

**CITY OF JONESVILLE**  
**DRINKING WATER STATE REVOLVING**  
**FUND**  
**PROJECT PLAN**

**WATER SYSTEM IMPROVEMENTS**

**DRINKING WATER SYSTEM**

PREPARED FOR:



**CITY OF JONESVILLE**

**HILLSDALE COUNTY, MI**

# TABLE OF CONTENTS

Executive Summary .....	iv
Introduction.....	1
I. Project Background.....	2
A. Study Area Characteristics.....	2
1. Delineation of Study Area .....	2
2. Land Use in Study Area .....	2
3. Population .....	2
4. Existing Environment Evaluation .....	3
5. Existing Waterworks System .....	5
B. Need for the Project .....	7
II. Analysis of Alternatives .....	8
A. Identification of Potential Alternatives .....	8
1. Alternative 1 – No Action .....	8
2. Alternative 2 – Water Service Replacement.....	8
B. Analysis of Principal Alternatives .....	9
1. Monetary Evaluation .....	9
2. Environmental Evaluation .....	10
III. Selected Alternative .....	10
A. Description of the Recommended Alternative and Design Parameters .....	11
B. Useful Life .....	11
C. Project Maps .....	11
D. Estimated Schedule for Design and Construction .....	11
<b>E. Project and User Cost Summary .....</b>	<b>12</b>
<b>IV. User Costs.....</b>	<b>12</b>
<b>F. Implementability of the Selected Alternative .....</b>	<b>13</b>
V. Environmental & Public Health Impacts .....	13
A. Direct Impacts .....	13
B. Indirect Impacts.....	15
C. Cumulative Impacts.....	15
VI. Mitigation of Impacts.....	15
A. Mitigation of Short-Term Construction-Related Impacts.....	16
1. Traffic and Safety Hazard Control .....	16
2. Dust Control .....	16
3. Noise Control .....	16

4. Soil Erosion and Sedimentation Control .....	16
5. Restoration of Disturbed Areas .....	16
B. Mitigation of Long-Term Impacts .....	17
6. General Construction .....	17
7. Siting Decisions .....	17
8. Operational Impacts .....	17
C. Mitigation of Indirect Impacts .....	17
9. Master Plan and Zoning .....	17
VII. Public Participation .....	17
A. Public Meeting .....	17
B. Public Meeting Advertisement .....	17
C. Public Meeting Summary .....	18
D. Public Hearing Written Comments and Answers .....	18
E. Adoption of the Project Plan .....	18

## ATTACHMENTS

- Appendix A - Environmental Evaluation Reports
  - Figure 1 – Existing Water System
  - Figure 2 – Topographic Map
  - Figure 3 – Floodplain Map
  - Figure 4 – Wetlands Map
  - Figure 5 – USGS Farmland Classification Map
- Appendix B - Water System Reliability Study
- Appendix C - Detailed Financing Schedule
- Appendix D - Public Participation Documents and Existing Zoning Map

## EXECUTIVE SUMMARY

This Project Plan was completed to qualify for funding through the Drinking Water State Revolving Fund (DWSRF) for lead service line replacements throughout the City of Jonesville. The proposed project includes replacement of approximately 276 water service lines that are non-compliant with EGLE's Lead and Copper Rule. The SRF program assists municipalities in financing certain utility improvements project over a 20 to 30-year term at favorable interest rates – typically between 2% and 2.75%. As such, projects reflect the long-term needs of the community.

This Project Plan is the first step in an application process to secure SRF financing to complete the necessary improvements. This report presents the results of the engineering and scientific evaluations performed to determine the need for the project, develop alternatives to remedy identified problems, and to define the scope of the selected alternative. Background information is also provided along with the rationale used to define alternative projects that can meet the long-term water service line replacement needs of the City. The viable alternatives are evaluated and compared with regard to their financial and technical feasibility and the ability to implement.

Two project alternatives were developed including: alternative 1 – no action and alternative 2 – replacement. Based on the technical and financial feasibility of each alternative, Alternative 2 was the selected alternative because it meets the project objectives and it is the most practical from an economical and operational standpoint.

Alternative 2 includes replacement of approximately 276 water service lines that are non-compliant with EGLE's Lead and Copper Rule. The project would include replacement of non-compliant lead service lines and associated appurtenances including, but not limited to, corporations, curb stops, interior plumbing, and exploratory digging.

The User Charge for a typical residential customer, if Selected Alternative 2 is implemented, is based on the conditions of an SRF loan for an assumed 30-year bond. Actual quarterly bills will vary depending on financing terms, principal forgiveness/grant eligibility, individual usage, and community rate structure. If grant funding for the project is awarded, the user charge increase would be reduced proportionally. At this time, it is expected that the City will qualify for Overburdened Community Status Principal Forgiveness. Actual grant eligibility will not be determined by EGLE until later in the project planning stages.

## INTRODUCTION

The City of Jonesville is situated in the northwestern area of Hillsdale County, Michigan. The St. Joseph River runs through the middle of the city. Jonesville is about 20 miles north of the Indiana-Michigan border and about an hour and ten minutes from Kalamazoo. A topographic map of the general area from the USGS is provided in Appendix A. The City is bordered on all sides by Fayette Township, other nearby communities include Scipio Township, located 6 miles to the North, Litchfield Township, located 6.9 miles to the northwest, Allen Township, located 5.9 miles to the southwest, the City of Hillsdale, located 5.4 miles to the south, Adams Township, located 7.5 miles to the east, and Moscow Township, located 9.2 miles to the north. The City of Jonesville can be reached via U.S. Route 12 and the M-99, which intersect in Downtown.

Major assets in the City's drinking water system include two type 1 municipal water supply wells, approximately 106,000 feet of watermain ranging from 2-inches to 12-inches in diameter, one 500,000-gallon single-pedestal elevated steel water storage tank, and 1708 fire hydrants. The drinking water system services approximately 859 customers, comprised of both residential and commercial users.

The purpose of this Project Plan is to fulfill and document the requirements found in the state statutes (MCL§324.5303) and rules that govern the State Revolving Fund (SRF) and the Strategic Water Quality Initiation Fund (SWQIF) programs (Michigan Administrative Code R323.952). In addition, this project plan provides a basis for ranking the City's proposed drinking water system improvements in comparison to projects by other municipalities in a project priority listing for a low-interest State Revolving Fund loan. This is a financially attractive program where municipalities across Michigan compete for limited funds based on the merits of their proposed projects.

The scope of this Project Plan includes a summary of current issues with the City's drinking water system with respect to lead service line replacements. The Project Plan identifies principal alternatives to meet the current and future drinking water needs and evaluates the environmental impacts of the Selected alternative.

The Project Plan presents projected costs necessary to repay the low-interest loan for the selected alternative. The draft project plan is available for public review 10 days prior to the public meeting which will be held on June 1<sup>st</sup>, 2026. A summary of public participation and public comments solicited by the City regarding the project plan and selected alternative will be included in Appendix C.

The format of this report follows the project planning guidelines for Drinking Water State Revolving Funds (SRF) prepared by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Revolving Loan Section.

# I. PROJECT BACKGROUND

## A. STUDY AREA CHARACTERISTICS

### 1. Delineation of Study Area

The Study Area is the City of Jonesville water system Service Area, which includes most of the City of Jonesville. See the existing system map shown in Figure 1.

### 2. Land Use in Study Area

Railroad access to the City of Jonesville is provided by the Indiana Northeastern Railroad System that links Jonesville with communities to the west and south including Coldwater, Litchfield and Hillsdale, and extends into northeast Indiana and northwest Ohio. This system is a freight rail and frequently transports coal, building materials, agricultural supplies, and agricultural commodities.

The manufacturing industry in Jonesville is the largest sector of the economy at 25%. In 2023, this sector employed 220 people. Health Care and Social Assistance is the second largest sector of Jonesville's economy, employing 20.7% of the population in 2023.

There are three major regional influences on the growth and development of the City of Jonesville. These regional influences are agriculture, industry, and transportation.

Industries include plastic and metal fabrication, logistics, and manufacturing. The industrial park and other businesses are serviced by the Indiana Northeastern Railroad System and the highway system U.S. Route 12 and the M-99.

In addition to agriculture and industry, the City is located around to the St. Joseph River, which attracts tourists each year to the region with recreational opportunities such as fishing, boating and swimming. The river flows through southwestern Michigan, northeastern Indiana, back into Michigan and into Lake Michigan to the west.

### 3. Population

Drinking water flow and loadings are directly related to the population and businesses in the Service Area. According to the 2023 ACS, the City of Jonesville population is 2,257 people. The Region 2 Planning Commission (R2PC) is the regional planning center for St. Joseph County. No population projections from R2PC were available. Table 1 illustrates the Census Data and 20-year population projections based on nominal to steady annual growth.

*Table 1: Jonesville Population*

Year	Total City Population	Percent Change
1970	2,081	x
1980	2,172	4.37
1990	2,283	5.11
2000	2,337	2.37
2010	2,258	-3.38
2020	2,176	-3.63
2023	2,257	3.72
2028 est.	2,263	5.00
2043 est.	2,435	5.00

## 4. Existing Environment Evaluation

### A. Cultural and Historic Resources

The historic places in the City of Jonesville listed in the National Register of Historic Places include addresses of Grace Church Chapel & Suite at 360 E. Chicago St., Heritage Lane Apartments at 117 West St., and a residential building at 211 Maumee St.

### B. Air Quality

The air quality trends in Michigan can be defined by the measurement of certain air pollutants. These pollutants are identified as carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and air toxins or trace metals.

The Air Quality Index (AQI) was developed by the EPA to provide a simple uniform way to report daily air pollution concentration on a numerical scale. The scale is related to potential health effects. The scale ranges as follows: good (0-50), moderate (51-100), unhealthy for sensitive groups (101-150), and unhealthy (151+). The unhealthy group also includes “very unhealthy” and “hazardous” classifications.

According to the EPA’s AirData Air Quality System, at the South Bend-Mishawaka, IN-MI air monitoring station (the one closest to Jonesville), the primary contributor to the index was ozone for 170 days in 2024 and PM2.5 for 170 days. These statistics are not available through the EPA for Jonesville or Hillsdale County, so the data provided in this report was taken from Lenawee County. Lenawee County is the neighboring county to the east of Hillsdale county. The AQI was in the good to moderate (less than 100) range for every day. Max AQI was 97 for the year. The 2024 AQI 90th percentile was 59 (moderate), meaning the AQI only exceeded 59 for 10% of the year.

The environmental impacts to air quality resulting from the proposed project are short-term, direct, negative impacts due to the construction of the facilities. These impacts can be minimized by properly maintaining construction equipment and using water to reduce dust problems.

### **C. Major Surface Waters**

The St Joseph River enters the City from the north and meanders through the center of the City. The River is dammed in the City creating a mill pond in the southeast corner. There are no major lakes located within the limits of the City of Jonesville. A map from the National Wetlands Inventory (NWI), provided in Appendix A, shows the locations of the major surface waters.

### **D. Wetlands**

There are wetland areas in the City of Jonesville, namely surrounding the St Joseph River. No environmental impact is anticipated given the scope of work, all of which will be done within road right-of-way, city owned property, and water service replacement areas. The implementation of appropriate SESC measures will occur at any locations where construction is larger than one acre or within 500 feet of the water's edge. A map showing wetlands and wetland soils in the City of Jonesville can be found in Appendix A. This map is from the Michigan Wetland Map Viewer.

### **E. Coastal Areas**

The Michigan Coastal Management Program (MCMP), which was established in 1978, manages community outreach to provide knowledge and monetary assistance for Michigan's coastal areas and subsequent habitats. The goal of the program is to mitigate detrimental impacts to the coastal areas and promote sustainability.

The City of Jonesville is not located in a coastal zone.

### **F. Floodplains**

There are floodplains within the City of Jonesville. The online FEMA Floodplain Map Viewer was used, and the floodplain map indicates that the area is of minimal flood hazard. The map is included in Appendix A. Appropriate permits will be acquired before any construction commences.

### **G. National Wild and Scenic Rivers**

The Wild and Scenic Rivers Act as amended by the Michigan Scenic Rivers Act of 1991, prohibits federal assistance to a project which will have a direct and adverse effect on the values for which a river segment listed in the National Wild and Scenic Rivers System or designated for study on the National Rivers Inventory was established. No river in or near the City of Jonesville and the project scope is listed on the National Wild and Scenic Rivers System website, administered by the National Park System, or on the Michigan Natural Rivers System found on the Michigan Department of Environment, Great Lakes, and Energy website. The selected alternative will have no impact on natural, wild, or scenic rivers.

### **H. Topography**

The topography map shows that the City of Jonesville has an elevation range between 1,040 and 1,180 feet with the WWTP being around 1,055 feet according to the USGS Quadrangle map.

### **I. Geology**

The City of Jonesville has a bedrock geology which is mainly comprised of Marshall formation on the northeast side of the City and Coldwater shale covers the rest of the City.

### **J. Soil Types**

Per the USDA web soil survey, most of the soils in this area are composed of the soil series fox (44%), and soil series Hillsdale-Riddles (26%), where the remaining 30 percent is composed of Matherton, Coloma, Elva, and Boyer.

### **K. Agricultural Resources**

According to the United States Department of Agriculture's Web Soil Survey, most of the land in the City (approximately 55%) is considered "All areas are prime farmland." Other large portions of land (approximately 35%) are considered "Farmland of local importance". The remaining land (approximately 10%) is considered "Not prime farmland" or "Prime farmland if drained" largely consists of surface water

and wetland areas. A map showing the USDA's Farmland Classification for land throughout the City can be found in Appendix A.

All proposed work will occur on city owned property, road right-of-way, or water service replacement areas which has been previously disturbed for roads or water system needs. Construction activities will minimize surface disturbance, and all surface surrounding new construction will be restored to pre-construction or approved conditions.

**L. Fauna and Flora**

Minimal impact is expected on the existing vegetation. Sites will be restored to their existing states and local natural grasses will be planted.

**5. Existing Waterworks System**

Much of the information in this section has been obtained and summarized from the City of Jonesville's most recent Water System Reliability Study (WSRS) completed by Fleis and Vandenbrink in 2024 and is provided in Appendix B.

**A. Water Sources**

The City is supplied by two wells, labeled No. 1 and 2. Both wells are in regular service. The firm capacity is defined as the capacity delivered with the largest well out of service, the firm capacity for the City is 552 gpm with Well No. 1 out of service. EGLE recommends the firm capacity of any water supply system to meet or exceed the maximum day demands placed in the system. The existing maximum daily demand is 259 gpm.

Well House No. 1 is located east of the WTP, and Well House No.2 is located north of the WTP. The well houses are constructed of CMU blocks with flat roofs.

The City's water quality is considered good. The last water quality test taken in 2024 reported the water met the state drinking water standards.

The City of Jonesville water supply system currently consists of two wells. The wells are designated as No. 1 and 2. Table 2 summarizes the selected data of each well and pump.

*Table 2: Well Summary*

Well No.	Year Drilled	Diameter (inches)	Depth (feet)	Rated Pump Capacity @ TDH	Current Pump Capacity @ TDH
1	1962	12	81	500 gpm @ 75 ft	512 gpm @ N/A ft
2	1972	14	80	500 gpm @ 75 ft	606 gpm @ 54 ft

**B. Water Treatment**

The City treats the water supply at Wells No. 1 and No. 2 by directing the water to an iron and manganese removal system. Chlorine and fluoride are added to the water after the filters.

The City regularly tests the water quality of its wells and throughout the system per MDEQ/EGLE requirements. There is testing done monthly for bacteria, yearly for partial chemical and every 3 years for metals analysis. The tests taken at the wells in 2024 reported that the contaminant levels were well below the state requirements. The water quality tests taken in 2024 reported that the water met the State drinking water standards.

The City tests lead and copper on a triennial basis. Lead/copper levels in 2024 were well below the EGLE action levels. The City is in compliance.

**C. Water Storage**

The City of Jonesville currently has one 500,000-gallon elevated tank that supplies water storage for the system. The tank is located at the southwest corner of the City on Industrial Parkway. The water has an overflow elevation of approximately 120 feet. The total head range 37.5 feet. The tank currently supplies water pressure and emergency storage to the City water customers. The storage tank is located at the southwest corner of the City off of Industrial Parkway as shown in Figure 1. The tank was constructed in 1996 and was last inspected in 2022. The tanks exterior, dry interior, and wet interior were all said to be in good condition with no major deficiencies noted.

The projected maximum day usage of 412,000 gpd is less than the current tank capacity; therefore, no additional storage is recommended by EGLE. Tanks are also sized for fire flow capability and based on current total well capacity no additional storage is needed for a residential fire. The City meets commercial, industrial, and institutional fire flow requirements. No additional gallons of storage would be needed to meet commercial and industrial requirements for a 2-3-hour duration. No additional storage will be needed before 2044.

**D. Service Lines**

The City has no known lead service lines. It's recommended that a service line replacement program be implemented to begin replacing the 276 galvanized lines that may or may not have been previously connected to lead lines.

**E. Distribution System**

The City of Jonesville's distribution system is made up of cast iron (43.3%) and ductile iron (56.7%) watermain. Table 3 provides a breakdown of the water distribution system's watermain inventory by size. Most service lines are copper (67%), with the remainder being galvanized (31%) and plastic (2%).

The water distribution system contains 18% of 4-inch waterlines and 1.4% of 2-inch waterlines. EGLE considers watermains smaller than 6 inches undersized. It is recommended that the City consider the use of 8" or greater watermains for future replacements or extensions, due to problems associated with providing adequate fire flows through 6-inch or smaller lines.

*Table 3: Water Main Pipe Size Distribution*

Water Main Size	Cast Iron (ft)	Ductile Iron (ft)	Total Length (ft)	Percentage of Total
2"	1,488	0	1,488	1.4%
4"	19,052	56	19,108	18.0%
6"	13,865	10,708	24,573	23.2%
8"	7,050	25,541	32,591	30.8%
10"	2,925	0	2,925	2.8%
12"	1,537	23,714	25,251	23.8%
<b>Total Length (ft)</b>	<b>45,917</b>	<b>60,019</b>	<b>105,936</b>	<b>100.0%</b>
<b>Percentage of Total</b>	<b>43.3%</b>	<b>56.7%</b>	<b>100.0%</b>	<b>-</b>

**F. Residuals Handling & Disposal**

There are no existing residuals handling and disposal requirements for the City's water system.

**G. Water Meters**

There are approximately 871 metered service connections to the City's water system. All customer metered were replaced in 2019 with remota read Neptune meters. The City plans to replace 10% of meters annually.

**H. Operations & Maintenance**

The Jonesville water distribution classification is S-3, and its water treatment classification is D-3. The operator in charge has an S-2 and a D-3 license to operate the distribution system. The back-up part-time operator has S-1 and D-1 licenses. There are six other assistant operators who each are partially certified with various S and D licenses. EGLE recommends that public water systems have a minimum of two certified people on staff to operate the system.

The City does not have a formal valve-turning program in place, although it is recommended that a formal program is implemented. Hydrants are flushed twice annually, once in the spring and fall. During hydrant flushing, some valves associated with the flushing program are operated if time permits.

**I. System Capacity**

The projected water demands for the 20-year study period were calculated using projected population and the current average usage per capita. Table 4 shows the current per capita water usage.

The amount of water used on a per capita basis has averaged 89 gpcd. The maximum day peaking factor (maximum day demand divided by average day demand) has ranged between 1.75 to 1.87 between 2019 to 2022. For this report, a more conservative maximum daily peaking factor was chosen as 1.9. Table 4 shows the projected water demands.

*Table 4: Project Water Demands*

Year	Average Day Demand (gpd)	Estimated Population	Average Day Demand (gpcd)
2023	197,000	2,209	89
2028	201,000	2,263	89
2043	217,000	2,435	89

**J. Climate Resiliency**

In Michigan, climate change is leading to more extreme heat and storm events. Extreme heat events can result in an increase of peak water demands, especially due to irrigation. The WSRS demonstrated that the water system has sufficient capacity to meet projected peak demands over the next 20 years. Extreme storm events can result in flooding and power outages. The water system’s operational facilities are located outside of flood zones defined by FEMA.

**B. NEED FOR THE PROJECT**

Need for the project was in part established in part of EGLE’s Lead and Copper Rule update from the EPA that requires all states to replace lead service lines by 2037. The DWAM project and more recent needs identified the following:

1. Lead Service Line Replacements: identified through DWAM, historical records, City employee knowledge, and compliance with EGLE’s Lead and Copper Rule

Distribution System – Lead Service Line Replacements

Through hydro-excavations during the DWAM project, numerous water services were found containing galvanized material that could have previously been connected to lead goosenecks or lead service lines. Utilizing past project records and City employee knowledge of the system, the number of service lines requiring replacement was pared down more. Considering EGLE’s Lead and Copper Rule in conjunction with the EPA, the City’s focus is on water service line replacements to comply with the rule and replace all

violating water service lines before 2037. The City plans to replace approximately 276 water service lines to comply with the rule.

## II. ANALYSIS OF ALTERNATIVES

Alternatives to address the identified needs of the city's water service line replacements were developed and evaluated based on their ability to meet the technical, financial, and regulatory constraints. The alternatives analysis presented below is required to justify the selected alternative.

Project objectives include:

- Provide reliable and quality water service to the customers.
- Comply with EGLE's Lead and Copper Rule.
- Provide infrastructure capable of consistent reliable service.
- Minimize financial burden to the water distribution system users.
- Minimize environmental impact during construction of the improvements project.

Two alternatives were developed for the City of Jonesville's Lead Service Line Replacement Water System Improvements Project:

1. No action.
2. Replacement of non-compliant water service lines

The alternatives are described in detail in the following report subsections. Each alternative was initially screened based on effectiveness, constructability, and financial requirements. Feasible alternatives were then subjected to a comprehensive evaluation with attention to detailed economic, technical, environmental, and public concerns.

Financial analysis of feasible alternatives followed a net present worth methodology. Capital costs, operations, maintenance and replacement costs, and salvage values were determined separately and discounted back to present value. The sum of these costs represents the net present worth of the project.

### A. IDENTIFICATION OF POTENTIAL ALTERNATIVES

#### 1. Alternative 1 – No Action

Under the "No Action" alternative, the City would continue the use of the existing water services in their current condition. The "No Action" alternative leaves lead service lines in place and goes against Michigan's Lead and Copper Rule.

The "No Action" alternative does not meet the project objectives and will not be evaluated further as a principal alternative.

#### 2. Alternative 2 – Water Service Replacement

Alternative 2 would complete all the identified replacements and improvements to improve safety, reliability, and compliance.

Prior to the development of the scope listed below, Alternative 2 assessed the number of water service lines throughout the system that contain galvanized, lead, or unknown materials. This alternative also had

an analysis performed on the EGLE Lead and Copper Rule and compliance aspects of this rule. The City of Jonesville is required to comply with the rule by 2037 and therefore must replace approximately 276 water service lines. Water service line replacements could be required from the corporation at the water main to 18" inside the home or building or to the water meter, whichever is further, or from the corporation to the curb stop, or from the curb stop to 18" inside the home or building or to the water meter, whichever is further. These limits will be established based on records as much as feasible in the project documents. The scope could include exploratory digging in a case where a contractor excavates and is anticipating only replacing a specific section of the water service, but upon excavation finds a non-compliant material on a section of the water service that was not deemed to be replaced.

Alternative 2 includes the following improvements to the Water Distribution System:

- Water service line replacements at approximately 276 locations throughout the City of Jonesville to comply with EGLE's Lead and Copper Rule

Alternative 2 is the only alternative that met the project objectives. This alternative was reviewed further for effectiveness, reliability, constructability, environmental impacts, and cost effectiveness.

## B. ANALYSIS OF PRINCIPAL ALTERNATIVES

### 1. Monetary Evaluation

The monetary evaluation includes a present worth analysis. This analysis does not identify the source of funds but compares cost uniformly for each alternative over the 20-year planning period. The present worth is the sum which, if invested now at a given interest rate, would provide the same funds required to pay projected costs within the planning period. The total present worth, used to compare the alternatives, is the sum of the initial capital cost, plus the present worth of Operation, Maintenance, and Replacement (OM&R) costs, minus the present worth of the salvage value of the facility at the end of the 20-year planning period. The salvage value is calculated at the end of 20 years where portions of the project structures or equipment may have a salvage value, which is determined by using straight-line depreciation. In general, water service lines and associated appurtenances have a useful book life of 30-50 years.

The cost of labor, equipment and materials is not escalated over the 20-year life since it assumes any increase in these costs will apply equally to all alternatives. The interest charge during construction (capitalized interest) would not significantly influence the comparison of alternatives and was not included in the cost-effectiveness analysis.

The following cost comparison details were specifically addressed and were applied in the present worth analysis as per the EGLE guidance:

- Capital costs were included for all identified improvements.
- Sunk costs were excluded from the present worth cost. Sunk costs for the project include existing land, existing water system facilities, and outstanding bond indebtedness.
- Operation, Maintenance, and Replacement, (OM&R) costs were included in the present worth cost.
- The economic comparison is based on a 20-year planning period and a real discount rate of 2.0%, per OMB Circular No. A-94 for FY2027.
- Salvage values were included in the present worth cost.
- Energy costs escalation was assumed equal between the alternatives and therefore are not adjusted over the 20-year period.

Table 5 compares the opinion of probable cost for each of the principal alternatives. A detailed breakdown of project costs is included in Appendix B.

*Table 5: Summary of Cost*

Alternative	Capital Cost of Project
2	\$1,264,000

## 2. Environmental Evaluation

Table 6 provide a summary of the anticipated environmental impacts resulting from construction of the project.

An environmental evaluation was conducted for Alternative 2.

Alternative 2 includes replacement of approximately 276 water service lines throughout the City of Jonesville. The mitigation measures will be designed and implemented as required for the construction phase of the project, including dust control and erosion control activities, and restoration. Table 2 evaluates the impacts on various environmental features for Alternative No. 2.

*Table 6. Environmental Evaluation of Alternative 2*

Environmental Feature	Alternative No. 2
Agricultural and Open Space Lands	NSI
Air Quality	T
Archeological Historic Sites	NSI
Drinking Water Supply Source	NSI
Endangered or Threatened Species	NSI
Fauna and Flora Communities/ habitat	NSI
Floodplains	NSI
Great Lakes Shoreline	NA
Lakes and Streams	NSI
Parks and Recreational Facilities	NSI
Unique Features	NA
Wetlands	NSI
Wild & Scenic Rivers	NSI

NSI: No Significant Impact

L: Low, but Measurable Impact

T: Temporary Impact

B: Beneficial

No substantial indirect, direct, or cumulative impacts were identified for the implementation of Alternative 2.

## III. SELECTED ALTERNATIVE

The objectives of the water distribution system improvements project with respect to water service line replacement are identified as:

- Provide reliable and quality water service to the customers.
- Comply with EGLE’s Lead and Copper Rule.
- Provide infrastructure capable of consistent reliable service.

- Minimize financial burden to the water distribution system users.
- Minimize environmental impact during construction of the improvements project.

Each feasible alternative that met the project objectives was reviewed for effectiveness, reliability, constructability, environmental impacts, and cost effectiveness.

## A. DESCRIPTION OF THE RECOMMENDED ALTERNATIVE AND DESIGN PARAMETERS

Alternative No. 2 was found to be the only feasible alternative and is therefore the recommended.

### Lead Service Line Replacements

Water service lines constructed with galvanized lines previously connected to lead, lead lines, or lines of unknown material are a risk to the water system and water users. It is also a rule put out by the EPA and EGLE to have all water service lines be compliant with EGLE's Lead and Copper Rule by 2037. The City of Jonesville has approximately 276 water service lines that are required to be replaced to be compliant with the rule. The project would include individual service line replacements at each of the 276 locations. The scope at each location could slightly differ depending on what sections of the service line currently contain the non-compliant materials. It is anticipated that lead service line replacements will cost approximately \$1,264,000.

## B. USEFUL LIFE

The City of Jonesville intends to secure the long term with SRF loan with the lowest rate for the construction of the selected alternative. The weighted useful life for the Alternative 2 has been calculated to greater than the 30-year loan period. The weighted useful life is the total of all calculated life values (each asset's dollar value times its estimated useful life) divided by the total estimate of all the project dollars spent on those assets. This analysis verifies that the components of the selected alternative will cost-effectively address replacement requirements for the term of the loan. It is not anticipated that all the equipment will last the entirety of the planning period. The City will have to annually reserve funds to account for some equipment replacement.

## C. PROJECT MAPS

A project location map and additional figures can be found in Appendix A.

## D. ESTIMATED SCHEDULE FOR DESIGN AND CONSTRUCTION

Table 7 presents the proposed project schedule, which follows the SRF FY2026 Q4 milestone schedule for traditional design, bid, build projects.

**Table 7: Proposed Schedule for Design and Construction**

Anticipated Date	Activity
May 2026	Submit Final SRF Project Plan to EGLE
October 2026	Proceed with Project Development and Preliminary Design
November 2026	Begin Detailed Design
February 2027	Finalize Design
May 2027	EGLE Approval of Plans & Specs
August 2027	SRF Loan Closing
September 2027	Begin Construction
November 2028	Complete Construction
December 2028	Project Closeout and Record Drawings

### E. Project and User Cost Summary

Table 8 summarizes the net present worth (NPW) for the selected alternative. Appendix B shows the breakdown of the project costs, as well as NPW calculations.

**Table 8: Cost Summary of the Selected Alternative**

Description	Capital Costs
Alternative No. 2 – Replacement of Non-Compliant Water Service Lines	\$1.126 M

#### IV. User Costs

The City of Jonesville funds water distribution system operations entirely through user fees. The anticipated project cost is \$1.126 million. The exact sources of funding cannot be determined at this time, nor is it reasonable to assume a certain percent of principle forgiveness, even if that may seem likely given the current SRF program funding. The following assumptions were made to show the likely bond amount a community would have to cover each year to afford the project:

1. Funded over a loan term of 30 years.
2. Rate of 2.75%
3. Assume project is 100% loan.

With these assumptions applied to the project cost of \$1.126 million, The City of Jonesville would have to pay \$56,500 each year to cover the project loan payment.

## F. Implementability of the Selected Alternative

The City of Jonesville has established legal, institutional, technical, financial, and managerial resources to improve, maintain, and operate its water distribution system.

The ability for the City of Jonesville to implement the selected alternatives depends on the success of the City's application to EGLE for DWSRF financial assistance. The city intends to utilize consultants to assist with project coordination, design, financing, and construction administration. For water distribution system operations, the City of Jonesville will operate and maintain its own water distribution system.

## V. ENVIRONMENTAL & PUBLIC HEALTH IMPACTS

The potential beneficial and detrimental environmental impacts of the selected alternative is evaluated in this section of the project plan. The analyses of impacts are divided into direct, indirect, and cumulative impacts. Direct environmental impacts are those that are directly attributable to the construction and operation of the project. Indirect impacts are caused by the project but are removed in time and/or distance and are often considered secondary in nature. Cumulative impacts are those impacts which increase in magnitude over time, or which result from individually minor, but collectively significant actions.

### Beneficial or Adverse Impacts

A discussion of the full range of potential impacts (i.e., direct, indirect, and cumulative) must identify the nature of the impacts in terms of both beneficial and adverse impacts. The following section will describe the positive and negative impacts resulting from the selected alternative with special emphasis on cultural or environmentally sensitive resources.

### Short-Term and Long-Term Impacts

The analysis includes trade-offs between short-term uses and the maintenance enhancement of long-term productivity and vice versa.

### Irreversible or Irretrievable Resources

The analysis of the environmental impacts also includes any irreversible commitments or use of irretrievable resources, such as the commitment of construction materials, energy, and land to the proposed project.

## A. DIRECT IMPACTS

Direct impacts are the environmental impacts directly attributable to the construction and operation of the project. The city must consider impacts resulting from construction in areas which have not been previously disturbed. The effects of the proposed project are considered for each of the following environmental factors:

### Historic, Archaeological, Geological, Cultural, or Recreational Areas

There are no known issues with the current sites. The proposed project will affect only existing utility rights-of-way and water service replacement areas. No landscape changes are proposed and the sites will be restored to approved or pre-project conditions.

It is not anticipated that the proposed project will impact tribally important cultural or religious sites of Native American tribes since none are found directly within Clare County. Any nearby tribes that need to be notified will be contacted by EGLE to review the proposed sites if deemed necessary.

#### Natural Settings and Sensitive Ecosystems

The selected alternative includes water service line replacements. This work will be performed in existing utility rights-of-way, easements, and water service replacement areas and could include excavations in the road at the water main to buildings and homes depending on the sections of service line requiring replacement. No long-term impacts to the natural setting of project area are anticipated.

#### Existing and Future Quality of Surface Water and Groundwater

The primary goal of the project is to replace non-compliant water service lines throughout the City's distribution system. The proposed project is not anticipated to cause negative changes to the quality of nearby surface or groundwaters.

#### Consumption of Materials, Land, Energy, and Construction & Operation

Construction materials, public funds, energy, and manpower will be consumed to construct and operate the proposed improvements. No known shortage of these items exists, nor is it expected that a shortage of these items will result from implementing this project.

The only chemicals used during the construction would be fertilizers used after the seeding and mulching of disturbed areas from the construction operations.

Energy (both electrical and fossil fuels) will be used during the construction of the improvements.

#### Human, Social, and Economic Impacts

There will be no dislocation of people during the construction. Brief water service disruptions to residents are anticipated because of having to take the water service line out of service for the replacement of piping. Work occurring in the roadway will be coordinated and planned to minimize traffic impacts. Small surface disturbances are anticipated while water service lines are being installed but will be restored to approved or pre-project conditions.

Employment of some residents by the contractor(s) is a possibility for certain construction operations.

#### Construction and Operational Impacts

A minor impact on local traffic may occur during the construction of the proposed water service line replacements. During construction, equipment will increase local noise and dust levels during operations. There will be a short-term adverse impact on air quality during the construction phase due to dust and construction equipment emissions generated during the excavation operations.

## B. INDIRECT IMPACTS

Indirect impacts are those caused by the proposed project but removed in time and/or distance. Indirect impacts are often secondary in nature and are generally caused by residential and/or commercial development made possible by the project.

Examples of indirect impacts include undirected growth including additional traffic, over-extended police and fire protection, or heavy financial burden on existing and future residents for the cost of the water service line replacements. It is not expected that the proposed project would cause any significant undirected growth that would result in changes to zoning, population density, or types of developments found throughout the city, including residential, commercial, and industrial areas.

Transportation and infrastructure are already in place within the service area, and the proposed water service line replacements within the water distribution system will only serve to enhance the existing City infrastructure.

The proposed project will not result in any changes in anticipated land use.

There are no anticipated indirect impacts due to changes to the natural setting or sensitive ecosystems or jeopardy to any endangered species resulting from potential secondary growth. The City of Jonesville does have habitat suitable for 2 animals on the threatened list, the Northern Long-eared bat and Eastern Massasauga rattlesnake, which is worth mentioning.

There are no anticipated changes in air or water quality stemming from any primary or potential secondary development as a result of the improvements since any additional commercial/industrial development would be subject to the city's existing zoning or land use requirements.

There will be minimal additional groundwater consumption over the useful life of the facility due to the projected annual growth of the city. In addition, no additional generation of waste is anticipated as a result of the proposed project.

## C. CUMULATIVE IMPACTS

There are no anticipated cumulative impacts that would increase in magnitude over time or result from individually minor, but collectively significant actions of the project. There is no anticipated new infrastructure proposed in conjunction with the proposed water service line replacements.

## VI. MITIGATION OF IMPACTS

Structural and non-structural measures which avoid, eliminate, or mitigate adverse impacts on the environment need to be identified in the project plan. The cost of mitigation was considered during the financial analysis and is included in the unit costs and lump sum prices developed during the capital cost evaluation for the principal alternatives.

The structural measures involve the specific design and construction of the improvements while the non-structural measures involve regulatory, institutional, governmental or private plans, policies or regulations of the city. Mitigation of short-term, long-term, and indirect impacts must be considered in the project plan.

## A. MITIGATION OF SHORT-TERM CONSTRUCTION-RELATED IMPACTS

### 1. Traffic and Safety Hazard Control

Traffic control and maintaining access to homes and businesses will be the responsibility of the Contractor. However, access to all homes and businesses will be maintained and emergency vehicle access will be ensured throughout construction. Residents will be notified when construction work is scheduled in their area. Traffic detour signs and flag control will be incorporated to provide non-local traffic with the information they need to navigate the construction site and to travel safely.

Construction site safety is the responsibility of the Contractor. The Contractor will be required to have only trained persons performing all phases of the work. The Contractor will also be required to comply with the Occupational Safety & Health Act (OSHA), including using back up alarms on all equipment, having employees trained in hazard control, and maintaining materials safety data sheets (SDS) for materials that may be used or handled by construction personnel.

### 2. Dust Control

Construction activities will result in increased dust in the vicinity of the construction sites during the length of the proposed construction. Mitigation measures to minimize the negative effect of dust on residents and construction workers will be defined in the project specifications. It is anticipated that dust control will be provided by the application of water and/or dust palliative during dry and dusty periods. The Contractor will be required to control dust in accordance with methods described in the project specifications.

### 3. Noise Control

Noise levels will increase temporarily during construction of the proposed project. Construction activities will only be allowed during the hours approved by the city and would be subject to all local noise control ordinances. Construction workers and site visitors may be required to wear earplugs to minimize the effects of long-term noise during the construction operations.

### 4. Soil Erosion and Sedimentation Control

The Contractor will be required to obtain a soil erosion and sedimentation control permit from the local agency prior to the start of the work. It is anticipated that mitigation measures that may be utilized will include silt fence, straw bales, rip rap, geotextile fabric, and other such methods, as appropriate.

### 5. Restoration of Disturbed Areas

As previously stated, the project specifications will require the Contractor to provide and maintain access at all times to homes and businesses. Traffic control, including signage and flag persons must be provided. Restoration of disturbed areas will also be defined in the specifications. Restoring disturbed lawn areas, roadways, existing utilities, etc. will be completed in a timely fashion and in accordance with the project specifications.

### Service Disruption

Minor and brief water service disruptions are anticipated during construction.

## B. MITIGATION OF LONG-TERM IMPACTS

### 6. General Construction

Mitigation measures would be developed to ensure that sensitive environments do not suffer permanent damage. Every effort will be made to avoid potential long-term or irreversible adverse impacts during the construction of the lead service line replacements.

The construction will incorporate “best management practice” methods for installing pipelines or disturbing the earth. Wetland, floodplain, and inland stream mitigation would be handled through the permit process. If impacts cannot be avoided, wetland mitigation measures will be used. The design and project specifications will include the proper use of physical measures to reduce soil erosion to a manageable level and any disturbed slope areas will be immediately seeded, mulched and/or sodded to prevent soil erosion and/or sedimentation.

### 7. Siting Decisions

Water service line replacement construction activities are expected to be contained within existing utility right-of-way, easements, and water service line replacement areas. Where traffic must be re-routed for any construction activities, the City will work closely with MDOT and state authorities to develop detours within urban areas.

### 8. Operational Impacts

Noise and dust levels will be monitored throughout construction. No major operation issues are anticipated.

## C. MITIGATION OF INDIRECT IMPACTS

### 9. Master Plan and Zoning

The most effective way of mitigating unrestricted growth in any community is proactive creation of zoning districts and effective enforcement of that zoning. The city has zoning in place, and officials have historically had a significant role in the development of the city. Unrestricted growth is not anticipated with or without the proposed project.

## VII. PUBLIC PARTICIPATION

### A. PUBLIC MEETING

A Public Meeting will be held on June 1<sup>st</sup>, 2026 at \_\_\_\_\_ PM at the City Hall located at 265 E. Chicago Street, Jonesville, MI 49250

### B. PUBLIC MEETING ADVERTISEMENT

Prior to the public hearing, a copy of the Draft Project Plan will be made available to the public for a 10-day period at the City Hall and as stated in the public hearing notice.

**C. PUBLIC MEETING SUMMARY**

A public meeting has not been held to date

**D. PUBLIC HEARING WRITTEN COMMENTS AND ANSWERS**

A public meeting has not been held to date

**E. ADOPTION OF THE PROJECT PLAN**

A public meeting has not been held to date

DRAFT