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Drinking Water State Revolving Fund

Project Planning Document Amendment

Project No. 221812
April 10, 2026

Draft

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Drinking Water State Revolving Fund
Project Planning Document Amendment

Prepared For: City of Grand Rapids

April 10, 2026
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List of Abbreviations/Acronyms

CIP capital improvements plan

City	City of Grand Rapids
CMP	Comprehensive Master Plan
DWSRF	Drinking Water State Revolving Fund
EHPD	East High-Pressure District
EGLE	Michigan Department of Environment, Great Lakes, and Energy
gpm	gallons per minute
HP	high pressure
IPD	Intermediate Pressure District
ITA	Intent to Apply
LUST	leaking underground storage tanks
LMFP	Lake Michigan Filtration Plant
LP	low pressure
LPD	Low-Pressure District
LSL	lead service line
LSLR	lead service line replacement
MAHI	median annual household income
mg	million gallons
mgd	million gallons per day
MNFI	Michigan Natural Features Inventory
MP	medium pressure
PDR	Preliminary Design Report
PRV	pressure-reducing valves
SHPO	Michigan State Historical Preservation Office
THPO	Tribal Historic Preservation Officers
USFWS	U.S. Fish and Wildlife Services
VFD	Variable Frequency Drives

1.0 Introduction

In January of 2026, the City of Grand Rapids (City) authorized Fishbeck to complete a Drinking Water State Revolving Fund (DWSRF) Project Planning Amendment Document. The purpose of this document is to meet the Project Planning Amendment requirements of the Michigan Department of Environment, Great Lakes, and Energy (EGLE). Fishbeck submitted an Intent to Apply (ITA) on the City's behalf on October 30, 2025, to seek funding in FY2027 based on the original Planning Document submitted in May 2023. However, there have been recent additions that were not part of the 2023 Planning Document and the previously submitted 2025 Amendment. Based on consultation from the EGLE project manager, these additional improvements proposed for FY2027 will require an amendment to be submitted.

The FY2023 Planning Document included the following scope of improvements for FY2027:

1. Lead Service Line Replacement (LSLR)
2. Watermain Improvements:
    a. Second Street Watermain (Valley Avenue to Fremont Avenue)
    b. Butterworth Street Watermain (Marion Avenue to Lane Avenue)
    c. Buchanan Avenue Watermain (Stewart Street to Corinne Street)
    d. Alger Street Watermain (Division Avenue to Madison Avenue)
    e. Butterworth Street Watermain (Lane Avenue to Hogadone Avenue)

The 2023 Planning Document (Excerpts related to the project areas) is provided in Appendix 1 for reference. The project need, figures, and cost associated with these watermains are included in Appendix 1.

This Amendment Document will add the following storage tank, watermain improvement, and associated lead service lines projects to the scope of FY2027 and FY2028:

1. Intermediate District Elevated Storage Tank, FY2027
2. Watermain Improvements:
    a. Sherman Street Watermain (Giddings Avenue to City Limits), FY2027
    b. Godfrey Avenue Watermain (Market Avenue to Oxford Street), FY2027
    c. Wealthy Street Watermain (Fuller Avenue to Giddings Avenue), FY2028

These additional projects are necessary to ensure that the reliability and functionality of the City's water supply system is maintained for the future.

2.0 Project Background

2.1 Summary of Project Need – Intermediate District Elevated Storage Tank

The Intermediate Pressure District (IPD) serves a part of the City located between the Low-Pressure District (LPD) and East High-Pressure District (EHPD). Historically, the IPD was supplied by the Coldbrook Pump Station in addition to two pressure-reducing valves (PRVs) that allow water to enter the IPD from the EHPD. The Coldbrook Pump Station was decommissioned in conjunction with improvements made at the Livingston Pump Station (Livingston). The improvements at Livingston included three new pumps that now supply the IPD. There are three existing PRVs in the IPD: the 20 Diamond PRV, Fuller Avenue and 3-Mile PRV, and the new PRV at the Livingston. The IPD covers a relatively large area and has no elevated storage.

Pressures within the district are controlled within a certain range using pumps with variable frequency drives (VFDs) and PRVs. The reliability of the IPD supply could be improved by constructing an elevated storage tank in the district. An elevated tank would also improve operational efficiency and could result in lower energy costs. A preliminary evaluation was conducted by Fishbeck as part of the 2020 Comprehensive Master Plan Update and concluded that an elevated tank in the IPD was a viable option. This study is available upon request.

2.2 Summary of Project Need – Watermain Replacement

The proposed distribution system projects recommend action due to aged watermain, dead-end lines, or lead service lines associated with the watermain. To avoid redundancy, the concern of each of these items are described generally for all proposed projects.

2.2.1 Aged Watermain

Failure of cast iron watermains and valves built before 1940 in the older parts of Grand Rapids are common, particularly during the winter months. These failures impact distribution system reliability and increase operation and maintenance efforts. The City's policy is to replace aged watermains with ductile iron pipe as streets are reconstructed. Aged watermains generally include lead service lines; it is best practice and most cost effective to replace both the watermain and lead service lines concurrently.

2.2.2 Dead-End Lines

Dead-end lines often have increased water age due to insufficient demand and limited freshwater flow. The age of the water reduces the chlorine residual present. Chlorine residual helps to keep the water disinfected and lead out of solution, which is important where lead service lines and old watermains exist within the distribution system. The poor water quality is noticeable to residents and results in a lack of confidence in the safety of their water. For these reasons, dead-end lines are flushed approximately once every 30 days. Where feasible, dead-end lines are gradually being removed from the system to eliminate the associated maintenance, operation efforts, and water safety concerns.

2.2.3 Lead Service Lines

Lead water services are a known potential public health hazard. Many lead service lines still exist within older portions of the distribution system. These lead service lines need to be eliminated within 10 years, starting three years from the date of promulgation (October 2027), to meet the requirements of the Safe Drinking Water Act.

2.3 Compliance with Drinking Water Standards

The City owns and operates the Lake Michigan Filtration Plant (LMFP); drinking water from the facility is following drinking water standards.

In 2018, the State of Michigan adopted Michigan Administrative Code Rule 604f, i.e., R325.10604f, entitled "Treatment Techniques for Lead and Copper" pursuant to the Safe Drinking Water Act, Act 399 of Public Acts of Michigan of 1976, as amended ("Act 399"). The City has been taking a proactive approach in verifying and replacing the potential lead services.

2.4 Orders of Enforcement Actions

No court or enforcement orders, nor written enforcement actions have been issued to the City regarding the water system.

2.5 Drinking Water Quality Problems

The aesthetic quality of the water produced by the LMFP is generally good; there are no known drinking water problems in the overall distribution system. There have been occasional occurrences of taste and odor events, but they have been rare in the last decade and are not considered to be a major priority. The LMFP feeds powdered activated carbon as needed to address taste and odor issues.

2.6 Projected Needs for the Next 20 Years

The Comprehensive Master Plan (CMP) completed in 2025 outlined projected needs for the 20-year period from 2025 to 2045.

Section 14.0 in Segment II of the 2025 CMP identified water system capital improvements. Table II-14-3 in Segment II that report shows the individual projects for both the LMFP and the distribution system for which funding has been planned. The projects in this Amendment have been selected from the CIP.

3.0 Analysis of Alternatives

3.1 Intermediate District Elevated Storage Tank

3.1.1 No-Action

The 'No-Action' alternative would continue to operate the IPD pressures using the PRVs and the three pumps in Livingston. The IPD system pressures are controlled within a certain range using the PRVs and pumps running on Variable Frequency Drives (VFDs). However, the system is dependent on the pumps and PRVs which is not reliable and could affect operational efficiency. In addition, running the pumps incurs energy costs. Therefore, this alternative is not further considered.

3.1.2 Optimum Performance of Existing Facilities

The current system cannot be further optimized in terms of the system set-up with the pumps and PRVs. The improvements at Livingston included three new pumps that now supply the IPD. Therefore, this alternative is not further considered.

3.1.3 Construction Alternatives

The construction alternative consists of constructing a tank to increase the reliability of the IPD supply. This alternative will also improve operational efficiency. The tank could be filled during the night when demands are low, or the tank could be used to supply low nighttime demands if filled during the day. With the addition of elevated storage, the setting of the PRVs would be adjusted so that they would normally remain closed except when needed in emergency situations or as a redundant supply. Refer to Figure 3.1.

3.1.4 Regional Alternatives

A regional alternative is not applicable.

3.2 Sherman Street Watermain (Giddings Avenue to City Limits)

3.2.1 No-Action

Approximately 1,820 feet of 10-inch HP watermain has exceeded its design life; in the No-Action Alternative, this watermain would remain in service. The 31 lead service lines would need to be replaced within the next 13 years to comply with the Safe Drinking Water Act.

3.2.2 Optimum Performance of Existing Facilities

The existing 10-inch HP watermain and service lines have exceeded their design lives and no longer function optimally, nor do they meet current City design and operation expectations and standards.

3.2.3 Construction Alternatives

3.2.3.1 New 12-inch HP Watermain and Services

Replace approximately 1,820 feet of the existing 10-inch HP watermain with new 12-inch HP watermain. This project would include replacement of 31 water service lines (including the portions on private property for those lines containing lead). Refer to Figure 3.2.

3.2.3.2 Lead Service Line Replacement

Replace 31 lead service lines (including the portions on private property) with copper services. No watermain replacements. Refer to Figure 3.2.

3.2.4 Regional Alternatives

A regional alternative is not applicable.

3.3 Wealthy Street Watermain (Fuller Avenue to Giddings Avenue)

3.3.1 No-Action

Approximately 1,300 feet of 10-inch HP watermain has exceeded its design life; in the No-Action Alternative, this watermain would remain in service. The 38 lead service lines would need to be replaced within the next 13 years to comply with the Safe Drinking Water Act.

3.3.2 Optimum Performance of Existing Facilities

The existing 10-inch HP watermain and service lines have exceeded their design lives and no longer function optimally, nor do they meet current City design and operation expectations and standards.

3.3.3 Construction Alternatives

3.3.3.1 New 12-inch HP Watermain and Services

Replace approximately 1,300 feet of the existing 10-inch HP watermain with new 12-inch HP watermain. This project would include replacement of 38 water service lines (including the portions on private property for those lines containing lead). Refer to Figure 3.3.

3.3.3.2 Lead Service Line Replacement

Replace 38 lead service lines (including the portions on private property) with copper services. No watermain replacements. Refer to Figure 3.3.

3.3.4 Regional Alternatives

A regional alternative is not applicable.

3.4 Godfrey Avenue Watermain (Market Avenue to Oxford Street)

3.4.1 No-Action

3.4.1.1 Local Watermain

Approximately 2,850 feet of 8-inch MP and 2,980 feet of 12-inch MP parallel watermains and associated water and fire services have exceeded their design life; in the No-Action Alternative, this watermain would remain in service.

3.4.1.2 Transmission Watermain

Approximately 3,030 feet of 24-inch LP watermain has exceeded its design life; in the No-Action Alternative, this watermain would remain in service.

3.4.2 Optimum Performance of Existing Facilities

3.4.2.1 Local Watermain

The existing 8-inch and 12-inch MP watermains and service lines have exceeded their design lives and no longer function optimally, nor do they meet current City design and operation expectations and standards.

3.4.2.2 Transmission Watermain

The existing 24-inch LP watermain and valves have exceeded their design lives and no longer function optimally, nor do they meet current City design and operation expectations and standards.

3.4.3 Construction Alternatives

3.4.3.1 Local Watermain

Replace approximately 2,850 feet of the existing 8-inch MP and 2,980 feet of 12-inch MP parallel watermains with a single new 16-inch MP watermain. This project would include replacement of water and fire service lines. Refer to Figure 3.4A.

3.4.3.2 Transmission Watermain

Replace approximately 3,030 feet of the existing 24-inch LP watermain with a new 24-inch LP watermain. Refer to Figure 3.4B.

3.4.4 Regional Alternatives

3.4.4.1 Local Watermain

A regional alternative is not applicable.

3.4.4.2 Transmission Watermain

A regional alternative is not applicable.

4.0 Principal Alternatives

4.1 Intermediate District Elevated Storage Tank

4.1.1 Monetary Evaluation

An estimated project cost was developed for the selected Construction Alternative. The project budgetary cost summary for the Construction Alternative is presented in the following tables.

Table 4-1 – Estimated Project Cost Summary for Intermediate District Elevated Storage Tank

Item	Initial Capital Cost	Design Life(Years)	Salvage Value
Elevated Storage Tank	$6,600,000	50	$3,960,000
Sitework and Piping	$800,000	50	$480,000
Electrical and Instrumentation	$400,000	30	$133,333
Elevated Storage Tank	$0	NA	NA
Estimated Construction Cost	$7,800,000		
Administration, Engineering, Contingency	$2,656,000		
Estimated Project Budget	$10,500,000		

A present worth analysis was completed for the selected Construction Alternative and for the No-Action Alternative, as summarized in the following table. The No-Action Alternative has no associated capital costs. Sunk costs are not included in the analysis.

Table 4-2 – 20-Year Present Worth Analysis: Intermediate District Elevated Storage Tank

Alternatives	New Watermain and Services		No-Action	
	Cost/Value	20-Year Present Worth	Cost/Value	20-Year Present Worth
Capital Cost	$10,500,000	$10,500,000	$0	$0
O&M Cost/Year	$10,000	$160,400	$0	$0
Salvage Value	$4,574,000	($2,959,900)	$0	$0
Total Worth		$7,700,500		$0

4.1.2 Environmental Evaluation

4.1.2.1 Cultural Resources

There will be no direct impact on any historical sites during the construction project.

4.1.2.2 The Natural Environment

The proposed project addresses water reliability issues. There is no long-term impacts on the natural environment due to the project. The only anticipated impact to the natural environment is a temporary decrease in air quality due to construction.

4.1.3 Mitigation

The impact on air quality will be controlled to the greatest extent possible by limiting construction to regular working hours during the week. Erosion control measures will be taken during construction to prevent any impact on the surrounding area.

4.1.4 Implementability and Public Participation

The Project Planning Document amendment will be available for public review. If at that time it becomes apparent that an alternative is not acceptable to the public, the alternatives will be reevaluated.

4.1.5 Technical Considerations

The project is required due to alleviate the water system reliability. The location and sizing of the tank have been determined based on the Preliminary Engineering report completed by Fishbeck.

4.1.6 Residuals

This item is not applicable to this project.

4.1.7 Industrial/Commercial/Institutional

The project will occur in a developed neighborhood. No changes to existing industrial, commercial or institutional uses are anticipated.

4.1.8 Growth Capacity

This does not apply to the project. The proposed project is to alleviate water system reliability issues.

4.1.9 Contamination

Map 3 shows the location of the project in relation to the contaminated sites. As indicated, the project location has few nearby contaminated sites.

4.2 Sherman Street Watermain (Giddings Avenue to City Limits)

4.2.1 Monetary Evaluation

An estimated project cost was developed for the selected Construction Alternative. The project budgetary cost summary for the Construction Alternative is presented in the following tables. The cost estimate includes the restoration of curb, pavement, sidewalk, grass, and other items required to complete the improvements.

Table 4-3 – Estimated Project Cost Summary for Sherman Street Watermain (Giddings Avenue to City Limits)

Item	Initial Capital Cost	Design Life (Years)	Salvage Value
New 12-inch Watermain	$899,080	75	$659,325
City Street Reconstruction	$484,120	10	$0
Service Line Replacement	$239,000	75	$175,267
Contamination Allowance	$0	NA	NA
Estimated Construction Cost	$1,622,200		
Administration, Engineering, Contingency	$567,770		
Estimated Project Budget	$2,189,970		

A present worth analysis was completed for the selected Construction Alternative and for the No-Action Alternative, as summarized in the following table. The No-Action Alternative has no associated capital costs. Sunk costs are not included in the analysis.

Table 4-4 – 20-Year Present Worth Analysis: Sherman Street Watermain (Giddings Avenue to City Limits)

Alternatives	New Watermain and Services		No-Action	
	Cost/Value	20-Year Present Worth	Cost/Value	20-Year Present Worth
Capital Cost	$2,189,970	$2,189,970	$322,650	$322,650
O&M Cost/Year	$0	$0	$0	$0
Capital Cost	$2,189,970	$2,189,970	$322,650	$322,650
O&M Cost/Year	$0	$0	$0	$0
Salvage Value	$834,592	($541,000)	$175,267	($118,000)
Total Worth		$1,649,000		$204,700

4.2.2 Environmental Evaluation

4.2.2.1 Cultural Resources

The project is in a previous construction area and no direct historical or archeological impact is expected. There are no historical sites in the vicinity of the project.

4.2.2.2 The Natural Environment

The only anticipated impact to the natural environment is a temporary decrease in air quality and a temporary increase in noise during construction.

4.2.3 Mitigation

The impact on air quality and noise will be controlled to the greatest extent possible by limiting construction to regular working hours during the week. The dust due to construction on the site will be temporary and limited by dust control mitigation techniques.

4.2.4 Implementability and Public Participation

The Construction Alternative would involve work within the existing City of Grand Rapids public right-of-way.

4.2.5 Technical Considerations

4.2.5.1 No-Action

Watermain age and capacity concerns based on 20-year planning projections are not addressed.

4.2.5.2 New 12-inch HP Watermains and Services

Watermain and service line age is addressed. Watermain capacity concerns based on 20-year planning projections are addressed.

4.2.6 Residuals

The project will have no impact on residuals

4.2.7 Industrial/Commercial/Institutional

The project area is fully developed; the majority of the properties served by the watermain are residential or small business. Industrial/commercial/institutional usage does not require consideration in this case

4.2.8 Growth Capacity

The purpose of the proposed project is to service existing customers. The watermain is not being installed for growth.

4.2.9 Contamination

There are no known Part 201 sites and leaking underground storage tanks (LUSTs) located near the project area. Map 1 shows the location of the project in relation to the contaminated sites.

4.3 Wealthy Street Watermain (Fuller Avenue to Giddings Avenue)

4.3.1 Monetary Evaluation

An estimated project cost was developed for the selected Construction Alternative. The project budgetary cost summary for the Construction Alternative is presented in the following tables. The cost estimate includes the restoration of curb, pavement, sidewalk, grass, and other items required to complete the improvements.

Table 4-5 – Estimated Project Cost Summary for Wealthy Street Watermain (Fuller Avenue to Giddings Avenue)

Item	Initial Capital Cost	Design Life (Years)	Salvage Value
New 12-inch Watermain	$642,200	75	$470,947
City Street Reconstruction	$345,800	10	$0
Service Line Replacement	$262,000	75	$192,133
Contamination Allowance	$0	NA	NA
Estimated Construction Cost	$1,250,000		
Administration, Engineering, Contingency	$437,500		
Estimated Project Budget	$1,687,500		

A present worth analysis was completed for the selected Construction Alternative and for the No-Action Alternative, as summarized in the following table. The No-Action Alternative has no associated capital costs. Sunk costs are not included in the analysis.

Table 4-6 – 20-Year Present Worth Analysis: Wealthy Street Watermain (Fuller Avenue to Giddings Avenue)

Alternatives	New Watermain and Services		No-Action	
	Cost/Value	20-Year Present Worth	Cost/Value	20-Year Present Worth
Capital Cost	$1,687,500	$1,687,500	$164,025	$164,025
O&M Cost/Year	$0	$0	$0	$0
Salvage Value	$663,080	($430,000)	$89,100	($60,000)
Total Worth		$1,257,500		$104,000

4.3.2 Environmental Evaluation

4.3.2.1 Cultural Resources

The project is in a previous construction area and no direct historical or archeological impact is expected. There are no historical sites in the vicinity of the project.

4.3.2.2 The Natural Environment

The only anticipated impact to the natural environment is a temporary decrease in air quality and a temporary increase in noise during construction.

4.3.3 Mitigation

The impact on air quality and noise will be controlled to the greatest extent possible by limiting construction to regular working hours during the week. The dust due to construction on the site will be temporary and limited by dust control mitigation techniques.

4.3.4 Implementability and Public Participation

The Construction Alternative would involve work within the existing City public right-of-way.

4.3.5 Technical Considerations

4.3.5.1 No-Action

Watermain age and capacity concerns based on 20-year planning projections are not addressed.

4.3.5.2 New 12-inch HP Watermains and Services

Watermain and service line age is addressed. Watermain capacity concerns based on 20-year planning projections are addressed.

4.3.6 Residuals

The project will have no impact on residuals

4.3.7 Industrial/Commercial/Institutional

The project area is fully developed; the majority of the properties served by the watermain are residential or small business. Industrial/commercial/institutional usage does not require consideration in this case.

4.3.8 Growth Capacity

The purpose of the proposed project is to service existing customers. The watermain is not being installed for growth.

4.3.9 Contamination

There are no known Part 201 Sites and leaking underground storage tanks (LUSTs) located near the project area. Map 1 shows the location of the project in relation to the contaminated sites.

4.4 Godfrey Avenue Watermain (Market Avenue to Oxford Street)

4.4.1 Monetary Evaluation

An estimated project cost was developed for the selected Construction Alternative. The project budgetary cost summary for the Construction Alternative is presented in the following tables. The cost estimate includes the restoration of curb, pavement, sidewalk, grass, and other items required to complete the improvements.

Table 4-7 – Estimated Project Cost Summary for Godfrey Avenue Watermain (Market Avenue to Oxford Street)

Item	Initial Capital Cost	Design Life (Years)	Salvage Value
New 16-inch and 24-inch Watermain	$3,045,120	75	$2,233,088
City Street Reconstruction	$1,639,680	10	$0
Service Line Replacement	$0	75	$0
Contamination Allowance	$0	NA	NA
Estimated Construction Cost	$4,684,800		
Administration, Engineering, Contingency	$1,639,680		
Estimated Project Budget	$6,324,480		

A present worth analysis was completed for the selected Construction Alternative and for the No-Action Alternative, as summarized in the following table. The No-Action Alternative has no associated capital costs. Sunk costs are not included in the analysis.

Table 4-8 – 20-Year Present Worth Analysis: Godfrey Avenue Watermain (Market Avenue to Oxford Street)

Alternatives	New Watermain and Services		No-Action	
	Cost/Value	20-Year Present Worth	Cost/Value	20-Year Present Worth
Capital Cost	$6,324,480	$6,324,480	$0	$0
O&M Cost/Year	$0	$0	$0	$0
Salvage Value	$2,233,088	($1,446,000)	$0	$0
Total Worth		$4,878,500		$0

4.4.2 Environmental Evaluation

4.4.2.1 Cultural Resources

The project is in a previous construction area and no direct historical or archeological impact is expected. There are no historical sites in the vicinity of the project.

4.4.2.2 The Natural Environment

The only anticipated impact to the natural environment is a temporary decrease in air quality and a temporary increase in noise during construction.

4.4.3 Mitigation

The impact on air quality and noise will be controlled to the greatest extent possible by limiting construction to regular working hours during the week. The dust due to construction on the site will be temporary and limited by dust control mitigation techniques.

4.4.4 Implementability and Public Participation

The Construction Alternative would involve work within the existing City of Grand Rapids public right-of-way.

4.4.5 Technical Considerations

4.4.5.1 No-Action

Watermain age and capacity concerns based on 20-year planning projections are not addressed.

4.4.5.2 New 16-inch MP and 24-inch LP Watermains and Services

Watermain and service line age is addressed. Watermain capacity concerns based on 20-year planning projections are addressed.

4.4.6 Residuals

The project will have no impact on residuals.

4.4.7 Industrial/Commercial/Institutional

The project area is fully developed; the majority of the properties served by the watermain are residential or small business. Industrial/commercial/institutional usage does not require consideration in this case.

4.4.8 Growth Capacity

The purpose of the proposed project is to service existing customers. The watermain is not being installed for growth.

4.4.9 Contamination

There are no known Part 201 sites and leaking underground storage tanks (LUSTs) located near the project area. Map 1 shows the location of the project in relation to the contaminated sites.

5.0 Selected Alternative

5.1 Intermediate District Elevated Storage Tank

A Preliminary Design Report (PDR) has been completed and is available upon request. The IPD tank will be 1.5 million gallons (mg), composite tank having a concrete base. There is an existing storm sewer in Fuller Avenue that will serve to capture overflow from the proposed tank. The hydraulic model was used to evaluate pressure throughout the IPD with the proposed tank at Fuller Park. The ground elevation at this location is approximately 700 feet. The proposed tank has a capacity of 1.5 mg, with an operating range of 40 feet and an overflow of 880 feet. Refer to Figure 3.1.

5.2 Sherman Street Watermain (Giddings Avenue to City Limits)

5.2.1 Description

The selected alternative for the Sherman Street Watermain project is the installation of the new 12-inch HP watermain and services. This alternative addresses the concern of watermain age and performance, and lead service line compliance. The selected alternative is detailed in Figure 3.2.

5.2.2 Design Parameters

The following design parameters are associated with this project:

- Replacement of Aged Watermain 1,820 feet of 12-inch HP watermain
- Service Line Replacement 0 properties
- Lead Service Line Replacement 31 properties

5.3 Wealthy Street Watermain (Fuller Avenue to Giddings Avenue)

5.3.1 Description

The selected alternative for the Wealthy Street Watermain project is the installation of the new 12-inch HP watermain and services. This alternative addresses the concern of watermain age and performance, and lead service line compliance. The selected alternative is detailed in Figure 3.3.

5.3.2 Design Parameters

The following design parameters are associated with this project:

- Replacement of Aged Watermain 1,300 feet of 12-inch HP watermain
- Service Line Replacement 0 properties
- Lead Service Line Replacement 38 properties

5.4 Godfrey Avenue Watermain (Market Avenue to Oxford Street)

5.4.1 Description

5.4.1.1 Local Watermain

The selected alternative for the Godfrey Avenue Local Watermain project is the installation of the new 16-inch MP watermain and services to replace the existing parallel 8-inch MP and 12-inch MP watermains. This alternative addresses the concern of watermain age and performance. The selected alternative is detailed in Figure 3.4A.

5.4.1.2 Transmission Watermain

The selected alternative for the Godfrey Avenue Transmission Watermain project is the installation of the new 24-inch LP transmission watermain to replace the existing 24-inch LP transmission watermain. This alternative addresses the concern of watermain age and performance. The selected alternative is detailed in Figure 3.4B.

5.4.2 Design Parameters

5.4.2.1 Local Watermain

The following design parameters are associated with this project:

- Replacement of Aged Watermain 2,980 feet of 16-inch MP watermain
- Service Line Replacement 11 properties
- Lead Service Line Replacement 0 properties

5.4.2.2 Transmission Watermain

The following design parameters are associated with this project:

- Replacement of Aged Watermain 3,030 feet of 24-inch LP watermain
- Service Line Replacement 0 properties
- Lead Service Line Replacement 0 properties

5.5 Maps

A list of the figures associated with the selected alternative is summarized in Table 5-1.

Table 5 – 1 Selected Alternatives

Intermediate Tank	Figure 3.1
Sherman Street Watermain (Giddings Avenue to City Limits)	Figure 3.2
Wealthy Street Watermain (Fuller Avenue to Benjamin Avenue)	Figure 3.3
Godfrey Avenue Watermain (Market Avenue to Oxford Street)	Figure 3.4

5.6 Schedule for Design and Construction

This amendment includes projects that impact the City of Grand Rapids (City only). The project schedule, consistent with the quarterly DWSRF funding deadlines, is presented in Table 5-2 for projects included in this Amendment. The Wealthy Street watermain will be included in FY2028.

Table 5 – 2 Project Schedule

Task	Estimated Milestone FY2027	Estimated Milestone FY2028
Project	Intermediate Tank, Sherman Street Watermain, Godfrey Avenue Watermain	Wealthy Street Watermain
EGLE Fiscal Year and Quarter Planned for Project	FY2027, Quarter 3	FY2028, Quarter 3
Final Design	February 2027	February 2028
Construction Permit	March 2027	March 2028
Bidding	March 2027	March 2028
DWSRF Funding Award	June 2027	June 2028
Anticipated Project Start	September 2027	September 2028

5.7 Cost Estimate

This section summarizes the selected alternatives and their estimated project costs including engineering design, administrative and legal costs, and construction. Engineering costs include preparation of the Project Planning Document, route alternative analyses, design, construction, and inspection services. The cost estimates presented in this report reflect January 2026 costs and were prepared to determine approximate project costs to aid the City in its planning and budgeting process. There are a number of factors that could cause the actual project costs to deviate from these estimates, including the competitive bidding climate at the time that the construction bids are received, inflation, and additions to or changes in the scope of the project that may occur during the design process.

Table 5-3 summarizes this information and presents the additional projects for FY2027 and FY2028 in this amendment. Appendix 4 includes additional FY2027 and FY2028 project cost details.

Table 5 – 3 Summary of Estimated Loan Amount

DWSRF Fiscal Year	City Only Loan
FY2027	$19,014,450*
FY2028	$1,687,500

**Includes Capital, Engineering, Legal, Administration and Contingency*

5.8 User Costs

The cost indicated in Table 5-3 is fully allocated to City of Grand Rapids users.

The anticipated new debt on a loan amount of $19,014,450 for FY2027 additional project is $1,278,070 using an interest rate of 3.00% and a 20-year loan term. For a family of four consuming 100 gallons per day, per person (400 gpd total), the monthly cost to finance the projects is $2.42

The anticipated new debt on a loan amount of $1,687,500 for FY2028 additional project is $113,427 using an interest rate of 3.00% and a 20 Year loan term. For a family of four consuming 100 gallons per day per person (400 gpd total), the monthly cost to finance the projects is $0.22.

5.9 Disadvantaged Community

Communities can be classified as “overburdened” or “significantly overburdened” based on the cost of the projects and the median annual household income (MAHI) of the community. The qualification is determined for each loan the community applies in FY2027.

EGLE has made changes to the overburdened criteria for FY2027 and beyond. For some loans, the overburdened qualification may apply, depending on the projects included in the specific loan and the users that those projects impact. The watermain projects included in this DWSRF Project Planning Document are fully allocated to the City of Grand Rapids, and the project costs will only impact Grand Rapids users. The overburdened survey will be submitted once it is available.

5.10 Ability to Implement the Selected Alternative

The water distribution system is owned and operated by the City. The City Financial Department will manage all financial and loan-related work.

6.0 Environmental Evaluation

6.1 Historical/Archeological/Tribal Resources

The Environmental Evaluation in Appendix 1 includes a list of all historic sites within Kent County according to the National Register of Historic Places database. No direct historical or archeological impacts are expected; however, if the project is deemed equivalent, contact with appropriate historical and archeological agencies will be initiated. The Michigan State Historical Preservation Office (SHPO) and Tribal Historic Preservation Officers (THPOs) will also be contacted to review the project locations in detail if the plan is deemed equivalent.

6.2 Water Quality

The proposed construction projects will provide continued high-quality water. Watermain projects will replace aging infrastructure and address water quality concerns.

6.3 Land/Water Interface

Map 2 depicts the major water surfaces within the project area and Map 3 shows the location of wetlands. The proposed projects will not impact water surface and wetlands.

The extent of the 500-year flood boundary as defined by the National Flood Insurance Program consists primarily of the areas immediately adjacent to the Grand River and its tributaries. Map 4 presents both the 100-year and 500-year floodplains. The proposed projects are not in the vicinity of the flood plains.

6.4 Endangered Species

Endangered or threatened species are defined as those species that are or could become endangered or threatened and, therefore, are protected under the Endangered Species Act. The objective of the act is to preserve and restore species threatened with extinction. The US Fish and Wildlife Services (USFWS) Environmental Conservation Online System was used to identify endangered and threatened species by state. A list of endangered and threatened species within the State of Michigan is provided in Appendix 2.

The Michigan Natural Features Inventory (MNFI) by county has additional listings of fauna and flora with a state status of endangered, threatened, or special concern. Appendix 3 lists the species for Kent County.

Construction or operational activities for the proposed projects are not anticipated to have long-term negative impacts.

6.5 Agricultural Land

The location of prime farmland is depicted in Map 5. The Intermediate District tank will occur on a City owned parcel and watermains included in the project will be constructed within the road right-of-way and will not negatively impact existing land use.

6.6 Social/Economic Impact

Upgrading the distribution system will result in direct cultural and social benefits. Public health and safety will benefit from the increased quality and reliability the proposed projects will create.

The construction phase of the projects will create jobs and contribute favorably to the local economy.

6.7 Construction/Operational Impact

6.7.1 Intermediate District Elevated Storage Tank

The proposed project will occur in a City owned property (Fuller Park). Vehicular and pedestrian access to all properties will be maintained throughout construction. Construction for projects of this type is generally limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 7:00 a.m. to 1:00 p.m. on Saturday.

6.7.2 Sherman Street Watermain (Giddings Avenue to City Limits)

The proposed project is within a residential neighborhood. The new watermain would be installed under the pavement within the north lane of Sherman Street. Removal and replacement of the curbline and approximately 10 feet of brick pavement will be required. Small trees exist along the roadway. Removal of several may be required to replace lead services. All grass parkways will be restored in kind.

Sherman Street will be closed to through traffic and detoured during construction. No adverse impacts on major street traffic patterns are anticipated. Vehicular and pedestrian access to all properties will be maintained throughout construction. Construction for projects of this type is generally limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 7:00 a.m. to 1:00 p.m. on Saturday.

6.7.3 Wealthy Street Watermain (Fuller Avenue to Giddings Avenue)

The proposed project is within a residential neighborhood. The new watermain would be installed under the pavement within the north lane. Removal and replacement of the curbline and approximately 10 feet of brick pavement will be required. Small trees exist along the roadway. Removal of several may be required to replace lead services. All grass parkways will be restored in kind.

Wealthy Street will be closed to through traffic and detoured during construction. No adverse impacts on major street traffic patterns are anticipated. Vehicular and pedestrian access to all properties will be maintained

throughout construction. Construction for projects of this type is generally limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 7:00 a.m. to 1:00 p.m. on Saturday.

6.7.4 Godfrey Avenue Watermain (Market Avenue to Oxford Street)

6.7.4.1 Local Watermain

The proposed project is completely within a historic industrial and business area. The new watermain would be installed under the pavement within the westerly lane. Removal and replacement of the curbline and approximately 15 feet of pavement will be required. No trees exist within the proposed disturbance limits. All grass parkways will be restored in kind.

Godfrey Avenue will be closed to through traffic and detoured during construction. No adverse impacts on major street traffic patterns are anticipated. Vehicular and pedestrian access to all properties will be maintained throughout construction. Construction for projects of this type is generally limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 7:00 a.m. to 1:00 p.m. on Saturday.

6.7.4.2 Transmission Watermain

The proposed project is completely within a historic industrial and business area. The new watermain would be installed under proposed sidewalk on the east side of Godfrey Avenue. Removal and replacement of the curbline and sidewalk will be required. Two trees existing within the proposed disturbance limits and will be removed. All grass parkways will be restored in kind.

Godfrey Avenue will be closed to through traffic and detoured during construction. No adverse impacts on major street traffic patterns are anticipated. Vehicular and pedestrian access to all properties will be maintained throughout construction. Construction for projects of this type is generally limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and 7:00 a.m. to 1:00 p.m. on Saturday.

6.8 Indirect Impacts

6.8.1 Changes in Development

The proposed alternatives enhance the existing water distribution system. The proposed projects have been designed to support the 20-year planning period.

6.8.2 Changes in Land Use

With limited undeveloped land in Grand Rapids, significant changes in land use in the City are not expected as an indirect result of the proposed improvements. To mitigate potential indirect environmental impacts, the West Michigan Planning Commission recommends agricultural zoning, tax relief mechanisms, purchase of development rights, and other methods to preserve agricultural land in Kent County.

6.8.3 Changes in Air or Water Quality

With the proposed water system improvements, temporary air quality changes could result from the construction. There are no long-term changes anticipated.

6.8.4 Changes to Natural Setting or Sensitive Ecosystems

Significant ecosystem or natural setting changes are not expected as an indirect result of the proposed projects. The effect on sensitive ecosystems will be controlled by the assessment of environmental impacts and the permitting process.

6.8.5 Changes to Aesthetic Aspects of the Community

There will be no changes to aesthetic aspects of the community due to the proposed projects.

6.8.6 Resource Consumption

Resource consumption in the form of materials and energy will occur as a result of the projects.

7.0 Mitigation Measures

7.1 Mitigation Measures for Short-Term Impact

Measures that will be taken to avoid, eliminate, or mitigate potential short-term environmental impacts include the following:

- Traffic: use of designated traffic routes for construction traffic, as well as flagmen, warning signs, barricades, and cones.
- Air emissions: use of calcium chloride or water for dust control and proper maintenance on heavy equipment to reduce exhaust emissions.
- Noise control: use designated daytime work hours, use mufflers on all equipment, and minimize work on weekends and/or holidays.
- Soil erosion and sedimentation control: use riprap, hay bales, erosion control fence, silt fence, etc.
- Restoration: use top soil, seed, sod, mulch, gravel, and pavement.

7.2 Mitigation Measures for Long Term Impact

Measures that will be taken to avoid, eliminate, or mitigate potential long-term environmental impacts including the following:

- Soils disposal and contaminated soils: if construction occurs in floodplains or near a lake or stream, a US Army Corps of Engineers EGLE Joint Permit will be filed that indicates quantities of soils taken off site or used onsite as fill, new fill materials utilized onsite, buffer zones from ecologically sensitive areas, and measures that will be taken to stabilize embankments.
- A Soil Erosion Plan for the construction of the selected alternatives will be filed with the local Soil Erosion and Sedimentation Control Agency (Kent County Drain Commissioner). The plan will also be reviewed by the EGLE Land and Water Management Division. The plan will summarize the quantity of soils that will be removed, locations where soil will be stored, the destination of soils (onsite or off site) and measures that will be taken (silt fence, sod, etc.) to minimize erosion.

8.0 Public Participation

8.1 Public Hearing Advertisement

On April 10, 2026, a notice of the public meeting for the DWSRF Project Planning Document Amendment with Proposed Improvements will be posted on the City's website (https://www. grandrapidsmi.gov). The EGLE Project Manager will be provided a link to this posted public meeting advertisement. The advertisement briefly describes the proposed projects and estimated costs; it mentioned the availability of the report for viewing and invited written comments from the public. The Project Planning Document will be made available on the City's website for public review and comment. Written comments will be requested to be received no later than April 28, 2026, the date of the public meeting.

8.2 Formal Public Meeting

A public meeting will be held at the City of Grand Rapids Water Administration Building, 1900 Oak Industrial Drive, on April 28, 2026. The meeting minutes and presentation slides from the public meeting will be included in the final report.

8.2.1 Public Meeting Contents

Fishbeck will provide a presentation of the proposed improvements at the public meeting. The contents of the presentation included the following:

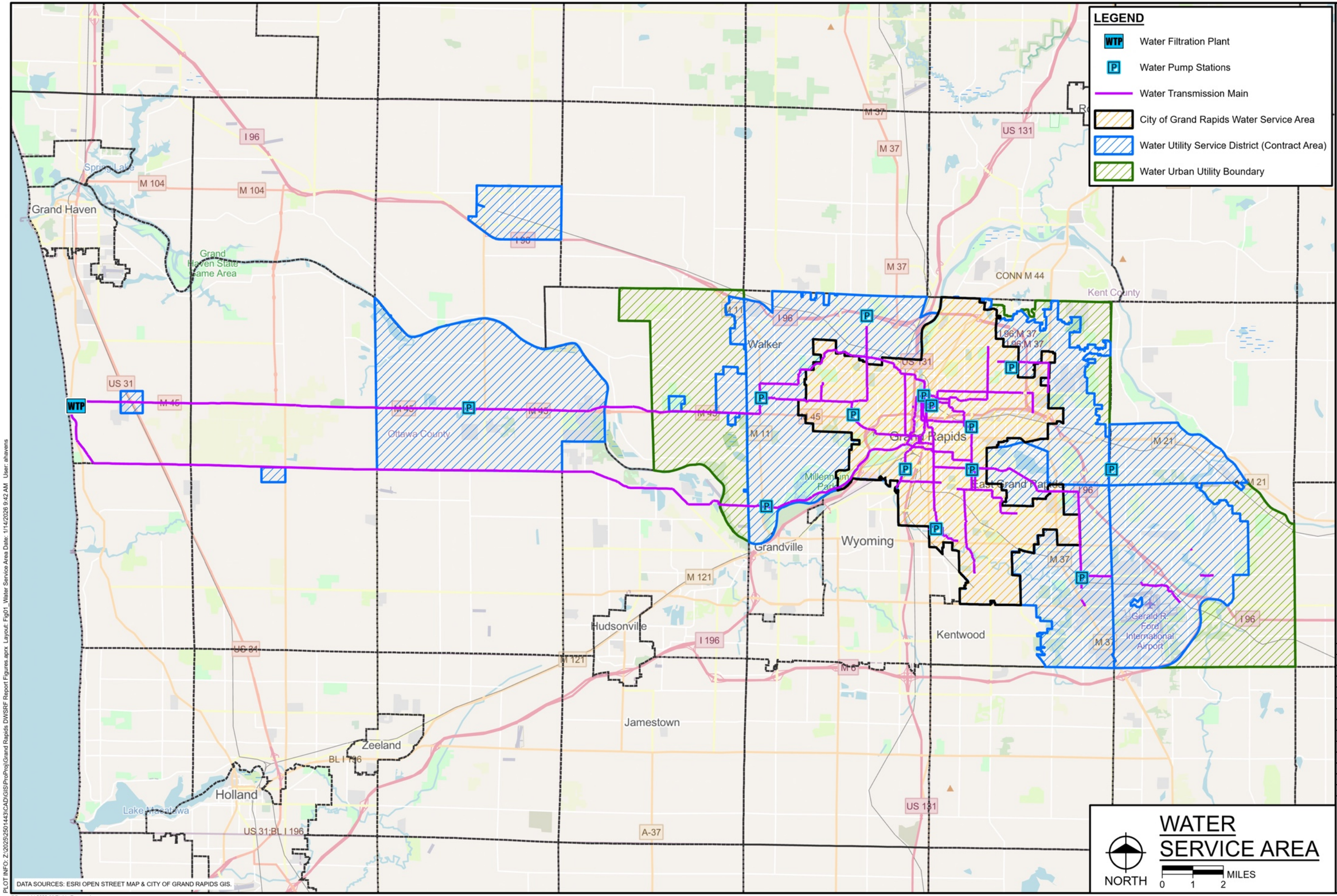
- A description of the project needs and problems to be addressed by the proposed projects and the principal alternatives that were considered.
- A description of the selected alternatives, including capital costs.
- A description of project financing and anticipated costs to users, including the proposed method of project financing and the proposed annual charge to the typical residential customer.
- A description of the anticipated social and environmental impacts associated with the recommended alternatives and the measures that will be taken to mitigate adverse impacts.

8.3 Comments Received and Answered

Any comments received will be addressed and included in the final report.

8.4 Adoption of the Project Plan

A resolution to formally adopt the Project Planning Document and implement the selected alternatives will be passed at a regular City Council meeting on May 12, 2026 and included in the final report.



fishbeck
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City of Grand Rapids
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

NORTH

WATER SERVICE AREA

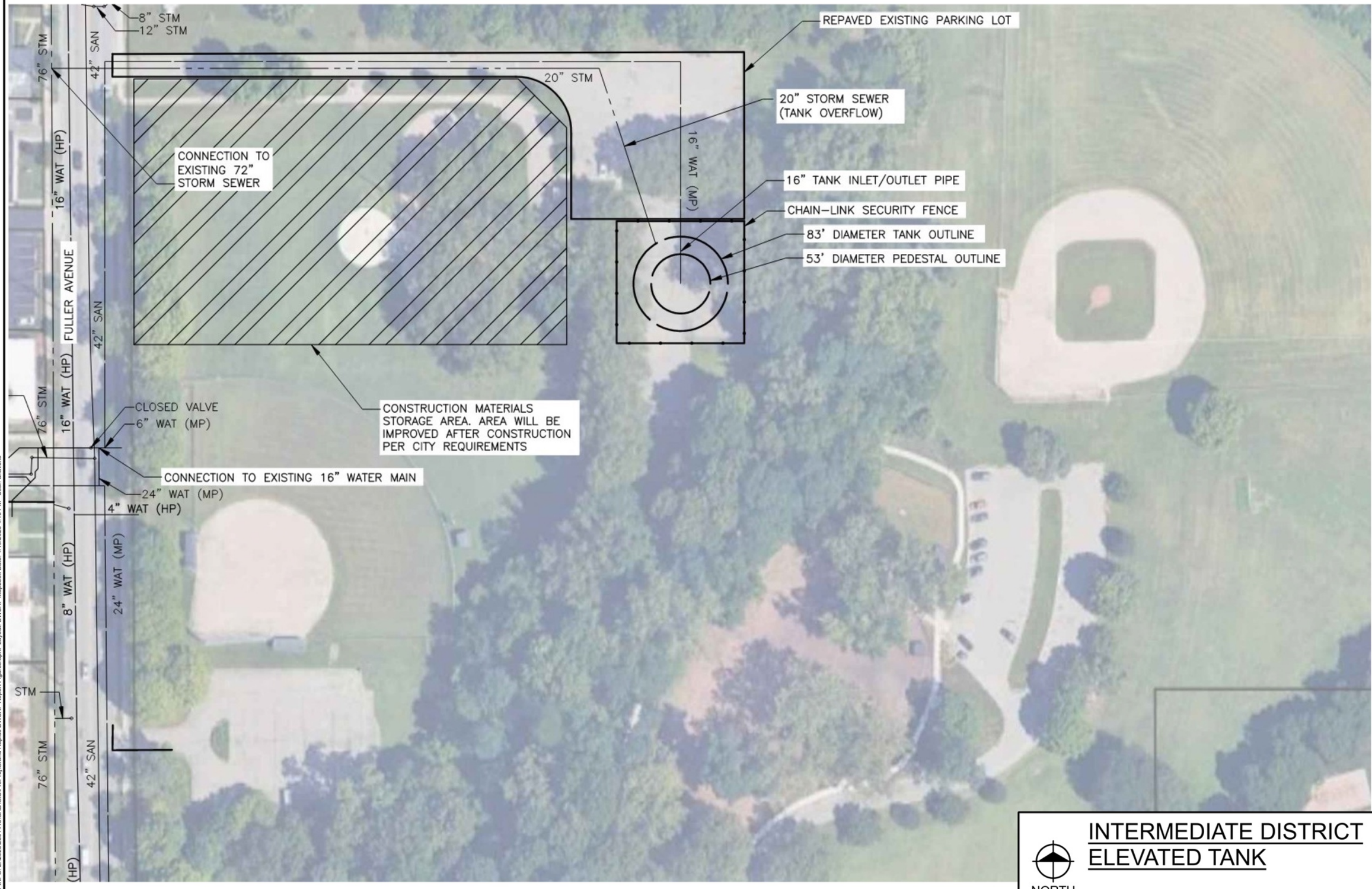
0 1 2 MILES

PROJECT NO.
2501443

FIGURE NO.
1

DATA SOURCES: ESRI OPEN STREET MAP & CITY OF GRAND RAPIDS GIS.

PLOT INFO: Z:\2025\2501443\CAD\GIS\ProProj\Grand Rapids DWSRF Report Figures.aprx Layout: Fig01_Water Service Area Date: 1/14/2026 9:42 AM User: ahavens



NORTH

INTERMEDIATE DISTRICT ELEVATED TANK

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City of Grand Rapids
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
2501443

FIGURE NO.
3.1

PLOT INFO: Z:\2025\2501443\CAD\GIS\ProProj\Grand Rapids DWSRF Report Figures.aprx Layout: DWSRF Mapbook Date: 1/19/2026 4:19 PM User: ahavens

Lead Service Inventory
Lead (Public Side Only) = 0
Lead (Private Side Only) = 2
Lead (Full Length) = 29
Non-Lead = 1

LEGEND

- Water System Valve
- Water Main

Proposed Improvement

- High Pressure Water Main
- Elevation - 10 ft interval

Existing = 10" HP, CI, 1909
Proposed = 12" HP, Class 53 DIP

Bemis St SE
Sherman St SE
Dunham St SE
Giddings Ave SE
Ethel Ave SE
Norwood Ave SE
Glenwood Ave SE
Claridge Dr SE

6 (in)
8 (in)
10 (in)
12 (in)
760
770

NORTH

SHERMAN STREET WATER MAIN

0 50 100 FEET

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City of Grand Rapids
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
2501443

FIGURE NO.
3.2

PLOT INFO: Z:\2025\2501443\CAD\GIS\ProProj\Grand Rapids DWSRF Report Figures.aprx Layout: DWSRF Mapbook Date: 1/30/2026 2:37 PM User: ahavens

Lead Service Inventory
Lead (Public Side Only) = 3
Lead (Private Side Only) = 7
Lead (Full Length) = 28
Non-Lead = 7

LEGEND

- Water System Valve
- Water Main

Proposed Improvement

- High Pressure Water Main
- Elevation - 10 ft interval

Existing = 10" HP, CI, 1909
Proposed = 12" HP, Class 53 DIP

Lillian St SE
Ct SE
Auburn Ave SE
Benjamin Ave SE
Carlton Ave SE
Richard Ter SE
Wealthy St SE
Fuller Ave SE
Giddings Ave SE
Sigsbee St SE
Little Caesars
Southeast Career
Sigsbee School

6 (in)
12 (in)
24 (in)
10 (in)
4 (in)
16 (in)
8 (in)
760
750

NORTH
0 50 100 FEET

WEALTHY STREET WATER MAIN

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City of Grand Rapids
Kent County, Michigan
Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
2501443

FIGURE NO.
3.3

PLOT INFO: Z:\2025\2501443\CAD\GIS\ProjGrand Rapids DWSRF Report Figures.aprx Layout: DWSRF Mapbook Date: 1/30/2026 2:37 PM User: ahavens

PLOT INFO: Z:\2025\2501443\CAD\GIS\ProProj\Grand Rapids DWSRF Report Figures.aprx Layout: 11x17V Date: 1/30/2026 2:37 PM User: ahavens

LEGEND

- Water System Valve
- Water Main

Proposed Improvement

- Medium Pressure Water Main
- Elevation - 10 ft interval

Existing = 8" and 12" MP, CI, 1898 & 1923
Proposed = 16" MP, Class 53 DIP

GODFREY AVENUE WATER MAIN

NORTH

FEET
0 125 250

DATA SOURCES: ESRI LIGHT GRAY BASE & CITY OF GRAND RAPIDS GIS.

FIGURE NO. 3.4A

PROJECT NO. 2501443

City of Grand Rapids
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

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PLOT INFO: Z:\2025\2501443\CAD\GIS\ProProj\Grand Rapids DWSRF Report Figures.aprx Layout: 11x17V Date: 1/30/2026 2:37 PM User: ahavens

LEGEND

- Water System Valve
- Water Main

Proposed Improvement

- Low Pressure Water Main
- Elevation - 10 ft interval

Existing = 24" LP, CI, 1929
Proposed = 24" LP, Class 53 DIP

Grand River
Market Ave SW
C and O Railroad
Godfrey Ave SW
Oakland Ave SW
New Ave SW
Pleasant
Graham
Chestnut St SW
Sheffield St SW
Hayden St SW
Oxford St SW
Roberto Clemente Park
Grandville
Laurel St SW
Stone St SW
A St SW
B St SW
Gilners Ct SW
Bekius Ct SW
Gaulfield Ave SW
Morwich Ave SW
600
610
620
630
640
650
660
670
196

GODFREY AVENUE WATER MAIN

NORTH

FEET
0 125 250

DATA SOURCES: ESRI LIGHT GRAY BASE & CITY OF GRAND RAPIDS GIS.

FIGURE NO. 3.4B

PROJECT NO. 2501443

City of Grand Rapids
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

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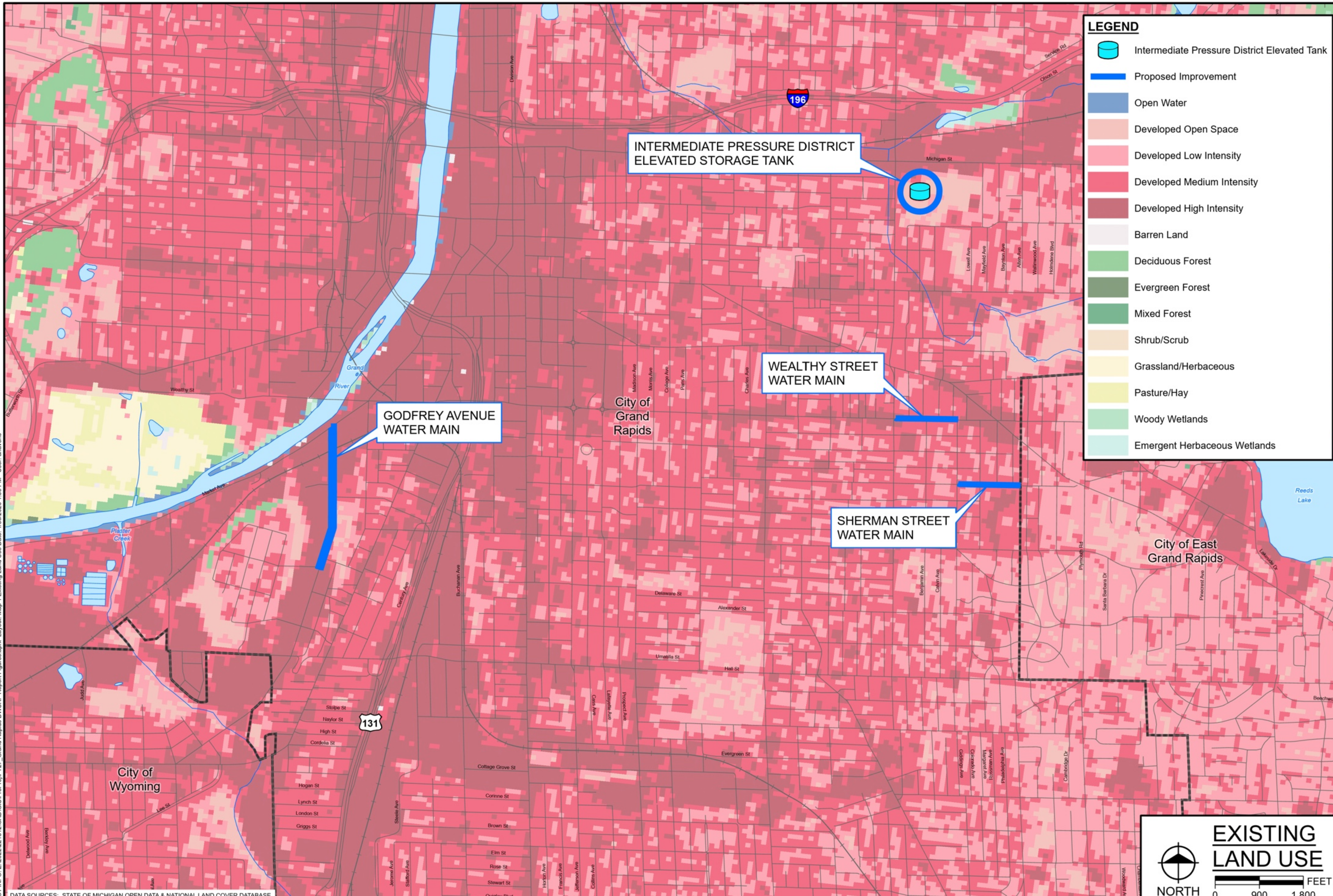

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City of Grand Rapids

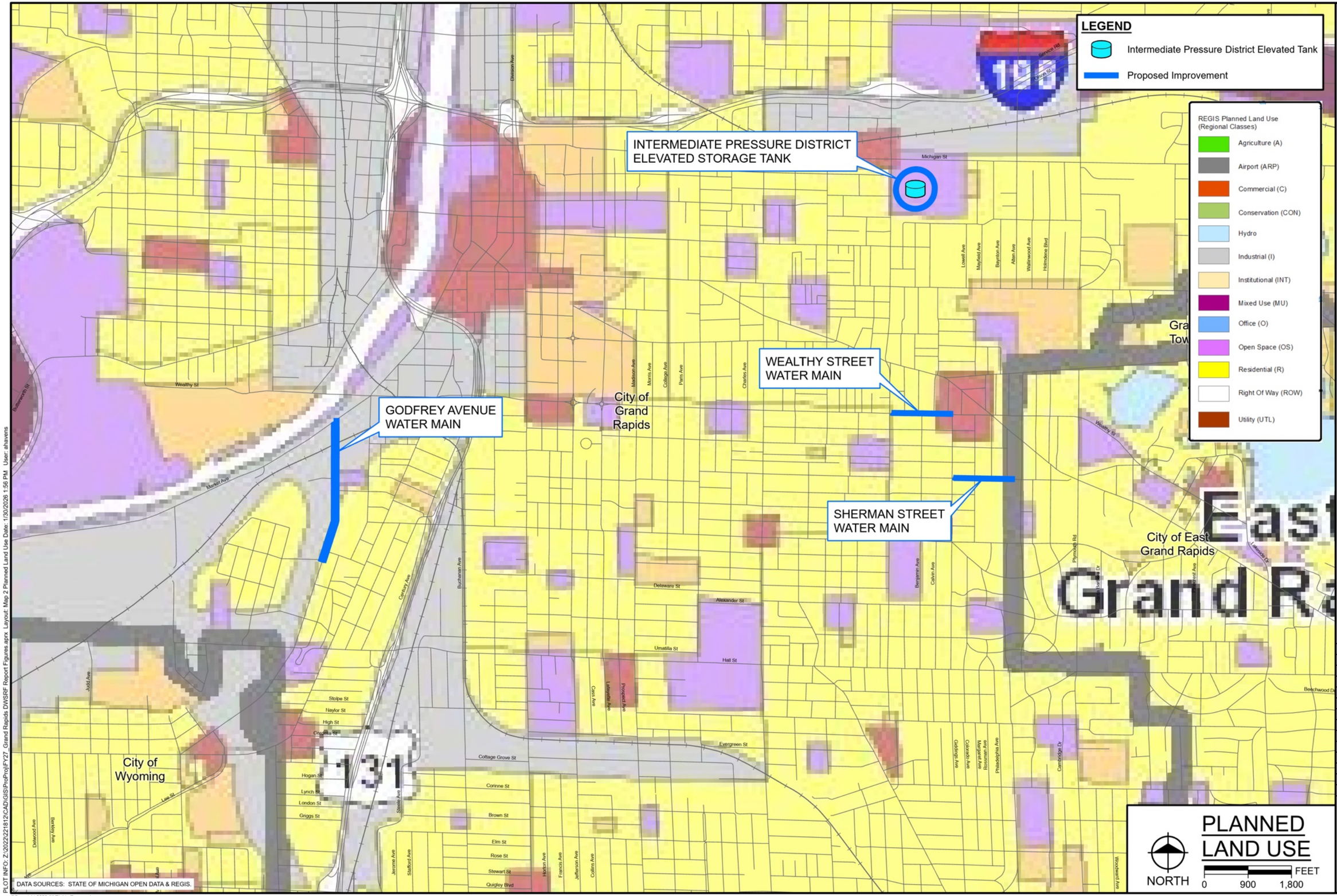
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
221812

MAP NO.
1

PLOT INFO: Z:\2022\221812\CAD\GIS\ProProj\FY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 1 Existing Land Use Date: 1/30/2026 1:56 PM User: ahavens



PLOT INFO: Z:\2022\221812\CAD\GIS\Proj\FY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 2 Planned Land Use Date: 1/30/2026 1:56 PM User: ahavens

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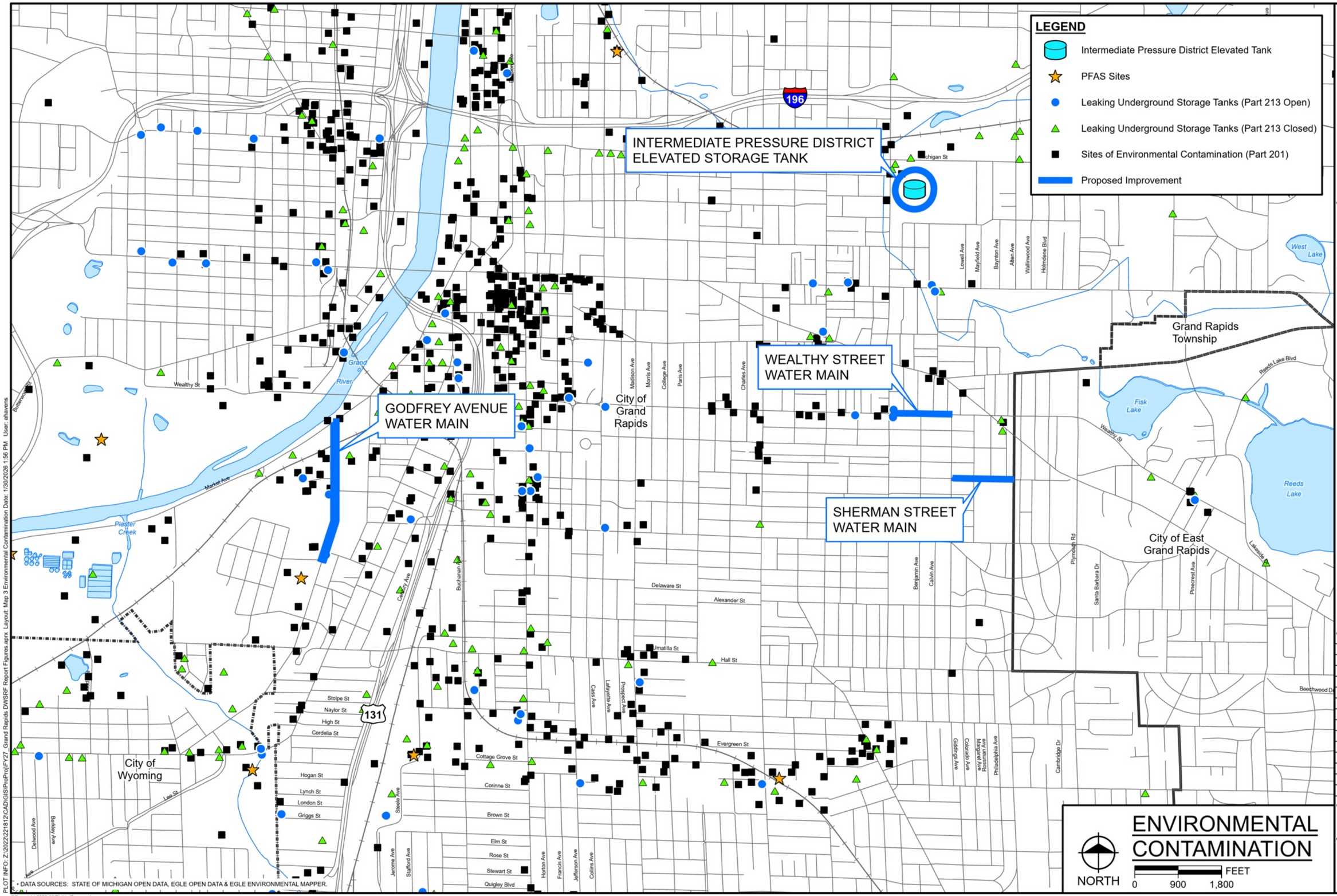
City of Grand Rapids
Kent County, Michigan
Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
221812

MAP NO.
2



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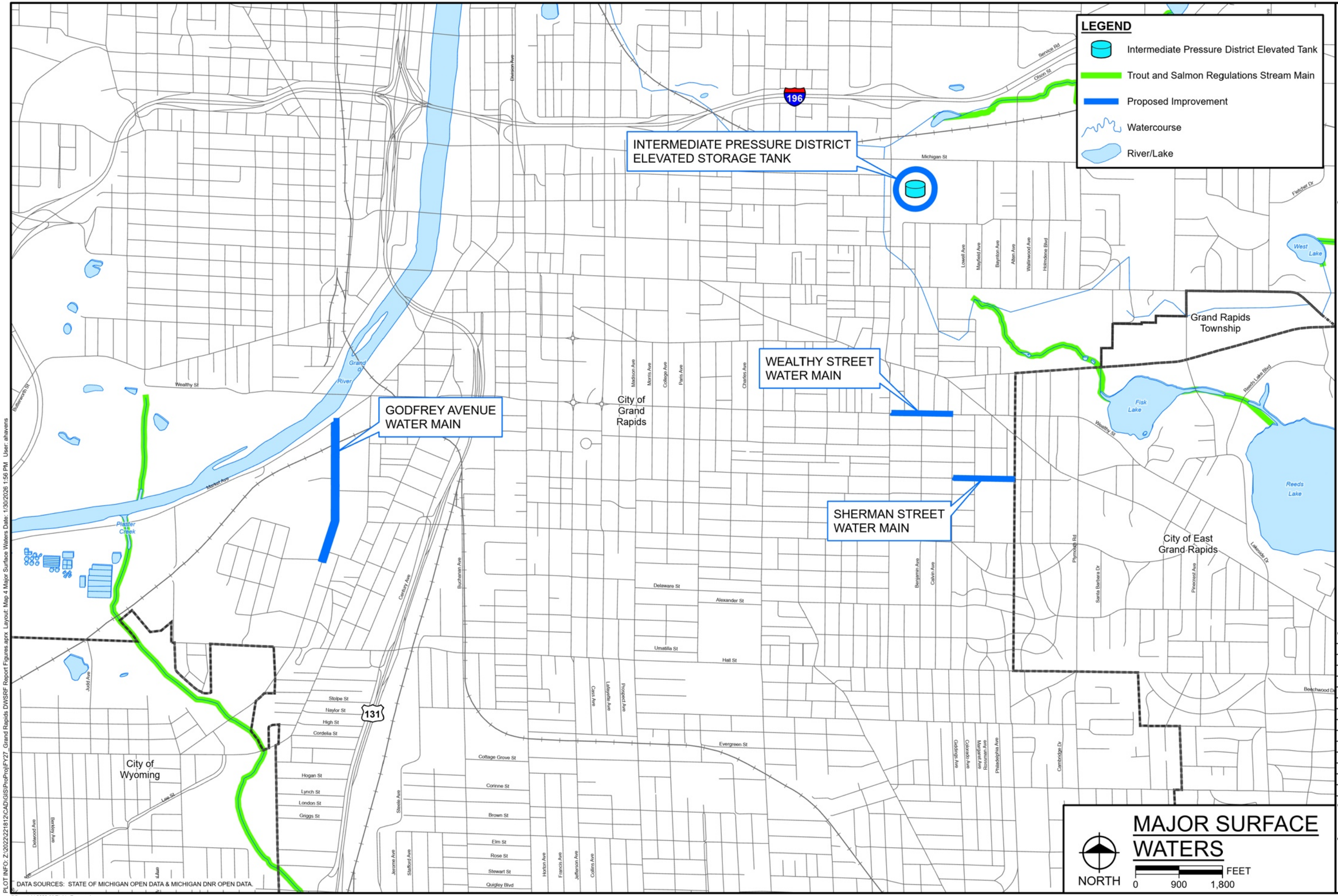
City of Grand Rapids
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
221812

MAP NO.
3



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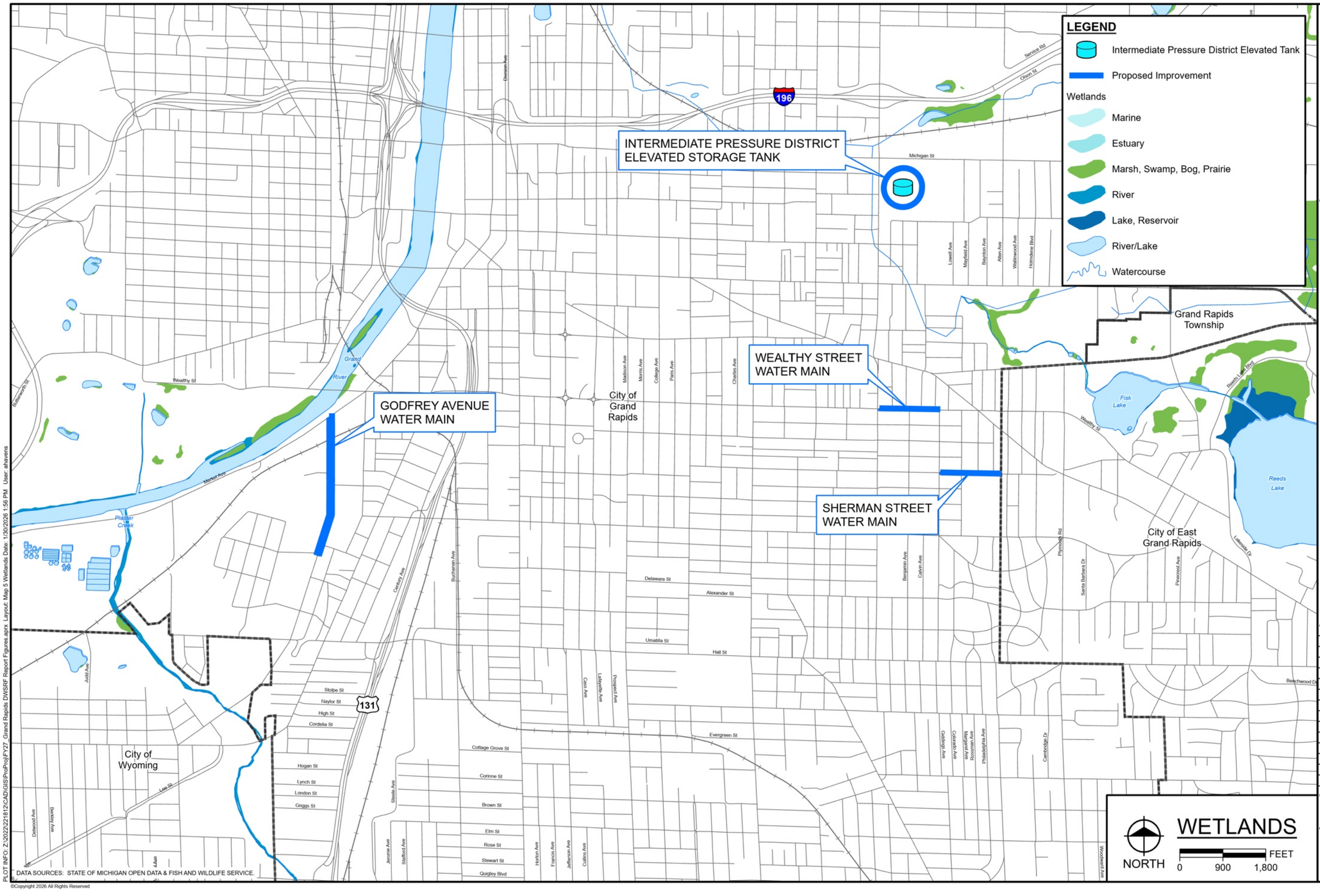
City of Grand Rapids
Kent County, Michigan
Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
221812

MAP NO.
4

DATA SOURCES: STATE OF MICHIGAN OPEN DATA & MICHIGAN DNR OPEN DATA.

PLOT INFO: Z:\2022\221812\CAD\GIS\Proj\FY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 4 Major Surface Waters Date: 1/30/2026 1:56 PM User: ahavens



DATA SOURCES: STATE OF MICHIGAN OPEN DATA & FISH AND WILDLIFE SERVICE.

NORTH

WETLANDS

0 900 1,800 FEET

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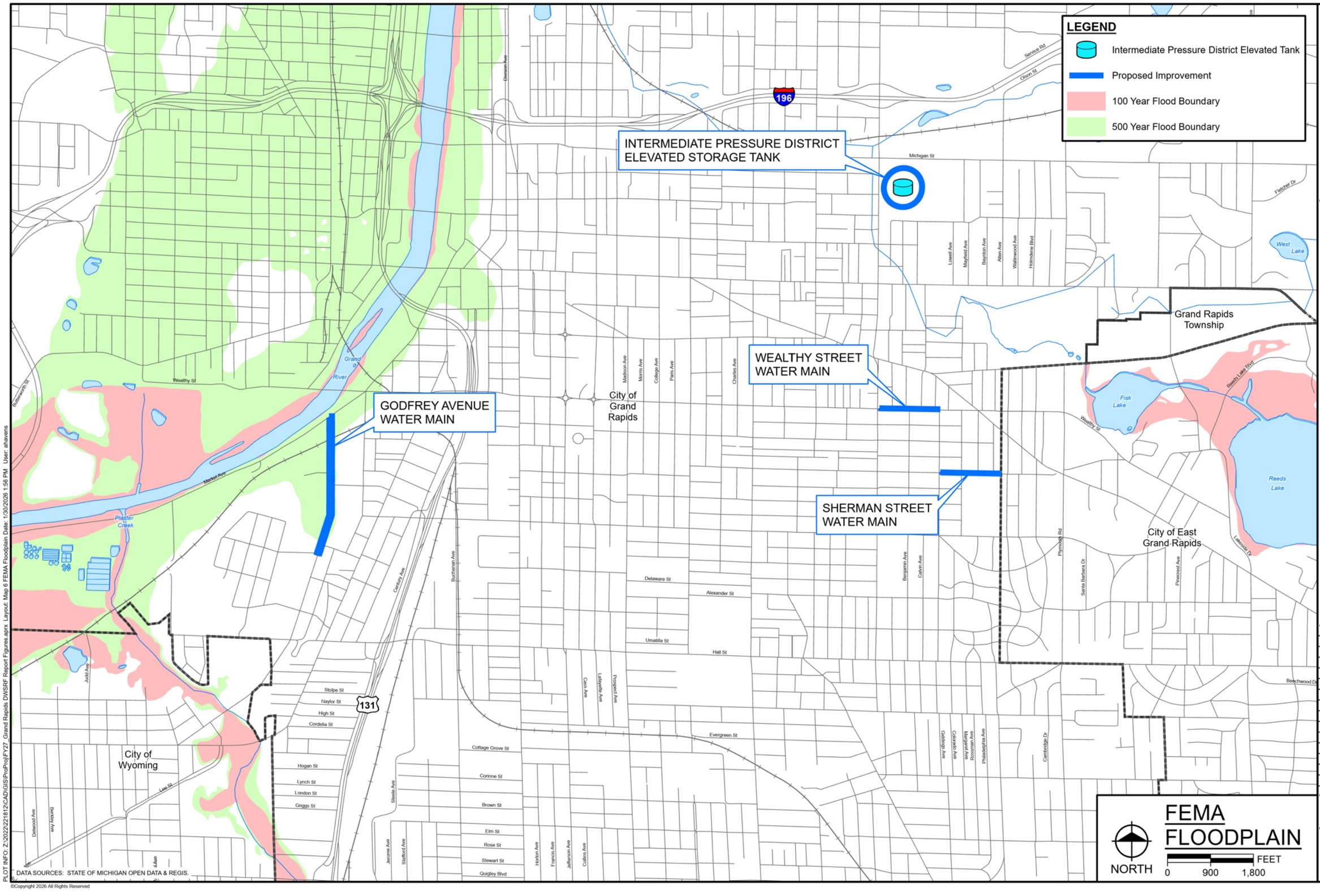
Hard copy is intended to be 11"x17" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

City of Grand Rapids
Kent County, Michigan
Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
221812

MAP NO.
5

PLOT INFO: Z:\2022\221812\CAD\GIS\ProPro\FY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 5 Wetlands Date: 1/30/2026 1:56 PM User: ahavens



DATA SOURCES: STATE OF MICHIGAN OPEN DATA & REGIS.

PLOT INFO: Z:\2022\221812\CAD\GIS\ProPro\FY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 6 FEMA Floodplain Date: 1/30/2026 1:56 PM User: ahavens

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City of Grand Rapids

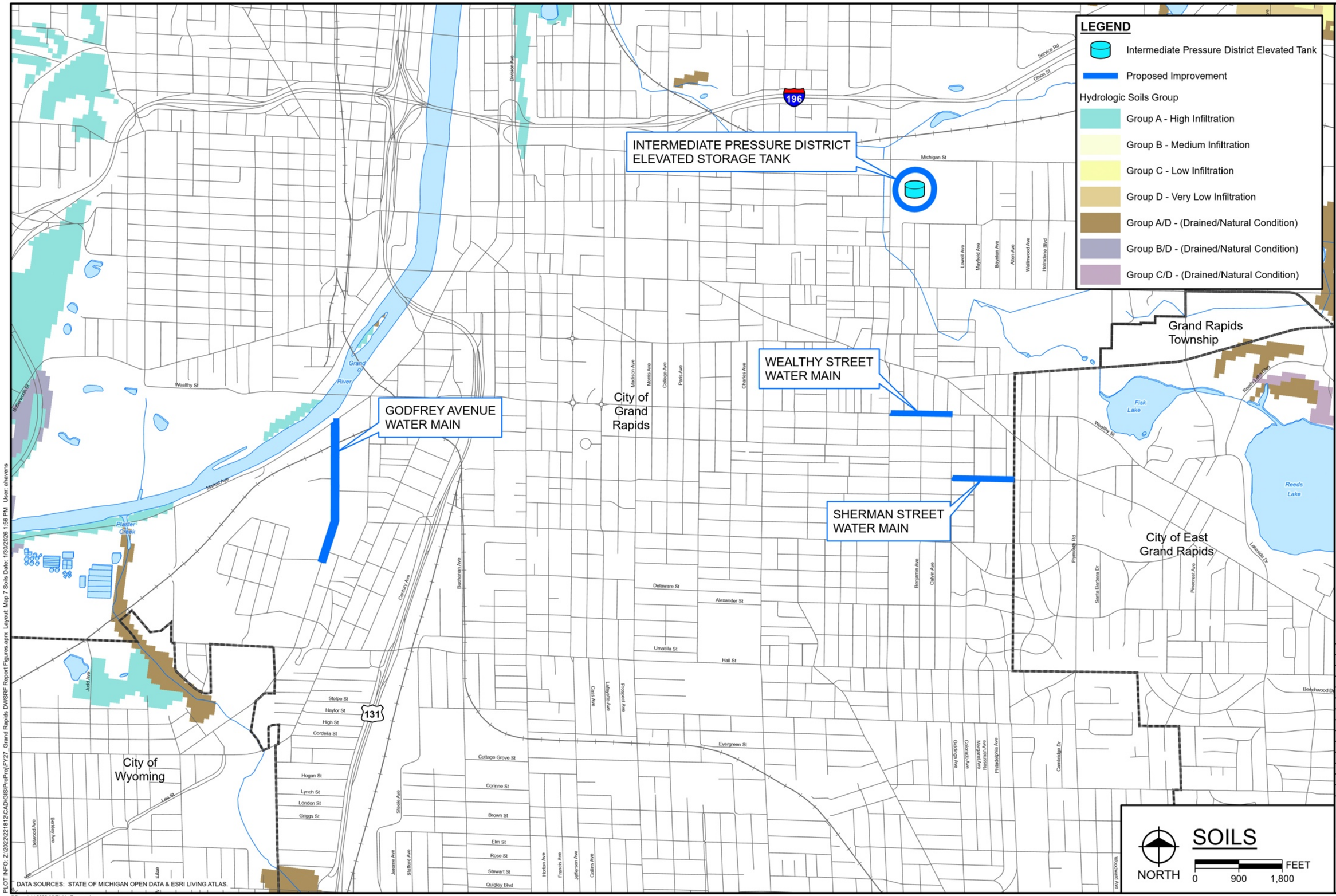
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

FEMA FLOODPLAIN

PROJECT NO.
221812

MAP NO.
6



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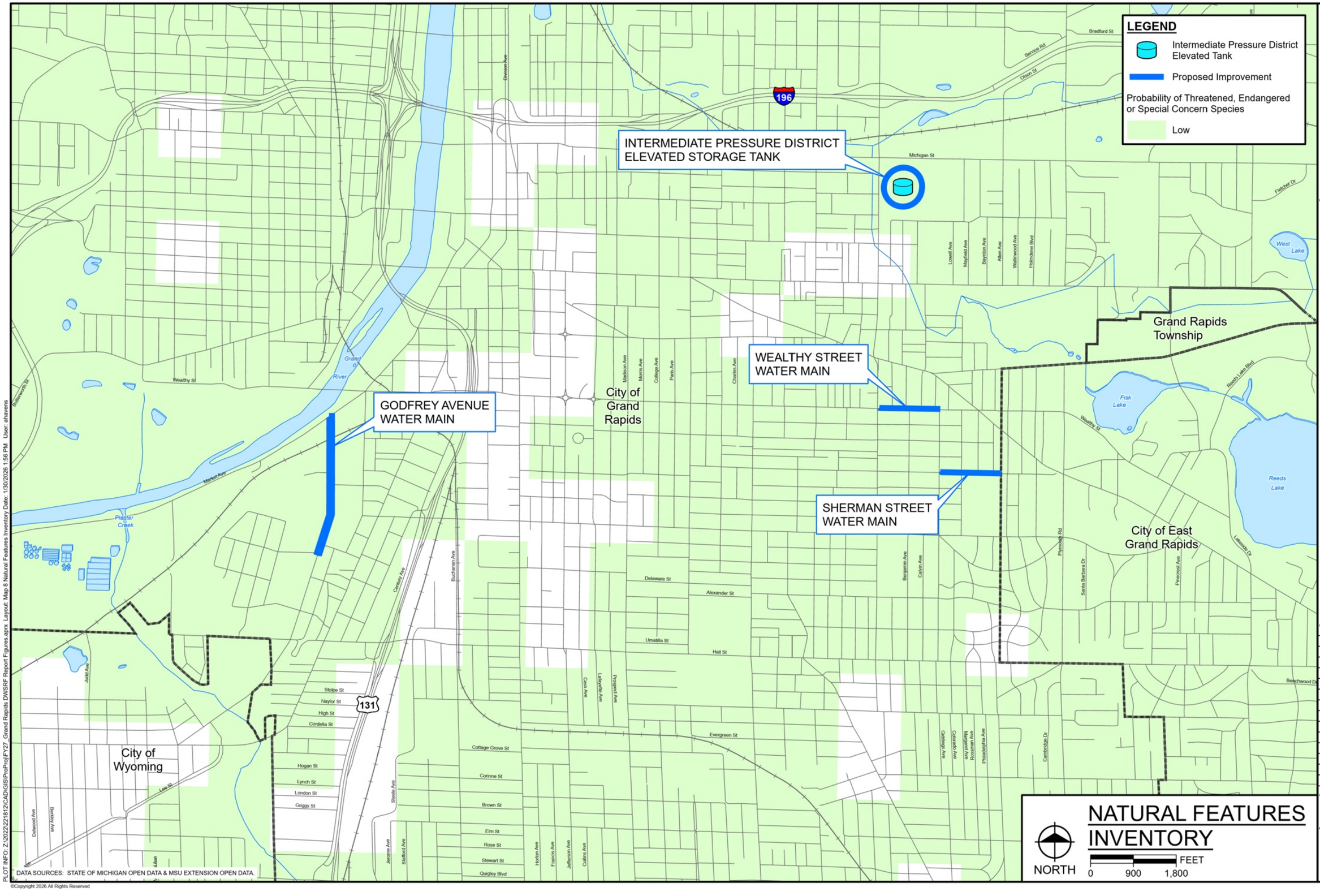
City of Grand Rapids
Kent County, Michigan
Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
221812

MAP NO.
7

PLOT INFO: Z:\2022\221812\CAD\GIS\ProjFY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 7 Soils Date: 1/30/2026 1:56 PM User: ahavens

DATA SOURCES: STATE OF MICHIGAN OPEN DATA & ESRI LIVING ATLAS.



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Hard copy is intended to be 11"x17" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

City of Grand Rapids
Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

NORTH

NATURAL FEATURES INVENTORY

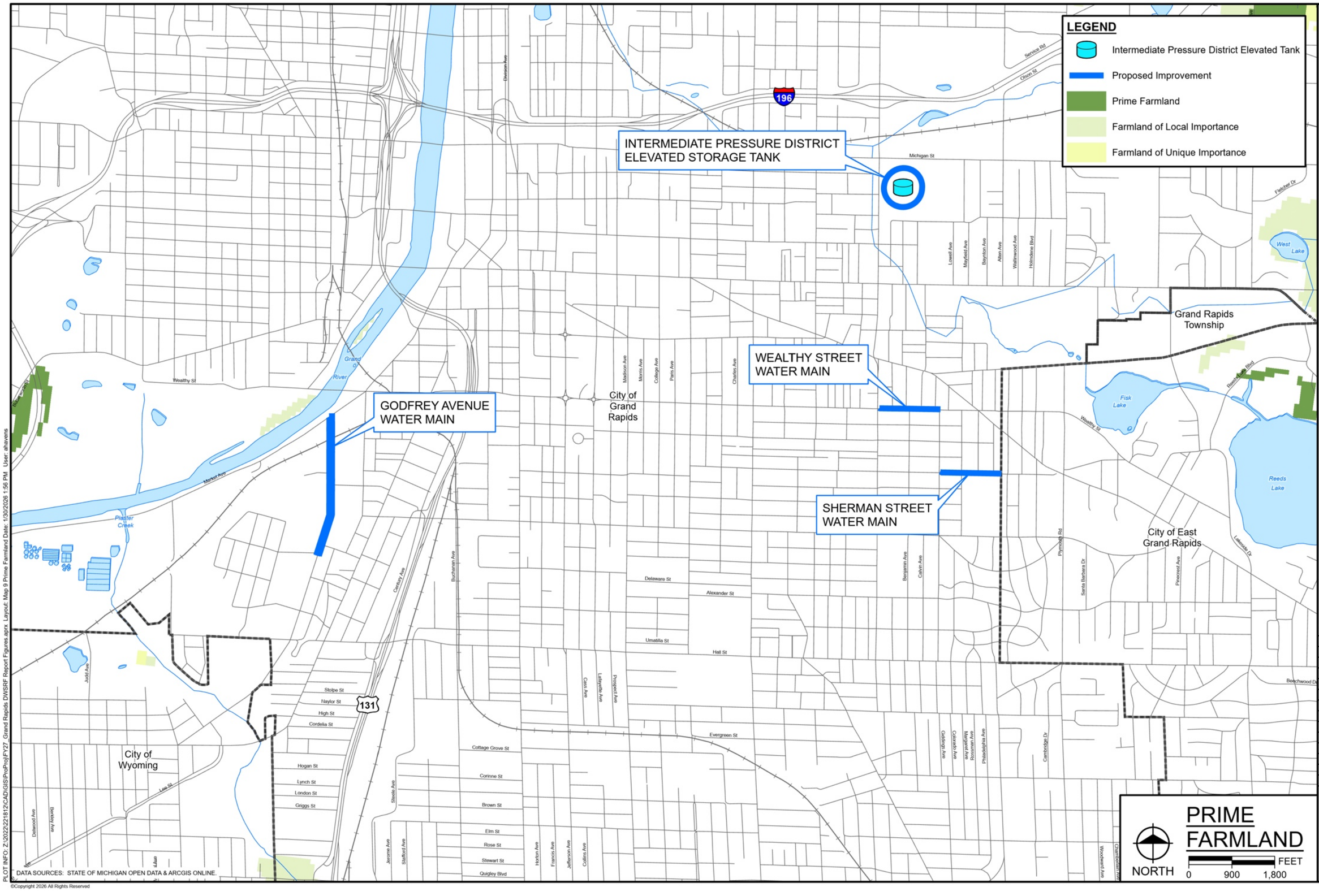
FEET
0 900 1,800

PROJECT NO.
221812

MAP NO.
8

DATA SOURCES: STATE OF MICHIGAN OPEN DATA & MSU EXTENSION OPEN DATA.

PLOT INFO: Z:\2022\221812\CAD\GIS\ProPro\FY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 8 Natural Features Inventory Date: 1/30/2026 1:56 PM User: ahavens



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Hard copy is intended to be 11"x17" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

City of Grand Rapids

Kent County, Michigan

Drinking Water State Revolving Fund (DWSRF) FY27

PROJECT NO.
221812

MAP NO.
9

DATA SOURCES: STATE OF MICHIGAN OPEN DATA & ARCGIS ONLINE.

PLOT INFO: Z:\2022\221812\CAD\GIS\ProPro\FY27_Grand Rapids DWSRF Report Figures.aprx Layout: Map 9 Prime Farmland Date: 1/30/2026 1:56 PM User: ahavens

fishbeck

Appendix

1

Appendix 3 - National Register of Historical Places for Kent & Ottawa Counties
Source: https://www.nps.gov/subjects/nationalregister/database-research.htm#table

Reference number	Property Name	State	County	City	Street & Number	Level of Significance - International	Level of Significance - Local	Level of Significance - National	Level of Significance - Not Indicated	Level of Significance - State	Listed Date
_70000275	Ada Covered Bridge	MICHIGAN	Kent	Ada	Across the Thornapple River	False	False	False	False	True	2/16/1970
_01001018	Porter Hollow Embankment and Culvert	MICHIGAN	Kent	Algoma Township	White Pine Strail at Stegman Creek, W of Summit Ave.	False	True	False	False	False	9/24/2001
_90000570	Thornapple River Drive Bridge	MICHIGAN	Kent	Cascade Township	Thornapple River Dr. over Thornapple River	False	True	False	False	False	4/18/1990
_06001326	Whitney Tavern Stand	MICHIGAN	Kent	Cascade Township	5283 Whitneyville Ave.	False	True	False	False	False	2/1/2007
_83000877	Blodgett, John W., Estate	MICHIGAN	Kent	East Grand Rapids	250 Plymouth Rd., SE	False	True	False	False	False	7/28/1983
_82000536	Aldrich Building	MICHIGAN	Kent	Grand Rapids	98 Monroe Center, NW	False	True	False	False	False	11/12/1982
_99000052	Aldrich, Godfrey, and White Block	MICHIGAN	Kent	Grand Rapids	89-99 Monroe Center	False	True	False	False	False	1/27/1999
_08001102	Alten, Mathias., House and Studio	MICHIGAN	Kent	Grand Rapids	1593 E. Fulton St.	False	False	True	False	False	6/23/2009
_100005823	American Box Board Company Headquarters and Factory	MICHIGAN	Kent	Grand Rapids	470 Market Ave. SW	False	True	False	False	False	11/24/2020
_03000687	American Seating Company Factory Complex	MICHIGAN	Kent	Grand Rapids	801 Broadway Ave. NW	False	False	True	False	False	7/25/2003
_00001486	Berkey and Gay Furniture Company Factory	MICHIGAN	Kent	Grand Rapids	940 Monroe Ave., NW	False	False	False	False	True	12/20/2000
_13000969	Central Furniture Company-H.E. Shaw Furniture Company Factory	MICHIGAN	Kent	Grand Rapids	400 Ionia Ave., SW.	False	True	False	False	False	12/24/2013
_99001523	Division Avenue-Plaster Creek Bridge	MICHIGAN	Kent	Grand Rapids	Division Ave. over Plaster Creek	False	False	False	False	True	12/17/1999
_13000666	Eastern Avenue School	MICHIGAN	Kent	Grand Rapids	758 Eastern Ave., NE.	False	True	False	False	False	9/4/2013
_82000537	Fine Arts Building	MICHIGAN	Kent	Grand Rapids	220 Lyon St., NW	False	True	False	False	False	11/12/1982
_82000538	First (Park) Congregational Church	MICHIGAN	Kent	Grand Rapids	10 E. Park Pl., NE	False	True	False	False	False	11/12/1982
_95000073	Ford, President Gerald R., Jr., Boyhood Home	MICHIGAN	Kent	Grand Rapids	649 Union Ave., SE.	False	False	True	False	False	2/27/1995
_100007211	Fulton Manor	MICHIGAN	Kent	Grand Rapids	1450 Fulton St. East	False	True	False	False	False	12/2/2021
_80001877	Goodspeed Brothers Building	MICHIGAN	Kent	Grand Rapids	188 Monroe St., NW	False	True	False	False	False	4/17/1980
_100002712	Grand Rapids Christian High School	MICHIGAN	Kent	Grand Rapids	415 Franklin St., SE	False	True	False	False	False	7/25/2018
_90001956	Grand Rapids Savings Bank Building	MICHIGAN	Kent	Grand Rapids	60 Monroe Center, NW	False	True	False	False	False	12/28/1990
_12001032	Grand Rapids Storage and Van Company Building	MICHIGAN	Kent	Grand Rapids	1415 Lake Dr. SE.	False	True	False	False	False	12/12/2012
_82002844	Heartside Historic District	MICHIGAN	Kent	Grand Rapids	Division, Commerce, and Ionia Aves., Fulton, Weston, Oakes, and Cherry Sts.	False	True	False	False	False	3/2/1982
_100007933	Heartside Historic District (Boundary Increase)	MICHIGAN	Kent	Grand Rapids	Roughly Sheldon Blvd. SE, South Division Ave., Commerce Ave. SW, Ionia Ave. SW, Weston St. SE, Cherry St. SW, Williams St. SW, Bartlett St. SW, and Goodrich Street SW, all south of Fulton St. and north of Wealthy St.	False	True	False	False	False	7/11/2022
_71000399	Heritage Hill Historic District	MICHIGAN	Kent	Grand Rapids	Bounded by Michigan Ave. on the N, Pleasant St. on the S, Union Ave. on the E, and Clarendon Pl. and Jefferson Ave. W	False	True	False	False	False	3/11/1971
_80004806	Keeler Building	MICHIGAN	Kent	Grand Rapids	56 N Division Ave.	False	False	False	False	False	11/27/2017
_04000690	Kent County Civil War Monument	MICHIGAN	Kent	Grand Rapids	Division Ave. at Monroe Ave.	False	False	False	False	True	7/14/2004
_71000400	Ladies' Literary Club	MICHIGAN	Kent	Grand Rapids	61 Sheldon St., SE.	False	True	True	False	False	10/26/1971
_83000878	Ledyard Block Historic District	MICHIGAN	Kent	Grand Rapids	123-145 Ottawa Ave., and 104-124 Monroe Center, NW	False	True	False	False	False	9/8/1983
_13000667	Lexington School	MICHIGAN	Kent	Grand Rapids	45 Lexington, NW.	False	True	False	False	False	9/4/2013
_82000539	Loraine Building	MICHIGAN	Kent	Grand Rapids	124 E. Fulton St.	False	True	False	False	False	11/24/1982
_00000506	Medical Arts Building	MICHIGAN	Kent	Grand Rapids	26 Sheldon Blvd. SE	False	True	False	False	False	5/18/2000
_04000691	Metal Office Furniture Company (Steelcase) Plants No. 2 and 3	MICHIGAN	Kent	Grand Rapids	401 Hall St. SW	False	True	False	False	False	7/17/2004
_83000879	Michigan Trust Company Building	MICHIGAN	Kent	Grand Rapids	40 Pearl St., NW	False	False	False	False	True	2/24/1983
_02000815	Monroe Avenue Water Filtration Plant	MICHIGAN	Kent	Grand Rapids	1430 Monroe Ave. NW	False	False	True	False	False	7/31/2002
_93000769	Mt. Mercy Academy and Convent	MICHIGAN	Kent	Grand Rapids	1425 Bridge St., NW	False	True	False	False	False	8/5/1993
_66000396	Norton Mound Group	MICHIGAN	Kent	Grand Rapids	Address Restricted	False	False	True	False	False	10/15/1966
_85002154	Paddock, Augustus, House	MICHIGAN	Kent	Grand Rapids	1033 Lake Dr., SE	False	True	False	False	False	9/12/1985
_00001483	Peck Block	MICHIGAN	Kent	Grand Rapids	34-50 Monroe Center NW	False	True	False	False	False	12/7/2000
_70000276	Pike, Abram W., House	MICHIGAN	Kent	Grand Rapids	230 Fulton St., E.	False	False	False	False	True	7/8/1970
_88000142	Rood Building	MICHIGAN	Kent	Grand Rapids	Address Restricted	False	True	False	False	False	3/4/1988
_100004384	Saint Joseph Seminary	MICHIGAN	Kent	Grand Rapids	600 Burton St. SE	False	True	False	False	False	9/16/2019
_100007588	Sisters of the Order of Saint Dominic Motherhouse Complex	MICHIGAN	Kent	Grand Rapids	2025 Fulton St. East	False	True	False	False	False	4/7/2022
_76001030	Sixth Street Bridge	MICHIGAN	Kent	Grand Rapids	Spans Grand River between Newberry and 6th St.	False	False	False	False	True	8/13/1976
_71000401	St. Cecilia Society Building	MICHIGAN	Kent	Grand Rapids	24--30 Ransom Ave., NE	False	True	False	False	False	12/9/1971
_82002845	Third Reformed Church	MICHIGAN	Kent	Grand Rapids	1009 Hermitage St., SE	False	True	False	False	False	4/22/1982
_70000277	Turner House	MICHIGAN	Kent	Grand Rapids	731 Front St., NW	False	True	False	False	False	7/8/1970
_74000990	U.S. Post Office	MICHIGAN	Kent	Grand Rapids	Ionia and Pearl Sts.	False	True	False	False	False	7/10/1974
_86003373	Villa Maria	MICHIGAN	Kent	Grand Rapids	1315 Walker NW	False	True	False	False	False	3/27/1987
_12001172	Willard Building	MICHIGAN	Kent	Grand Rapids	150 E. Fulton St.	False	True	False	False	False	1/14/2013
_99001539	Downtown Lowell Historic District	MICHIGAN	Kent	Lowell	Roughly along Main St. bet. Hudson and Washington	False	True	False	False	False	12/9/1999
_72000627	Fallasburg Covered Bridge	MICHIGAN	Kent	Lowell	Covered Bridge Rd.	False	False	False	False	True	3/16/1972
_72000626	Graham House	MICHIGAN	Kent	Lowell	323--325 Main St.	False	True	False	False	False	1/13/1972
_98001217	Fallasburg Historic District	MICHIGAN	Kent	Vergennes Township	Covered Bridge Rd.	False	True	False	False	False	3/31/1999
_99001522	Business Route M-21-Plaster Creek Bridge	MICHIGAN	Kent	Wyoming	Bus. Rte. M-21 over Plaster Creek	False	True	False	False	False	12/17/1999

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Appendix

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Data from U.S. Fish & Wildlife Service, Environmental Conservation Online System

Scientific Name	Common Name	Where Listed	Region	ESA Listing Status	Group
Myotis sodalis	Indiana bat	Wherever found	3	Endangered	Mammals
Canis lupus	Gray wolf	U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico.	6	Endangered	Mammals
Lynx canadensis	Canada Lynx	Wherever Found in Contiguous U.S.	6	Threatened	Mammals
Charadrius melodus	Piping Plover	[Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.)	3	Endangered	Birds
Nerodia erythrogaster neglecta	Copperbelly water snake	Indiana north of 40 degrees north latitude, Michigan, Ohio	3	Threatened	Reptiles
Pleurobema clava	Clubshell	Wherever found; Except where listed as Experimental Populations	5	Endangered	Clams
Epioblasma rangiana	Northern rifffleshell	Wherever found	5	Endangered	Clams
Lycaeides melissa samuelis	Karner blue butterfly	Wherever found	3	Endangered	Insects
Neonympha mitchellii mitchellii	Mitchell's satyr Butterfly	Wherever found	3	Endangered	Insects
Brychius hungerfordi	Hungerford's crawling water Beetle	Wherever found	3	Endangered	Insects
Somatochlora hineana	Hine's emerald dragonfly	Wherever found	3	Endangered	Insects
Cirsium pitcheri	Pitcher's thistle	Wherever found	3	Threatened	Flowering Plants
Iris lacustris	Dwarf lake iris	Wherever found	3	Threatened	Flowering Plants
Mimulus michiganensis	Michigan monkey-flower	Wherever found	3	Endangered	Flowering Plants
Platanthera leucophaea	Eastern prairie fringed orchid	Wherever found	3	Threatened	Flowering Plants
Solidago houghtonii	Houghton's goldenrod	Wherever found	3	Threatened	Flowering Plants
Hymenoxys herbacea	Lakeside daisy	Wherever found	3	Threatened	Flowering Plants
Asplenium scolopendrium var. americanum	American hart's-tongue fern	Wherever found	5	Threatened	Ferns and Allies
Epioblasma triquetra	Snuffbox mussel	Wherever found	3	Endangered	Clams
Villosa fabalis	Rayed Bean	Wherever found	3	Endangered	Clams
Grus americana	Whooping crane	U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY)	2	Experimental Population, Non-Essential	Birds
Sistrurus catenatus	Eastern Massasauga (=rattlesnake)	Wherever found	3	Threatened	Reptiles
Calidris canutus rufa	Red knot	Wherever found	5	Threatened	Birds
Myotis septentrionalis	Northern Long-Eared Bat	Wherever found	3	Endangered	Mammals
Oarisma poweshiek	Poweshiek skipperling	Wherever found	3	Endangered	Insects

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Appendix

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County Element Data

The lists include all elements (species and natural communities) for which locations have been recorded in MNFI's database for each county. Information from the database cannot provide a definitive statement on the presence, absence, or condition of the natural features in any given locality, since much of the state has not been specifically or thoroughly surveyed for their occurrence and the conditions at previously surveyed sites are constantly changing. The County Elements Lists should be used as a reference of which natural features currently or historically were recorded in the county and should be considered when developing land use plans.

Choose a county Kent

Kent County

Code Definitions

Species

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Occurrences in County	Last Observed in County
Acella haldemani	Spindle lymnaea		SC	G3	SH	1	Historical
Acipenser fulvescens	Lake sturgeon		T	G3G4	S2	1	1970
Acris blanchardi	Blanchard's cricket frog		T	G5	S2S3	7	2021
Adlumia fungosa	Climbing fumitory		SC	G4	S3	1	1889
Alasmidonta marginata	Elktoe		SC	G4	S3?	16	2021
Alasmidonta viridis	Slippershell		T	G4G5	S2S3	16	2017
Ammodramus savannarum	Grasshopper sparrow		SC	G5	S4	2	2006
Amorpha canescens	Leadplant		SC	G5	S3	2	1984
Anaxyrus fowleri	Fowler's toad		SC	G5	S3S4	1	
Astragalus canadensis	Canadian milk vetch		T	G5	S1S2	1	1901
Astragalus neglectus	Cooper's milk vetch		SC	G4	S3	2	1897
Baptisia lactea	White or prairie false indigo		SC	G4Q	S3	1	1880
Berula erecta	Cut-leaved water parsnip		T	G4G5	S2	1	2020
Besseya bullii	Kitten-tails		E	G3	S1	5	2008
Boechera dentata	Rock cress		T	G5	S1	5	2016
Boechera missouriensis	Missouri rock-cress		SC	G5	S2	2	1898
Bombus affinis	Rusty-patched bumble bee	LE	SC	G2	SH	1	1937

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Occurrences in County	Last Observed in County
Bombus auricomus	Black and gold bumble bee		SC	G5	S2	3	2021
Bombus pensylvanicus	American bumble bee		SC	G3G4	S1	2	1946
Bombus sandersoni	Sanderson's bumble bee		SC	G5	S2S3	1	2021
Bouteloua curtipendula	Side-oats grama grass		E	G5	S1	2	1986
Brickellia eupatorioides	False boneset		SC	G5	S2	3	2011
Buteo lineatus	Red-shouldered hawk		T	G5	S4	1	2016
Calephelis muticum	Swamp metalmark		SC	G3	S1	3	1964
Callophrys irus	Frosted elfin		T	G2G3	S2S3	1	2003
Cambarus robustus	Big water crayfish		SC	G5	S2?	1	2014
Carex assiniboinensis	Assiniboia sedge		T	G4G5	S2	1	2012
Carex davisii	Davis's sedge		SC	G4	S3	4	2016
Carex oligocarpa	Eastern few-fruited sedge		T	G4G5	S2	1	2016
Carex trichocarpa	Hairy-fruited sedge		SC	G4	S2	4	1939
Carex typhina	Cattail sedge		T	G5	S1	1	2014
Cincinnatia cincinnatiensis	Campeloma spire snail		SC	G5	S3	2	Historical
Cistothorus palustris	Marsh wren		SC	G5	S3	1	2003
Clemmys guttata	Spotted turtle		T	G5	S2	4	2021
Collinsia verna	Blue-eyed Mary		SC	G5	SNR	2	1897
Conioselinum chinense	Hemlock-parsley		SC	G5	SNR	3	1899
Coregonus artedi	Lake herring or Cisco		T	GNR	S3	2	2013
Cyclonaias tuberculata	Purple wartyback		T	G5	S2	14	2019
Cypripedium candidum	White lady slipper		T	G4	S2	2	2004
Diarrhena obovata	Beak grass		T	G4G5	S2	3	2016
Dorydiella kansana	Leafhopper		SC	GNR	S3	1	
Draba reptans	Creeping whitlow grass		T	G5	S1	3	1901
Echinacea purpurea	Purple coneflower		X	G4	SX	1	1891
Eleocharis compressa	Flattened spike rush		T	G4	S2	1	1898
Eleocharis engelmannii	Engelmann's spike rush		SC	G4G5	S2S3	1	1901
Eleocharis melanocarpa	Black-fruited spike-rush		SC	G4	S3	6	1944
Eleocharis tricostata	Three-ribbed spike		T	G4	S2	1	2015

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Occurrences in County	Last Observed in County
	rush						
Emydoidea blandingii	Blanding's turtle		SC	G4	S2S3	21	2022
Endodeca serpentaria	Virginia snakeroot		T	G4	S2	2	1985
Epioblasma triquetra	Snuffbox	LE	E	G3	S1S2	7	2020
Erynnis martialis	Mottled duskywing		SC	G3	SU	1	1955
Erynnis persius persius	Persius dusky wing		T	G5T1T3	S3	1	1954
Euonymus atropurpureus	Wahoo		SC	G5	S3	3	2016
Euphorbia commutata	Tinted spurge		T	G5	S1	3	1901
Falco peregrinus	Peregrine falcon		E	G4	S3	1	2020
Faxonius immunis	Calico crayfish		SC	G5	S4	4	2014
Fontigens nickliniana	Watercress snail		SC	G5	S2S3	4	1935
Fuirena pumila	Umbrella-grass		T	G4	S2	1	1974
Galearis spectabilis	Showy orchis		T	G5	S2	2	1894
Gentiana alba	White gentian		E	G4	S1	1	1901
Gentiana puberulenta	Downy gentian		E	G4G5	S1	1	1943
Gentianella quinquefolia	Stiff gentian		T	G5	S2	1	1901
Geum triflorum	Prairie smoke		T	G5	S2S3	2	1992
Glyptemys insculpta	Wood turtle		SC	G3	S2	1	1996
Graphephorum melicoides	Purple false oats		SC	G4G5	SNR	1	1894
Haliaeetus leucocephalus	Bald eagle		SC	G5	S4	5	2021
Helianthus hirsutus	Whiskered sunflower		SC	G5	S3	1	1967
Hybanthus concolor	Green violet		SC	G5	S3	4	1999
Hydrastis canadensis	Goldenseal		T	G3G4	S2	2	1989
Incisalia henrici	Henry's elfin		T	G5	S2S3	1	1955
Isotria verticillata	Whorled pogonia		T	G5	S2	2	1979
Jeffersonia diphylla	Twinleaf		SC	G5	S3	2	1980
Lasmigona compressa	Creek heelsplitter		SC	G5	S3	12	2017
Lasmigona costata	Flutedshell		SC	G5	SNR	15	2022
Lepisosteus oculatus	Spotted gar		SC	G5	S2S3	1	1988
Leptodea leptodon	Scaleshell	LE	E	G1G2	SX	1	1930
Ligumia recta	Black sandshell		E	G4G5	S1?	11	2020
Linum sulcatum	Furrowed flax		SC	G5	S2S3	1	1896

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Occurrences in County	Last Observed in County
Linum virginianum	Virginia flax		T	G4G5	S2	2	1899
Lipocarpha micrantha	Dwarf-bulrush		SC	G5	S3	4	1979
Lithobates palustris	Pickerel frog		SC	G5	S3S4	5	2017
Lithospermum latifolium	Broad-leaved puccoon		SC	G4	S2	6	2021
Lycaeides melissa samuelis	Karner blue	LE	T	G1G2	S2	2	2021
Lycopus virginicus	Virginia water-horehound		T	G5	S2	1	2016
Mertensia virginica	Virginia bluebells		E	G5	S1S2	7	2018
Mesomphix cupreus	Copper button		SC	G5	S1	1	Historical
Morus rubra	Red mulberry		T	G5	S2	5	2002
Moxostoma carinatum	River redhorse		T	G4	S2	3	2018
Moxostoma duquesnei	Black Redhorse		SC	G5	S2	3	2018
Myotis septentrionalis	Northern long-eared bat	LT	SC	G2G3	S1	1	1975
Notropis anogenus	Pugnose shiner		E	G3	S1S2	2	1955
Notropis dorsalis	Bigmouth shiner		SC	G5	S2	5	1997
Oarisma poweshiek	Poweshiek skipperling	LE	T	G1	S1	2	1968
Oecanthus laricis	Tamarack tree cricket		SC	G3?	S3	1	
Oxyloma peoriense	Depressed ambersnail		SC	G4G5	SNR	1	1885
Panax quinquefolius	Ginseng		T	G3G4	S2S3	1	1896
Pandion haliaetus	Osprey		SC	G5	S4	2	2020
Parkesia motacilla	Louisiana waterthrush		T	G5	S2	1	2016
Penstemon calycosus	Beard tongue		T	G5	S2	1	1891
Persicaria careyi	Carey's smartweed		T	G4	S1S2	1	1938
Platanthera ciliaris	Orange- or yellow-fringed orchid		E	G5	S1S2	5	1942
Pleurobema sintoxia	Round pigtoe		SC	G4G5	S3	15	2017
Pomatiopsis cincinnatiensis	Brown walker		SC	G4	SH	2	Historical
Potamilus alatus	Pink heelsplitter		SC	G5	SNR	1	2018
Potamogeton vaseyi	Vasey's pondweed		T	G4	S1S2	2	2003
Protonotaria citrea	Prothonotary warbler		SC	G5	S3	1	2007
Rallus elegans	King rail		E	G4	S2	1	1986
Ranunculus rhomboideus	Prairie buttercup		T	G5	S2	6	2012

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Occurrences in County	Last Observed in County
Regina septemvittata	Queen snake		SC	G5	S2S3	1	2017
Rhynchospora macrostachya	Tall beakrush		SC	G4	S3S4	2	1955
Rhynchospora scirpoides	Bald-rush		T	G4	S2	1	1899
Schoenoplectus americanus	Three-square bulrush		E	G5	S1	1	1899
Schoenoplectus torreyi	Torrey's bulrush		SC	G5?	S2S3	1	1900
Setophaga cerulea	Cerulean warbler		T	G4	S3	2	2005
Setophaga citrina	Hooded warbler		SC	G5	S3	2	2005
Silphium laciniatum	Compass plant		T	G5	S1S2	1	2012
Sistrurus catenatus	Eastern massasauga	LT	SC	G3	S3	2	2006
Sisyrinchium atlanticum	Atlantic blue-eyed-grass		T	G5	S2	1	2018
Sisyrinchium strictum	Blue-eyed-grass		SC	G3	S2	1	1942
Smallanthus uvedalia	Yellow-flowered leafcup		T	G4G5	S1	1	1897
Solidago missouriensis	Missouri goldenrod		T	G5	SX	1	1938
Sphaerium fabale	River fingernail clam		SC	G5	SNR	1	Historical
Strophostyles helvula	Trailing wild bean		SC	G5	S3	1	1979
Symphyotrichum drummondii	Drummond's aster		T	G5	S2	2	1941
Symphyotrichum sericeum	Western silvery aster		T	G5	S2	1	1896
Terrapene carolina carolina	Eastern box turtle		SC	G5T5	S2S3	30	2021
Toxolasma parvum	Lilliput		E	G5	S1	5	2020
Triphora trianthophora	Nodding pogonia or three birds orchid		T	G4?	S1	1	1901
Triplasis purpurea	Sand grass		SC	G4G5	S2	1	1999
Truncilla donaciformis	Fawnsfoot		T	G5	S1	1	2017
Truncilla truncata	Deertoe		SC	G5	S2S3	5	2018
Utterbackia imbecillis	Paper pondshell		SC	G5	S2S3	3	2016
Valerianella chenopodiifolia	Goosefoot corn salad		T	G4	S1	1	1897
Valvata perdepressa	Purplecap valvata		SC	G2G3	SNR	1	1914
Ventridens intertextus	Pyramid dome		SC	G5	SNR	1	1948
Venustaconcha ellipsiformis	Ellipse		SC	G4	S3	14	2022

Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank	Occurrences in County	Last Observed in County
Villosa iris	Rainbow		SC	G5	S3	10	2020
Zizia aptera	Prairie golden alexanders		T	G5	S1S2	4	1985

Natural Communities

Community Name	Global Rank	State Rank	Occurrences in County	Last Observed in County
Bog	G3G5	S4	4	2015
Dry-mesic Northern Forest	G4	S3	1	2015
Dry-mesic Southern Forest	G4	S3	6	2019
Emergent Marsh	GU	S4	2	1990
Floodplain Forest	G3?	S3	2	2015
Hardwood-Conifer Swamp	G4	S3	4	2015
Hillside Prairie	G3	S1	5	2002
Mesic Southern Forest	G2G3	S3	1	1990
Oak Barrens	G2?	S1	1	2014
Poor Conifer Swamp	G4	S4	1	1991
Prairie Fen	G3	S3	8	2010
Southern Hardwood Swamp	G3	S3	1	1981
Southern Shrub-carr	GU	S4	1	1990
Southern Wet Meadow	G4?	S3	2	2020

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Appendix

4

Grand Rapids Water Distribution System Improvements
DWRF Project Planning Amendment FY2027
Intermediate Pressure District Elevated Storage Tank

	Units	Qty.	Unit Cost	Initial Estimated Capital Cost
Elevated Storage Tank	EA	1	$6,600,000	$6,600,000
Sitework and Piping	LS	1	$800,000	$800,000
Electrical and Instrumentation	LS	1	$400,000	$400,000
Subtotal - Estimated Construction Cost				$7,800,000
Contingency (12%)				$936,000
Design and Construction Engineering (22%)				$1,720,000
Subtotal - Estimated Project Budget				$10,500,000

	Estimated Capital Cost	Design Life (yrs)	Replace. Cost	Salvage Value
Elevated Storage Tank	$6,600,000	50	$0	$3,960,000
Sitework and Piping	$800,000	50	$0	$480,000
Electrical and Instrumentation	$400,000	30	$0	$133,333
Subtotal - Estimated Construction Cost	$7,800,000			$4,574,000
Contingency (12%)	$936,000			
Design and Construction Engineering (22%)	$1,720,000	$2,656,000		
Subtotal - Estimated Project Budget	$10,500,000			

20 Year Present Worth	Actual Cost	20 yr Present Worth
Initial Capital Cost	$10,500,000	$10,500,000
Annual O&M Cost	$10,000	$160,400
Salvage Value	$4,574,000	$ (2,959,900)
TOTAL ESTIMATE OF PRESENT WORTH		$7,700,500

Notes:
Present Worth estimated using discount rate of 2.2% *from EGLE*

Grand Rapids Water Distribution System Improvements
DWRF Project Planning Amendment 2027
Sherman Street Water Main

Alternative 1

Item	Unit	Unit Cost	Quantity	Amount
6" Water	LF	660	0	$0
8" Water	LF	700	0	$0
12" Water	LF	760	1820	$1,383,200
16" Water	LF	840	0	$0
			Subtotal =	$1,383,200
Copper Service (Main to House)	EA	8000	29	$232,000
Copper Service (Main to Property Line)	EA	4500	0	$0
Copper Service (Property Line to House)	EA	3500	2	$7,000
			Subtotal =	$239,000
			Water Main (65%) =	$899,080
			City Street Reconstruction (35%) =	$484,120
			Service Replacement =	$239,000
			Contamination Allowance =	$0
			Estimated Total Construction Cost =	$1,622,200
			Administration, Engineering, Contingency =	$567,770
			Estimated Total Project Budget =	$2,189,970

Alternative 2

Item	Unit	Unit Cost	Quantity	Amount
6" Water	LF	660	0	$0
8" Water	LF	700	0	$0
12" Water	LF	760	0	$0
16" Water	LF	840	0	$0
			Subtotal =	$0
Copper Service (Main to House)	EA	8000	29	$232,000
Copper Service (Main to Property Line)	EA	4500	0	$0
Copper Service (Property Line to House)	EA	3500	2	$7,000
			Subtotal =	$239,000
			Water Main (65%) =	$0
			City Street Reconstruction (35%) =	$0
			Service Replacement =	$239,000
			Contamination Allowance =	$0
			Estimated Total Construction Cost =	$239,000
			Administration, Engineering, Contingency =	$83,650
			Estimated Total Project Budget =	$322,650

Grand Rapids Water Distribution System Improvements
DWRF Project Planning Amendment 2027
Wealthy Street Water Main

Alternative 1

Item	Unit	Unit Cost	Quantity	Amount
6" Water	LF	660	0	$0
8" Water	LF	700	0	$0
12" Water	LF	760	1300	$988,000
16" Water	LF	840	0	$0
			Subtotal =	$988,000
Copper Service (Main to House)	EA	8000	28	$224,000
Copper Service (Main to Property Line)	EA	4500	3	$13,500
Copper Service (Property Line to House)	EA	3500	7	$24,500
			Subtotal =	$262,000
			Water Main (65%) =	$642,200
			City Street Reconstruction (35%) =	$345,800
			Service Replacement =	$262,000
			Contamination Allowance =	$0
			Estimated Total Construction Cost =	$1,250,000
			Administration, Engineering, Contingency =	$437,500
			Estimated Total Project Budget =	$1,687,500

Alternative 2

Item	Unit	Unit Cost	Quantity	Amount
6" Water	LF	660	0	$0
8" Water	LF	700	0	$0
12" Water	LF	760	0	$0
16" Water	LF	840	0	$0
			Subtotal =	$0
Copper Service (Main to House)	EA	8000	13	$104,000
Copper Service (Main to Property Line)	EA	4500	0	$0
Copper Service (Property Line to House)	EA	3500	5	$17,500
			Subtotal =	$121,500
			Water Main (65%) =	$0
			City Street Reconstruction (35%) =	$0
			Service Replacement =	$121,500
			Contamination Allowance =	$0
			Estimated Total Construction Cost =	$121,500
			Administration, Engineering, Contingency =	$42,525
			Estimated Total Project Budget =	$164,025

Grand Rapids Water Distribution System Improvements
DWRF Project Planning Amendment 2027
Godfrey Avenue Water Main

Alternative 1

Item	Unit	Unit Cost	Quantity	Amount
6" Water	LF	660	0	$0
8" Water	LF	700	0	$0
12" Water	LF	760	0	$0
16" Water	LF	840	2980	$2,503,200
24" Water	LF	720	3030	$2,181,600
			Subtotal =	$4,684,800
Copper Service (Main to House)	EA	8000	0	$0
Copper Service (Main to Property Line)	EA	4500	0	$0
Copper Service (Property Line to House)	EA	3500	0	$0
			Subtotal =	$0
			Water Main (65%) =	$3,045,120
			City Street Reconstruction (35%) =	$1,639,680
			Service Replacement =	$0
			Contamination Allowance =	$0
			Estimated Total Construction Cost =	$4,684,800
			Administration, Engineering, Contingency =	$1,639,680
			Estimated Total Project Budget =	$6,324,480

Alternative 2

Item	Unit	Unit Cost	Quantity	Amount
6" Water	LF	660	0	$0
8" Water	LF	700	0	$0
12" Water	LF	760	0	$0
16" Water	LF	840	0	$0
			Subtotal =	$0
Copper Service (Main to House)	EA	8000	0	$0
Copper Service (Main to Property Line)	EA	4500	0	$0
Copper Service (Property Line to House)	EA	3500	0	$0
			Subtotal =	$0
			Water Main (65%) =	$0
			City Street Reconstruction (35%) =	$0
			Service Replacement =	$0
			Contamination Allowance =	$0
			Estimated Total Construction Cost =	$0
			Administration, Engineering, Contingency =	$0
			Estimated Total Project Budget =	$0