



DRAFT

PROJECT PLAN  
FOR  
THE CITY OF GLADSTONE

DRINKING WATER STATE REVOLVING FUND  
PROJECT PLAN  
WATER

DELTA COUNTY, MICHIGAN

APRIL 2026

**COLEMAN ENGINEERING COMPANY**

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CIVIL ENGINEERING • GEOTECHNICAL ENGINEERING • SURVEYING

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FOR  
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DRINKING WATER STATE REVOLVING FUND UTILITY  
PROJECT PLAN  
WATER

DELTA COUNTY, MICHIGAN

APRIL 2026

COLEMAN ENGINEERING COMPANY  
635 Circle Drive  
Iron Mountain, MI 49801

CEC Project #EC-260343

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## SECTION 1: EXECUTIVE SUMMARY

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This Project Plan has been prepared on behalf of the City of Gladstone (City) in an effort to evaluate their existing water distribution systems, determine deficiencies and propose corrective action. The report has been assembled in a format to meet the requirements of the Michigan Department of Environment, Great Lakes and Energy (EGLE). It is expected this document will be submitted to EGLE as part of an application for funding assistance through the Drinking Water State Revolving Fund (DWSRF) program. The need for this study and analysis was determined by the City of Gladstone.

The City of Gladstone is located in south central Delta County in the Upper Peninsula of Michigan. The City owns its water treatment and distribution systems. The water treatment plant is a 1.5 MGD plant which includes disinfection, coagulation, sedimentation, corrosion control, taste and odor control, fluoridation, filtration and storage. The City has approximately 215,000 feet of water main, a 500,000-gallon finished water storage tank, a 1,000,000-gallon elevated reservoir, a 250,000-gallon elevated storage tank, one booster station and 273 fire hydrants. The City's water source is Little Bay de Noc on Lake Michigan. The City has identified approximately 330 service lines that require replacement as defined by the State of Michigan Lead and Copper rule.

The goal of the proposed project is to replace lead service lines and maintain a sustainable water distribution system.

Total project cost for the recommended alternative is \$4,041,780. A project of this magnitude is not easily funded by the City through normal rates considering the existing, primarily residential, user base in the City. As such, the City is requesting assistance with project funding in the form of grants to limit the impact to user rates to the greatest extent possible.

None of the considered alternatives are expected to directly impact historical, archaeological, geological, cultural or recreational resources in the study area. The action alternative would have construction related temporary direct adverse impacts to air quality, noise, traffic and material consumption. The action alternatives would have a temporary positive impact on economics through construction related employment and materials purchased. They would also have positive long-term impacts on the area's water quality due to a reliable water distribution system. It is expected that the project contract documents and required permits will mitigate any adverse short-term environmental impacts related to construction activities.

## SECTION 2: BACKGROUND

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This Project Plan has been prepared on behalf of the City of Gladstone (City) in an effort to evaluate their existing water distribution system, determine deficiencies and propose corrective action. The report has been assembled in a format to meet the requirements of the Michigan Department of Environment, Great Lakes, and Energy (EGLE). It is expected this document will be submitted to EGLE as part of an application for funding assistance through the Drinking Water State Revolving Fund program. The need for this study and analysis was determined by the City of Gladstone.

### A. Study and Service Area

The City of Gladstone is located in south central Delta County in the Upper Peninsula of Michigan. The study area for this Project Plan is in the City of Gladstone, located primarily in Sections 16, 20, 21, 22, 28 and 29 of Township 40N Range 22W. The proposed project area is limited to all those sections. The City is bound on the north by Brampton Township, the west by Escanaba Township and on the south and east by Little Bay de Noc on Lake Michigan. Refer to Figure 1 for a location map and Figure 2 for a proposed project area map.

### B. Population

U.S. Census Bureau data shows the population for the City of Gladstone has been trending up and down since 1970 and has been very inconsistent. Using those trends would not be an accurate representation of the projected population in 20 years. The most recent data from the Census Bureau estimates a decrease in population of -0.2% from 2020 to 2021. Using the same declining trend as the census, the population has been projected through the 20-year planning period.

**Table 1: Population**

| Area              | 1970 | 1980 | 1990 | 2000 | 2010 | 2020 | 2030 | 2040 |
|-------------------|------|------|------|------|------|------|------|------|
| City of Gladstone | 5237 | 4533 | 4565 | 5032 | 4973 | 5257 | 5168 | 5081 |

\*Data from U.S. Census Bureau for 1970–2020

The Lead Service Line Replacement project will affect approximately 825 people. We use a calculation of 2.5 people per service line. 330 services X 2.5 people = 825 people.

### C. Existing Environment Evaluation

#### Cultural and Historic Resources

Per the National Register of Historic Places, there are no historical and archaeological sites within the City of Gladstone. A SHPO section 106 application was submitted with a response dated February 29, 2024 indicating No Adverse Effect; however, it was acknowledged that a shipwreck was identified just off shore near the City Water Plant. All

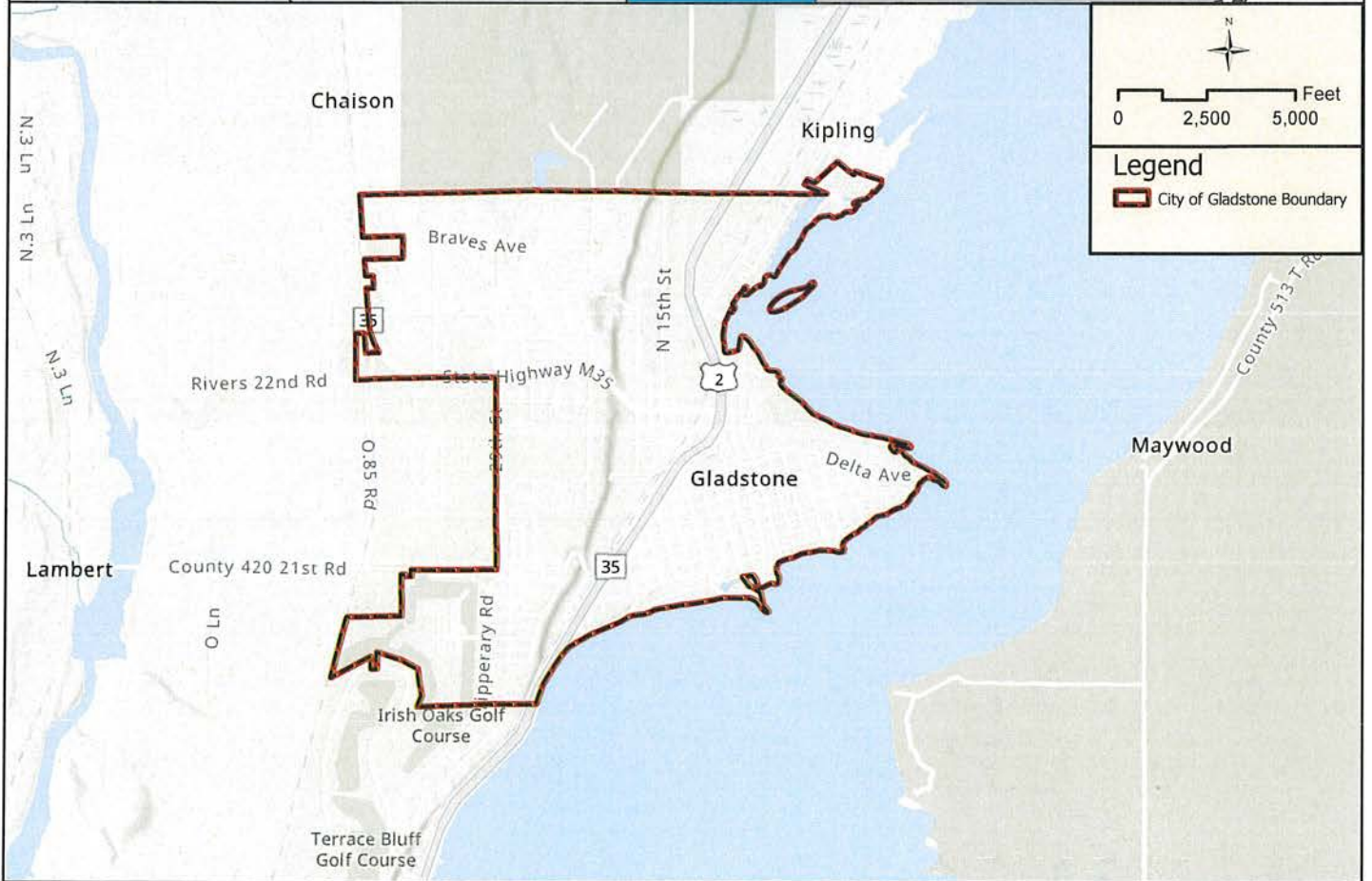
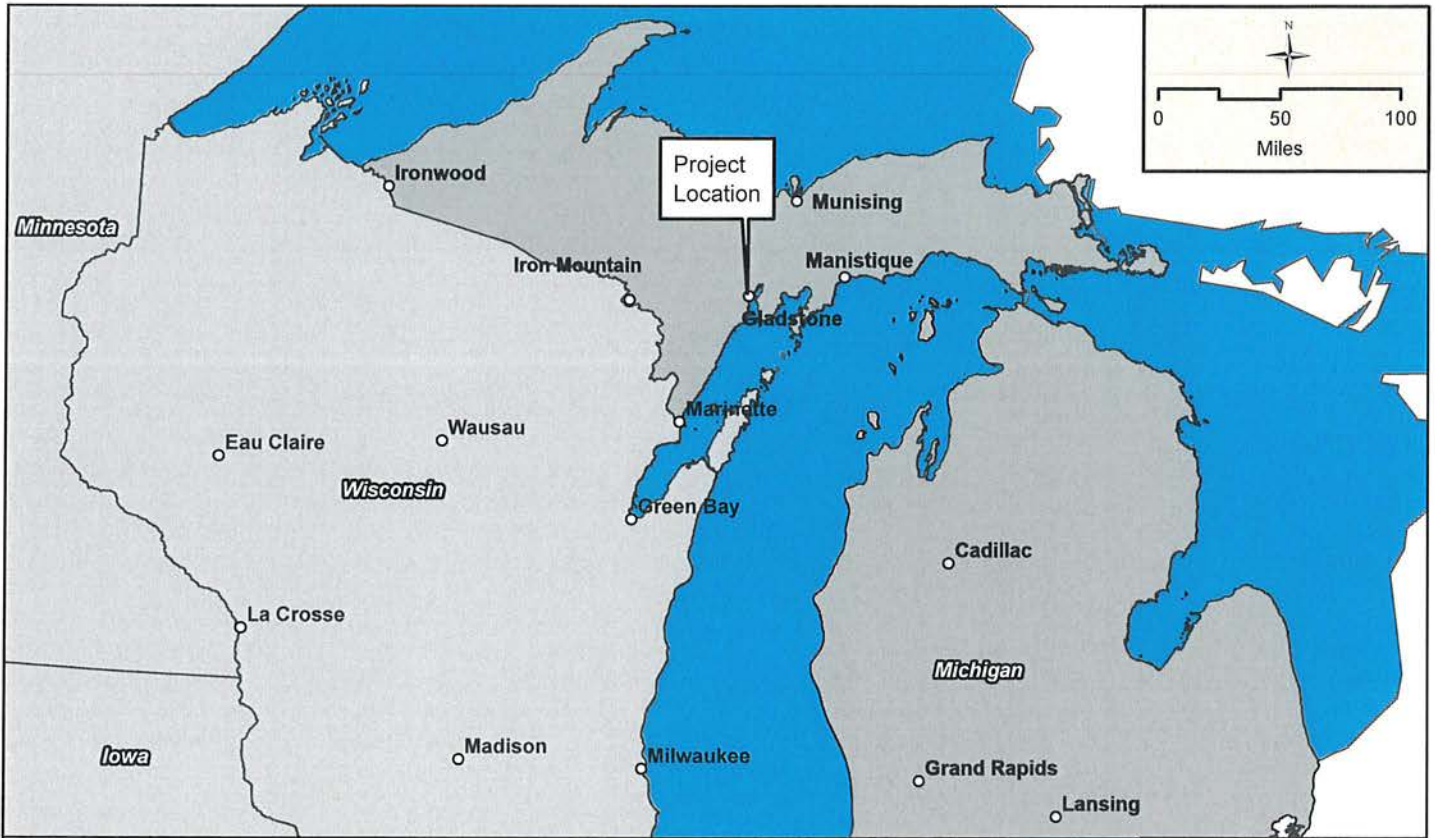


Figure 1 - Project Location Map  
City of Gladstone

Project Number | 260343

Date | 3/27/2026

Drawn by | RHH





construction activities will be within the current right-of-way and will not be within 100-feet of this area.

#### Air Quality

The air quality near the site is considered to be good but is site specific and has seasonal fluctuations. There are no indications in the scope of work for special air monitoring or air quality testing with the project site. Air quality impacts are not anticipated. Refer to Figure 3.

#### Wetlands

Impacts to wetlands will be avoided as the installation of new service lines are through residential yards in previously disturbed areas. Refer to Figure 4 for the location of the wetlands.

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

The project location does fall into parts of the Coastal Zone Management Boundary and is within the Coastal Zone Management area. Refer to Figure 5.

#### Floodplains

Floodplains exist on the north and east side of the project location near the shoreline of Lake Michigan. No long-term impacts to the floodplain of Lake Michigan are anticipated as part of this project. Refer to Figure 6.1 and Figure 6.2.

#### Natural or Wild and Scenic Rivers

There are two major wild rivers in the Gladstone area. The Whitefish River is to the north and the Escanaba River is to the south. Neither river will be impacted by the construction phase of this project. Refer to Figure 7 and Figure 8.

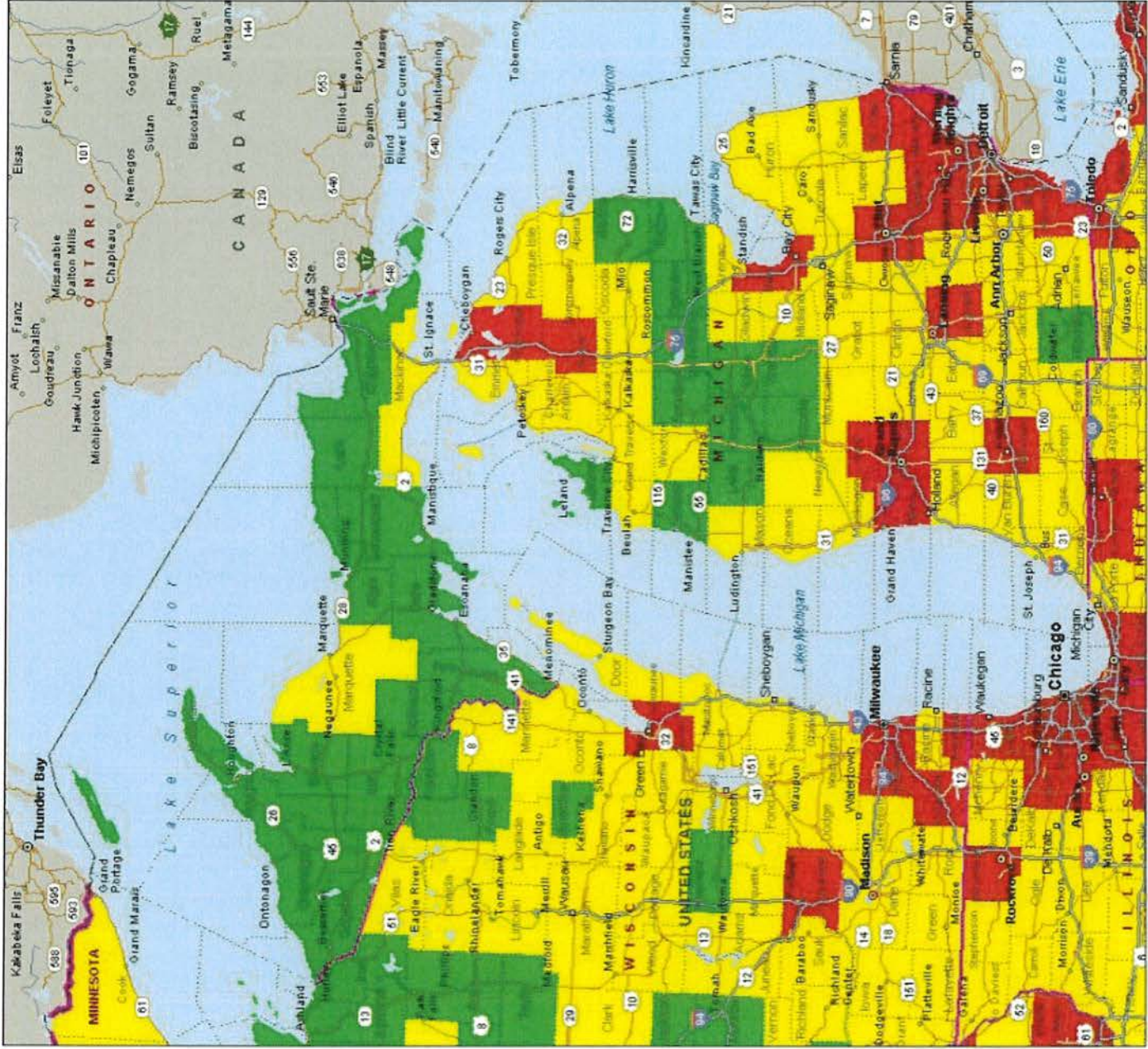
#### Major Surface Waters

Major surface water is identified as Little Bay De Noc, a bay of Lake Michigan. An EGLE/USACE (U.S. Army Corps of Engineers) Joint Permit is not anticipated to be required. Refer to Figure 9.

#### Topography

The City is generally flat with slight elevational fluctuations moving toward the lake front. A major vertical elevation change in the form of the Gladstone Bluff (Bluff) divides the City north to south. Elevations west of the Bluff range from 700 to 720 feet above sea level. Elevations east of the Bluff range from 580 to 610 feet above sea level. Refer to Figure 10.

Figure 3 - Air Quality



A = Best/Cleanest in the US; F = Worst/Dirtiest in the US.

Figure 4 - Wetlands



February 14, 2023

- Sedimentary Basins
- Structural Lineaments
- Cross Section Lines
- A-A'
- A-B
- A-C
- A-D
- A-E
- A-F
- A-G
- A-H
- A-I
- A-J
- A-K
- A-L
- A-M
- A-N
- A-O
- Cross Section Wells
- Part 303 Final Wetlands Inventory
- Wetlands as identified on NMI and MIRIS maps
- Soil areas which include wetland soils
- Wetlands as identified on NMI and MIRIS maps and soil areas which include wetland soils

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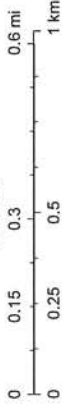


Figure 5 - Coastal Zones

Delta County  
Brampton Township, T40N R22W  
Gladstone, T40N R22W  
Escanaba Township, T40N R22W  
Wells Township, T39N R22W and T39N R23W  
Escanaba City, T38N R22W, T38N R23W and T39N R22W

The heavy red line is the *Coastal Zone Management Boundary*  
The red hatched area is the *Coastal Zone Management Area*

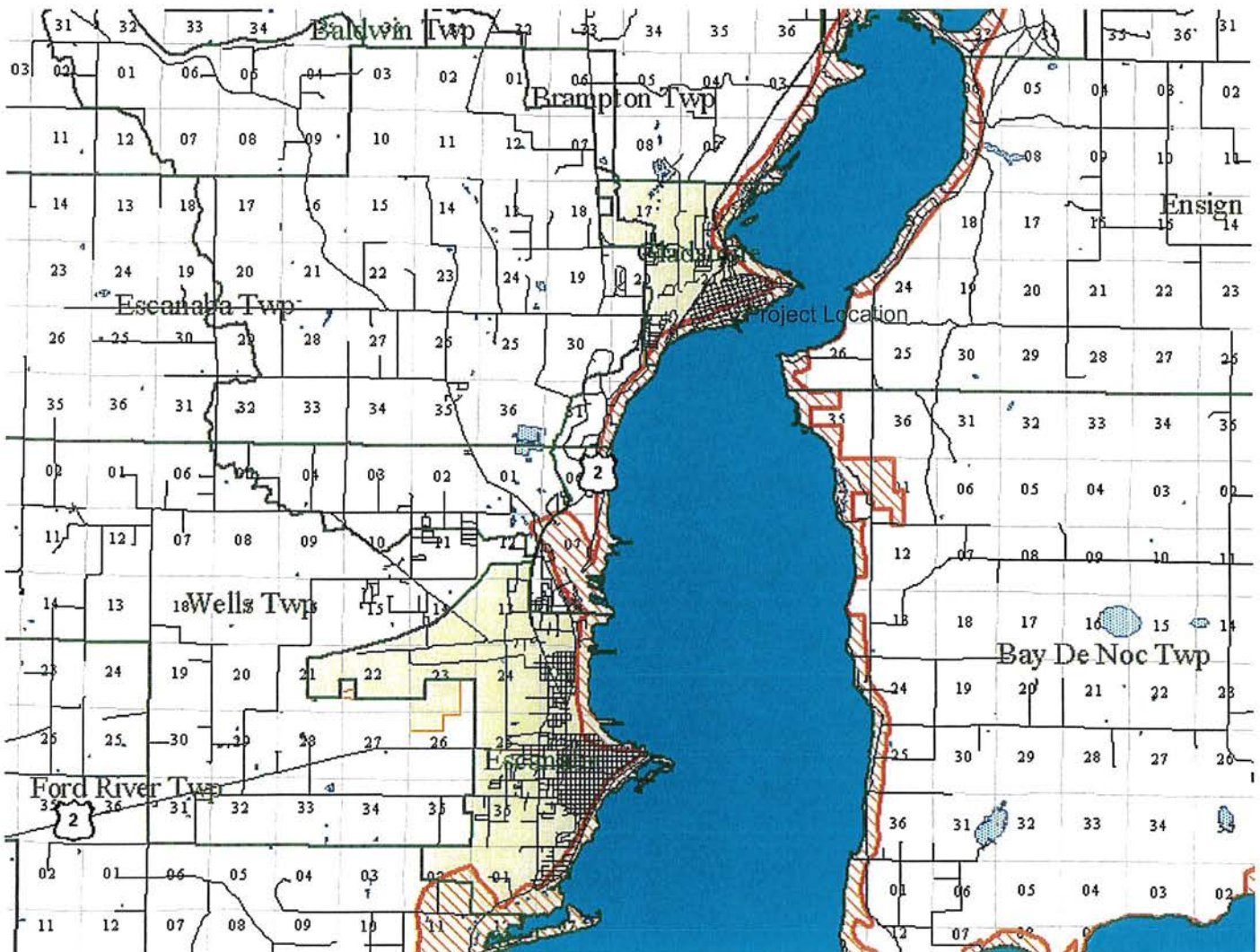
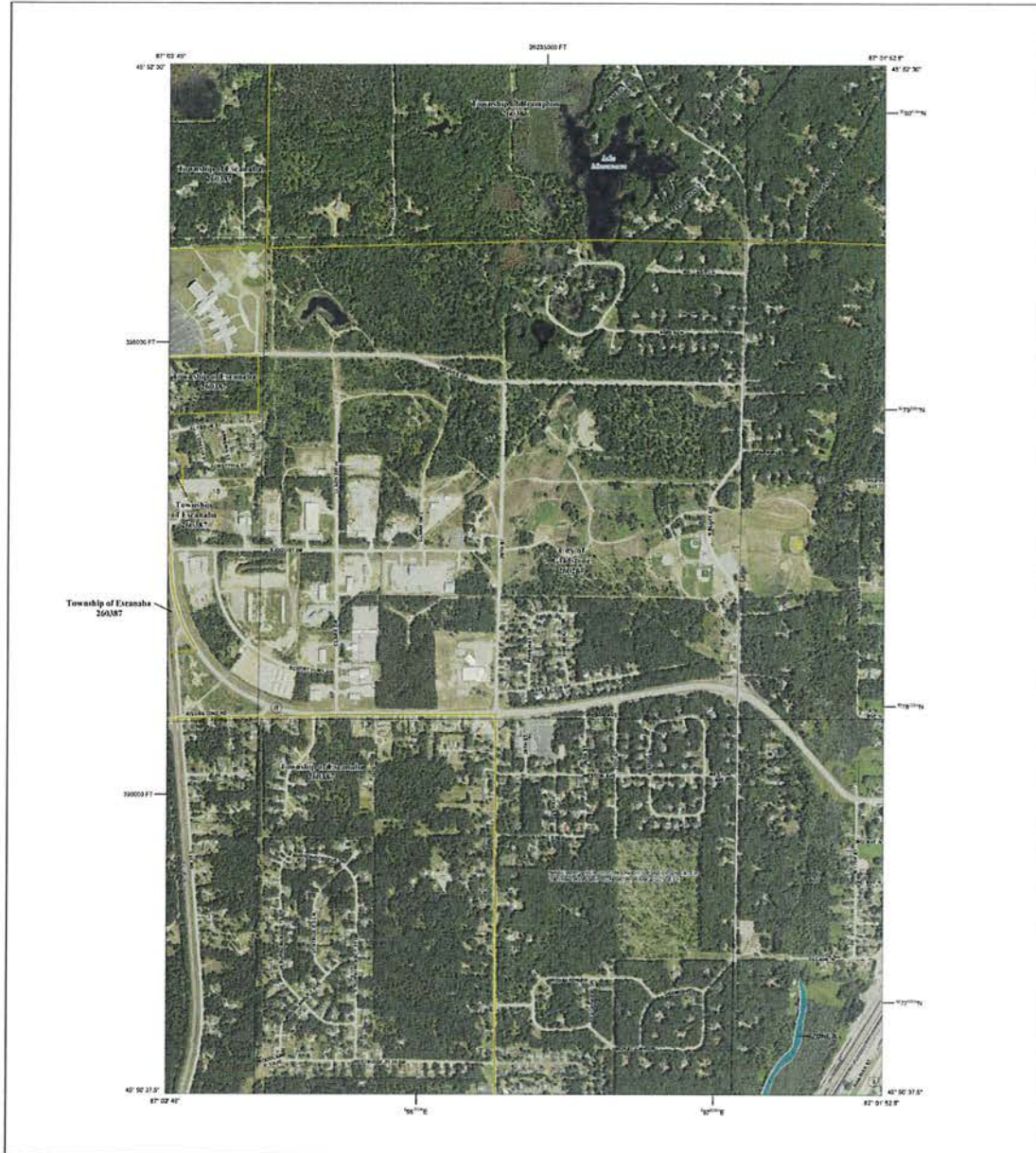




Figure 6.2 - Gladstone FEMA Map-2



**FLOOD HAZARD INFORMATION**

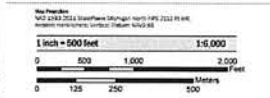
SEE HIS REPORT FOR DETAILED LEGEND AND NOTES FOR FIRM PANEL LIMITS  
 THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING  
 DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT  
[HTTPS://NASC.FEMA.GOV](https://nasc.fema.gov)

- SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) [Symbol]
  - With BFE or Depth [Symbol]
  - Regulatory Floodway [Symbol]
  - 0.2% Annual Chance Flood Hazard, Area of 1% Annual Chance Flood with average depth less than one foot or with drainage area of one thousand square feet [Symbol]
  - Future Conditions 1% Annual Chance Flood Hazard [Symbol]
  - Area with Reduced Flood Risk due to Levee [Symbol]
  - Area with Flood Risk due to Levee [Symbol]
  - NO SCREEN [Symbol]
  - Area of Undetermined Flood Hazard [Symbol]
- OTHER AREAS OF FLOOD HAZARD**
- OTHER AREAS**
- GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer [Symbol]
  - Levee, Dike, or Floodwall [Symbol]
  - Cross Sections with 1% Annual Chance Water Surface Elevation [Symbol]
  - Coastal Transect [Symbol]
  - Coastal Transect Baseline [Symbol]
  - Profile Baseline [Symbol]
  - Hydrographic Feature [Symbol]
  - Base Flood Elevation Line (BFE) [Symbol]
  - Limit of Study [Symbol]
  - Jurisdiction Boundary [Symbol]
- OTHER FEATURES**

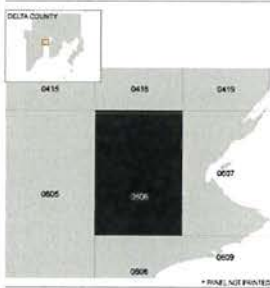
**NOTES TO USERS**

The information on this map was derived from Flood Insurance Rate Maps (FIRMs) and/or other data provided to FEMA by the National Flood Insurance Program (NFIP) and/or other sources. The information on this map is for informational purposes only and does not constitute a warranty of any kind. The information on this map is not to be used for any purpose other than that for which it was intended. The information on this map is not to be used for any purpose other than that for which it was intended. The information on this map is not to be used for any purpose other than that for which it was intended.

**SCALE**



**PANEL LOCATOR**



**FEMA**  
 National Flood Insurance Program

**NATIONAL FLOOD INSURANCE PROGRAM**  
 FLOOD INSURANCE RATE MAP

**DELTA COUNTY, MICHIGAN**  
 FIRM NUMBER: 606-1105

| COMMENTS | NUMBER | PANEL | SUFFIX |
|----------|--------|-------|--------|
| REVISION | 260410 | 0605  | 0      |
| REVISION | 260411 | 0606  | 0      |
| REVISION | 260412 | 0607  | 0      |
| REVISION | 260413 | 0608  | 0      |
| REVISION | 260414 | 0609  | 0      |

REVISION NUMBER: 260410  
 MAP NUMBER: 2604100606  
 DATE: March 7, 2023

Figure 7 - Natural Rivers

# MICHIGAN'S DESIGNATED NATURAL RIVERS





Figure 9 - Major Surface Waters



February 16, 2023

AerialBest

- Red: Band\_1
- Green: Band\_2
- Blue: Band\_3

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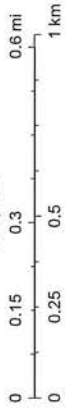
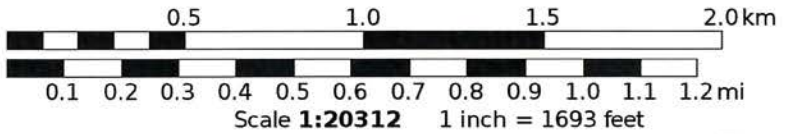


Figure 10 - Topography



Mercator Projection  
 WGS84  
 UTM Zone 16T  
 CALTOPO



MN -5.2°

Figure 10

### Geology

Geologic information of the site location indicates a composition of glacial outwash, sand, gravel and post glacial alluvium. Refer to Figure 11.

### Soil Types

Soil types in the proposed project location consist of previously disturbed and developed lands. Soils include wetland soils, sand, muck, peat and marl. Refer to Figure 12.

### Agricultural Resources

Agricultural land is not anticipated to be impacted by the project. It does not appear there will be any long-term significant negative impacts on these resources due to the project construction. Refer to Figure 13.

### Fauna and Flora

Fauna and flora mainly consist of white pine and white oak in the area. Impacts to wetlands will be avoided as the installation of new service lines are through residential yards in previously disturbed areas. Refer to Figure 14.

All Federal Crosscutter environmental requirements will be met if the project is determined to be fundable through EGLE's DWSRF program.

Figure 11 - Geology



April 21, 2023

Quaternary Geology

Peat and muck

Postglacial alluvium

Dune sand

Lacustrine clay and silt

Lacustrine sand and gravel

Glacial outwash sand and gravel and postglacial alluvium

Ice-contact outwash sand and gravel

Fine-textured glacial till

End moraines of fine-textured till

Medium-textured glacial till

End moraines of medium-textured till

Coarse-textured glacial till

End moraines of coarse-textured till

Thin to discontinuous glacial till over bedrock

Artificial fill

Exposed bedrock surfaces

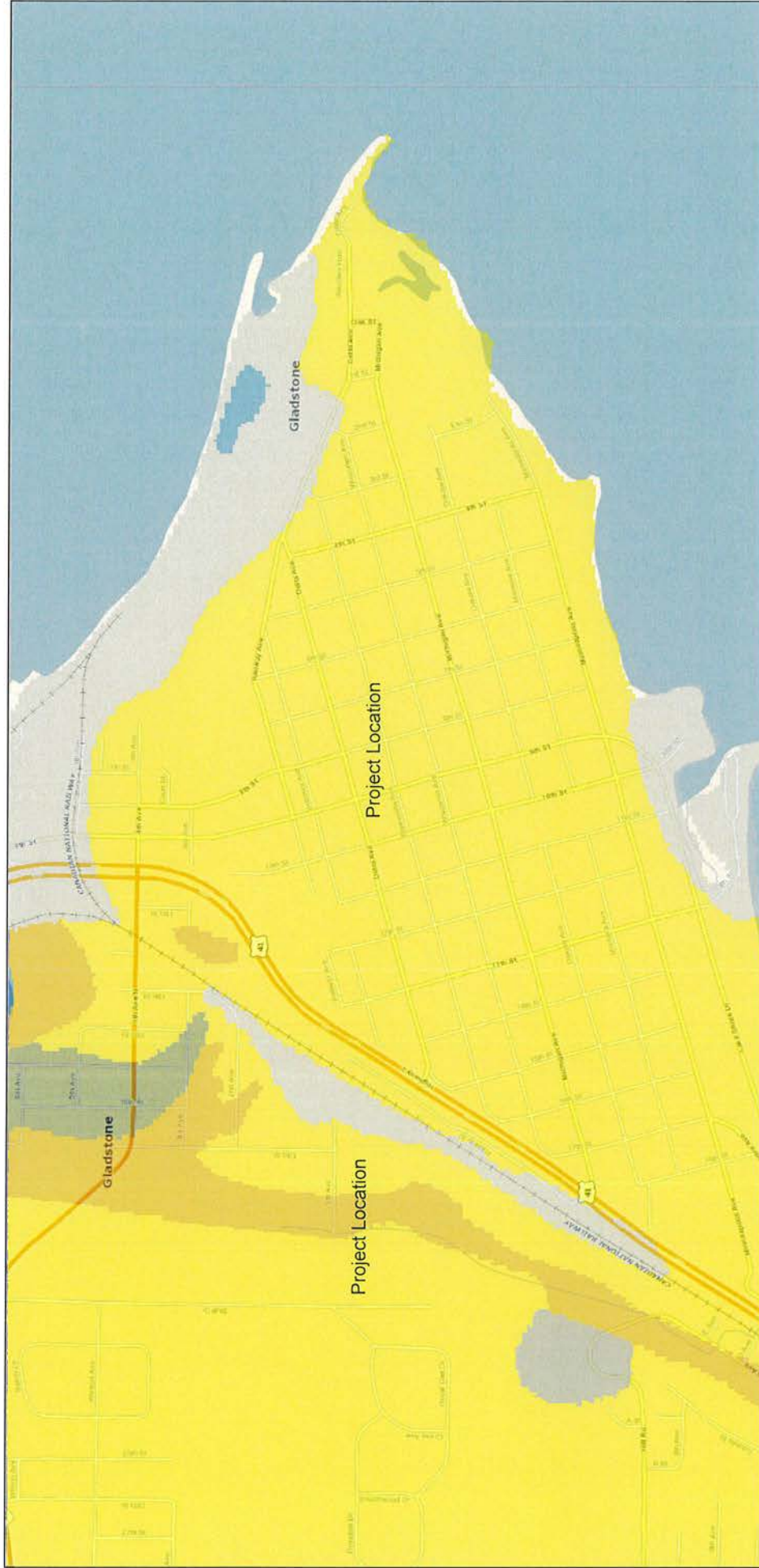
Water

1:10,043

0 0.1 0.2 0.35 0.4 mi

0 0.17 0.35 0.7 km

Figure 12 - Soils



April 21, 2023

Soils SSURGO 10 Meter Grid

- Area Not Mapped
- Pits, Quarries, Mines
- Landfill, Made Land, Disturbed, Other
- Urban Land

- Water
- Rock Outcrop
- Other
- Sand
- Loamy Sand
- Sandy Loam
- Loam
- Silt Loam
- Sandy Clay Loam
- Clay Loam
- Silty Clay Loam
- Silt Clay
- Clay
- Muck, Peat, Marl

1:10,043

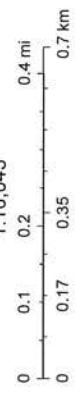




Figure 13 - Agricultural Resources

CDL2022 Area of Interest



Land Cover Categories  
(by decreasing acreage)

AGRICULTURE

Grass/Pasture

Alfalfa

Rye

Oats

Clover/Wildflowers

Other Hay/Non Alfalfa

NON-AGRICULTURE\*

Developed/Medium Intensity

Developed/Low Intensity

Woody Wetlands

Developed/Open Space

Developed/High Intensity

Deciduous Forest

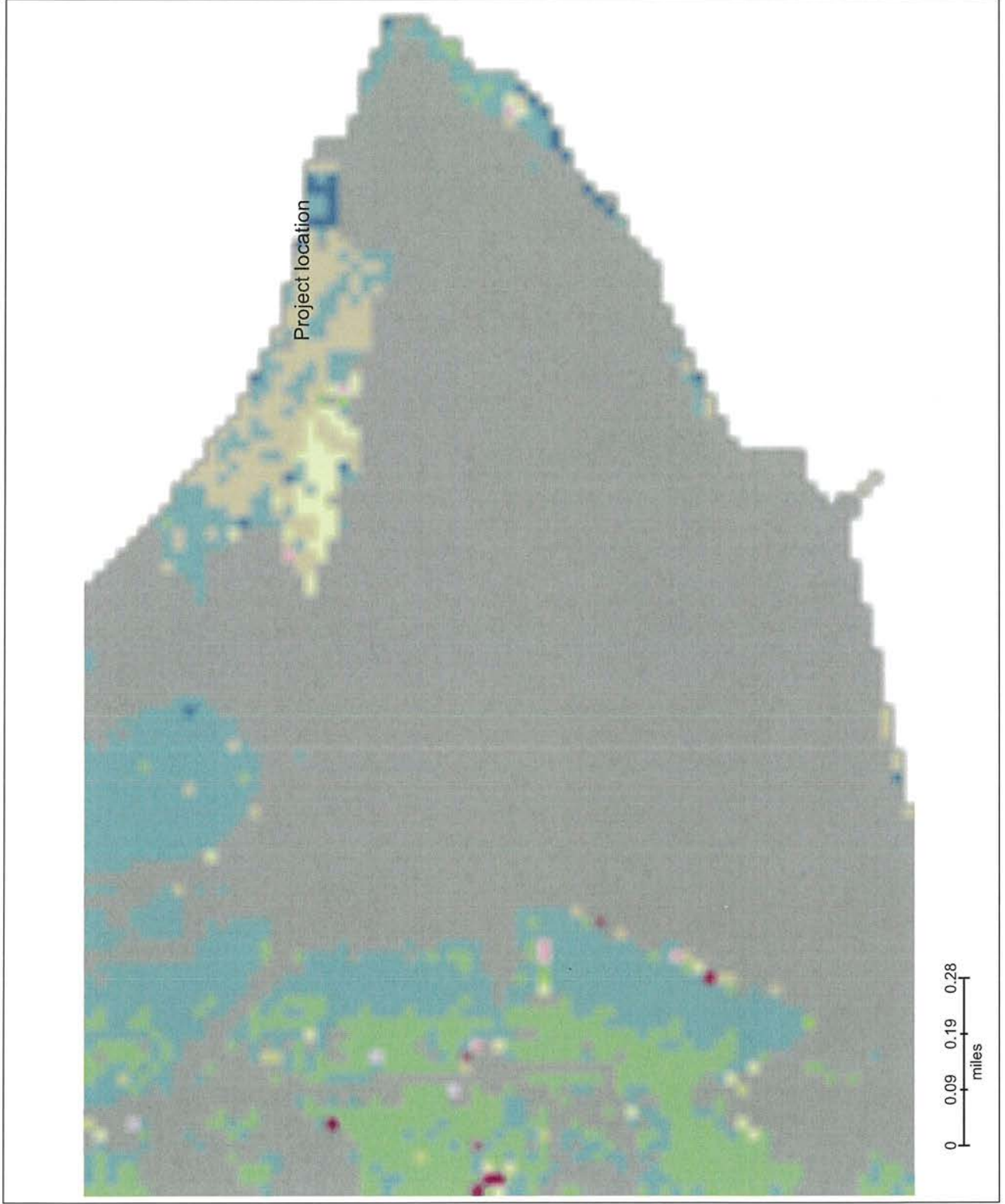
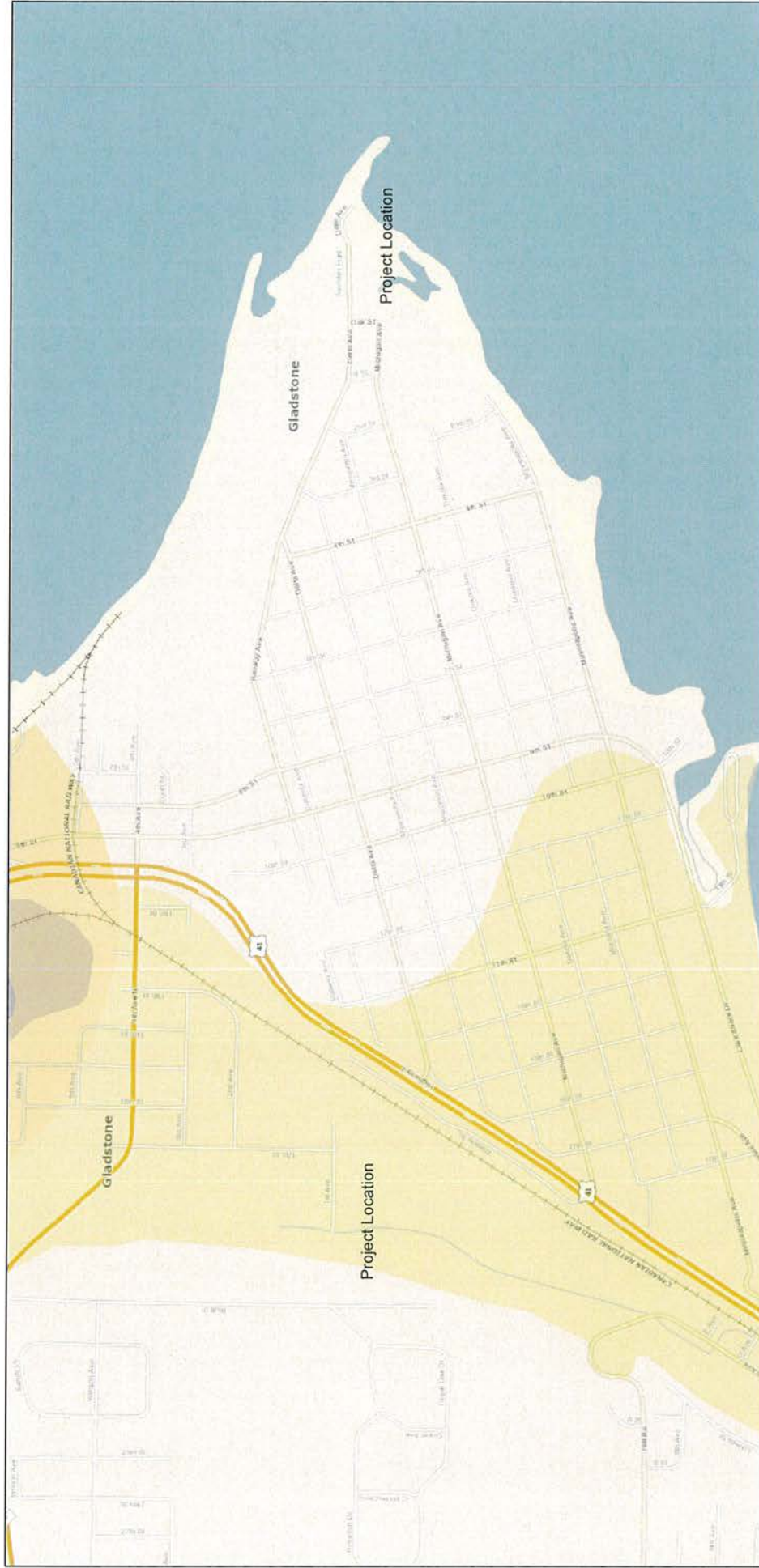


Figure 14 - Fauna and Flora



April 21, 2023

MI DNR Landcover Circa 1800

- ASPEN-BIRCH FOREST
- BEECH-SUGAR MAPLE FOREST
- BEECH-SUGAR MAPLE-HEMLOCK FOREST
- BLACK ASH SWAMP
- BLACK OAK BARREN
- CEDAR SWAMP

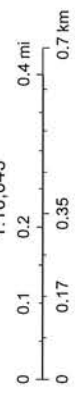
- EXPOSED BEDROCK
- GRASSLAND
- HEMLOCK-WHITE PINE FOREST
- HEMLOCK-YELLOW BIRCH FOREST
- JACK PINE-RED PINE FOREST
- LAKERIVER
- MIXED CONIFER SWAMP

- MIXED HARDWOOD SWAMP
- MIXED OAK FOREST
- MIXED OAK SAVANNA
- MIXED PINE-OAK FOREST
- MUSKIEGBOG
- OAK-HICKORY FOREST
- OAK/PINE BARRENS

- PINE BARRENS
- SAND DUNE
- SHRUB SWAMP/EMERGENT MARSH
- SPRUCE-FIR-CEDAR FOREST
- SUGAR MAPLE-BASSWOOD FOREST
- SUGAR MAPLE-HEMLOCK FOREST
- SUGAR MAPLE-YELLOW BIRCH FOREST

- WET PRAIRIE
- WHITE PINE-MIXED HARDWOOD FOREST
- WHITE PINE-RED PINE FOREST
- WHITE PINE-WHITE OAK FOREST
- Undetermined

1:10,043



## D. Existing System

### Water System

The City of Gladstone owns and operates a public water system which provides potable water to residents within the City limits. There are two metered customers outside of the City limits supplied with water. The system draws raw water from Little Bay de Noc on Lake Michigan through a 24-inch intake pipe and built in crib arrangement. Surface water is treated in a 1.5 MGD conventional surface water treatment plant that utilizes coagulation, flocculation, sedimentation, filtration, disinfection and treated water storage.

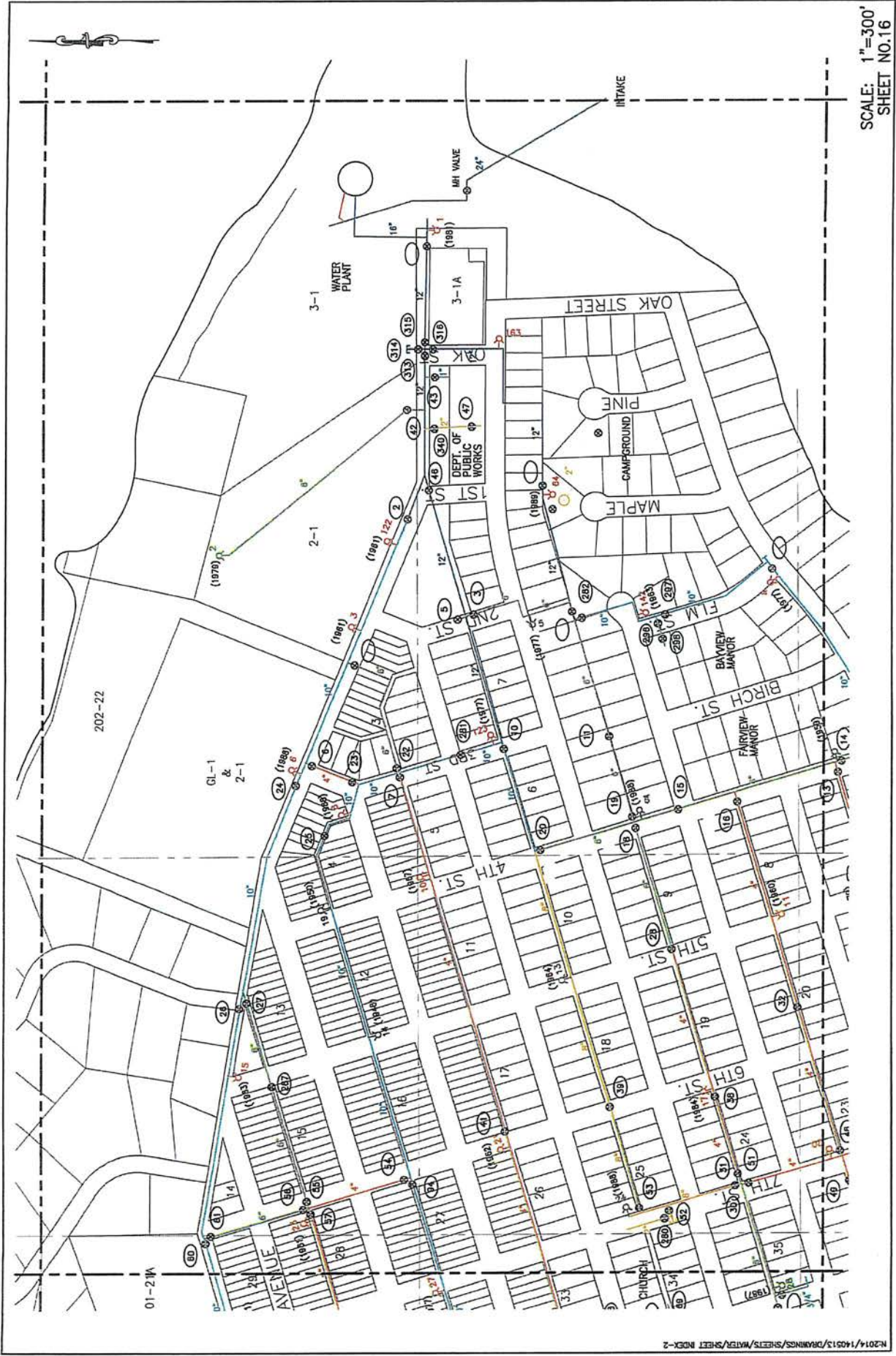
The existing distribution system consists of approximately 215,000-feet of 4-inch to 12-inch water main, a 500,000-gallon finished water storage tank, a 1,000,000-gallon elevated reservoir, a 250,000-gallon elevated storage tank and a booster station near the industrial park. Refer to Figures 15, 16 and 17 for project area components maps.

The Gladstone service area operates in two separate pressure districts. Water produced at the City treatment plant flows from the existing finished water storage tank to the 1,000,000-gallon underground storage tank which services the eastern portion of the City, built below the Gladstone Bluff (Bluff) and generally includes the easterly 50% of the City service area. The Bluff booster pump station draws suction from the ground storage reservoir and pumps to a 250,000-gallon elevated tank. This is the elevated storage for the upper pressure district. The Bluff booster pump station is a 1.5 MGD firm capacity pump station upgraded in 1997. The ground storage structure is approximately 85 years old, and the elevated tank is approximately 40 years old.

### Intake and Crib

The original raw water intake is a 24-inch inner dimension wood stave pipe and was constructed in 1887. In 1924, a section of the shore portion was replaced with 24-inch steel pipe. The shore portion of the pipe is 14-inch in diameter, connecting the shore well to the 24-inch steel pipe. The condition of the stave pipe and crib structure are summarized in an inspection report from Underwater Construction Corporation dated July 22, 2019. The intake crib is still in service but in poor condition, with screens no longer in place. The crib is a 5-foot square and sits approximately 3 feet, 9 inches above the surrounding lake bottom at a depth of 45 feet. There are four (4) anchor cables on each corner, connected 18 inches below the top, running into the lake bottom. The side consists of horizontal 2-inch by 6-inch planks with 2 inches of spacing between them. The planks are thin and weak and could be moved easily. The top of the crib is made up of 2-inch by 10-inch planks with a 24-inch diameter hole cut out for the intake pipe. All planks are present and gaps up to 3/4-inch have developed. The intake pipe is open to the lake and has no protective screens or grating. There is 100% coverage of zebra mussels inside the pipe, reducing the inside diameter. The water intake and crib structure are to be replaced with a USDA-RD funded project scheduled for 2026-2028.

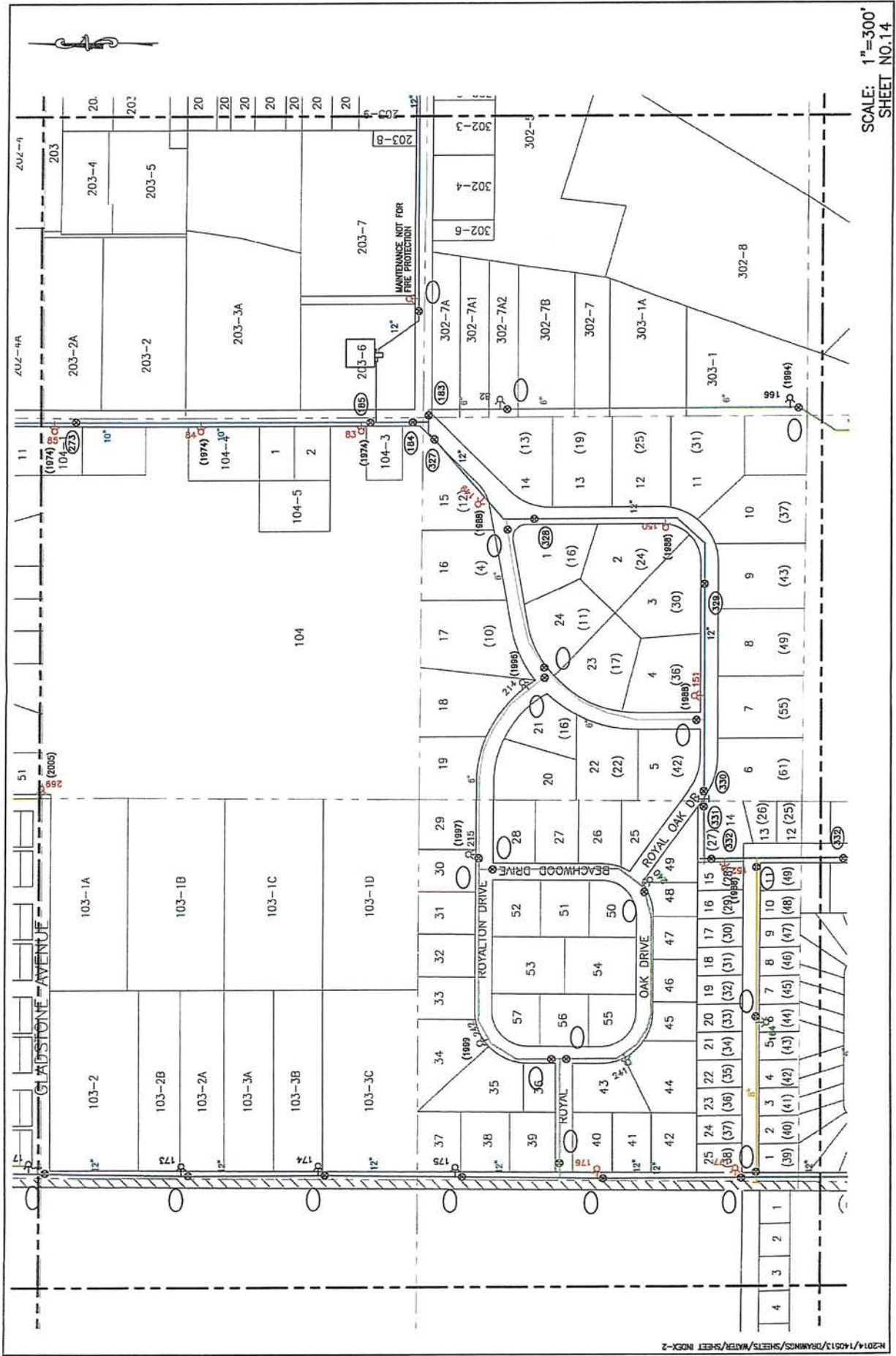
Figure 15 - Project Area Component Map



SCALE: 1"=300'  
SHEET NO.16



Figure 17 - Project Area Component Map



SCALE: 1"=300'  
SHEET NO.14

The intake is connected to a rectangular concrete shore well, which is 55 feet long by 15 feet wide and has a side water depth between 6 and 10 feet. The shore well is constructed to accept baffling and the concrete is in fair condition.

Surface water is treated in a 1.5 MGD conventional surface water treatment plant that utilizes coagulation, flocculation, sedimentation, filtration, disinfection and treated water storage. Treated water is pumped to the distribution system through a single 12-inch ductile iron water main.

Pipe materials for the distribution lines consist of cast iron, ductile iron and HDPE. Sizing is as follows.

|          | <u>Ductile/Cast Iron</u> | <u>HDPE</u> |
|----------|--------------------------|-------------|
| 12-inch: | 29,324 feet              | 880 feet    |
| 10-inch: | 55,903 feet              | 395 feet    |
| 8-inch:  | 30,099 feet              |             |
| 6-inch:  | 80,536 feet              | 245 feet    |
| 4-inch:  | 17,664 feet              |             |

The condition of the distribution system piping has been summarized in the City of Gladstone Asset Management Plan. The City has summarized the condition, based on the installation year of the main and valve. Groups 1, 2, 3 and 4 (1880–1959) show moderate deterioration; groups 5, 6 and 7 (1960–1989) show minor deterioration; and groups 8, 9 and 10 (1990–present) are considered in excellent condition. Refer to Figure 18 for asset inventory.

Figure 18 - Asset Inventory

Table 1

Asset Inventory  
 Directions  
 A. List assets  
 B. Enter asset information  
 C. Insert location and add rows then copy first asset row to new row to transfer formulas  
 D. Enter information in highlighted cells  
 E. Remaining cells will calculate automatically.

| A   | B        | C               | D         | E         | F                   | G             | H                | I                              | J         | K                      | L                      | M                  |
|---|----------|-----------------|-----------|-----------|---------------------|---------------|------------------|--------------------------------|-----------|------------------------|------------------------|--------------------|
| Source Assets   | Material | Location        | Latitude  | Longitude | Manufacturer        | Original Cost | Replacement Cost | Remaining Useful Life in Years | Condition | Probability of Failure | Consequence of Failure | Criticality Factor |
| Administration and Service Building (1976)  | Concrete | 22 Delta Avenue | 45°50'53" | 87°01'11" | LW Champion         | \$1,265,500   | \$1,265,500      | 22                             | 3         | 3                      | 1                      | 10                 |
| Interior Drip (Raw Water, Softened Water, Filter Effluent, Wastewater Drain, Filter Effluent, and Finished Water)   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | ARMCO Steel         | \$151,714     | \$151,714        | 22                             | 3         | 3                      | 3                      | 9                  |
| Interior Vahing (Raw Water, Softened Water, Filter Effluent, Wastewater Drain, Filter Effluent, and Finished Water) | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | ARMCO Steel         | \$40,586      | \$40,586         | 22                             | 3         | 3                      | 3                      | 9                  |
| Mechanical Support Systems, HP Air, Sump Pumps Systems  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | General Electric    | \$4,832       | \$4,832          | 22                             | 4         | 2.5                    | 2                      | 6                  |
| Electrical Service and Distribution System, 480 Volt, 3 Ph, Switchgear, MCCs, Transfer Switch)                      | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | General Electric    | \$91,000      | \$91,000         | 2                              | 4         | 2.5                    | 4                      | 10                 |
| Low Voltage Electrical Distribution   | Wood     | 22 Delta Avenue | 45°50'53" | 87°01'11" | TGR & Lippens, 2016 | \$725,117     | \$725,117        | 2                              | 4         | 4                      | 4                      | 8                  |
| Lighting (new LED upgrade December 2018)  | Wood     | 22 Delta Avenue | 45°50'53" | 87°01'11" | ALB Chalmers        | \$93,373      | \$93,373         | 52                             | 3         | 2.5                    | 4.5                    | 11                 |
| Raw Water Intake Pipe and Crb (1970)  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Wabco               | \$914,700     | \$914,700        | 52                             | 3         | 2.5                    | 4                      | 11                 |
| Raw Water Intake Pipe and Crb (1970)  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Wabco               | \$914,700     | \$914,700        | 52                             | 3         | 2.5                    | 4                      | 11                 |
| Infiltration Control Panel, Backflow Control  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Wabco               | \$115,543     | \$115,543        | 27                             | 2         | 1                      | 4                      | 4                  |
| Infiltration Control Panel, Backflow Control  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Wabco               | \$115,543     | \$115,543        | 27                             | 2         | 1                      | 4                      | 4                  |
| Laboratory Equipment  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Whetzel, Leopold    | \$106,839     | \$106,839        | 2                              | 3         | 3                      | 5                      | 15                 |
| Filter Equipment (Troughs, Underdrain, Surface Wash, Equipment, Sand Media)   | GAC      | 22 Delta Avenue | 45°50'53" | 87°01'11" | Calpan              | \$41,128      | \$41,128         | 1                              | 3         | 3                      | 3                      | 9                  |
| GAC Filter Media (New Nov 17)   | GAC      | 22 Delta Avenue | 45°50'53" | 87°01'11" | ALB Chalmers        | \$4,195       | \$4,195          | 20                             | 3         | 3                      | 3                      | 9                  |
| Filter Surface Wash Pump  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | ALB Chalmers        | \$31,955      | \$31,955         | 3                              | 3         | 3                      | 3                      | 9                  |
| Filter Effluent Pump  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | ALB Chalmers        | \$50,000      | \$50,000         | 2                              | 3         | 3                      | 4                      | 12                 |
| Filter Effluent Pump VFD  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Yaskawa             | \$51,192      | \$51,192         | 2                              | 3         | 3                      | 4                      | 12                 |
| Infiltration Control Panel, Backflow Control  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Yaskawa             | \$18,700      | \$18,700         | 27                             | 1         | 2                      | 2                      | 4                  |
| Infiltration Control Panel, Backflow Control  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Fisher Pentir       | \$6,030       | \$6,030          | 2                              | 3         | 2.5                    | 2                      | 5                  |
| Finished Water Reservoir, Charwell (500,000 Gallon Storage, 1 tank)   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | ALB Chalmers        | \$148,300     | \$148,300        | 2                              | 3         | 2                      | 2                      | 4                  |
| Finished Water Reservoir, Charwell (500,000 Gallon Storage, 1 tank)   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Universal Tank      | \$53,246      | \$53,246         | 27                             | 3         | 2.5                    | 4.5                    | 11                 |
| Alum Sludge Lagoons   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" |                     | \$338,200     | \$338,200        | 27                             | 2         | 1                      | 1                      | 1                  |
| Enter asset   |          |                 |           |           |                     |               |                  | D                              |           |                        |                        | D                  |

If Criticality Factor is greater than 16 cell will turn RED

| A   | B        | C               | D         | E         | F              | G             | H                | I                              | J         | K                      | L                      | M                  |
|---|----------|-----------------|-----------|-----------|----------------|---------------|------------------|--------------------------------|-----------|------------------------|------------------------|--------------------|
| Treatment Assets                                      | Material | Location        | Latitude  | Longitude | Manufacturer   | Original Cost | Replacement Cost | Remaining Useful Life in Years | Condition | Probability of Failure | Consequence of Failure | Criticality Factor |
| Chlorine Gas Feed System, Fire and Leak Mitigation    | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | CFE Superior   | \$59,518      | \$59,518         | 15                             | 1         | 2                      | 5                      | 10                 |
| Chlorine Leak Detector with Sensors                   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Walco & Terman | \$7,661       | \$7,661          | 2                              | 2         | 2                      | 1                      | 2                  |
| Carbon Control, Ozonobromine Chemical Feed Equipment  | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Blaw/Knight    | \$1,000       | \$1,000          | 53                             | 1         | 2                      | 5                      | 10                 |
| Carbon Slurry Feed System (Not in use)                | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Blaw/Knight    | \$6,483       | \$6,483          | 12                             | 2         | 2.5                    | 2                      | 6                  |
| Polymer Feed System                                   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Graco Pump     | \$13,000      | \$13,000         | 12                             | 2         | 2.5                    | 2                      | 6                  |
| Hotline Feed System                                   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Blaw/Knight    | \$18,700      | \$18,700         | 30                             | 1         | 2                      | 2                      | 4                  |
| Hotline Feed System                                   | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Blaw/Knight    | \$6,000       | \$6,000          | 23                             | 2         | 2                      | 2                      | 4                  |
| Facilities Heating, Ventilating, and Air Conditioning | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Blaw/Knight    | \$237,800     | \$237,800        | 22                             | 3         | 3                      | 3                      | 9                  |
| Facilities Heating, Ventilating, and Air Conditioning | Steel    | 22 Delta Avenue | 45°50'53" | 87°01'11" | Well McClan    | \$11,725      | \$11,725         | 2                              | 3         | 3                      | 3                      | 9                  |
| Enter asset   |          |                 |           |           |                | \$22,110      | \$22,110         | 2                              | 3         | 3                      | 3                      | 9                  |
|   |          |                 |           |           |                | \$57,200      | \$57,200         | 2                              | 3         | 3                      | 3                      | 9                  |
|   |          |                 |           |           |                |               |                  | D                              |           |                        |                        | D                  |

If Criticality Factor is greater than 16 cell will turn RED

| A  | B        | C                 | D        | E         | F            | G             | H                | I                              | J         | K                      | L                      | M                  |
|--|----------|-------------------|----------|-----------|--------------|---------------|------------------|--------------------------------|-----------|------------------------|------------------------|--------------------|
| Storage/Distribution Assets                                    | Material | Location          | Latitude | Longitude | Manufacturer | Original Cost | Replacement Cost | Remaining Useful Life in Years | Condition | Probability of Failure | Consequence of Failure | Criticality Factor |
| Bluff Booster Pump Station (Building, Storage Tank, Pump Well) | Steel    | North Bluff Dr    |          |           |              | \$536,103     | \$1,300,000      | 12                             | 2         | 2                      | 2                      | 4                  |
| Booster Pumps No. 1, 2, and 3                                  | Steel    | North Bluff Dr    |          |           |              | \$536,103     | \$1,300,000      | 12                             | 2         | 2                      | 2                      | 4                  |
| Watermain and Valves, Group 1 (1800-1900) approx. 15,000'      | Steel    | City of Gladstone |          |           |              | \$2,355,300   | \$2,355,300      | 2                              | 3         | 3.5                    | 4                      | 12                 |
| Watermain and Valves, Group 2 (1900-1920) approx. 7,800'       | Steel    | City of Gladstone |          |           |              | \$1,165,000   | \$1,165,000      | 2                              | 3         | 3                      | 3                      | 10                 |
| Watermain and Valves, Group 3 (1920-1940) approx. 5,200'       | Steel    | City of Gladstone |          |           |              | \$470,000     | \$470,000        | 32                             | 3         | 3                      | 3                      | 10                 |
| Watermain and Valves, Group 4 (1940-1960) approx. 5,200'       | Steel    | City of Gladstone |          |           |              | \$470,000     | \$470,000        | 32                             | 3         | 3                      | 3                      | 10                 |
| Watermain and Valves, Group 5 (1960-1970) approx. 17,000'      | Steel    | City of Gladstone |          |           |              | \$5,307,300   | \$5,307,300      | 42                             | 2         | 2.5                    | 3                      | 7                  |
| Watermain and Valves, Group 6 (1970-1980) approx. 21,400'      | Steel    | City of Gladstone |          |           |              | \$1,731,031   | \$4,478,300      | 52                             | 2         | 2.5                    | 3                      | 6                  |
| Watermain and Valves, Group 7 (1980-1990) approx. 38,000'      | Steel    | City of Gladstone |          |           |              | \$4,266,553   | \$9,074,900      | 62                             | 2         | 2                      | 2                      | 6                  |
| Watermain and Valves, Group 8 (2000-2010) approx. 13,500'      | Steel    | City of Gladstone |          |           |              | \$3,543,800   | \$3,543,800      | 62                             | 1         | 2                      | 2                      | 4                  |
| Watermain and Valves, Group 9 (2010-2015) approx. 13,500'      | Steel    | City of Gladstone |          |           |              | \$3,543,800   | \$3,543,800      | 62                             | 1         | 2                      | 2                      | 4                  |
| Watermain and Valves, Group 10 (2010 or newer) approx. 8,700'  | Steel    | City of Gladstone |          |           |              | \$595,200     | \$595,200        | 52                             | 3         | 1                      | 1                      | 3                  |
| Service and Curb Stop, Group 1 (1800-1900) > 41                | Steel    | City of Gladstone |          |           |              | \$249,800     | \$249,800        | 2                              | 4         | 3.5                    | 3.0                    | 11                 |
| Service and Curb Stop, Group 2 (1900-1920) > 95                | Steel    | City of Gladstone |          |           |              | \$138,800     | \$138,800        | 2                              | 4         | 3.5                    | 3.0                    | 11                 |
| Service and Curb Stop, Group 3 (1920-1940) > 38                | Steel    | City of Gladstone |          |           |              | \$65,200      | \$65,200         | 32                             | 4         | 3.5                    | 3.0                    | 11                 |
| Service and Curb Stop, Group 4 (1940-1960) > 38                | Steel    | City of Gladstone |          |           |              | \$65,200      | \$65,200         | 32                             | 4         | 3.5                    | 3.0                    | 11                 |
| Service and Curb Stop, Group 5 (1960-1970) > 32                | Steel    | City of Gladstone |          |           |              | \$65,200      | \$65,200         | 42                             | 3         | 3                      | 3                      | 9                  |
| Service and Curb Stop, Group 6 (1970-1980) > 130               | Steel    | City of Gladstone |          |           |              | \$97,500      | \$97,500         | 52                             | 3         | 2.5                    | 2.8                    | 7                  |
| Service and Curb Stop, Group 7 (1980-1990) > 130               | Steel    | City of Gladstone |          |           |              | \$441,876     | \$937,800        | 62                             | 2         | 2.5                    | 2.3                    | 6                  |
| Service and Curb Stop, Group 8 (2000-2010) > 130               | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 9 (2010 or newer) > 130           | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 10 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 11 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 12 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 13 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 14 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 15 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 16 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 17 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 18 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 19 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 20 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 21 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 22 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 23 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 24 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 25 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 26 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 27 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 28 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 29 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 30 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 31 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 32 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 33 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 34 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 35 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 36 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 37 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,200     | \$176,200        | 62                             | 2         | 2                      | 2                      | 4                  |
| Service and Curb Stop, Group 38 (2010 or newer) > 130          | Steel    | City of Gladstone |          |           |              | \$176,2       |                  |                                |           |                        |                        |                    |

**E. Need for the Project**

Compliance Status

The City of Gladstone has identified approximately 330 lead service lines that need replacing in order to comply with the Michigan Lead and Copper Rule.

Orders

There are currently no court orders, Federal or State enforcement orders, or administrative consent orders against the City of Gladstone's water treatment plant or distribution systems.

Water Quality Problems

The ultimate goal of the proposed project is to maintain a sustainable distribution system while protecting the health and safety of the public and natural environment

## SECTION 3: ANALYSIS OF ALTERNATIVES

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### A. Identification of Potential Alternatives

#### No Action

The No Action alternative would save the City a large amount of capital investment. However, this option would result in adverse impacts to the City and its water and customers. Those negative impacts include the following:

- Non-Compliance with the Michigan Lead and Copper Rule
- Decreased reliability in aging infrastructure, resulting in possible water disruptions to customers.

It is due to these reasons that the City of Gladstone has deemed the No Action alternative not feasible, because it will not address long-term sustainability to the water distribution systems and would place the City in non-compliance with the Michigan Lead and Copper Rule.

#### Regionalization

Regional alternatives have been considered in the past and would consist of a connection to the City of Escanaba, located 3.5 miles to the southwest, or to Rapid River, located 5 miles to the northeast. Connection to the City of Escanaba has been eliminated as a regionalization alternative due to the lack of treatment capacity at the existing City of Escanaba water treatment plant and the long transmission distance between the two cities. Rapid River does not operate a municipal water system.

The regionalization alternative was not considered further because it would not address the replacement of lead service lines and would place the City in non-compliance with the Michigan Lead and Copper Rule.

#### Replacement

Complete replacement of the identified 330 lead service lines would put the City of Gladstone in compliance with the Michigan Lead and Copper Rule.

### B. Analysis of Principal Alternatives

The three principal alternatives that were considered include:

1. No Action: This alternative would do nothing to put the City in compliance with the Michigan Lead and Copper Rule.

2. System Regionalization: This alternative involves regionalizing a water distribution system but would do nothing to address the replacement of lead service lines which is required to be in compliance with the Michigan Lead and Copper Rule.
3. System Replacement: This alternative involves replacement of 330 lead service lines.

Alternative 1: No Action

This alternative would put the City in Non-Compliance with the Michigan Lead and Copper Rule.

It was for this reason that the no action alternative was deemed not feasible.

Alternative 2: System Regionalization

This alternative involves regionalizing a water distribution system and does not address the need to replace lead service lines to maintain compliance with the Michigan Lead and Copper Rule. It was for this reason that the system regionalization was not chosen.

Alternative 3: System Replacement

This alternative would replace 330 lead water service lines in the project area, improving water quality.

This alternative achieves all the goals of the project and does it in the most cost-effective way. Lead Service Line replacement will put the City in compliance with the Michigan Lead and Copper Rule. Refer to User Costs in the Selected Alternative section for user rate increases.

See Appendix A for a cost estimate of this alternative.

This is why the system replacement alternative was chosen as the preferred option.

**C. Monetary Evaluation**

**Table 2: Present Worth Analysis**

| <b>Description</b>             | <b>Alternative 3</b> |
|--------------------------------|----------------------|
| Capital Costs                  | \$4,041,780          |
| Annual O & M                   | \$1,304,552          |
| Future Salvage Value           | \$0                  |
| Present Worth of O & M         | \$20,336,873         |
| Present Worth of Salvage Value | \$0                  |
| <b>Total Present Worth</b>     | <b>\$24,378,653</b>  |

Note: Federal discount rate of 2.5% for water resources projects was used.

Sunk Costs

Financial commitments made before and during the project planning have not been included in the project cost or cost-effectiveness analysis. The existing facilities and land have been under City control for many years and existing bond indebtedness, if any, has not been included in the cost-effectiveness analysis for the various alternatives. Also, the Project Plan preparation costs have not been included in the cost-effectiveness analyses.

#### Present Worth

Present worth is the sum that if invested now, at a given interest rate, would provide exactly the funds required to pay all present and future costs. A present worth analysis was used in the monetary evaluation of the alternatives. A planning period of 20 years and a real discount rate of 2.5% was used for this analysis.

#### Salvage Value

Salvage value is assumed to be \$0. Once a piece of pipe is put in the ground it no longer has a monetary value.

#### Escalation

Cost estimates for each alternative were done in 2026 dollars and no cost escalator was used.

#### Interest During Construction

Interest during construction was not applied in the present worth analysis.

#### Mitigation Costs

No significant structural or nonstructural mitigative measures are expected to be needed for long-term implementation of the project. Temporary construction control measures, such as limiting working hours and installation of soil erosion and sedimentation control measures, are planned to minimize short-term environmental impacts of the construction activities. Short-term mitigation measures have been accounted for in the cost estimates.

#### User Costs

Refer to user costs in the selected alternative section for details on how the proposed project will affect the City's utility rates.

#### Delivery Method

The proposed project is intended to be delivered using the design-bid-build delivery method.

**D. Environmental Evaluation**

Table 3 summarizes the potential environmental impacts due to each alternative.

**Table 3: Environmental Evaluation**

| <b>Category</b>                   | <b>Alternative 1<br/>No Action</b> | <b>Alternative 2<br/>System<br/>Regionalization</b> | <b>Alternative 3<br/>System<br/>Replacement</b> |
|-----------------------------------|------------------------------------|---|---|
| Historical/Archaeological         | 1                                  | 1   | 1   |
| Air Quality                       | 1                                  | 1   | 1   |
| Wetlands                          | 1                                  | 1   | 1   |
| Coastal Zones                     | 1                                  | 1   | 1   |
| Floodplains                       | 1                                  | 1   | 1   |
| Natural or Wild and Scenic Rivers | 1                                  | 1   | 1   |
| Surface Waters                    | 1                                  | 1   | 1   |
| Recreational Facilities           | 1                                  | 1   | 1   |
| Topography                        | 1                                  | 1   | 1   |
| Geology                           | 1                                  | 1   | 1   |
| Soils                             | 1                                  | 1   | 1   |
| Agricultural Resources            | 1                                  | 1   | 1   |
| Sensitive Habitats                | 1                                  | 1   | 1   |
| Threatened/Endangered Species     | 1                                  | 1   | 1   |
| Unique Features                   | 1                                  | 1   | 1   |
| <b>Total</b>                      | <b>15</b>                          | <b>15</b>   | <b>15</b>                                       |

1 = No Impact, 2 = Some Impact, 3 = Most Impact

None of the considered alternatives are expected to result in long-term impact to historical, archaeological, geological, cultural or recreational resources in the study area. Both action alternatives would have temporary construction related direct adverse impacts to air quality, noise, traffic and material consumption. The action alternatives would have a temporary positive impact on economics through construction related employment and materials purchased. They would also have positive long-term impacts on the area water quality due to a reliable water distribution system.

## SECTION 4: SELECTED ALTERNATIVE

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### A. Relevant Design Parameters

The selected alternative is Alternative 3: System Replacement. This alternative will replace 330 lead water service lines in the project area. All work is expected to take place within existing public right-of-way with the exception of the private side lead water service line replacements. Existing piping will be replaced with adequately sized pipe in accordance with current engineering standards. Construction will consist of open trench excavation for replacement of lead water service lines and restoration of surface features. Directional drilling may be utilized when it is found to be cost effective.

### B. Design Criteria

#### Water System

Design criteria will be in accordance with “Recommended Standards for Water Works – 2012” (Ten States Standards); Michigan’s requirements under the Clean Water Act, Act 399 P.A. 1976; and EGLE’s requirements of 100 gallons per inch diameter per mile per day allowable leakage. The following general criteria should also be observed for water distribution systems:

- a minimum pipe size diameter of 6 inches is required on all municipal water lines (water lines which provide fire protection);
- operating pressures: 35 psi minimum, 150 psi maximum, 20 psi minimum residual during fire flow;
- fire flow: residential 750 GPM, commercial/industrial 2,000 GPM, duration 2 hours;
- water mains shall be subjected to pressure and leakage testing in accordance with AWWA C600; and
- minimum storage: average daily demand.

### C. Useful Life

The project will install copper pipe for the water services. These materials all have a useful life of 100 years, which is much longer than the DWSRF loan terms.

### D. Schedule for Design and Construction

The following table shows the proposed schedule.

**Table 4: Proposed Schedule**

| <b>Task</b>                        | <b>Date</b>    |
|------------------------------------|----------------|
| Notice of Intent to Apply          | October 2025   |
| Overburdened Status Survey Form    | March 2026     |
| Draft Project Plan Submittal       | May 2026       |
| Advertise for Public Hearing       | April 2026     |
| Hold Public Hearing                | May 2026       |
| Submit Final Project Plan          | June 2026      |
| Project Priority List Announcement | September 2026 |
| Milestone Schedule                 | October 2026   |
| EA and FONSI                       | April 2027     |
| Draft Plans and Specs to EGLE      | February 2027  |
| Part I Application                 | May 2027       |
| Part II Application                | May 2027       |
| Advertise for Bids                 | May 2027       |
| Bid Opening                        | June 2027      |
| Part III Application               | July 2027      |
| Loan Closing                       | August 2027    |
| Construction Award                 | September 2027 |
| Construction Completion            | November 2029  |

**E. Cost Summary**

**Table 5: Total Project Costs Funded Through DWSRF**

|                           |             |
|---------------------------|-------------|
| Total Water Related Costs | \$4,041,780 |
|---------------------------|-------------|

Refer to Appendix A for a detailed project cost estimate.

**F. Authority to Implement the Selected Alternative**

The City of Gladstone has successfully implemented numerous public works projects and has proven it has the legal, institutional, financial and managerial resources to accomplish completion of the proposed alternative.

**G. User Costs**

The City plans to use water user charges to repay the debt for the proposed project. A summary of the water user costs before and after the project is presented in Table 6 and Table 7. These costs are based on the average usage of a residential customer. Average residential usage from City billing records was determined to be 2,774 gallons per month for water. The City has approximately 2,230 residential and commercial water users.

**Table 6: Current Utility Rates**

| Description                    | Water   |
|--------------------------------|---------|
| Fixed Charge 5/8" meter        | \$18.25 |
| Commodity Charge per 1000 gal. | \$6.30  |
| Total Monthly Charge           | \$35.73 |

The City is requesting a 30-year or 40-year loan from EGLE. For the purpose of this report, assumed loan terms of 2.0% interest for 30 years was used in the user cost analysis.

The following table shows the estimated rate increases required to cover the loan payments.

**Table 7: Utility Rates After Project**

| Description                           | Water       |
|---------------------------------------|-------------|
| Project Cost Funded through SRF       | \$4,041,780 |
| Annual Payment: 2.0% for 30 Years     | \$180,465   |
| Monthly Increase per Residential User | \$5.87      |
| Total Monthly Charge Before Project   | \$35.73     |
| Total Monthly Charge After Project    | \$41.60     |

#### **H. Overburdened Community Status**

The Overburdened Status and Significantly Overburdened Community Status Determination worksheets were submitted to EGLE in March of 2026. At the time of report writing, it is assumed that the City is considered overburdened. Refer to Appendix G.

## SECTION 5: EVALUATION OF ENVIRONMENTAL IMPACTS

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### A. Analysis of the Impacts

#### Direct Impacts

1. Construction Impacts: Negative impacts to archaeological, historical or cultural resources are not anticipated. All program requirements related to the State Historic Preservation Office (SHPO) will be met as the project development process is completed at a later date. Based on the conceptualized project scope of work, there are no anticipated impacts to cultural or historic properties resulting from this project. Surface water and groundwater will not be negatively impacted by the project. Mitigation measures to control stormwater runoff during construction will be required by the contract documents. There will be short-term impacts to air quality due to fugitive dust from construction activities. This will be mitigated through watering. The project is not expected to have any adverse impacts to floodplains, wetlands, stream crossings, shorelands, prime or unique agricultural lands or threatened and endangered species. All work will be limited to previously developed areas.
2. Operational Impacts: Improvements to the water system will put the City in compliance with the Michigan Lead and Copper Rule and improve water quality.
3. Social Impacts: There will be an increase to water user costs as a result of the project. The City will need to increase rates to pay for the water loan. Refer to the User Cost section on page 34 for rate increase. The project will create short-term economic benefits due to the needed construction workers and materials. The project will also cause short-term traffic delays during construction. Relocation of residents or businesses will not be required. Long-term social impacts will be positive, as this project will increase efficiency and reliability in the project area.

#### Indirect Impacts

1. Land Development: The areas of improvement are in areas of existing water service and will not change the rate, density, or type of land development. No changes will be made to any transportation routes.
2. Land Use: The project will not make changes to land use.
3. Air and Water Quality: The project will not negatively impact air and water quality.
4. Secondary Growth: The project is not expected to spur secondary growth.
5. Cultural, Human, Social and Economic: Impacts to cultural, human, social and economic resources will be positive, as a sustainable water distribution system will promote public health and safety.
6. Aesthetics: The project will not negatively impact area aesthetics. Minor destruction during construction will be offset by restoration.
7. Resource Consumption: The project will not increase resource consumption in any way. Construction activities will produce extra solid waste, but the extra waste will not be reoccurring over the useful life of the infrastructure.

### Cumulative Impacts

The proposed project is not expected to create any adverse impacts to the environment that increase over time or that result from individually minor but collectively significant actions taking place over time.

## SECTION 6: MITIGATION

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Where adverse impacts due to construction of the proposed project cannot be avoided, mitigation measures will be implemented. Costs for mitigation measures were considered and included, where applicable, in the engineer's opinion of cost. Mitigation measures needed during construction will be included in the construction contract documents.

### A. Short-Term Construction Related Mitigation

#### General Construction

Anticipated construction problems include high groundwater and areas of inferior pipe bedding and backfill soil material. These are normal occurrences with construction in the area. Planning and design will mitigate these issues and should not be a problem for qualified contractors.

#### Traffic

Short-term street closures and traffic rerouting is expected during construction. Any traffic disruptions that occur due to construction related activities will be organized and controlled to minimize disruption to local, transient, and emergency traffic. All needed barriers and signing or flagging will be in accordance with City, County and Michigan Department of Transportation (MDOT) standards.

#### Safety

All work shall comply with Federal, State and local laws governing activities, safeguards, devices and protective equipment. Minimum requirements are defined by the U.S. Department of Labor and the Michigan Occupational Safety and Health Act.

#### Dust and Noise

Construction dust and noise will be required to be kept to a minimum. No on-site burning will be allowed. Water will be used to control fugitive dust.

#### Erosion

A Soil Erosion and Sedimentation Control Permit will be required for the project. Site specific mitigation measures will be addressed during design and included in the construction contract documents.

#### Restoration

Damaged roadway, curbing, driveway and sidewalk surfaces will be restored to equal or better condition, in accordance with modern construction standards. Undeveloped areas will be restored with topsoil, fertilizer, mulch and seed or sod as needed.

### Utilities

Disruptions of utility services during construction will be kept to the minimum necessary to complete the project. In the event proposed utility upgrades will disrupt service for a long duration, temporary service lines will be required. It is expected there will be minor disruptions when water services going to individual residential houses and businesses are replaced.

### Valuable Features

This project is not expected to significantly impact valuable existing features such as mature vegetation. Areas of proposed construction are already fully developed.

### Construction Spoils

Disposal of construction spoils in wetlands, floodplains, shorelines or other sensitive areas will not be allowed. Any disposal of material will need to be permitted and disposed of at an approved location.

### Permitting

Water permits will be required from EGLE, along with a Soil Erosion and Sedimentation Control Permit from Delta County.

### Endangered/Threatened Species

The project is not anticipated to impact endangered or threatened species.

### Stream Crossings

The proposed work does not involve any stream crossings.

### Wetlands

Impacts to wetlands will be avoided as the installation of new service lines are through residential yards in previously disturbed areas or through the use of directional drilling.

## **B. Mitigation of Long-Term Impacts**

### General Construction

No adverse long-term impacts are expected as a result of the proposed project.

### Siting Decisions

All construction will take place in already developed street right-of-ways. Exact locations of utilities will be determined during project design.

### Operational Impacts

The proposed project will not have an operational impact to the City's water distribution or water treatment systems. The project will be replacing old failing infrastructure.

## C. Mitigation of Indirect Impacts

### Master Plan and Zoning

Long range planning by the City identified the proposed project areas. These areas are all in previously developed areas and would have no effect on planning and zoning in the City. The work will not impact historical features, agricultural land or other natural features.

### Ordinances

Local ordinances are in place regarding minimum building construction, operation standards and site erosion control. Wetlands, floodplains and other sensitive habitats are protected by State laws and permits.

### Staging of Construction

Construction activities will be staged in a way to minimize disruption to local residences and businesses.

## **SECTION 7: PUBLIC PARTICIPATION**

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### **A. Public Hearing on Project Alternatives**

A public hearing was held at X:XX p.m. on XXXXXXXX, at Gladstone City Hall.

Scott Nowack from Coleman Engineering Company presented on the contents of the Project Plan. Refer to Appendix B for an outline of the presentation, comments after the presentation and the related responses, draft meeting minutes and a sign-in sheet of participants.

The public hearing notice was posted on the City's website on May 11, 2023, which meets the 10-day notice requirement. A screen shot of the posting is included in Appendix F.

### **B. Adoption of the Project Plan**

On May 22, 2023, the City of Gladstone passed a resolution to approve the Project Plan. Refer to Appendix C for the signed resolution.

**Update once Public Hearing is determined**



**APPENDIX A: COST ESTIMATES**

City of Gladstone

Drinking Water State Revolving Fund Project

Preliminary Opinion of Cost

LSLR Project

CEC - 10/20/2025

| Items                                 | Units | Unit Cost | Total        |
|---------------------------------------|-------|-----------|--------------|
| Lead Service Line Replacements (LSLR) | 330   | \$ 9,500  | \$ 3,135,000 |

Archeological Monitoring  
 ELAC = Engineering, Legal, Admin, Contingency

|                    |           |                  |
|--------------------|-----------|------------------|
| Construction Total | \$        | 3,135,000        |
| Arch Monitoring    | \$        | 100,000          |
| ELAC               | \$        | 806,780          |
| <b>Grand Total</b> | <b>\$</b> | <b>4,041,780</b> |

**APPENDIX B: PUBLIC PARTICIPATION**

**APPENDIX C: PROJECT PLAN RESOLUTIONS**

**APPENDIX D: PROJECT PLAN SUBMITTAL FORMS**

**APPENDIX E: INTENT TO APPLY FORM**



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Finance Division

**FISCAL YEAR 2027 INTENT TO APPLY FORM**

This form must be submitted by all applicants seeking financing through the State Revolving Fund programs in fiscal year (FY) 2027 (October 1, 2026 – September 30, 2027). This includes the Drinking Water State Revolving Fund (DWSRF), Clean Water State Revolving Fund (CWSRF), and Strategic Water Quality Initiatives Fund (SWQIF). The Intent to Apply form may be submitted at any time but is due on or before November 1, 2025. Applicants must complete a separate form for CWSRF and DWSRF, if applying for both.

**General Information**

Date Submitted: **10/28/2025**

ITA Tracking Number: **1028-1943**

Is this project a carry-over from a plan submitted within the previous five fiscal years?

Yes  No  Unknown

Project Name:

**City of Gladstone - LSLR Project**

Project Need:

**Replacement of remaining lead service lines in the City to be in compliance with the State of Michigan Lead Copper rule.**

FY27 Project Scope:

**Replacement of Lead Service Lines at various locations throughout the City of Gladstone as mandated by the State of Michigan Lead Copper rule.**

Legal Name of Municipality\*: **City of Gladstone**

County\*: **Delta**

Applicant Contact Person Name\*: **Rob Spreitzer**

Title\*: **Superintendent**

Phone Number\*: **(906) 428-3460**

Email\*: **rspreitzer@gladstonemi.gov**

Alternative Email: **ebuckman@gladstonemi.gov**

Consulting Engineer Name: **Scott Nowack, P.E.**

Firm: **Coleman Engineering Company**

Phone Number: (906) 774-3440 Email: glessard@coleman-engineering.com

## Project Information

Project funding source\*:

- Clean Water State Revolving Fund
- Drinking Water State Revolving Fund
- Strategic Water Quality Initiatives Fund

Treatment Facility Name (if applicable): **City of Gladstone**

Will the proposed project result in a new or increased discharge requiring NPDES permit issuance?

- Yes  No  Unknown

Are you planning on constructing a new well?  Yes  No  Unknown

Proposed Construction Start Date: **12/2026**

FY 2027 Estimated Total Project Cost: **\$ 4,041,780**

(FY 2027 loan amount including any LSLR and/or Emerging Contaminant costs if applicable)

Will the project planning document include future work beyond the FY 2027 loan:  
(This would include projects to be financed by future SRF loan(s) in FY 2028-2031.)

- Yes  No  Unknown

FY 2027 Lead Service Line Replacement Cost: **\$ 4,041,780**

Estimated Number of Lead Service Lines replaced by FY 2027 project: **330**

FY 2027 Emerging Contaminant Cost: **\$ 0**

Identify additional funding sources being used on the project (check all that apply):

- MDOT
- USDA
- MEDC
- Other:

Identify any completed project-related planning documents (check all that apply):

- Capital Improvements Plan
- Project Plan
- NASSCO Report
- Asset Management Plan
- Infiltration & Inflow Study
- Master Plan

Preliminary Engineering Report

Environmental Report

Other:

Sanitary Sewer Evaluation Study

Watershed Management Plan

Reliability Study

DSMI

## Additional Information

Overburdened Community Status Determination Worksheets for FY 2027 cannot be completed until early 2026. Once the form is available, it will be posted to the [SRF: Affordability Criteria website](#) and information will be sent to all applicants. Note that a new form is required every year for all applicants.

Please note: Applicants for CWSRF funding may be required to use a Qualifications-based Selection (QBS) process to select and hire an architectural and engineering firm for those costs to be eligible for CWSRF funding. This includes planning, design engineering and construction engineering services. Your assigned project manager will discuss these requirements in more detail.

After your submission is received, you will be contacted by an assigned EGLE Water Infrastructure Funding and Financing Section (WIFFS) project manager within the next couple weeks to discuss the next steps. The project manager can help to identify project funding opportunities, challenges, and project planning guidance to assist the efforts of the applicant and their consulting engineer.

For questions, please visit our website at [Michigan.gov/CWSRF](https://Michigan.gov/CWSRF) and [Michigan.gov/DWSRF](https://Michigan.gov/DWSRF), or contact WIFFS at 517-284-5433 or [EGLE-WIFFS@Michigan.gov](mailto:EGLE-WIFFS@Michigan.gov). You may also contact the [SRF Project Manager](#) located in your EGLE District Office

If you need this information in an alternate format, contact [EGLE-Accessibility@Michigan.gov](mailto:EGLE-Accessibility@Michigan.gov) or call 800-662-9278.

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**APPENDIX F: PUBLIC HEARING ADVERTISEMENT**

**APPENDIX G: OVERBURDENED COMMUNITY STATUS WORKSHEETS**

**Finance Division**  
**Overburdened Preliminary Determination for FY27 State Revolving Fund Projects**

**Applicant Information**

Applicant: City of Gladstone  
 ITA Tracking Number: 1028-1943  
 Project Name: City of Gladstone - LSLR Project  
 Funding Source: DWSRF  
 Regional System:  Yes  No

**Contact Information**

|                                     |                                  |
|-------------------------------------|----------------------------------|
| Name of Applicant Contact and Title | Gary Lessard                     |
| Email                               | glessard@coleman-engineering.com |
| Phone Number                        | (906) 282-4768                   |

**Summary of Determination**

|  |              |
|--|--------------|
| Preliminary Determination                                | 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.

### City of Gladstone Blended Community Worksheet

| Municipality Name              | Percent of Flow | MAHI        | TVPC        | MAHI Contribution           | TVPC Contribution           |
|--------------------------------|-----------------|-------------|-------------|-----------------------------|-----------------------------|
| Gladstone city                 | 99.86           | \$54,970.00 | \$26,036.00 | \$54,893.00                 | \$26,000.00                 |
| Escanaba township-Delta County | 0.14            | \$81,250.00 | \$41,604.00 | \$114.00                    | \$58.00                     |
| Flow Total                     | 100             |             |             | Blended MAHI<br>\$55,007.00 | Blended TVPC<br>\$26,058.00 |

### Initial Overburdened Screening

|   |              |
|---|--------------|
| MAHI Threshold Qualification                            |              |
| Overburdened Determination Without Need for Calculation | 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 **Gary Lessard** on behalf of **City of Gladstone** hereby certify that the information in this form is complete, true, and correct to the best of my knowledge.

Yes

03/10/2026

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Preliminary