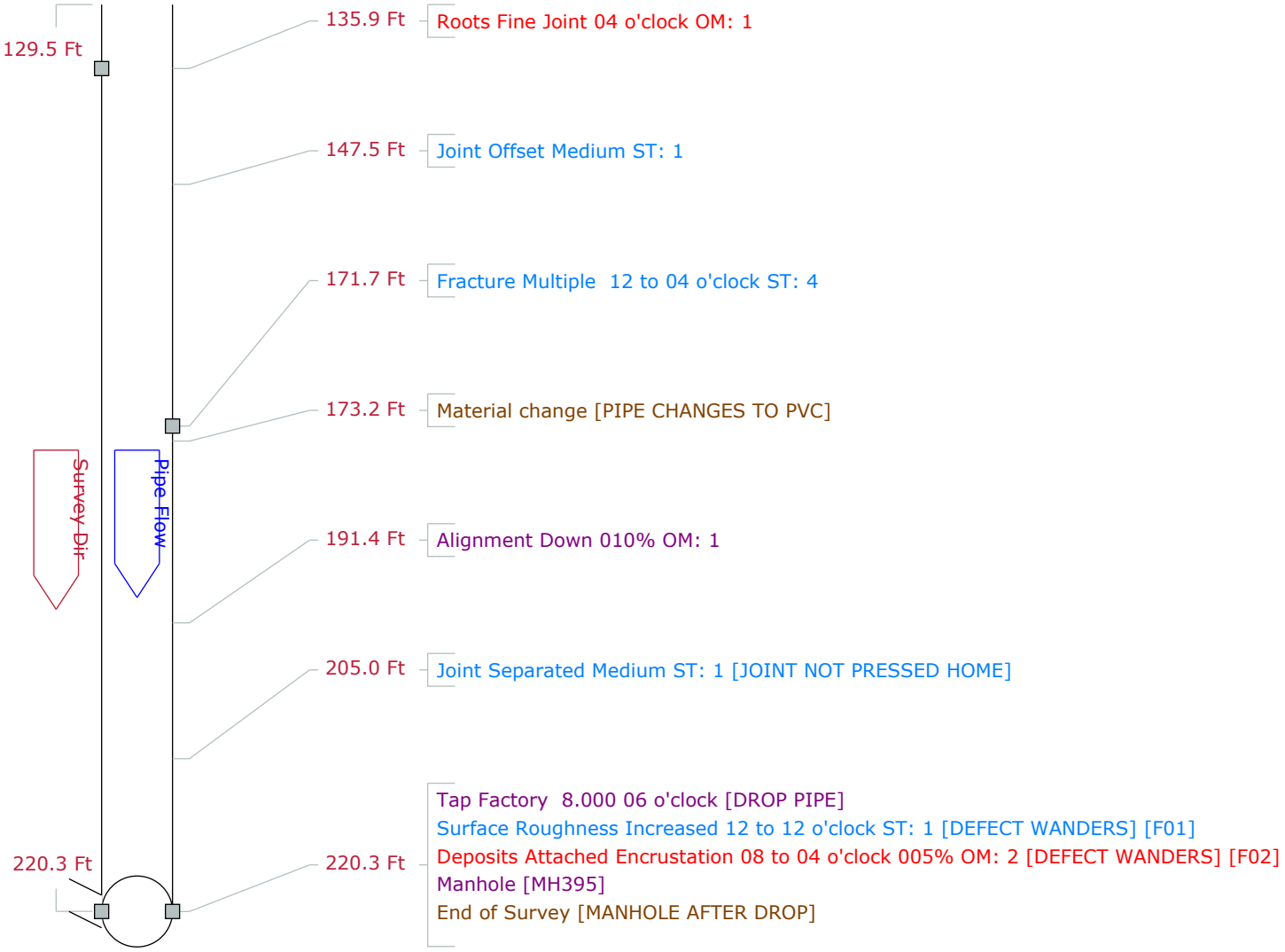
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Pipe Graphic Report of PSR 234 for CITY OF IONIA

Setup	4	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	11:30	Street	N JEFFERSON ST.
City	IONIA	Further location details					
Up	MH729	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH395	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Ductile Iron Pipe	Joint length	Ft	Total length	220.3 Ft	Length Surveyed	220.30 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



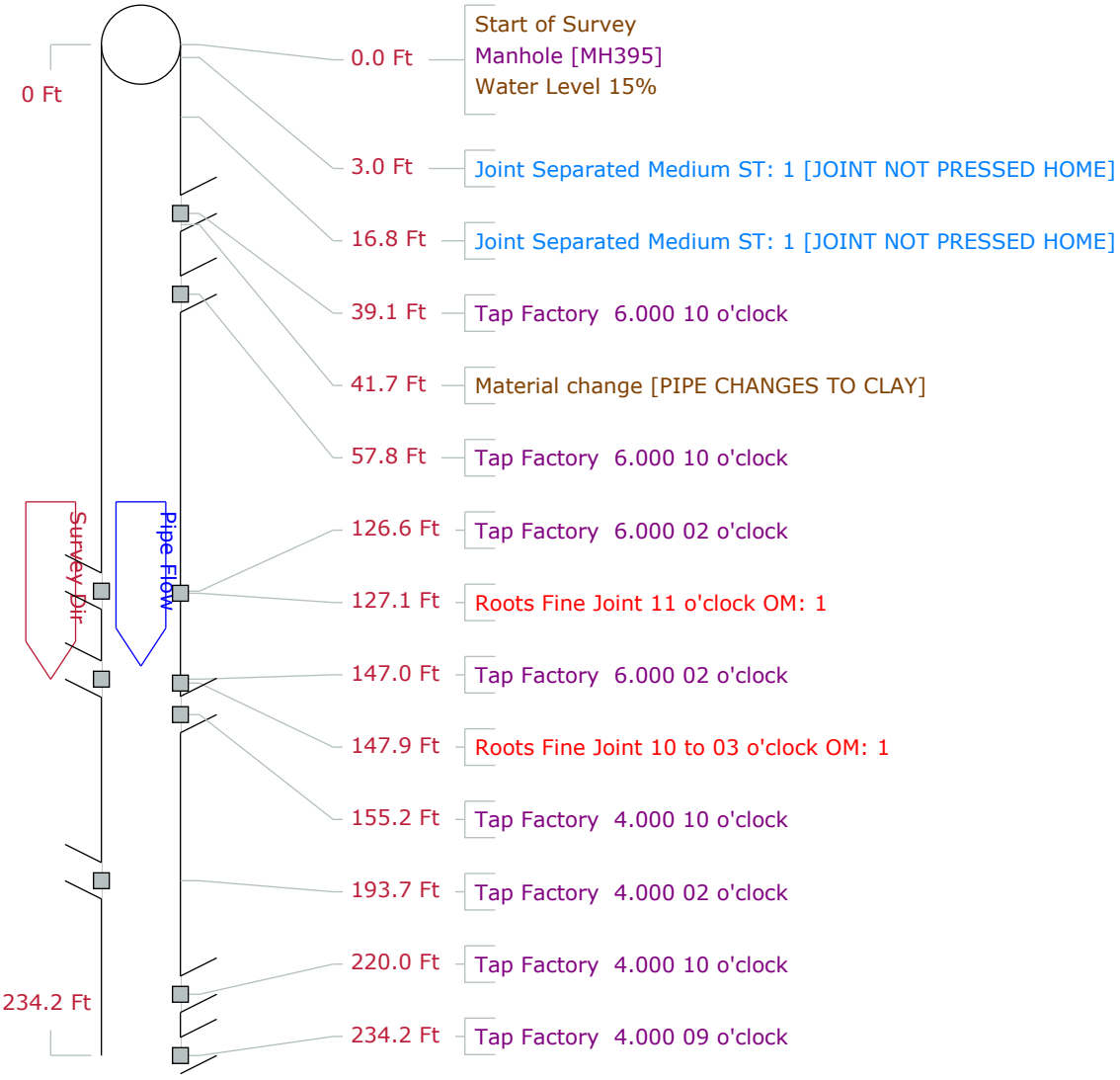
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Pipe Graphic Report of PSR 578 for CITY OF IONIA

Setup	5	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	12:53	Street	N JEFFERSON ST.
City	IONIA	Further location details					
Up	MH395	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH394	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	12	Width	ins	Preclean	J
Material	Polyvinyl Chloride	Joint length	Ft	Total length	331.0 Ft	Length Surveyed	331.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					
Additional info							
Location	Main Highway - Suburban/Rural						
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



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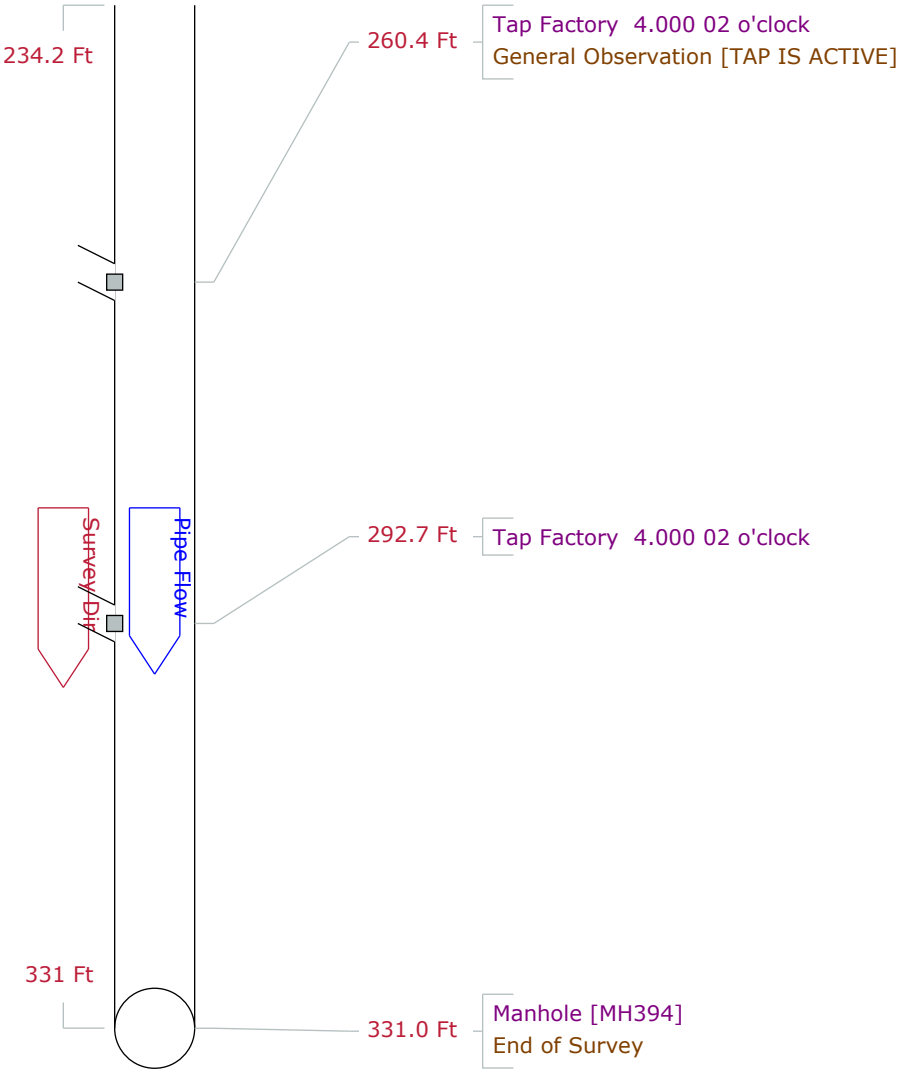
Pipe Graphic Report of PSR 578 for CITY OF IONIA

Setup	5	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	12:53	Street	N JEFFERSON ST.
City	IONIA	Further location details					

Up	MH395	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH394	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	12	Width	ins	Preclean	J
Material	Polyvinyl Chloride	Joint length	Ft	Total length	331.0 Ft	Length Surveyed	331.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat				Date Cleaned	2024/06/24

Additional info			Structural	O & M	Constructional
Location	Main Highway - Suburban/Rural		Miscellaneous	Hydraulic	
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV		Work Order		
Northing		Easting	Elevation		
Coordinate System			GPS Accuracy		



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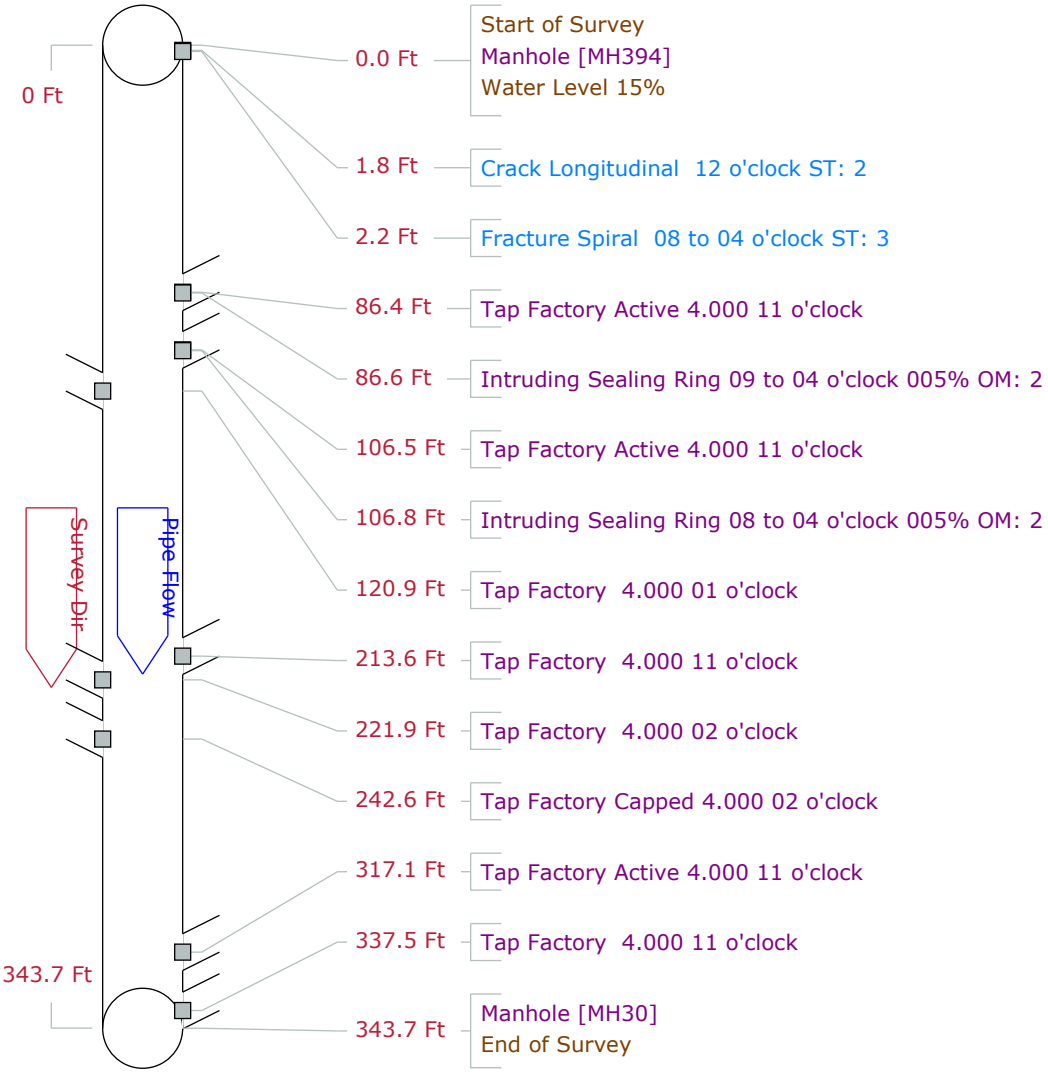
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Pipe Graphic Report of PSR 987 for CITY OF IONIA

Setup	6	Surveyor	NATE	Certificate #	P0043093-062023
System Owner					
Drainage		Survey Customer			
P/O #		Date	2024/06/24	Time	13:12
Street	N JEFFERSON ST.				
City	IONIA	Further location details			
Up	MH394	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH30	Rim to invert		Grade to invert	Rim to grade Ft
Use	Sanitary	Direction	Downstream	Flow control	Media No
Shape	Circular	Height	12	Width ins	Preclean J
Date Cleaned	2024/06/24				
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	343.7 Ft
Length Surveyed	343.70 Ft				
Lining		Year laid		Year rehabilitated	Weather Dry
Purpose		Cat			
Additional info					
Location	Main Highway - Suburban/Rural				
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV				
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic

Work Order



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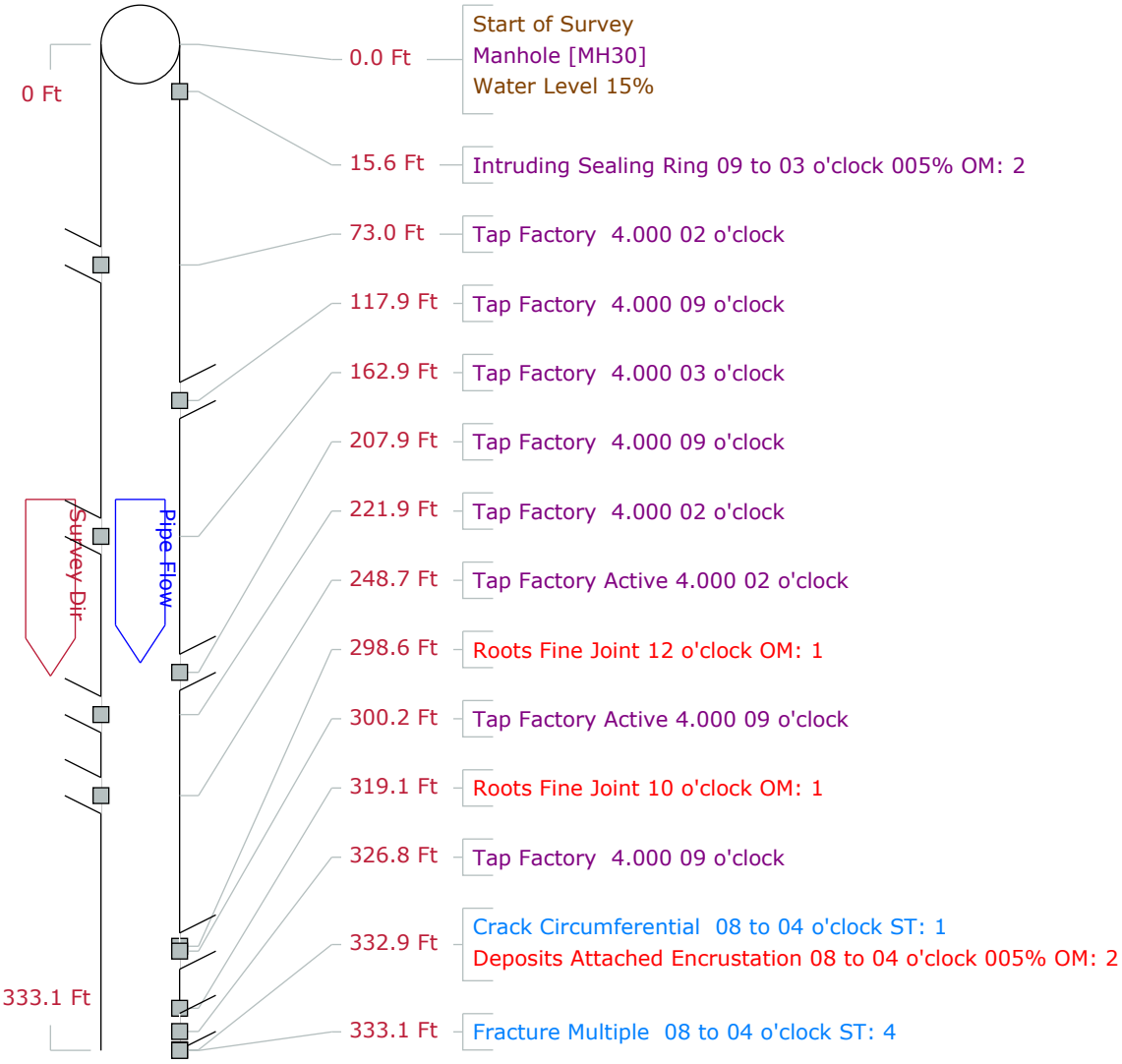
Pipe Graphic Report of PSR 988 for CITY OF IONIA

Setup	7	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	13:49	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH30	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH393	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	12	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	335.6 Ft	Length Surveyed	335.60 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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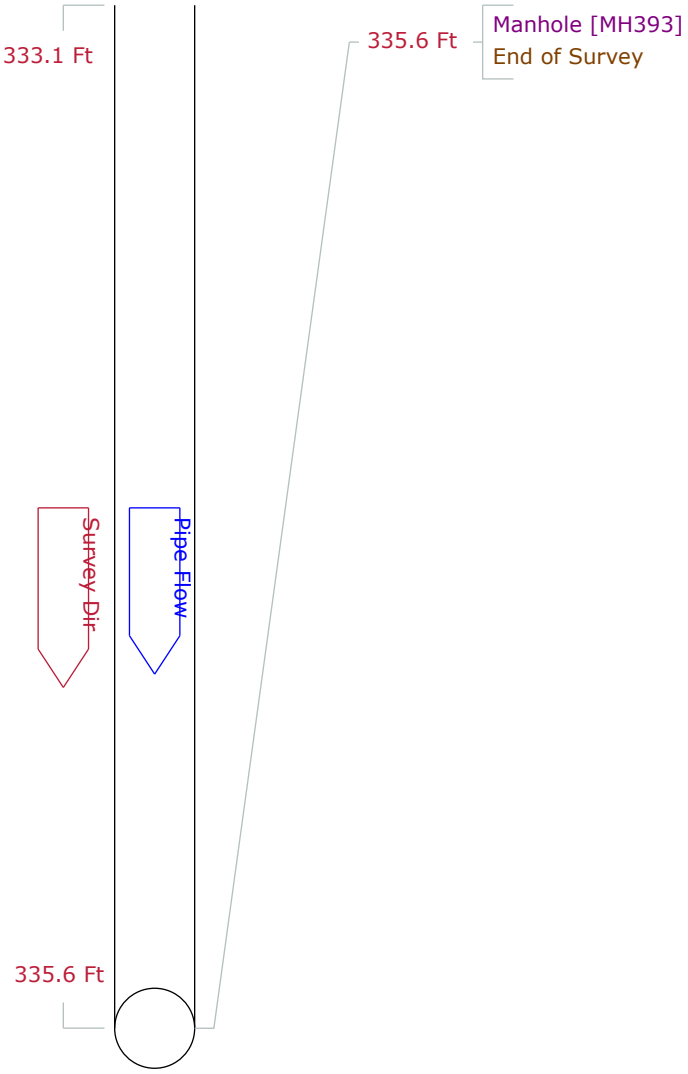
Pipe Graphic Report of PSR 988 for CITY OF IONIA

Setup	7	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/24	Time	13:49	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH30	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH393	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	12	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	335.6 Ft	Length Surveyed	335.60 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

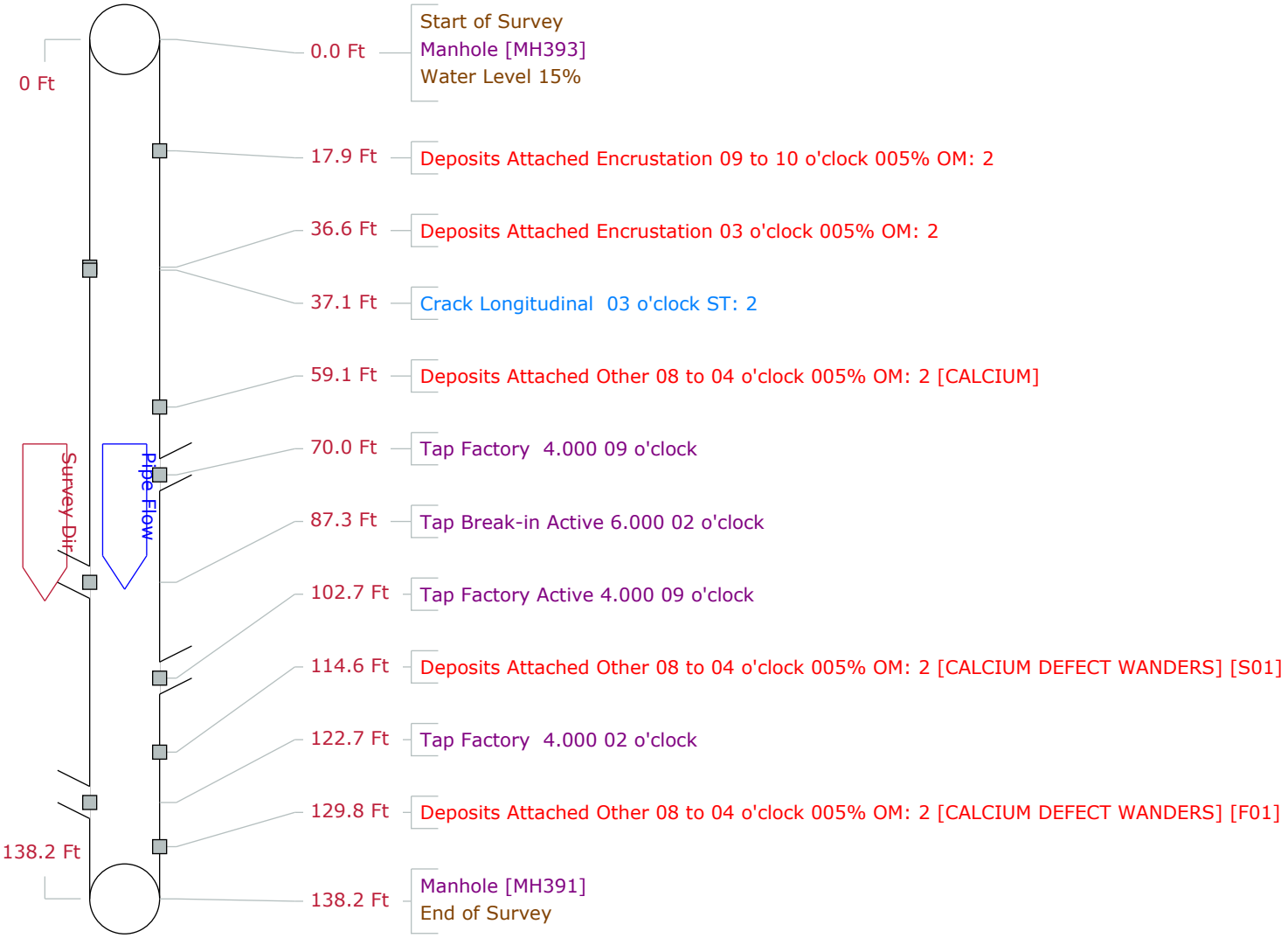
Location	Main Highway - Suburban/Rural		
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



Pipe Graphic Report of PSR 579 for CITY OF IONIA

Setup	8	Surveyor	NATE	Certificate #	P0043093-062023
System Owner					
Drainage		Survey Customer			
P/O #		Date	2024/06/24	Time	14:29
Street	S JEFFERSON ST.				
City	IONIA	Further location details			
Up	MH393	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH391	Rim to invert		Grade to invert	Rim to grade Ft
Use	Sanitary	Direction	Downstream	Flow control	Media No
Shape	Circular	Height	12	Width ins	Preclean J
Date Cleaned	2024/06/24				
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	138.2 Ft
Length Surveyed	138.20 Ft				
Lining		Year laid		Year rehabilitated	Weather Dry
Purpose		Cat			
Additional info					
Location	Main Highway - Suburban/Rural				
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV				
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



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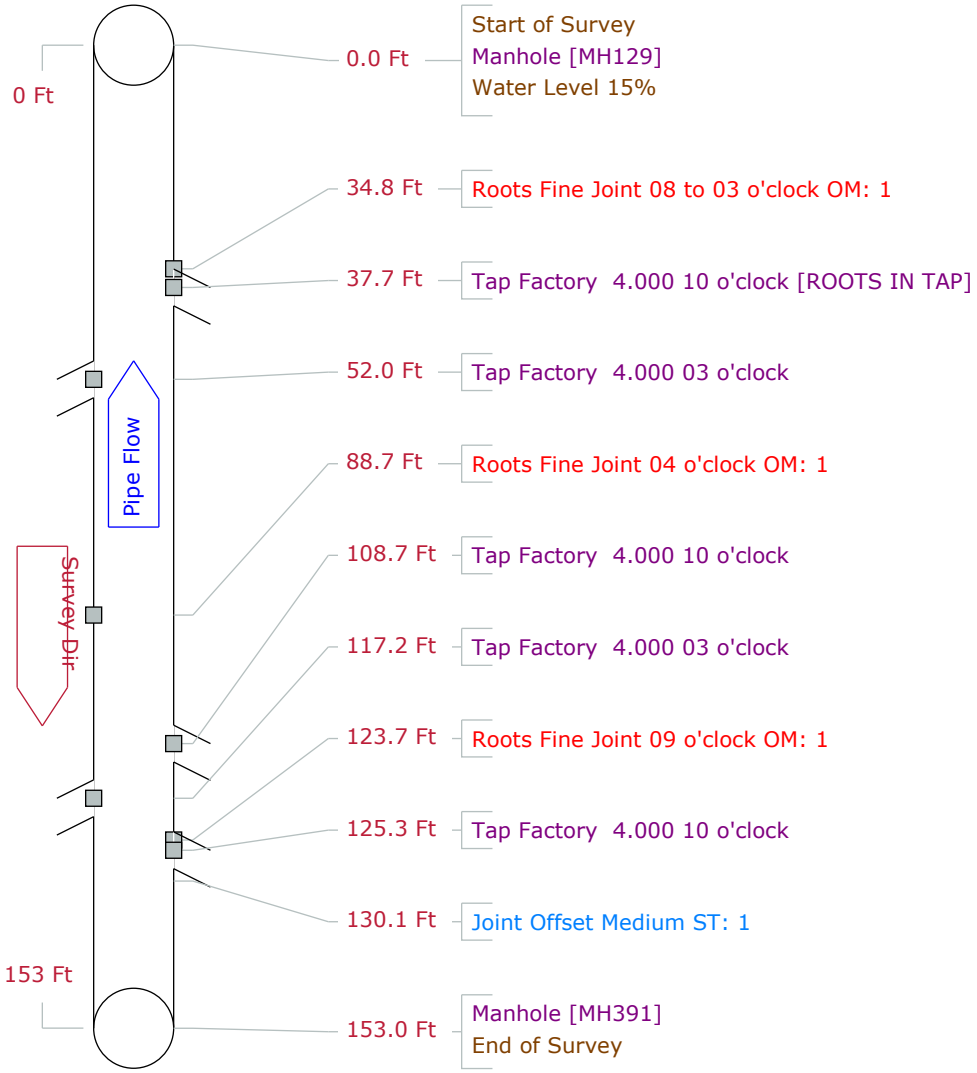
Pipe Graphic Report of PSR 870 for CITY OF IONIA

Setup	10	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/25	Time	13:31	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH391	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH129	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Upstream	Flow control		Media No	
Shape	Circular	Height	12	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	153.0 Ft	Length Surveyed	153.00 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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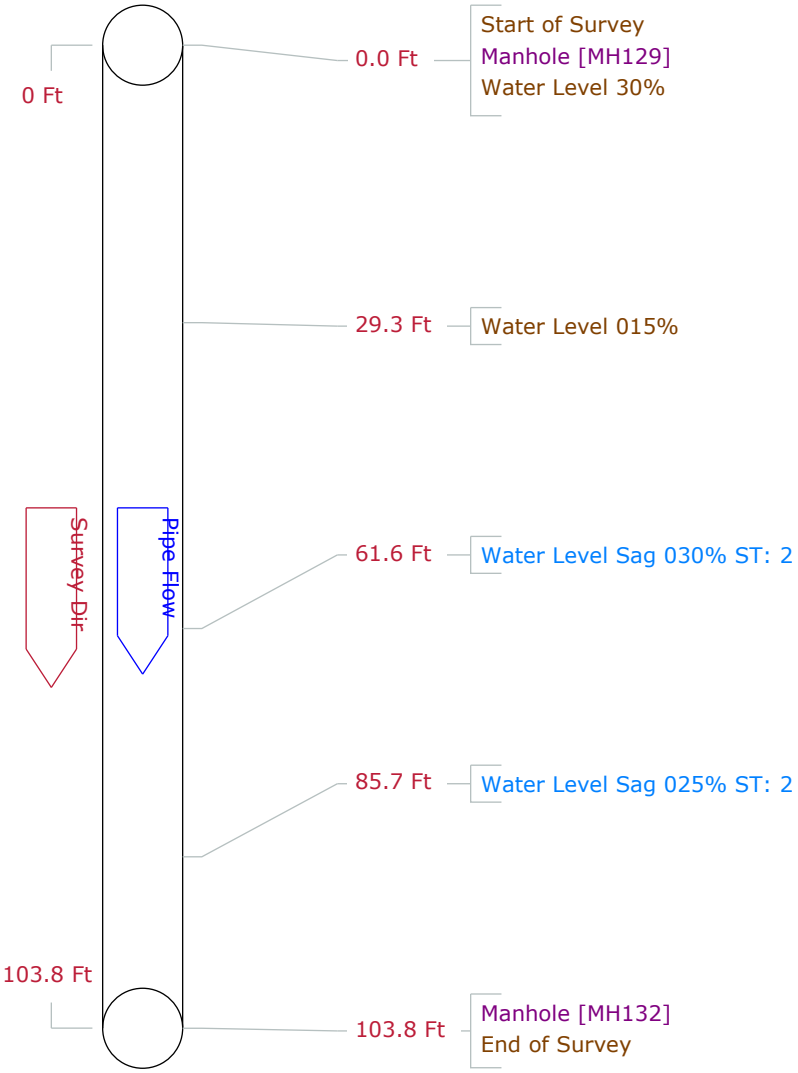
Pipe Graphic Report of PSR 871 for CITY OF IONIA

Setup	11	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/25	Time	13:46	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH129	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH132	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	12	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	103.8 Ft	Length Surveyed	103.80 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural		
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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Pipe Graphic Report of PSR 869 for CITY OF IONIA

Setup	12	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/25	Time	13:51	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH132	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH390	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	12	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	117.7 Ft	Length Surveyed	260.50 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

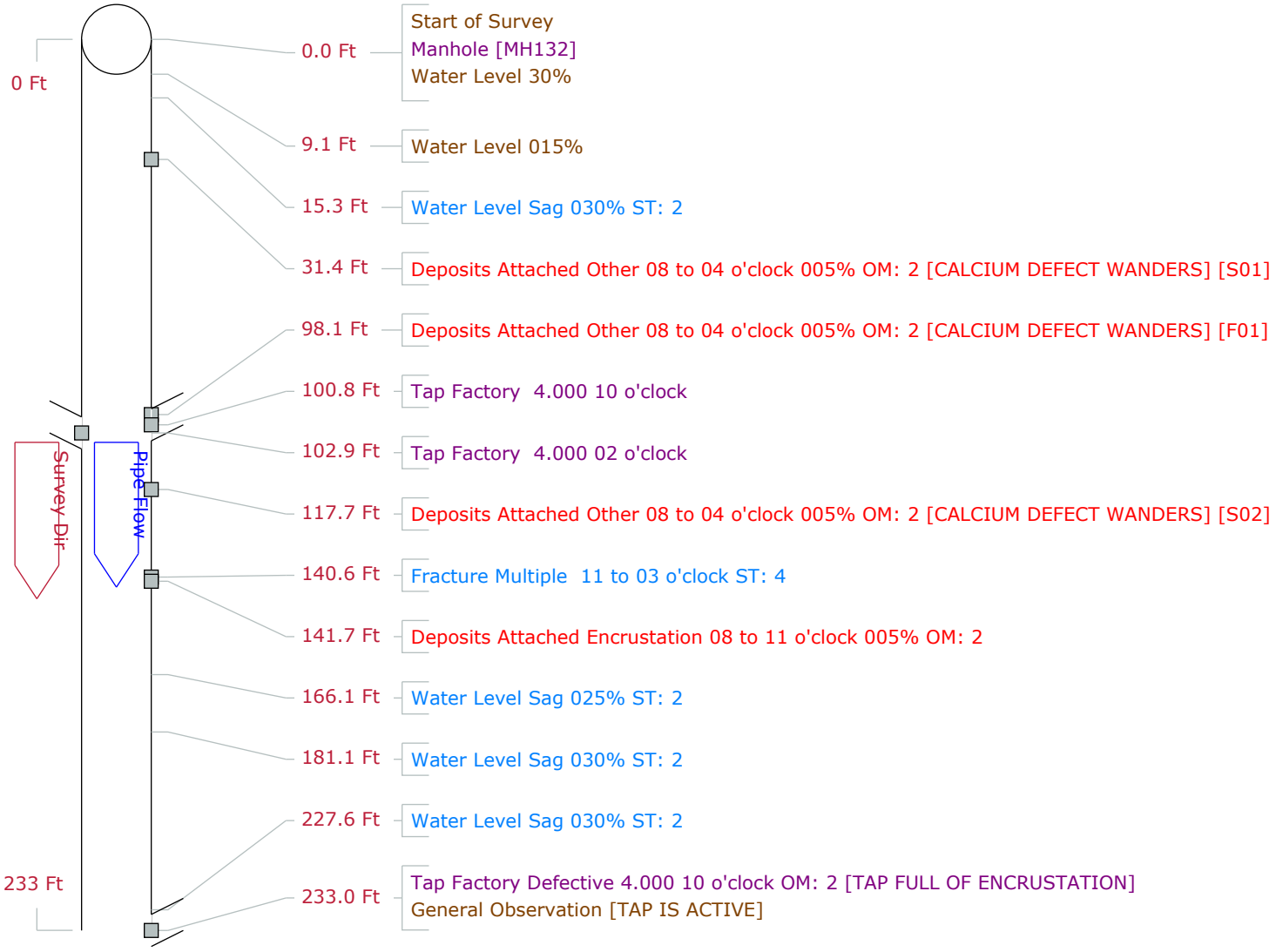
Structural O & M Constructional
Miscellaneous Hydraulic

Location Main Highway - Suburban/Rural

Project JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV Work Order

Northing Easting Elevation

Coordinate System GPS Accuracy



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Pipe Graphic Report of PSR 869 for CITY OF IONIA

Setup	12	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/25	Time	13:51	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH132	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH390	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media	No
Shape	Circular	Height	12	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	117.7 Ft	Length Surveyed	260.50 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location Main Highway - Suburban/Rural

Project JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV Work Order

Northing Easting Elevation

Coordinate System GPS Accuracy



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Phone:616-877-3930

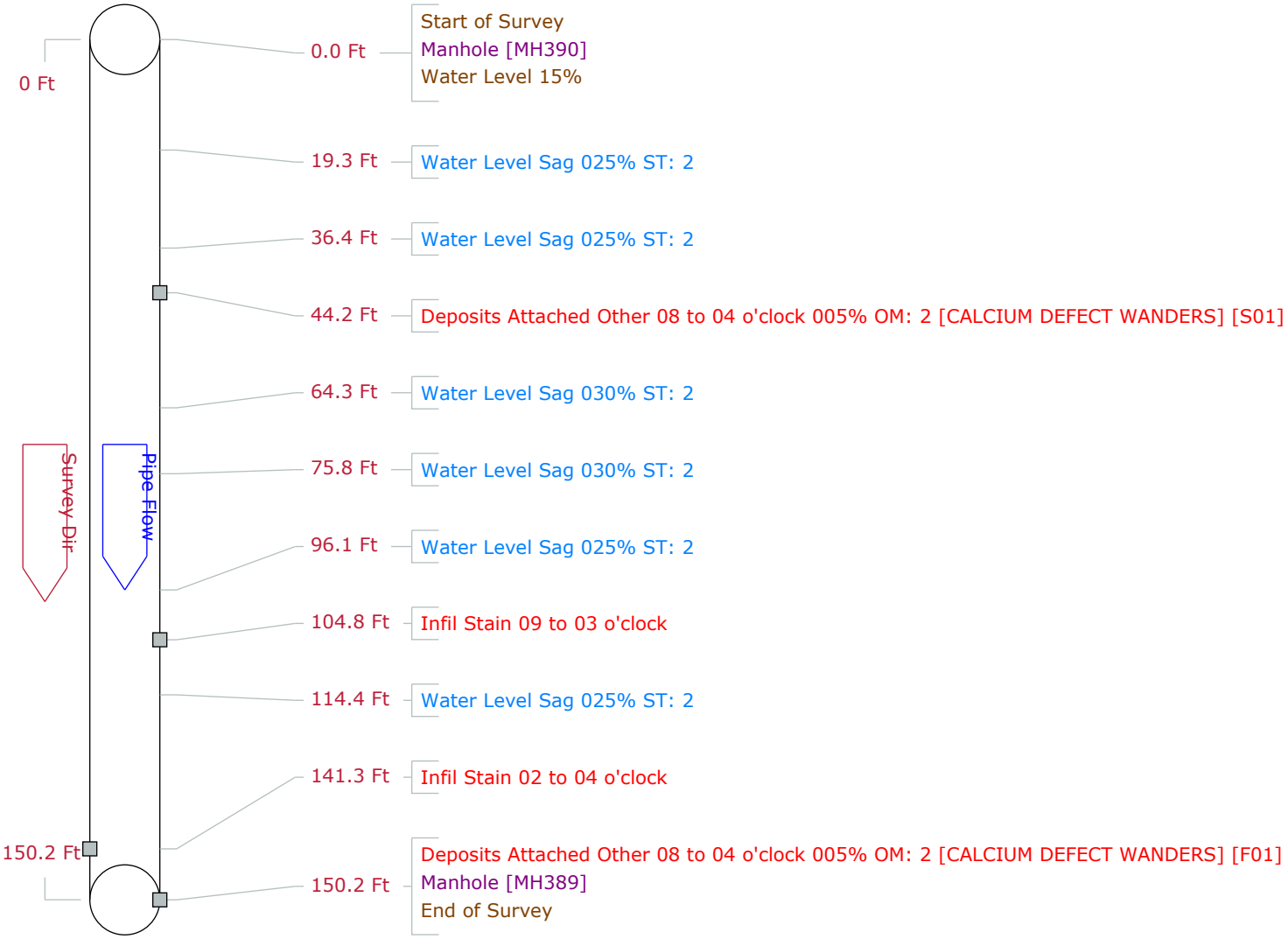
Pipe Graphic Report of PSR 582 for CITY OF IONIA

Setup	13	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/25	Time	14:03	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH390	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH389	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	12	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	150.2 Ft	Length Surveyed	150.20 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV
Work Order	
Northing	
Easting	
Elevation	
Coordinate System	
GPS Accuracy	



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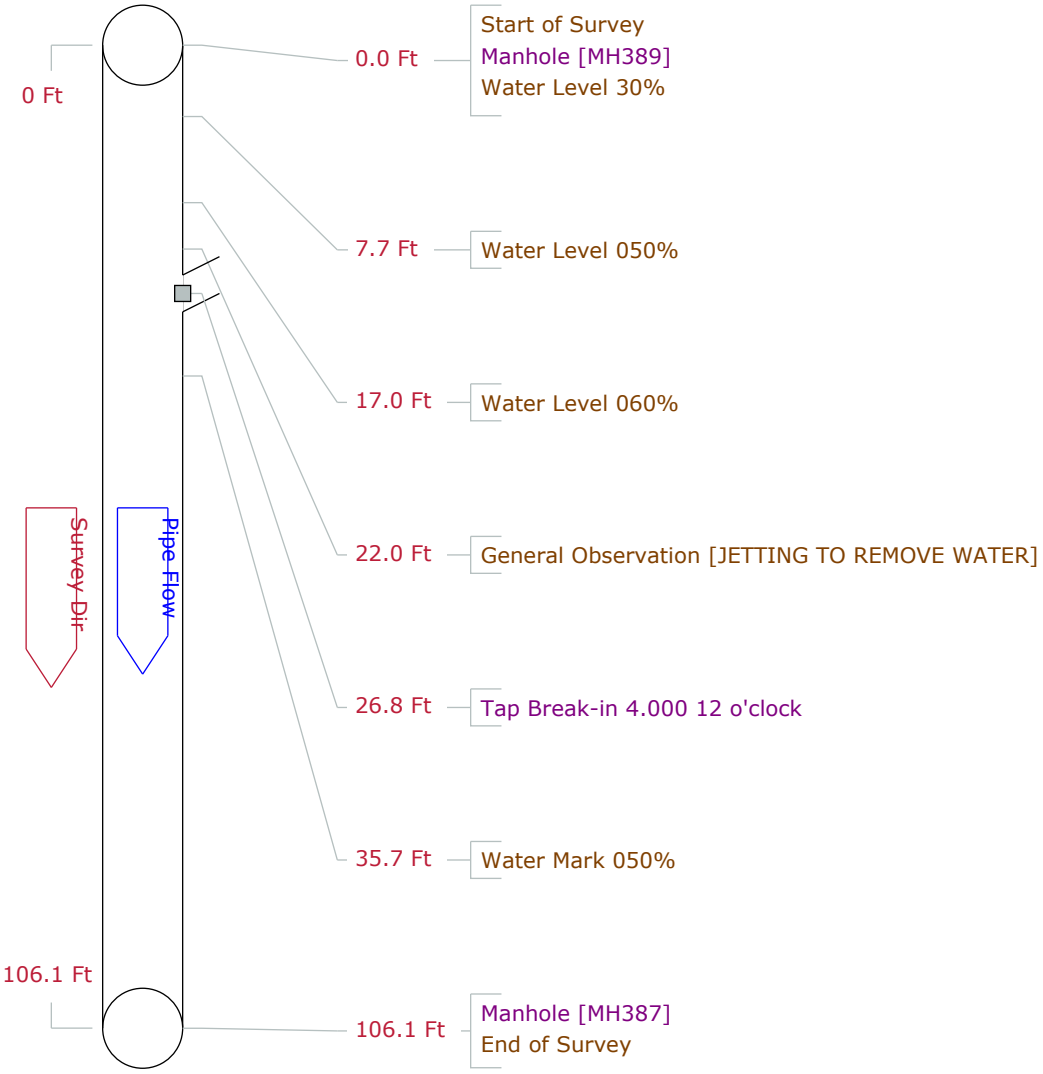
Pipe Graphic Report of PSR 583 for CITY OF IONIA

Setup	14	Surveyor	NATE	Certificate #	P0043093-062023	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/06/25	Time	14:10	Street	S JEFFERSON ST.
City	IONIA	Further location details					
Up	MH389	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH387	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	12	Width	ins	Preclean	H
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	106.1 Ft	Length Surveyed	106.10 Ft
Lining		Year laid		Year rehabilitated		Weather	Dry
Purpose		Cat					

Additional info

Structural O & M Constructional
Miscellaneous Hydraulic

Location	Main Highway - Suburban/Rural		
Project	JEFFERSON, JACKSON AND ADAMS ST. CLEAN AND TV	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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Pipe Graphic Report of PSR 882 for City of Ionia

Setup	1	Surveyor	Andrew	Certificate #	U-914-06021529	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/02/19	Time	8:35	Street	Steele St
City	Ionia	Further location details					
Up	MH 122	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH 122A	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Upstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	N
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	268.5 Ft	Length Surveyed	268.50 Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat					

Additional info

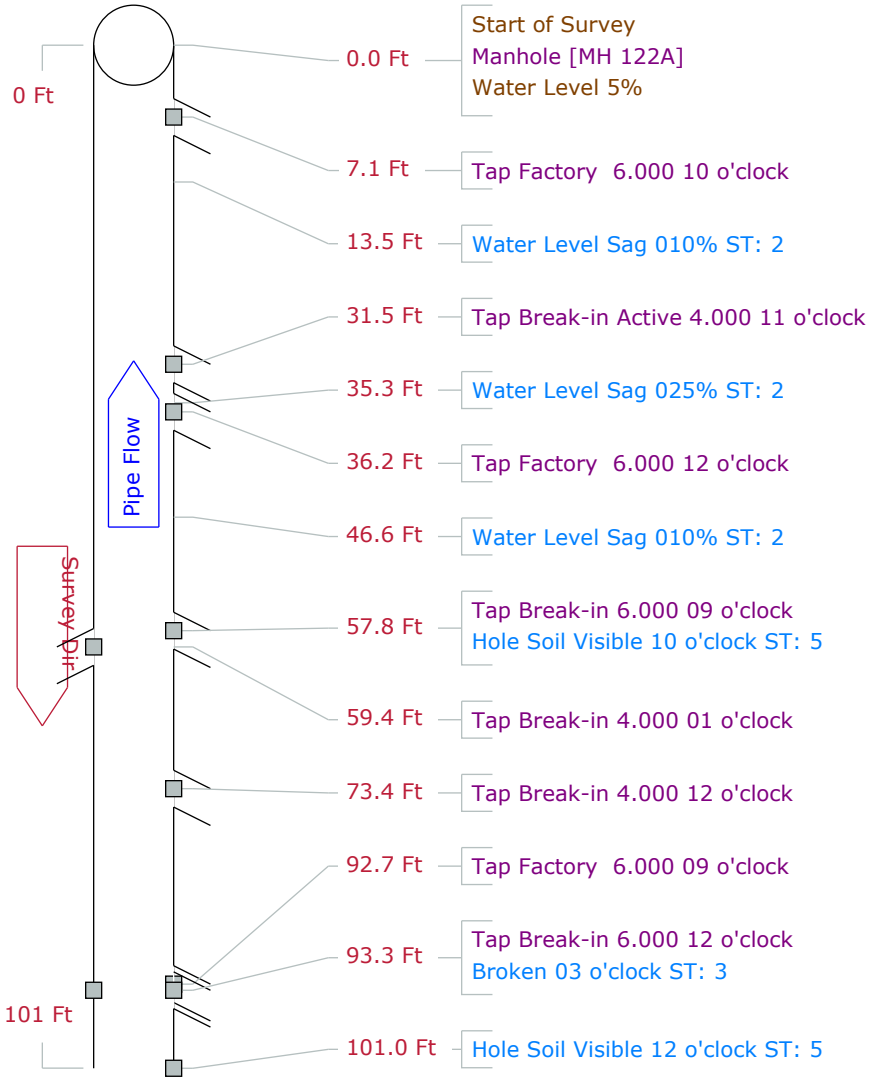
Structural O & M Constructional
Miscellaneous Hydraulic

Location

Project Sanitary Sewer Work Order

Northing Easting Elevation

Coordinate System GPS Accuracy



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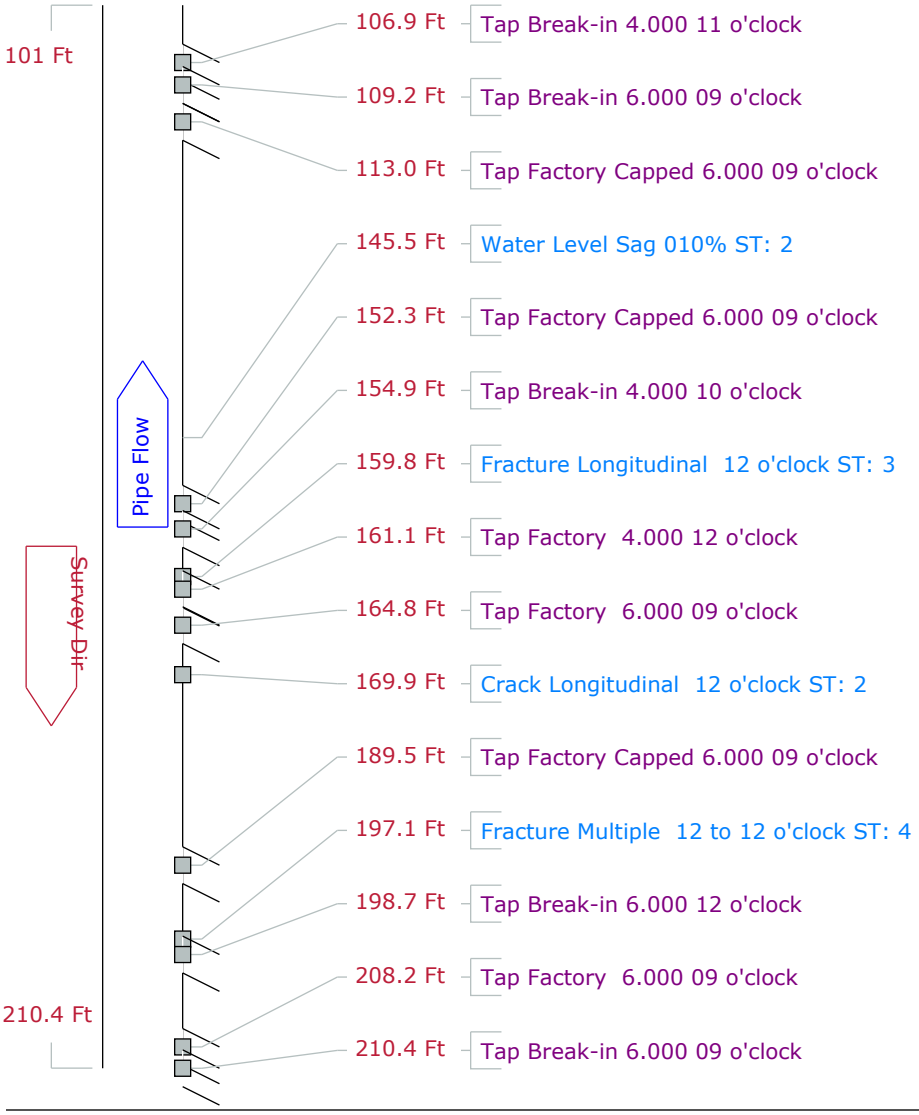
Pipe Graphic Report of PSR 882 for City of Ionia

Setup	1	Surveyor	Andrew	Certificate #	U-914-06021529	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/02/19	Time	8:35	Street	Steele St
City	Ionia	Further location details					

Up	MH 122	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH 122A	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Upstream	Flow control		Media	No
Shape	Circular	Height	8	Width	ins	Preclean	N
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	268.5 Ft	Length Surveyed	268.50 Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat					

Additional info		Structural	O & M
Location		Miscellaneous	Hydraulic
Project	Sanitary Sewer	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



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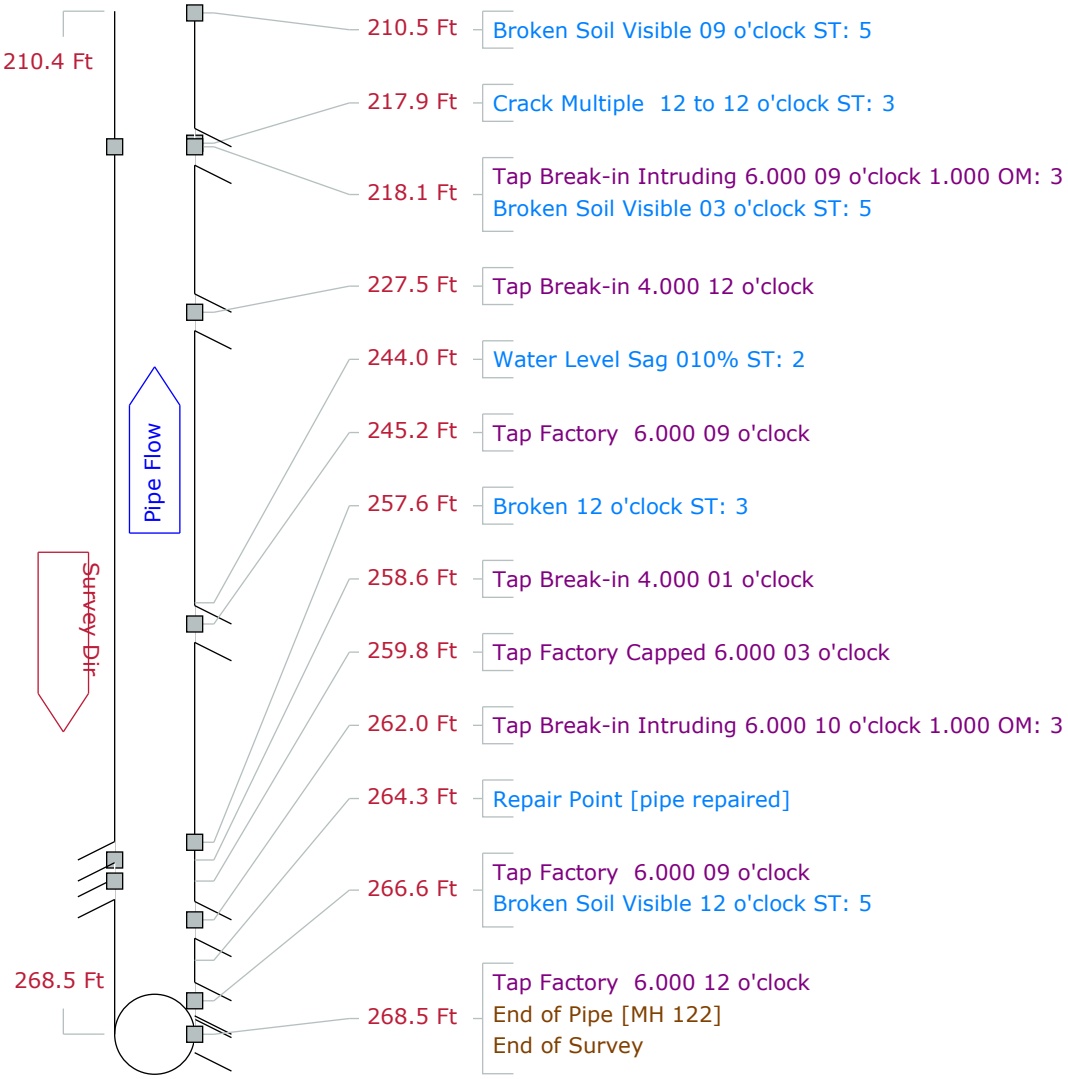
Plummers Environmental Services
Phone:616-877-3930

Pipe Graphic Report of PSR 882 for City of Ionia

Setup	1	Surveyor	Andrew	Certificate #	U-914-06021529
System Owner					
Drainage		Survey Customer			
P/O #		Date	2024/02/19	Time	8:35
Street	Steele St				
City	Ionia	Further location details			
Up	MH 122	Rim to invert		Grade to invert	Rim to grade Ft
Down	MH 122A	Rim to invert		Grade to invert	Rim to grade Ft
Use	Sanitary	Direction	Upstream	Flow control	Media No
Shape	Circular	Height	8	Width ins	Preclean N
Date Cleaned					
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	268.5 Ft
Length Surveyed	268.50 Ft				
Lining		Year laid		Year rehabilitated	Weather
Purpose		Cat			
Additional info					
Location					
Project	Sanitary Sewer				
Northing		Easting		Elevation	
Coordinate System				GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic

Work Order



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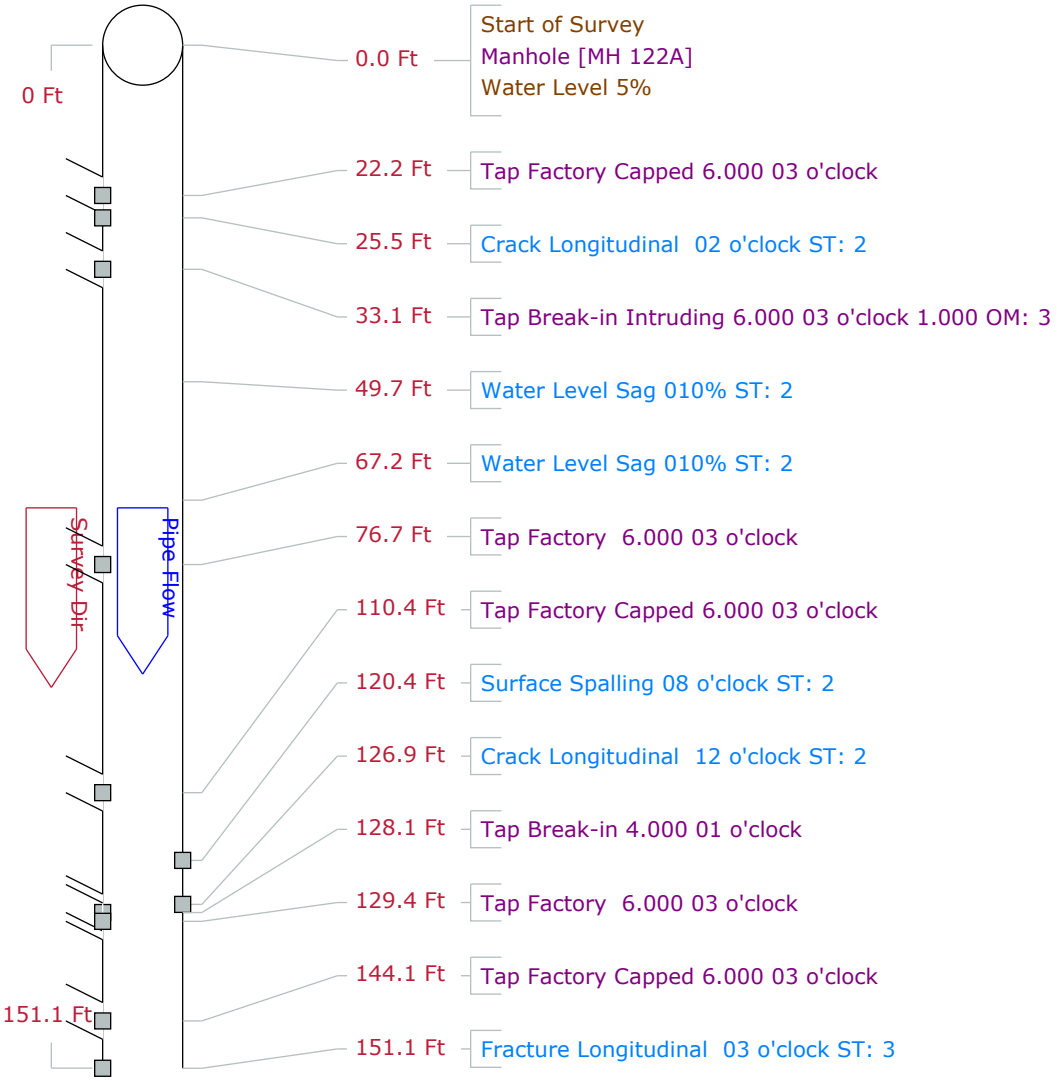
Pipe Graphic Report of PSR 881 for City of Ionia

Setup	2	Surveyor	Andrew	Certificate #	U-914-06021529	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/02/19	Time	10:25	Street	Steele St
City	Ionia	Further location details					

Up	MH 122A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH 568	Rim to invert		Grade to invert		Rim to grade	Ft

Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	245.1 Ft	Length Surveyed	245.10 Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat					

Additional info		Structural	O & M
Location		Miscellaneous	Hydraulic
Project	Sanitary Sewer	Work Order	
Northing	Easting	Elevation	
Coordinate System		GPS Accuracy	



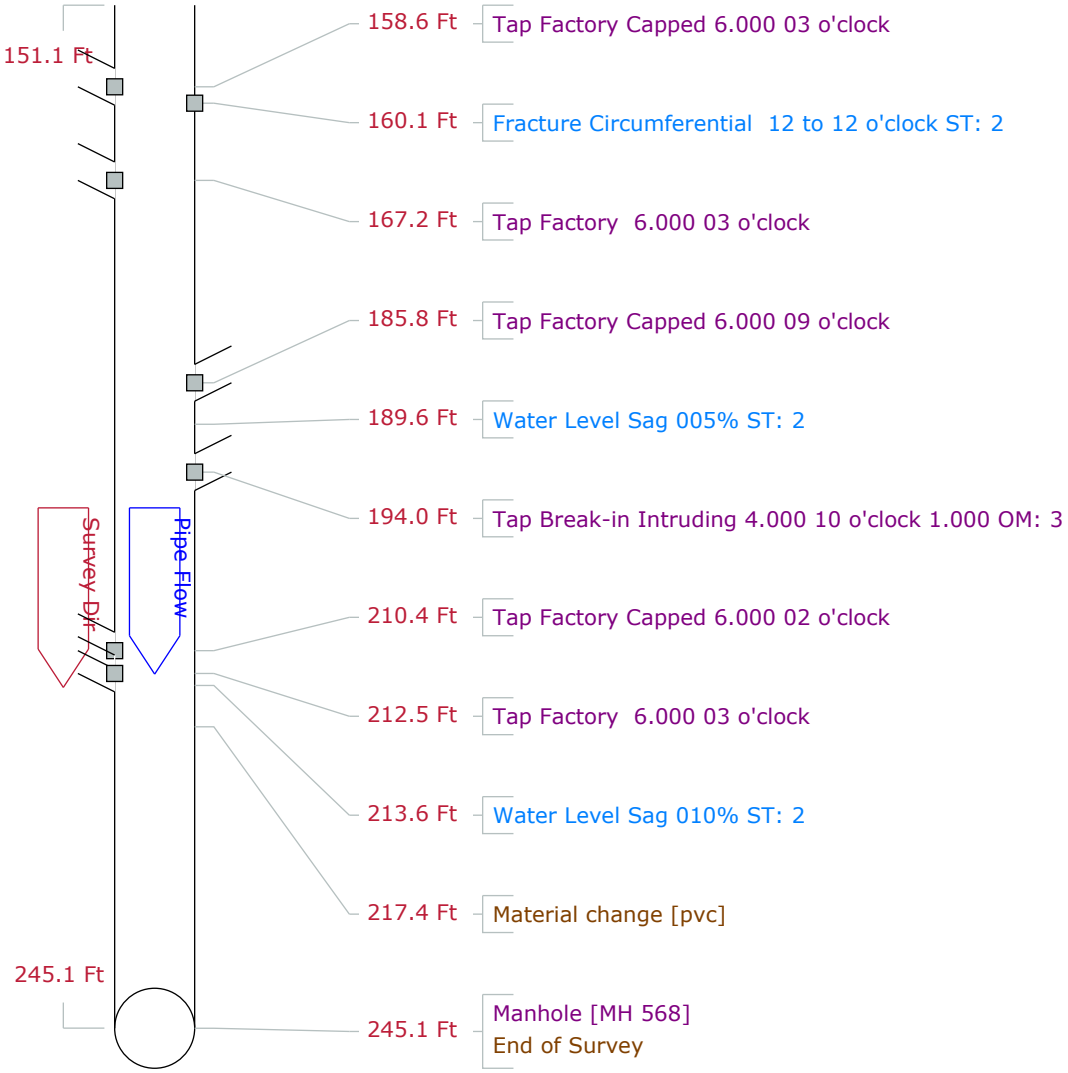
PLUMMER'S Environmental Services Inc.

Plummers Environmental Services
Phone:616-877-3930

Pipe Graphic Report of PSR 881 for City of Ionia

Setup	2	Surveyor	Andrew	Certificate #	U-914-06021529	System Owner	
Drainage		Survey Customer					
P/O #		Date	2024/02/19	Time	10:25	Street	Steele St
City	Ionia	Further location details					
Up	MH 122A	Rim to invert		Grade to invert		Rim to grade	Ft
Down	MH 568	Rim to invert		Grade to invert		Rim to grade	Ft
Use	Sanitary	Direction	Downstream	Flow control		Media No	
Shape	Circular	Height	8	Width	ins	Preclean	J
Material	Vitrified Clay Pipe	Joint length	Ft	Total length	245.1 Ft	Length Surveyed	245.10 Ft
Lining		Year laid		Year rehabilitated		Weather	
Purpose		Cat					
Additional info							
Location							
Project	Sanitary Sewer					Work Order	
Northing		Easting				Elevation	
Coordinate System						GPS Accuracy	

Structural O & M Constructional
Miscellaneous Hydraulic



PLUMMER'S Environmental Services Inc.

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PLUMMER'S Environmental Services Inc.

Pipe Segment Graphics

General information			
Project	Ionia - Prein Main St. - Sanitary - Clean a		
Owner	City of Ionia		
Surveyed by	Cameron		
Date	3/30/2026	**Time**	14:39
Direction of Survey	upstream		

Location	
Drainage Area	
Pipe Segment Ref.	**120-568 R**
Location Code	Easement/Right of way
Street	W. Main St.
City	Ionia

Pipe			
Pipe Use	Sanitary Sewage Pipe	**Total Length**	
Dimension [in]	8	**Length Surveyed**	172.000 ft
Shape	Circular	**Upstream MH**	120
Material	Vitrified Clay Pipe	**Downstream MH**	568

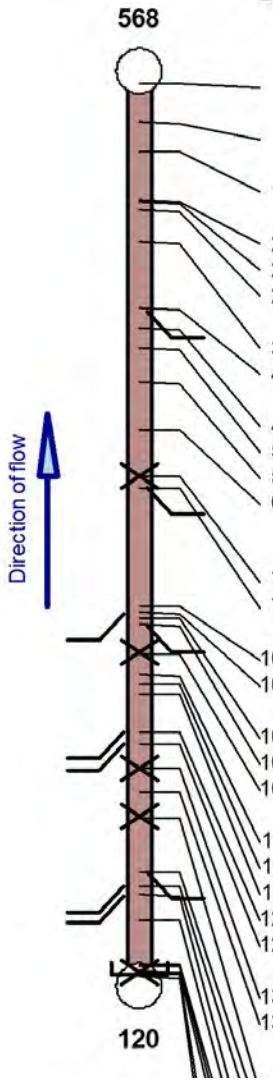
Quick Rating		
QSR	**QMR**	**QOR**
5141	352C	5141

Overall Rating (OR)	
Structural	**O&M**
76	71

Rating Index (RI)	
Structural	**O&M**
2.2	1.9

Segment Grade	1	2	3	4	5
Structural	0	58	9	4	5
O&M	10	46	15	0	0

Drawing direction: In inspection direction



Deleted.	Code	Picture	Video	Description
0.00	AMH	085	00:00:05	Access Point Manhole, 568
	MWL	086	00:00:10	Miscellaneous Water Level, Water level = 5 %
7.60	DSF	087	00:00:28	Deposits Settled Fine at 6 o'clock, Loss of cross sectional area = 5 %, OM:2
13.10	DSF	088	00:00:42	Deposits Settled Fine at 6 o'clock, Loss of cross sectional area = 5 %, OM:2
22.60	MMC	089	00:01:11	Miscellaneous Material Change, line changes to clay
23.00	JOM	090	00:01:16	Joint Offset Medium, S:3
24.30	SSS	091	00:01:20	Start (1): Surface Damage Surface Spalling from 7 to 5 o'clock, Defect Wanders, S:2
30.50	LL	092	00:01:36	Line Left, Deviation = 5 %, OM:1
43.30	TBI	093	00:02:02	Tap Break-In Intruding at 10 o'clock, Diameter = 6 in., Intrusion = 1 in., OM:3
47.20	LL	094	00:02:11	Line Left, Deviation = 5 %, OM:1
50.90	LL	095	00:02:18	Line Left, Deviation = 5 %, OM:1
57.70	LR	096	00:02:30	Line Right, Deviation = 5 %, OM:1
66.60	DAZ	097	00:02:47	Start (2): Deposits Attached Other from 12 to 12 o'clock, Loss of cross sectional area = 5 %, Defect Wanders, OM:2
75.80	TF	098	00:03:13	Tap Factory at 12 o'clock, Diameter = 6 in.
77.80	TFD	099	00:03:26	Tap Factory Defective at 10 o'clock, Diameter = 6 in., debris in lateral, OM:3
100.70	LD	100	00:04:13	Line Down, Deviation = 5 %, OM:1
102.00	TFD	101	00:04:21	Tap Factory Defective at 3 o'clock, Diameter = 6 in., sand and gravel in lateral, OM:3
103.00	JOM	102	00:04:30	Joint Offset Medium, S:3
104.30	TFC	103	00:05:15	Tap Factory Capped at 10 o'clock, Diameter = 6 in.
109.90	TBI	104	00:05:32	Tap Break-In Intruding at 12 o'clock, Diameter = 6 in., Intrusion = 1 in., OM:3
113.90	LR	105	00:05:40	Line Right, Deviation = 5 %, OM:1
115.80	LR	106	00:05:44	Line Right, Deviation = 5 %, OM:1
117.50	LR	107	00:05:49	Line Right, Deviation = 5 %, OM:1
125.00	TFC	108	00:06:08	Tap Factory Capped at 3 o'clock, Diameter = 6 in.
127.30	TB	109	00:06:34	Tap Break-In/Hammer at 3 o'clock, Diameter = 6 in., sand and gravel in lateral
131.90	TF	110	00:06:58	Tap Factory at 12 o'clock, Diameter = 6 in.
136.50	LR	111	00:07:24	Line Right, Deviation = 5 %, OM:1

Pipe Segment Graphics



141.40	TBC	112	00:08:02	Tap Break-In Capped at 12 o'clock, Diameter = 6 in.
151.90	TB	113	00:08:28	Tap Break-In/Hammer at 10 o'clock, Diameter = 6 in.
154.50	TF	114	00:08:45	Tap Factory at 3 o'clock, Diameter = 6 in., sand and gravel in lateral
156.20	TBC	115	00:08:59	Tap Break-In Capped at 2 o'clock, Diameter = 6 in.
161.10	LR	116	00:09:27	Line Right, Deviation = 5 %, OM:1
169.60	FL	117	00:10:21	Fracture Longitudinal at 11 o'clock, S:3
170.00	B	118	00:10:43	Broken from 4 to 2 o'clock, Joint, S:4
170.90	MGO	121	00:11:52	Miscellaneous General Observation, unable to continue due to condition of the line
	SSS			End (1): Surface Damage Surface Spalling from 7 to 5 o'clock, Defect Wanders, S:2
	DAZ			End (2): Deposits Attached Other from 12 to 12 o'clock, Loss of cross sectional area = 5 %, Defect Wanders, OM:2
171.30	BSV	119	00:11:11	Broken Soil Visible from 9 to 3 o'clock, S:5
	TBI	120	00:11:16	Tap Break-In Intruding at 12 o'clock, Diameter = 6 in., Intrusion = 1 in., lateral is active, OM:3
172.00	MSA	122	00:12:05	Miscellaneous Survey Abandoned, End of survey

PLUMMER'S Environmental Services Inc.

Pipe Segment Graphics

General information			
Project	Ionia - Prein Main St. - Sanitary - Clean a		
Owner	City of Ionia		
Surveyed by	Cameron		
Date	3/30/2026	**Time**	12:40
Direction of Survey	upstream		

Location	
Drainage Area	
Pipe Segment Ref.	**120-119**
Location Code	Easement/Right of way
Street	W. Main St.
City	Ionia

Pipe			
Pipe Use	Sanitary Sewage Pipe	**Total Length**	
Dimension [in]	8	**Length Surveyed**	378.000 ft
Shape	Circular	**Upstream MH**	120
Material	Polyvinyl Chloride	**Downstream MH**	119

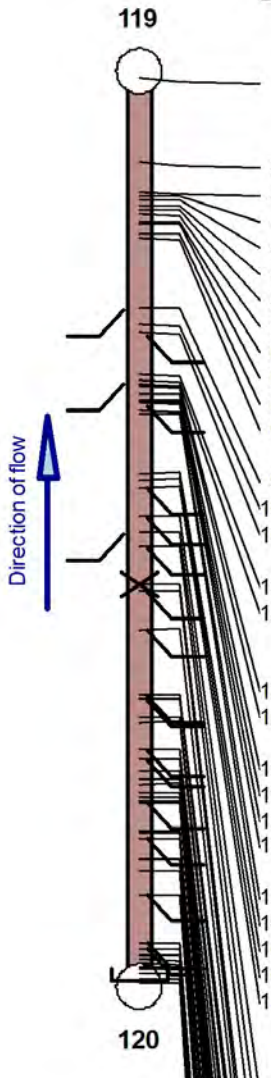
Quick Rating		
QSR	**QMR**	**QOR**
5342	4135	5343

Overall Rating (OR)	
Structural	**O&M**
350	51

Rating Index (RI)	
Structural	**O&M**
2.6	1.4

Segment Grade	1	2	3	4	5
Structural	0	126	201	8	15
O&M	30	2	15	4	0

Drawing direction: In inspection direction



Deleted.	Code	Picture	Video	Description
0.00	AMH	009	00:00:05	Access Point Manhole, 119
	MWL	010	00:00:10	Miscellaneous Water Level, Water level = 5 %
35.10	JOM	011	00:01:28	Joint Offset Medium, S:3
47.60	LD	012	00:02:08	Line Down, Deviation = 5 %, OM:1
48.90	MMC	013	00:02:15	Miscellaneous Material Change, pipe changes to clay
50.50	JOM	014	00:02:21	Joint Offset Medium, S:3
53.20	LU	015	00:02:28	Line Up, Deviation = 5 %, OM:1
54.80	LU	016	00:02:34	Line Up, Deviation = 5 %, OM:1
56.80	JAM	017	00:02:42	Joint Angular Medium, S:3
60.00	LD	018	00:02:50	Line Down, Deviation = 5 %, OM:1
60.70	JOM	019	00:02:54	Start (1): Joint Offset Medium, Defect Wanders, S:3
65.00	LU	020	00:03:02	Line Up, Deviation = 5 %, OM:1
66.90	SSS	021	00:03:07	Start (2): Surface Damage Surface Spalling from 7 to 5 o'clock, Joint, Defect Wanders, S:2
95.80	TFC	022	00:04:10	Tap Factory Capped at 2 o'clock, Diameter = 6 in.
103.00	LD	023	00:04:32	Line Down, Deviation = 5 %, OM:1
106.00	TF	024	00:04:44	Tap Factory at 9 o'clock, Diameter = 6 in., debris in lateral
123.70	LU	025	00:05:29	Line Up, Deviation = 5 %, OM:1
126.00	BSV	026	00:05:41	Broken Soil Visible from 6 to 2 o'clock, Joint, S:5
	TBI	027	00:06:11	Tap Break-In Intruding at 3 o'clock, Diameter = 6 in., Intrusion = 1 in., OM:3
128.00	LD	028	00:06:20	Line Down, Deviation = 5 %, OM:1
128.90	MWLS	029	00:06:25	Miscellaneous Water Level Sag, Water level = 10 %, S:2
131.60	LU	030	00:06:32	Line Up, Deviation = 5 %, OM:1
134.20	LU	031	00:06:40	Line Up, Deviation = 5 %, OM:1
134.80	BSV	032	00:07:02	Broken Soil Visible from 6 to 2 o'clock, Joint, S:5
135.20	TBI	033	00:07:07	Tap Break-In Intruding at 10 o'clock, Diameter = 6 in., Intrusion = 1 in., OM:3
138.50	LD	034	00:07:35	Line Down, Deviation = 5 %, OM:1
140.10	LR	035	00:07:40	Line Right, Deviation = 5 %, OM:1
165.00	LL	036	00:08:31	Line Left, Deviation = 5 %, OM:1
167.70	LR	037	00:08:40	Line Right, Deviation = 5 %, OM:1
170.90	TBI	038	00:08:58	Tap Break-In Intruding at 10 o'clock, Diameter = 6 in., Intrusion = 1 in., OM:3

Pipe Segment Graphics



183.10	TF	039	00:09:29	Tap Factory at 10 o'clock, Diameter = 6 in., debris in lateral
189.60	TBI	040	00:09:57	Tap Break-In Intruding at 3 o'clock, Diameter = 6 in., Intrusion = 1.5 in., debris in lateral, OM:4
195.50	LD	041	00:10:14	Line Down, Deviation = 5 %, OM:1
	TF	042	00:10:18	Tap Factory at 9 o'clock, Diameter = 6 in., debris in lateral
211.60	TB	043	00:11:05	Tap Break-In/Hammer at 12 o'clock, Diameter = 6 in.
213.90	TFC	044	00:11:19	Tap Factory Capped at 9 o'clock, Diameter = 6 in.
230.30	TFC	045	00:11:54	Tap Factory Capped at 9 o'clock, Diameter = 6 in.
257.20	TFC	046	00:12:43	Tap Factory Capped at 9 o'clock, Diameter = 6 in.
259.20	TBI	047	00:12:55	Tap Break-In Intruding at 10 o'clock, Diameter = 6 in., Intrusion = 1 in., OM:3
266.40	LR	048	00:13:13	Line Right, Deviation = 5 %, OM:1
268.70	LL	049	00:13:19	Line Left, Deviation = 5 %, OM:1
280.20	TBI	050	00:13:45	Tap Break-In Intruding at 9 o'clock, Diameter = 6 in., Intrusion = 0.25 in., debris in lateral, OM:2
284.50	TFC	051	00:13:59	Tap Factory Capped at 9 o'clock, Diameter = 6 in.
289.40	LD	052	00:14:43	Line Down, Deviation = 5 %, OM:1
292.70	LL	053	00:14:49	Line Left, Deviation = 5 %, OM:1
294.60	LL	054	00:14:54	Line Left, Deviation = 5 %, OM:1
298.60	LR	055	00:15:02	Line Right, Deviation = 5 %, OM:1
299.90	LU	056	00:15:06	Line Up, Deviation = 5 %, OM:1
301.50	TF	057	00:15:13	Tap Factory at 9 o'clock, Diameter = 6 in., roots in lateral
302.50	LD	058	00:15:19	Line Down, Deviation = 5 %, OM:1
314.60	BSV	059	00:16:03	Broken Soil Visible from 6 to 12 o'clock, S:5
315.30	FM	060	00:16:22	Fracture Multiple from 9 to 1 o'clock, S:4
317.60	TF	061	00:16:31	Tap Factory at 9 o'clock, Diameter = 6 in., roots in lateral
325.80	LD	062	00:16:54	Line Down, Deviation = 5 %, OM:1
331.00	LU	063	00:17:04	Line Up, Deviation = 5 %, OM:1
340.60	TF	064	00:17:22	Tap Factory at 9 o'clock, Diameter = 6 in.
361.20	TFC	065	00:18:17	Tap Factory Capped at 9 o'clock, Diameter = 6 in.
363.50	TBI	066	00:18:34	Tap Break-In Intruding at 9 o'clock, Diameter = 6 in., Intrusion = 1 in., OM:3
366.10	LD	067	00:18:47	Line Down, Deviation = 5 %, OM:1
368.10	JSM	068	00:19:11	Joint Separated Medium, S:3
369.80	LD	069	00:19:19	Line Down, Deviation = 5 %, OM:1
370.70	LD	070	00:19:23	Line Down, Deviation = 5 %, OM:1
372.10	LU	071	00:19:30	Line Up, Deviation = 5 %, OM:1
373.40	LU	072	00:20:08	Line Up, Deviation = 5 %, OM:1
376.30	JOL	073	00:20:19	Joint Offset Large, S:4
378.00	JOM			End (1): Joint Offset Medium, Defect Wanders, S:3
	MGO	074	00:20:52	Miscellaneous General Observation, unable to make it past offset in joint
	SSS			End (2): Surface Damage Surface Spalling from 7 to 5 o'clock, Joint, Defect Wanders, S:2
	MSA	075	00:20:57	Miscellaneous Survey Abandoned, End of survey

Appendix E

Projects Cost Estimate

Project 1 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Adams Street - Jackson St to M-66

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Sanitary Sewer					
1	Mobilization, Max 10%	1	ls	$411,000	$411,000
2	Sanitary Sewer, 8-inch	1,900	ft.	$150	$285,000
3	Sanitary Sewer, 15-inch	1,600	ft.	$225	$360,000
4	Sanitary Sewer, 18-inch	1,300	ft.	$350	$455,000
5	Sanitary Sewer Connect to Existing, 4-12 inch	10	ea.	$1,500	$15,000
6	Sanitary Sewer Connect to Existing, 15 inch	1	ea.	$2,500	$2,500
7	Sanitary Manhole	16	ea.	$7,000	$112,000
8	Sanitary Lateral, Connect to existing	59	ea.	$3,500	$206,500
II. Road Reconstruction					
9	Storm Structure Replacement	36	ea.	$3,500	$126,000
10	Storm Sewer Replacement	1,500	ft.	$100	$150,000
11	Storm Sewer Replacement, 24-inch	350	ft.	$150	$52,500
12	Storm Sewer Replacement, 36-inch	1,200	ft.	$200	$240,000

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Project 1 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Adams Street - Jackson St to M-66

Date:
April 3, 2026

Project #:
2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
13	Road Replacement	4,100	ft.	$420	$1,722,000
14	Traffic Control	1	ls	$100,000	$100,000
				Construction Estimate:	**$4,300,500**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$1,290,500**
				Total Estimate:	**$5,591,000**
				CWSRF Eligible (1/2 of Road Reconstruction):	$4,472,000
				Not CWSRF Eligible (1/2 Road Reconstruction):	$1,119,000

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Project 2 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Jackson Street - Lafayette to Adams Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Sanitary Sewer					
1	Mobilization, Max 10%	1	ls	$78,000	$78,000
2	Sanitary Sewer, 8-inch	650	ft.	$150	$97,500
3	Sanitary Sewer Connect to Existing, 8 inch	5	ea.	$1,500	$7,500
4	Sanitary Manhole	7	ea.	$7,000	$49,000
5	Sanitary Lateral, Connect to existing	15	ea	$3,000	$45,000
II. Road Reconstruction					
6	Storm Structure Replacement	4	ea.	$3,000	$12,000
7	Storm Sewer Replacement	100	ft.	$100	$10,000
8	Road Replacement	1,100	ft.	$360	$396,000
9	Brick Intersection Replacement	1	ls	$20,000	$20,000
10	Traffic Control	1	ls	$65,000	$65,000
				Construction Estimate:	**$787,500**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$236,500**
				Total Estimate:	**$1,024,000**

CWSRF Eligible (Sewer + 3/4 Road Reconstruction): $889,000
Not Eligible (1/4 Road Reconstruction): $135,000

Project 3 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Jefferson Street - M-21 to Webber Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Sanitary Sewer					
1	Mobilization, Max 10%	1	ls	$244,000	$244,000
2	Sanitary Sewer, 8-inch	650	ft.	$150	$97,500
3	Sanitary Sewer, 12-inch	1,850	ft.	$200	$370,000
4	Sanitary Sewer Connect to Existing, 4-12 inch	11	ea.	$1,500	$16,500
5	Sanitary Manhole	13	ea.	$7,000	$91,000
6	Sanitary Lateral, Connect to existing	42	ea	$3,000	$126,000
II. Road Reconstruction					
7	Storm Structure Replacement	20	ea.	$3,500	$70,000
8	Storm Sewer Replacement	1,200	ft.	$100	$120,000
9	Storm Sewer Replacement, 30-inch	375	ft.	$175	$65,625
10	Storm Sewer Replacement, 36-inch	300	ft.	$200	$60,000
11	Storm Sewer Replacement, 42-inch	50	ft.	$300	$15,000
12	Road Replacement	2,900	ft.	$370	$1,073,000
13	Brick Intersection Replacement	1	ls	$20,000	$20,000
14	Traffic Control	1	ls	$75,000	$75,000
				Construction Estimate:	**$2,443,625**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$733,375**
				Total Estimate (CWSRF Eligible):	**$3,177,000**

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Project 4 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Adams Street Alley (Eastern Extents) - Depot Street to Steele Street

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Sanitary Sewer					
1	Mobilization, Max 10%	1	ls	$38,000	$38,000
2	Sanitary Sewer, 8-inch	550	ft.	$160	$88,000
3	Sanitary Sewer Connect to Existing, 12 inch	2	ea.	$1,500	$3,000
4	Sanitary Sewer, Rem, Less than 24 inch	500	ft.	$15	$7,500
5	Sanitary Manhole	4	ea.	$7,500	$30,000
6	Sanitary Lateral, Connect to existing	15	ea.	$3,000	$45,000
II. Road Reconstruction					
7	Storm Structure Replacement	5	ea.	$3,000	$15,000
8	Storm Sewer Replacement	400	ft.	$100	$40,000
9	Road Replacement, Local	20	ft.	$320	$6,400
10	Parking Lot Replacement	600	ft.	$180	$108,000
11	Traffic Control	1	ls	$2,500	$2,500
				Construction Estimate:	**$383,400**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$115,600**
				Total Estimate (CWSRF Eligible):	**$499,000**

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Project 5 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
Adams Street Alley (Western Extents) - Steele Street to M-66

Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Sanitary Sewer					
1	Mobilization, Max 10%	1	ls	$27,000	$27,000
2	Sanitary Sewer, 8-inch	570	ft.	$160	$91,200
3	Sanitary Sewer Connect to Existing, 12-18 inch	2	ea.	$2,000	$4,000
4	Sanitary Sewer, Abandon	1	lsum	$7,500	$7,500
5	Sanitary Manhole	5	ea.	$7,500	$37,500
6	Sanitary Lateral, Connect to existing	10	ea.	$3,000	$30,000
II. Road Reconstruction					
7	Road Replacement, Local	60	ft.	$320	$19,200
8	Parking Lot Replacement	300	ft.	$180	$54,000
9	Traffic Control	1	ls	$2,500	$2,500
				Construction Estimate:	**$272,900**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$82,100**
				Total Estimate (CWSRF Eligible):	**$355,000**

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Project 6 — Estimate of Probable Cost

Owner:
City of Ionia

Project Title:
W. Main Street- M-66 to Yeomans Street

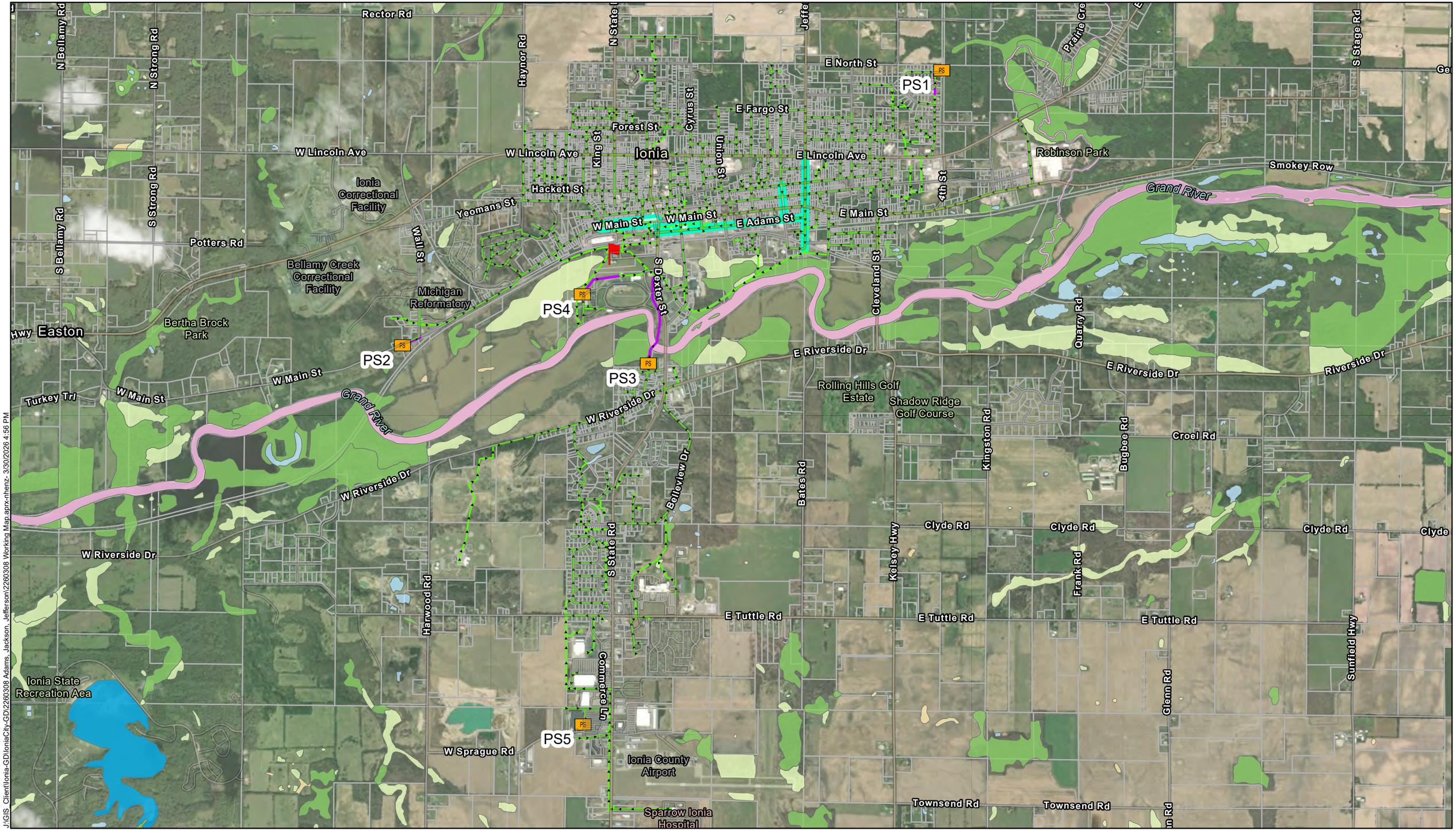
Date: April 3, 2026

Project #: 2260308

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
I. Sanitary Sewer					
1	Mobilization, Max 10%	1	ls	$142,000	$142,000
2	Sanitary Sewer, 8-inch	410	ft.	$150	$61,500
3	Sanitary Sewer, 10-inch	1,100	ft.	$175	$192,500
4	Sanitary Sewer, 12-inch	100	ft.	$200	$20,000
5	Sanitary Sewer Connect to Existing, 8-12 inch	5	ea.	$1,500	$7,500
6	Sanitary Manhole	7	ea.	$7,000	$49,000
7	Sanitary Lateral, Connect to existing	20	ea.	$3,000	$60,000
8	Sanitary Sewer, Rem, Less than 24 inch	1,610	ft.	$15	$24,150
II. Road Reconstruction					
9	Storm Structure Replacement	13	ea.	$3,000	$39,000
10	Storm Sewer Replacement	1,100	ft.	$100	$110,000
11	Road Replacement	1,700	ft.	$390	$663,000
12	Traffic Control	1	ls	$60,000	$60,000
				Construction Estimate:	**$1,428,650**
				Construction Contingencies, Legal, Administrative, Engineering Costs (30%):	**$429,350**
				Total Estimate:	**$1,858,000**
				CWSRF Eligible (3/4 Road + Sewer)	$1,642,000
				Not CWSRF Eligible (1/4 Road Reconstruction)	$216,000

Appendix F

National Wetland Inventory



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SCALE: 1" = 2,500 '

LEGEND

- WWTP
- PS Sanitary Pump Station
- Gravity Main
- Force Main
- Ionia County Tax Parcels
- CWSRF Project Extents
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

CITY OF IONIA

IONIA COUNTY, MICHIGAN

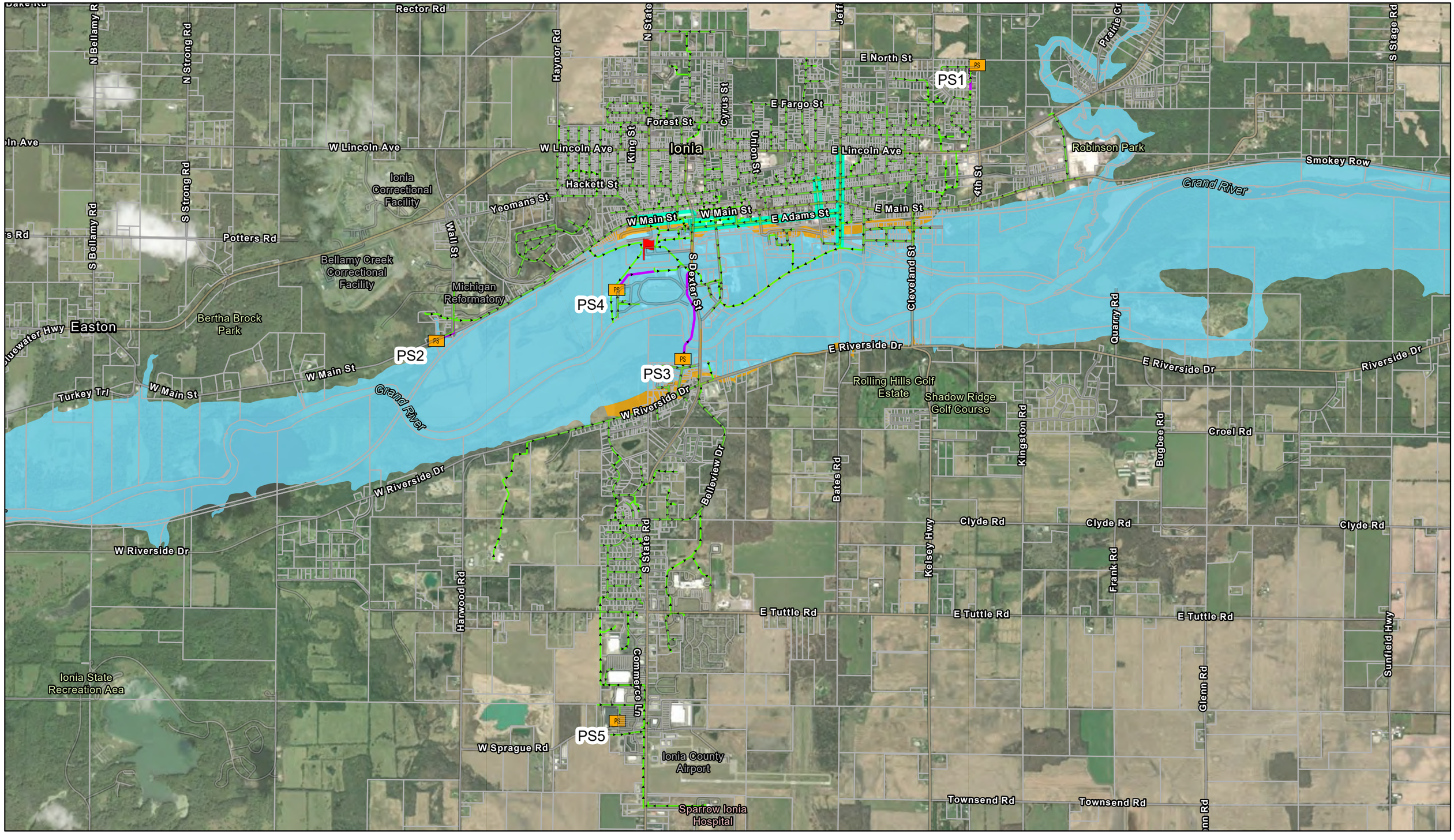
NATIONAL WETLAND INVENTORY

Prein&Newhof

2260308

Appendix G

FEMA Flood Hazard Map



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SCALE: 1" = 2,500 '

LEGEND

- WWTP
- Sanitary Pump Station
- Sanitary Gravity Main
- Sanitary Force Main
- 0.2% ANNUAL CHANCE FLOOD HAZARD (500 Year Flood)
- 1% ANNUAL CHANCE FLOOD HAZARD (100 YEAR FLOOD)
- CWSRF Project Extents
- Ionia County Tax Parcels

CITY OF IONIA

IONIA COUNTY, MICHIGAN

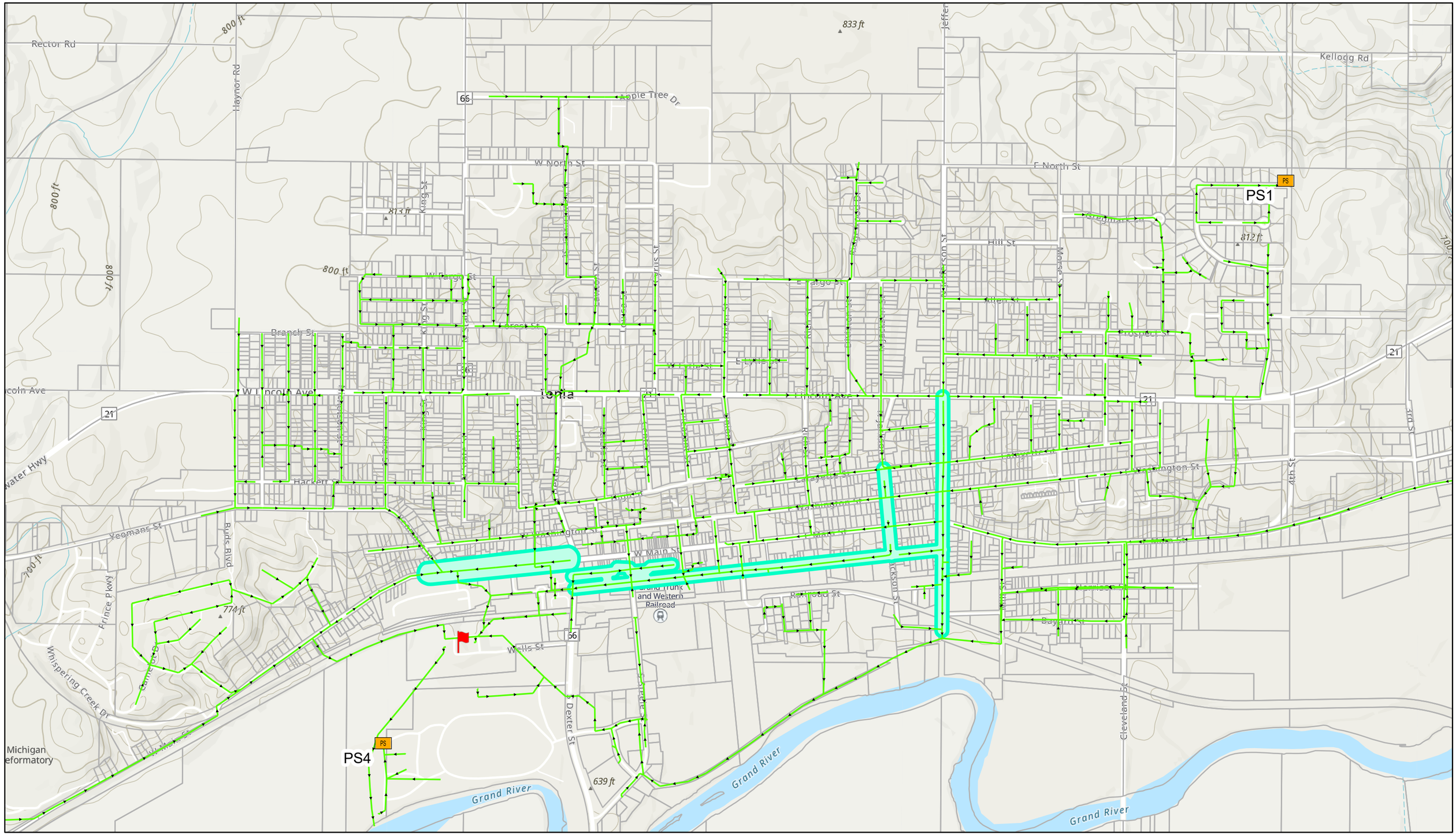
FEMA FLOOD HAZARDS

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2260308

Appendix H

Topographic Map



LEGEND

- WWTP
- Sanitary Pump Station
- Sanitary Gravity Main
- Ionia County Tax Parcels
- CWSRF Project Extents

SCALE: 1" = 1,000 '

CITY OF IONIA

IONIA COUNTY, MICHIGAN

TOPOGRAPHY

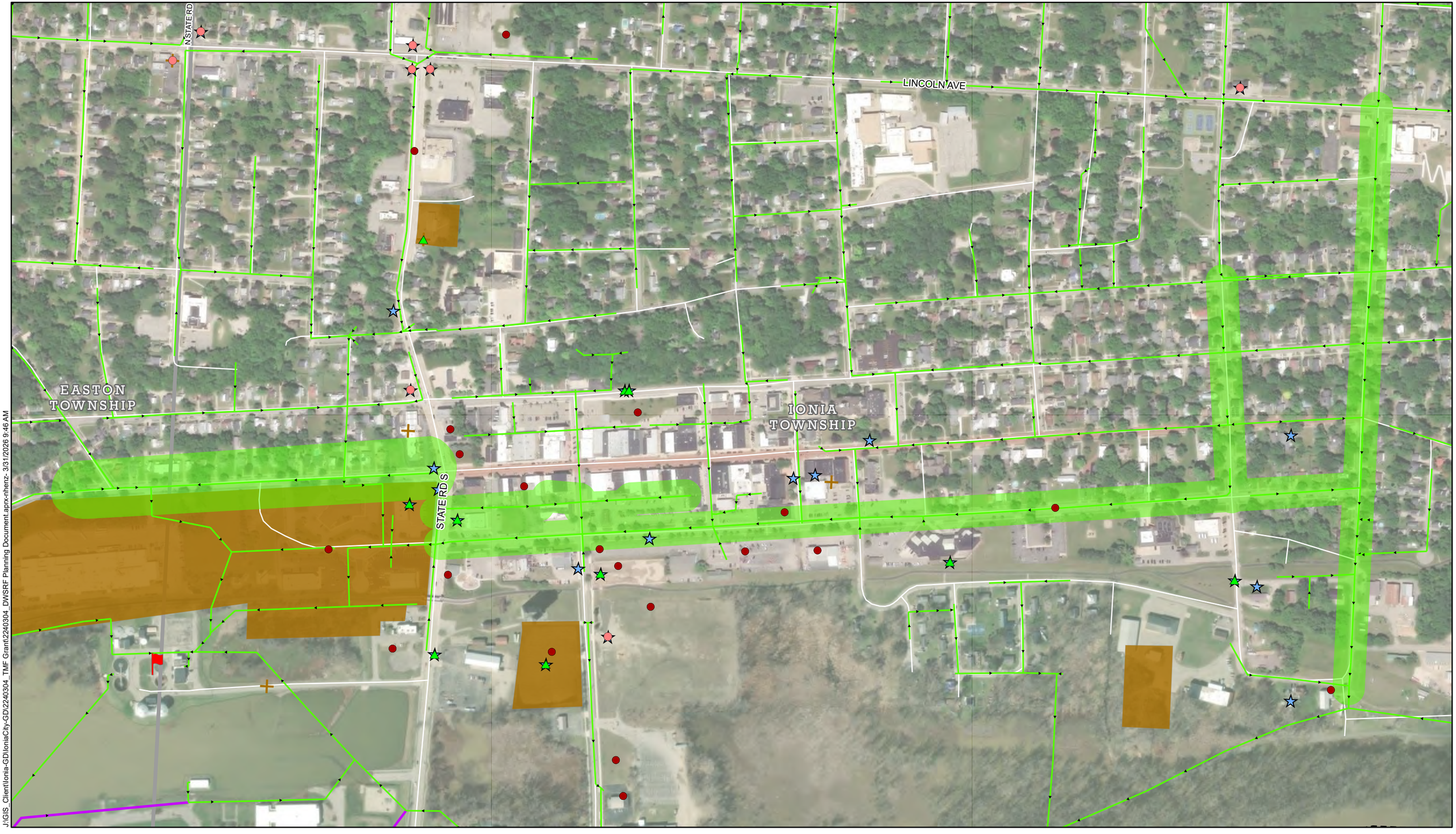
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Appendix I

Known Contamination Sites Map



J:\GIS_Client\Ionia-GD\IoniaCity-GD\2240304_TMF Grant\2240304_DWSRF Planning Document.aprx-nhenz- 3/31/2026 9:46 AM

SCALE: 1" = 400 '

LEGEND

- Part 201 Environmental Contamination Site
- Leaking Underground Storage Tank (Part 213 Open)
- Leaking Underground Storage Tank (Part 213 Closed)
- Underground Storage Tank (Part 211 Active)
- Underground Storage Tank (Part 211 Closed)

Land Resource Use Restriction

- Restrictive Covenant
- WWTP
- PS Sanitary Pump Station
- Sanitary Gravity Main
- Sanitary Force Main
- CWSRF Project Extents
- City of Ionia Boundary

CITY OF IONIA
IONIA COUNTY, MICHIGAN
WASTEWATER PROJECT PLANNING

KNOWN CONTAMINATION SITES

Prein&Newhof
2260308

Appendix J

Present Worth Analysis

CITY OF IONIA CWSRF PROJECT PLAN
PRESENT WORTH ANALYSIS

Project Description	*Project 1* Adams Street	*Project 2* Jackson Street	*Project 3* Jefferson Street	*Project 4* Adams Street Alley (Eastern Extents)	*Project 5* Adams Street Alley (Western Extents)	*Project 6* W. Main Street
	FY2027	FY2027	FY2027	FY2027	FY2027	Future
Capital Costs (including ELAC)						
Structures	$3,784,000	$752,000	$2,688,000	$422,000	$300,000	$0
Equipment	$0	$0	$0	$0	$0	$1,389,000
Planning	$172,000	$34,000	$122,000	$19,000	$14,000	$63,000
Design / Construction Engineering	$516,000	$103,000	$367,000	$58,000	$41,000	$190,000
Project Cost	$4,472,000	$889,000	$3,177,000	$499,000	$355,000	$1,642,000
(A) 30-yr Present Worth of Capital Costs[1]	$2,260,647	$449,400	$1,606,010	$252,250	$179,457	$830,050
Operation, Maintenance & Replacement (OM&R)						
Energy Cost Savings	$0	$0	$0	$0	$0	$0
OM&R	$0	$0	$0	$0	$0	$0
Annual OM&R[2]	$0	$0	$0	$0	$0	$0
(B) 30-yr Present worth of OM&R[1]	$0	$0	$0	$0	$0	$0
(C) 30-yr Present worth of Energy Cost Savings	$0	$0	$0	$0	$0	$0
Salvage Value of Capital						
Salvage value at 30 years	$1,513,600	$300,800	$1,075,200	$168,800	$120,000	$0
(D) 30-yr Present worth of Salvage[1]	$765,142	$152,058	$543,526	$85,330	$60,661	$0
Total Present Worth (A + B + C - D)	$1,495,505	$297,342	$1,062,484	$166,920	$118,795	$830,050
Equivalent Annual Cost (based on Total Present Worth)	$69,560	$13,830	$49,419	$7,764	$5,525	$38,608
Total Existing Residential Equivalent Units (REUs)						
City of Ionia REUs:	4,096	4,096	4,096	4,096	4,096	4,096
Unit of Government Responsible for Payment for:	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6
City of Ionia	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
City of Ionia Annual Cost per REU	$16.98	$3.38	$12.07	$1.90	$1.35	$9.43
City of Ionia Monthly Cost per REU	$1.42	$0.28	$1.01	$0.16	$0.11	$0.79
Total Proposed Project Cost FY2027:	**$4,472,000**	**$889,000**	**$3,177,000**	**$499,000**	**$355,000**	**$1,642,000**
Total Present Worth FY2027:	**$1,495,505**	**$297,342**	**$1,062,484**	**$166,920**	**$118,795**	**$830,050**
Total Equivalent Annual Cost FY2027[3]:	**$69,560**	**$13,830**	**$49,419**	**$7,764**	**$5,525**	**$38,608**
	Annual[3]	**Monthly[3]**				
Total City of Ionia Cost per REU (FY 2027 Projects):	$35.67	$2.97				
Total City of Ionia Cost per REU (Future Projects):	$9.43	$0.79				

Notes:

[1] U.S. EPA Discount rate for Year 2026 is 2.30%

[2] Negative value indicates reduction in Annual O&M

[3] Based on Total Present Worth

Appendix K

Annual Cost Summary

CITY OF IONIA
IONIA COUNTY, MICHIGAN
CWSRF PROJECT PLANNING DOCUMENT
ANNUAL COST SUMMARY

No.	Project	DWRF Project Cost Estimate	Annual Debt Service*	Operation & Maintenance Increase/Decrease	Total Annual Cost
FY 2027 - CWSRF					
1.	Adams Street	$4,472,000	$220,847	$0	$220,847
2.	Jackson Street	$889,000	$43,903	$0	$43,903
3.	Jefferson Street	$3,177,000	$156,894	$0	$156,894
4.	Adams Street Alley (Eastern Extents)	$499,000	$24,643	$0	$24,643
5.	Adams Street Alley (Western Extents)	$355,000	$17,531	$0	$17,531
	Total FY 2027:	$9,392,000	$463,818	$0	$463,818
	Exisitng REU's				4,096
	Annual REU Cost**				$35.67
	Monthly REU Cost**				$2.97
FUTURE - CWSRF					
6.	W. Main Street	$1,642,000	$81,089	$0	$81,089
	Total Future:	$1,642,000	$81,089	$0	$81,089
	Exisitng REU's				4,096
	Annual REU Cost**				$9.43
	Monthly REU Cost**				$0.79

*Annual debt service based on 30 year loan with a 2.75% interest rate.
**REU Cost based on total present worth