



CITY OF STANTON

Project Planning Document

Drinking Water State Revolving Fund Fiscal Year 2024

DRAFT April 17, 2023



MI WATER NAVIGATOR
WATER INFRASTRUCTURE HELPDESK





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Abbreviations

AMP	Asset Management Plan
CIP	Capital Improvement Plan
City	City of Stanton
CO	Carbon Monoxide
DWSRF	Drinking Water State Revolving Fund
EGLE	Michigan Department of Environment, Great Lakes, and Energy
FY	Fiscal Year
GAWA	Gratiot Area Water Authority
GPM	Gallons per Minute
GPCL	Galvanized Previously Connected to Lead
ITA	Intent to Apply
IUP	Intended Use Plan
kW	Kilowatt
LSLR	Lead Service Line Replacement
MAHI	Median Annual Household Income
MG	Million Gallons
MGD	Million Gallons per Day
MNFI	Michigan Natural Features Inventory
NAAQS	National Ambient Air Quality Standards
NO₂	Nitrogen Dioxide
O&M	Operation and Maintenance
Pb	Lead
SHPO	State Historic Preservation Office
U.S.	United States
WMRPC	West Michigan Regional Planning Commission
WRS	Water Reliability Study



I. INTRODUCTION

The City of Stanton (City) is submitting this project planning document to apply for a Drinking Water State Revolving Fund (DWSRF) low-interest loan to design and replace existing water mains and lead service lines for Fiscal Year (FY) 2024. This project planning document has been developed using the DWSRF Project Planning Document Preparation Guidance available on the Michigan Department of Environment, Great Lakes, and Energy (EGLE) website as of January 2023.

An Intent to Apply (ITA) was submitted to EGLE on November 1, 2022, indicating Stanton's intent to apply for a DWSRF loan. The ITA included a brief description of the desired projects and preliminary costs. On November 30, 2022, a multi-jurisdictional webinar was held by EGLE while virtual office hours were held on December 13, 2022, and December 16, 2022, to ask questions about this project and to seek clarification regarding the required level of detail for this project planning document submission.

This report incorporates the required level of detail as presented in the aforementioned webinars and project planning document preparation guidance.



II. BACKGROUND

Study and Service Areas

The City of Stanton (City) is a 2.1-square mile community located in Montcalm County, Michigan on M-66 south of the intersection with M-46 in the middle of the state. Stanton is bordered by Day Township to the northeast, Evergreen Township to the southeast, Sidney Township to the southwest, and Douglass Township to the northwest.

A Water Reliability Study (WRS) was prepared for Stanton in 2017 and is included in Appendix A. The study area focused on the City’s entire water system. The findings of the study were used to generate recommendations for a Capital Improvement Plan (CIP) to rehabilitate and replace select areas of the water system. The CIP was subsequently used as a basis to identify the projects contained in this planning document. The projects are focused on the City’s distribution system and include the following:

1. Water Main Replacements
2. Lead Service Line Replacements (LSLR)

These assets are owned solely by the City and are located within its boundaries. A map of the City and its water distribution system is shown in Figure 1.

Populations

The population of the City at the time of the 2020 Census was 1,348 according to the United States (U.S.) Census Bureau. The population decreased by 4.9% from the 2010 to the 2020 Census. According to the West Michigan Regional Planning Commission (WMRPC), the population projection for the City is 1,517 by 2030, assuming a conservative growth rate of 0.35%. By 2043 the population is projected, through extrapolation, to reach 1,586. Table 1 displays the City’s demographic data as obtained through/extrapolated using these sources and assumptions.

Table 1: Population Data for the City of Stanton

Year	Population
2010 (Census)	1,417
2020 (Census)	1,348
2030 Projected	1,517
2043 Projected	1,586

Sources: www.census.gov, accessed on 2/27/2023; WMRPS, 2017.

The Median Annual Household Income (MAHI) of the City is \$37,813, while the taxable value per capita is \$17,724. As per the Overburdened Calculation Worksheet, included as Appendix B, and defined following Figure 1, the City meets the criteria for designation as an Overburdened Community. The application for overburdened status was submitted on 3/28/2023.

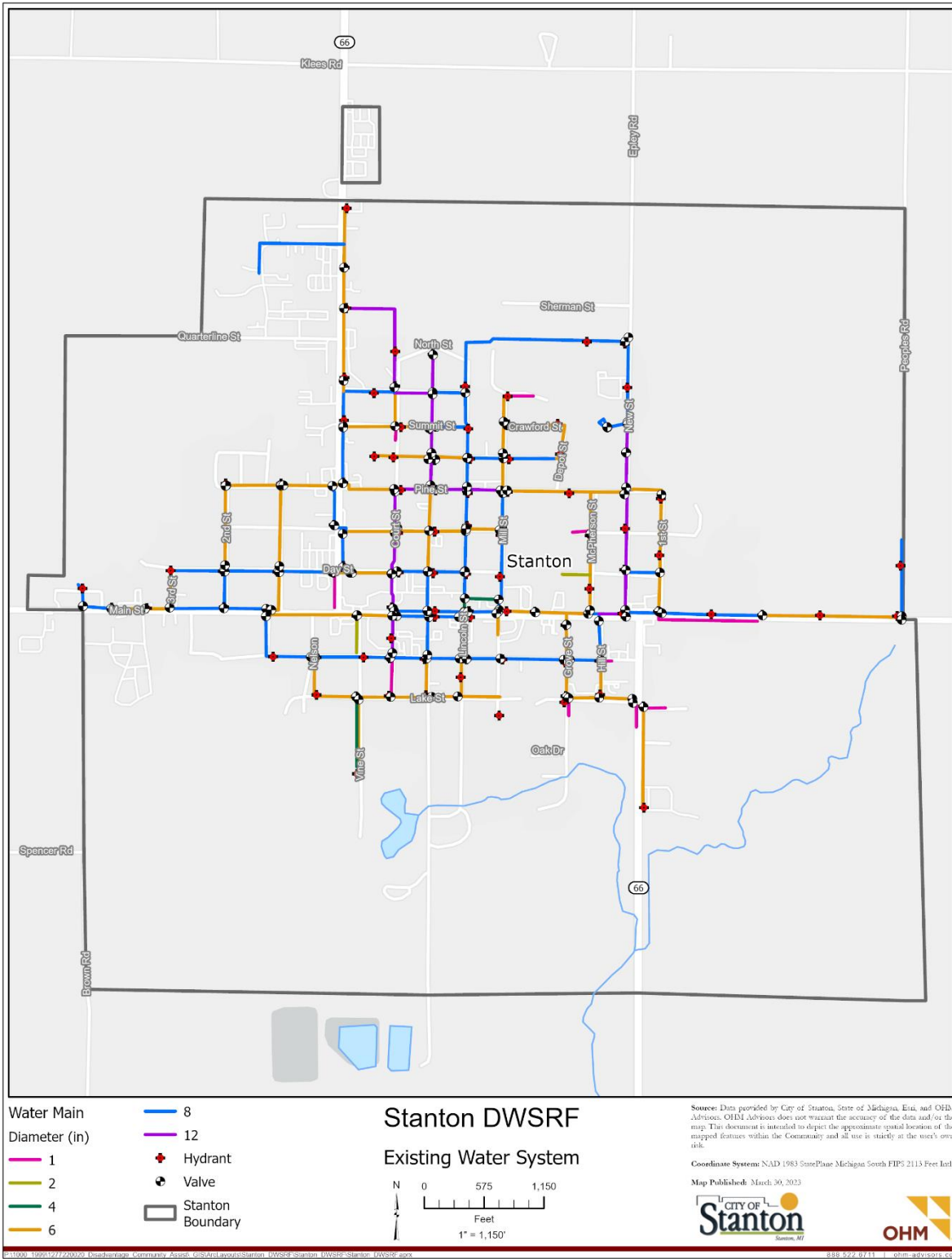


Figure 1: Existing Water System in Stanton, MI



EGLE defines “overburdened community” as a municipality in which all of the following conditions are met:

- A. Users within the area served by a proposed drinking water project, sewage treatment works project, or stormwater treatment project are directly assessed for the costs of construction.
- B. The median household income of the area served by a proposed drinking water, sewage treatment works project or stormwater treatment project does not exceed 100% of the statewide median annual household income for this state.
- C. The municipality demonstrates at least one of the following:
 - (i) The taxable value per capita of the area served by a project falls into the communities representing the lowest 20% of Michigan’s population within that category. **For FY24, the value is \$22,920 per capita.**
 - (ii) The annual user costs for the corresponding portion of the water system (sewage and stormwater treatment or drinking water) exceed 1% of the median annual household income of the area served by the proposed project.

Existing Environment Evaluation

A. Cultural and Historic Resources

The City was established in 1860 and has the following property listed on the National Register of Historic Places:

- Gilbert, Giles, House, 306 N. Camburn St.

The water main upgrades and lead service line replacements are not anticipated to negatively impact the appearance or structural integrity of the noted historic home. Figure 2 depicts the location of the nationally registered site.

The State Historic Preservation Office (SHPO) requirements for DWSRF will be fulfilled after EGLE’s release of the DWSRF FY2024 Intended Use Plan (IUP). The IUP will indicate whether the City is determined to be in the fundable range and/or whether the Section 106 review is required by the awarded funding source.

B. Air Quality

According to EGLE’s 2021 Michigan Air Quality Annual Report, the monitoring sites closest to the City are in Belding, Bay City, Lansing, and Evans, none of which exceeded the National Ambient Air Quality Standards (NAAQS) for Ozone or particulate matter. Additionally, Montcalm County is an attainment area, with Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO₂), and particulate matter levels well below NAAQS attainment concentration levels.

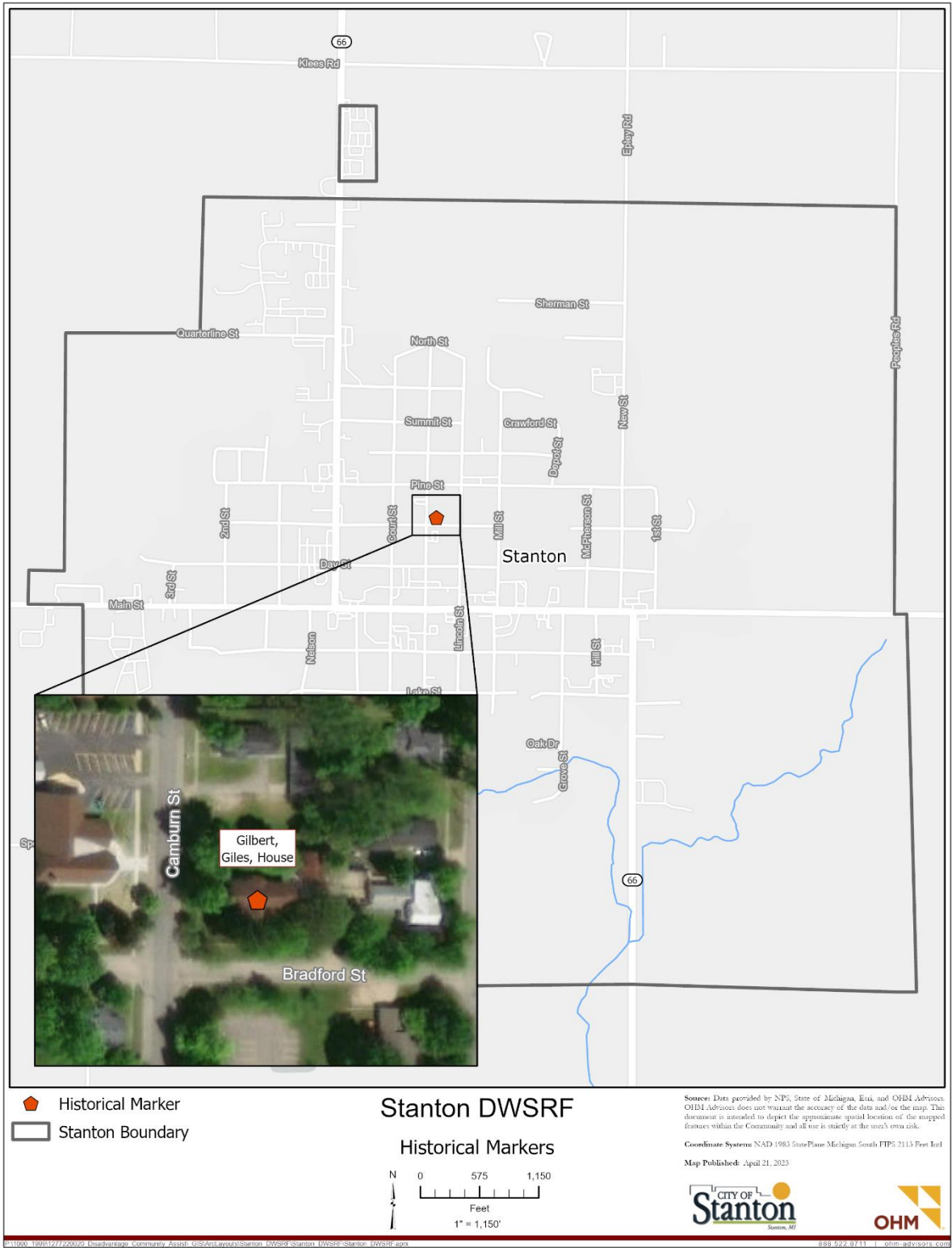


Figure 2: Historical Sites in Stanton, MI



C. Wetlands

The wetland locations within the City are depicted in Figure 3. The wetlands are principally located in the south and southeastern portions of the City, but there are also a few wetlands scattered throughout the northern half of the community.

D. Great Lakes Shorelands, Coastal Zones, and Coastal Management Areas

The City is not located along the Great Lakes shoreline.

E. Floodplains

No FEMA 100-year flood plain data is available for the City as this area is listed as unmapped.

F. Natural or Wild and Scenic Rivers

There are no natural or wild and scenic rivers within the City.

G. Major Surface Waters

There are no major surface water bodies located in the City; however, the City is part of the West Branch Fish Creek watershed, which is tributary to Lake Michigan via the Grand River.

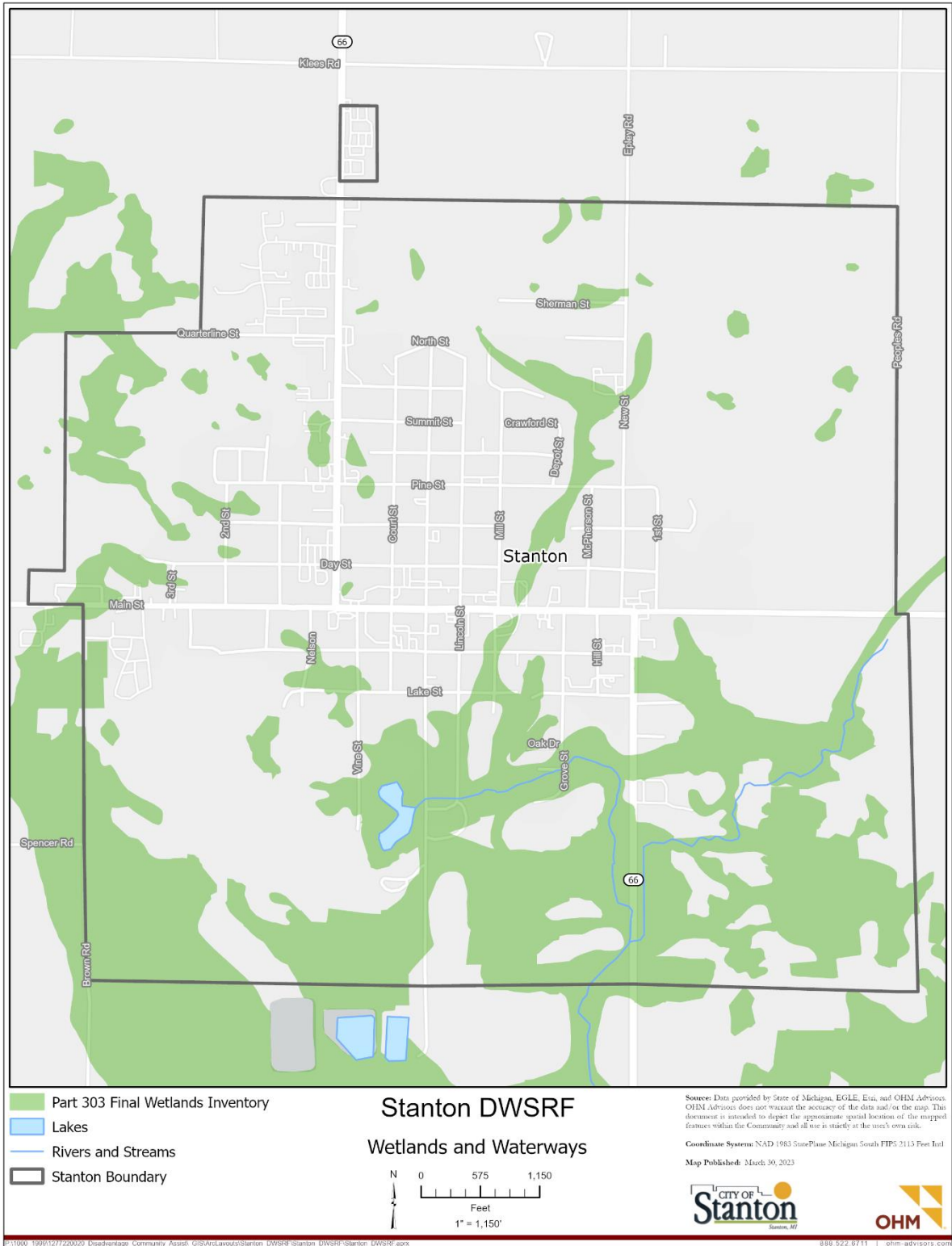


Figure 3: Wetlands in Stanton, MI



H. Topography

The topography of the City is depicted in Figure 4. Elevations increase from the southwest to the northeastern portions of the City. The lowest elevation is located in the southern half of the City.

I. Geology

The bedrock geology below the City consists of glacial drift (red beds) and the Saginaw Formation. The Saginaw Formation underlies the red beds and consists of sandstone and shale containing limestone, coal, and gypsum ranging from 75 to 350 feet in thickness. The bedrock is of Pennsylvanian and Jurassic Age. The source of this data is the Department of Environmental Quality GeoWebFace.

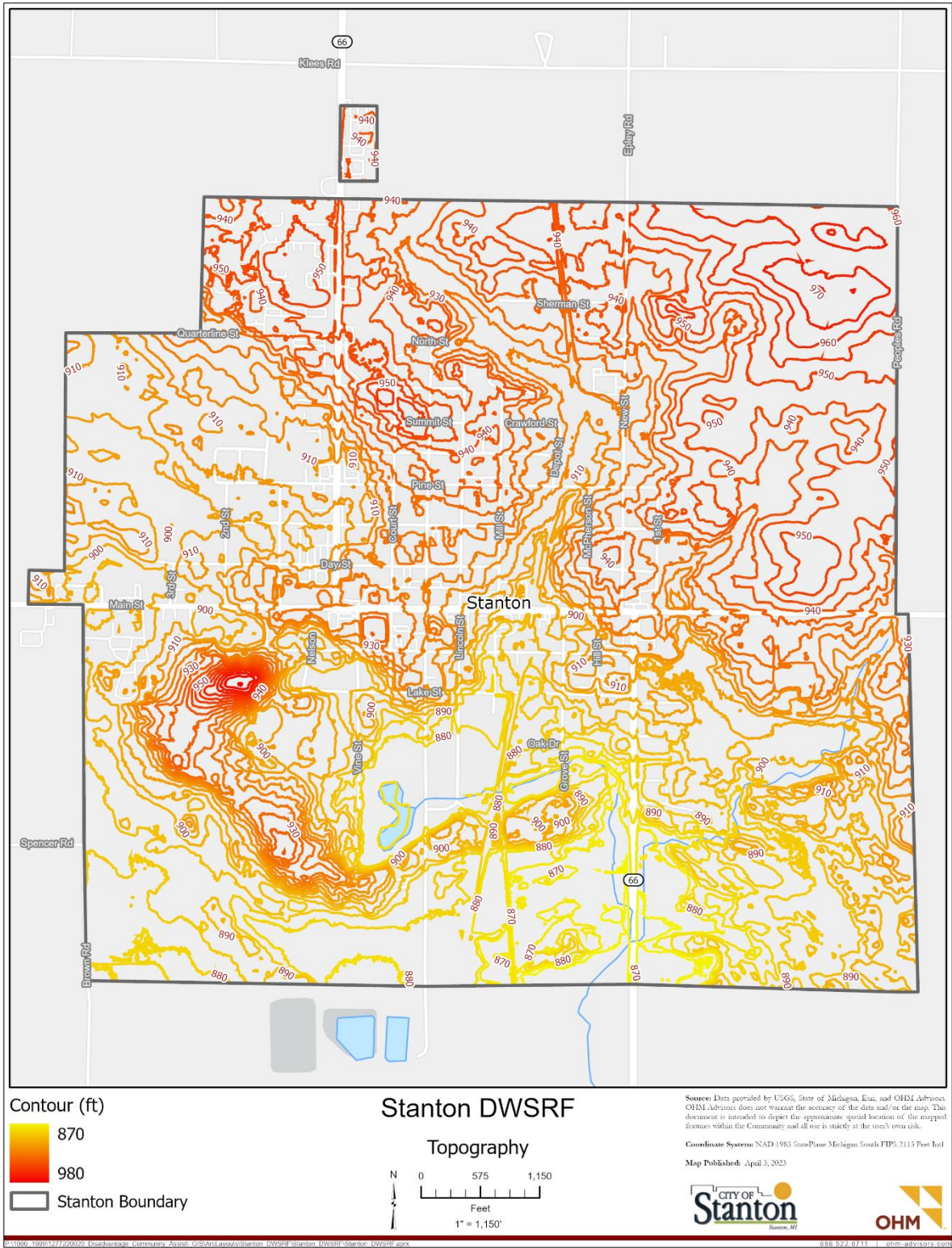


Figure 4: Elevations in Stanton, MI



J. Soil Types

Figure depicts the soil types in the City. The soils are mostly sandy loam and loamy sand with regions of muck, peat, and marl in the southern regions surrounding the waterways. The source of this data is the Department of Environmental Quality GeoWebFace.

K. Agricultural Resources

According to the 2020 Stanton Zoning Map there is no land zoned for agricultural use nor is the use contemplated in the 2016 Master Plan.

L. Fauna and Flora

The Michigan Natural Features Inventory (MNFI) web database was reviewed for the presence of protected species. The full inventory can be found in Appendix C. MNFI database did not identify any State threatened, endangered, or species of special concern documented within a 1.5-mile project area buffer. However, as per the U.S. Fish and Wildlife Services (USFWS) Information for Planning and Consultation website, a total of seven Federally listed threatened, endangered or candidate species were identified. Additional information is provided in Section IV.F. Environmental Assessment of this report.

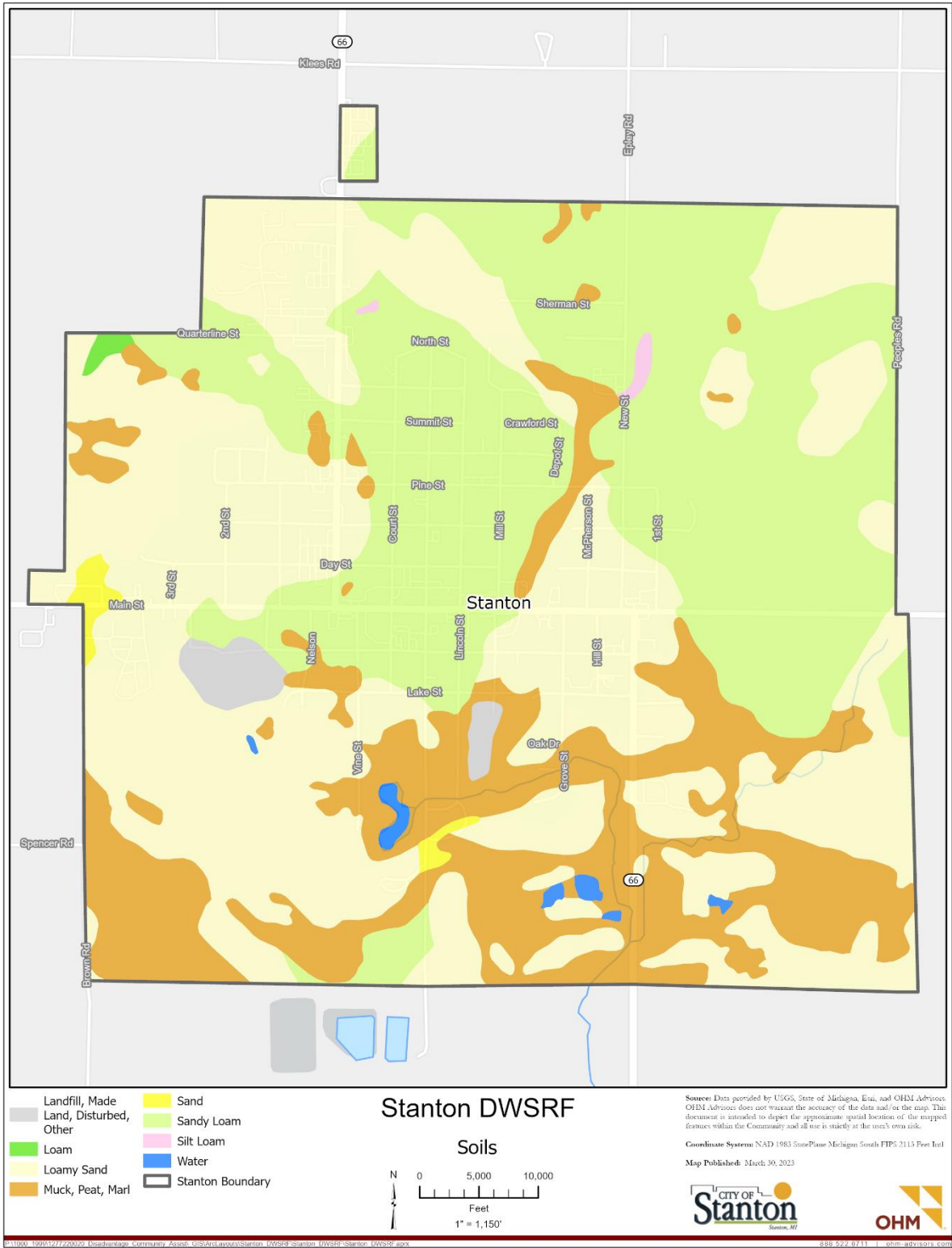


Figure 5: Soil Types in Stanton, MI



Existing System

Two groundwater supply wells, one elevated storage tank, and the water distribution system are owned by the City, each of which is depicted in Figure 1.

A. Condition of Source Facilities

The City’s water source is groundwater obtained from two 12-inch diameter wells located in a single well field at the northeast corner of the City. Both wells have vertical pumps and were last inspected in March 21, 2022. There are no current concerns regarding the quality or quantity of the source water supply.

B. Water Treatment

The City’s water supply is provided via groundwater drawn through two wells installed respectively in 1965 and 1982. Polyphosphate and sodium hypochlorite are added to the water at the well house prior to entering the distribution system. The polyphosphate (84%) is added first for iron sequestering, then sodium hypochlorite (12.5%) is added for disinfection.

C. Storage Tanks and Pump Station Facilities

The City’s water distribution system includes one 200,000-gallon elevated storage tank located on the north side of the community on Camburn Street. This tank currently meets the needs of the City and there are no concerns relative to its condition.

D. Service Lines

As reported in the 2021 Consumer Confidence report, the City has 536 water service lines. Of the noted service lines, it has been estimated that 46 are likely connected to galvanized piping which would have been connected to a lead service line. Of the remaining service lines, 57 are known to have never been connected to lead or galvanized piping while the remaining 433 service lines are of unknown material.

E. Condition of Distribution System

Tables 2, 3, and 4 list the sizes, materials, and ages of the water mains as denoted in the 2017 WRS. The City’s water distribution system consists of approximately 12.5 miles of water main ranging from 4-inch and smaller to 12-inch. Nearly 70% of the water main is ductile iron and over 80% of the water main is at least 30 years old (using 2023 as the baseline year for age calculations). The City’s system also has 106 hydrants and 247 valves. The ages of the hydrants and valves are assumed to be consistent with those of the pipes to which they are attached.

Table 2: Water Main Pipe Diameter and Lengths

Diameter (in)	Length (miles)
4 or smaller	0.4
6	5.5
8	5.0
12	1.6
Total	12.5



Table 3: Water Main Pipe Material and Lengths

Material	Length (miles)
Unknown	3.13
Cast Iron	0.82
Ductile Iron	8.52
Total	12.47

Table 4: Water Main Age

Approximate Year of Installation	Pipe Length (miles)
Unknown	3.13
1960 - 1969	0.82
1970 - 1979	0
1980 - 1989	6.43
1990 - 1999	0.21
2000 - 2009	0
2010 - Current (as of 2017 WRS)	1.88
Total	12.47

F. Residuals Handling

There are no projects at the water treatment plant, thus residuals handling does not apply to this project planning document.

G. Water Meters

There are no projects defined in this project planning document that involve water meters.

H. Operation and Maintenance

System-wide Operation and Maintenance (O&M) is performed on an ongoing basis. City staff flush water mains and exercise a portion of the valves in April and October each year. Additionally, staff flush water mains through every hydrant, without the use of valves every August giving a total of three water main flushing events each year.

I. Design Capacity of Waterworks System

According to the WRS, the permitted capacity of the two wells (known as Well 2 and Well 3) that supply water to the City of Stanton are 400-gallons per minute (GPM) and 500-gpm, respectively, as shown in Table 5. Each well has a vertical turbine pump with a nominal capacity of 0.53 million gallons per day (MGD) (368 gpm). The total and firm capacities as per the 2018 Water System Sanitary Survey are also listed in Table 5.

Table 5: Well Capacities

Facility	Capacity (gpm)
Well 2	400 Permitted
Well 3	500 Permitted
Total Capacity	752 Nominal
Firm Capacity	351



J. Climate Resiliency

The well house containing the two wells which supply water to the City is equipped with a 80kW diesel generator for emergency power.

Because the existing and proposed water mains are buried and pressurized, there is no additional susceptibility to flooding due to climate change. The primary objectives of these projects are to improve the condition of the water system and comply with Act 399 requirements.

Need for the Project

A CIP for the water system is found in the most recent WRS. That study identified the recommended water system improvements including water main and lead service line replacements. See Figure 6 for the location of each water main replacement project.

Water Main Replacements

Water main replacements are needed throughout the City due to unreliable, problematic, or undersized water mains. These improvements are aimed to increase reliable water transmission capacity and create more consistent and reliable water supply. The prioritized water main replacements include the following:

- **McPherson Street**
Replace aging water main on McPherson Street. This water main, installed in 1965, has reached the end of its useful life and has a history of breaks. The project would also include the replacement of possible lead water service lines in the construction area.
- **North State Street**
Replace aging water main on North State Street. This water main, installed in 1950, has reached the end of its useful life and has a history of breaks. This project would also include the replacement of possible lead water service lines in the construction area.
- **2nd Street**
Replace aging water main on 2nd Street. This water main was installed in 1982 and, at 41 years old, is approaching the end of its useful life. It also has a history of breaks.
- **Alley North of Main**
Replace aging water main in the alley north of Main Street. This water main was installed in 1965 and, at 60 years old, has reached the end of its useful life.

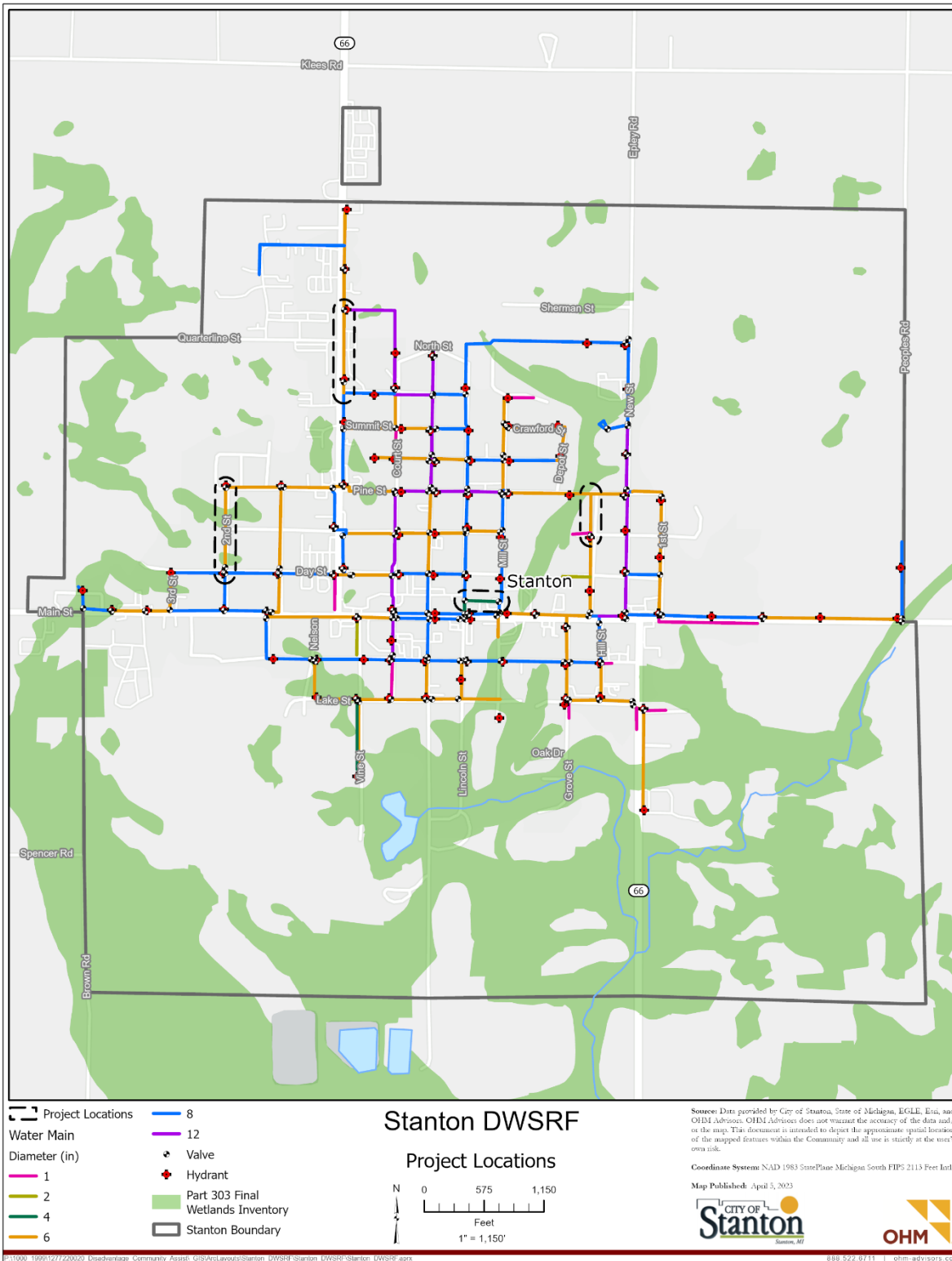


Figure 6: DWSRF Project Locations in Stanton, MI



Table 6 lists the water main breaks throughout the City since January 2017.

Table 6: Water Main Breaks in Stanton Since January 2017

Water Main Break Location	Number of Breaks	Year
W. Main (600 Block)	1	2018
W. Main (500 Block)	1	2018
E. Pine (200 Block)	2	2018, 2019
N. State (600 Block)	3	2017, 2018, 2021
N. State (800 Block)	1	2021
Vine Street (100 Block)	3	2022, 2023
S. Court (200 Block)	2	2018, 2022
Alley north of Main	NA*	
2nd Street	NA*	
McPherson	NA*	

*Break history documented in 2019 Capital Improvement Plan (CIP) see Appendix D

Lead Service Line Replacements

As reported in the 2021 Consumer Confidence Report, the City of Stanton has 536 water service lines. Of those 536 service lines, it is estimated that 46 are likely connected to galvanized piping which likely would have previously been connected to a lead service line. Of the remaining service lines, 57 were never connected to lead or galvanized piping and 433 are of unknown material. LSLR and replacement of galvanized pipe connected to lead are critical to public health.

Projected Future Needs

For population projections, please refer to the “Populations” section under the “Background” chapter of this report.

According to the WRS, there is a projected 0.01% annual increase in average daily use of water and a 0.3% annual increase in peak hourly use of water. Applying these projections, the current and projected water demands, extrapolated out to 2043, are show in Table 7. The WRS and Asset Management Plan (AMP) outline the recommended water system improvements necessary to achieve the projected water demands, each of which are included in Appendix A.

Table 7: Current and Projected Water Demands for Stanton

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2016	0.150	0.405	0.811
2021	0.150	0.413	0.825
2026	0.151	0.420	0.839
2031	0.151	0.427	0.853
2036	0.152	0.434	0.868
2043	0.153	0.444	0.889



III. NEW WATER SUPPLY WELL PROCEDURES

The City is not proposing a project in which a new supply well will be constructed, thus this section does not apply.



IV. ANALYSIS OF ALTERNATIVES

No Action

If a water main is not replaced, it will continue to age further beyond its useful life and result in more water main breaks and unreliable service. This will increase O&M costs for repairing breaks that, over time, will become more frequent. Water main breaks also leave the system vulnerable to loss of pressure and possible contamination of its drinking water, which could result in the issuance of a boil water notice and could jeopardize public health.

There are no alternatives to lead service line replacements. Lead service line replacement is required in order to protect public health. It is required that all lead service lines and galvanized service lines previously connected to lead be replaced by January 1, 2041. The No Action alternative will not be considered further.

Optimum Performance of Existing System

Optimizing performance of the existing facilities will not protect the City's system from water main breaks, public health impacts due to lead/galvanized services, and the need for increased, reliable water main capacity.

Regionalization

The City is not part of a regional system. The neighboring cities of Alma and St. Louis make up the Gratiot Area Water Authority (GAWA). Joining GAWA would not protect the City's system against water main breaks, decrease the need for lead/galvanized service replacements, or decrease the need for increased and reliable water main capacity. Additionally, connecting the City of Stanton to the GAWA system would require approximately 30 miles of new water main to cover the distance between the the City distribution system and the GLWA supply location.

Principal Alternative

The 2019 CIP for the water system identified the prioritized water system improvements including water main and lead service line replacements.

Water Main Replacements

This project planning document includes four water main replacement projects needed due to the history of water main breaks as identified in the CIP. In accordance with the 2012 Ten State Standard for Water Works, the minimum water main size allowable is 6-inch diameter. Where no increased demand is demonstrated, 6-inch diameter water main will be replaced with like size. These project areas are shown in Figure 6 and described as follows:

- 1. McPherson Street**

Replace existing 6-inch diameter water main on McPherson Street from Bradford Street to Pine Street with 6-inch diameter pipe. This water main is 58 years old and has a history of breaks.

- 2. North State Street**

Replace existing 6-inch diameter water main on North State Street, north of Cedar Street, with 8-inch diameter pipe. The water main in this area is currently undersized, has a history of breaks, and is 73 years old.



3. 2nd Street

Replace existing 6-inch diameter water main pipe on 2nd Street from Day Street to Pine Street with 6-inch diameter pipe. This water main is 41 years old and has a history of breaks.

4. Alley North of Main

Replace existing 4-inch diameter watermain in the alley between Lincoln Street and Mill Street, north of Main Street, with 8-inch diameter pipe. This water main is 60 years old and has surpassed its useful life. This water main connects to existing 8-inch water mains on each end.

Project 1: McPherson Street

Replace 450 linear feet of existing 6-inch diameter water main on McPherson Street from the intersection of Bradford Street to the intersection of Pine Street with 450 linear feet of 6-inch diameter ductile iron (DI-CL-54) pipe. This water main has a history of breaks.

1. Alternative 1: Replacement of 450 linear feet of 6-inch diameter pipe with 450 linear feet of 6-inch diameter ductile iron pipe (DI-CL-54) using an open cut installation.
2. Alternative 2: Replacement of 450 linear feet of 6-inch diameter pipe with 450 linear feet of 6-inch diameter ductile iron pipe (DI-CL-54) using a directional drilling installation.

Project 2: North State Street

Replace 820 linear feet of existing 6-inch diameter water main on North State Street, north of the Cedar Street intersection, with 8-inch diameter ductile iron (DI-CL-54) pipe. The water main in this area is undersized and has a history of breaks.

1. Alternative 1: Replacement of 820 linear feet of 6-inch diameter pipe with 820 linear feet of 8-inch diameter ductile iron pipe (DI-CL-54) using an open cut installation.
2. Alternative 2: Replacement of 820 linear feet of 6-inch diameter pipe with 820 linear feet of 8-inch diameter ductile iron pipe (DI-CL-54) using a directional drilling installation.

Project 3: 2nd Street

Replace 800 linear feet of existing 6-inch diameter water main on 2nd Street from the intersection with Day Street to the intersection with Pine Street with 6-inch diameter ductile iron (DI-CL-54) pipe. This water main has a history of breaks.

1. Alternative 1: Replacement of 800 linear feet of 6-inch diameter pipe with 800 linear feet of 6-inch diameter ductile iron pipe (DI-CL-54) using an open cut installation.
2. Alternative 2: Replacement of 800 linear feet of 6-inch diameter pipe with 800 linear feet of 6-inch diameter ductile iron pipe (DI-CL-54) using a directional drilling installation.

Project 4: Alley north of Main Street

Replace 325 linear feet of existing 4-inch diameter water main in the alley north of Main from Lincoln Street to Mill Street with 8-inch diameter ductile iron (DI-CL-54) pipe.

1. Alternative 1: Replacement of 325 linear feet of 4-inch diameter pipe with 325 linear feet of 8-inch diameter ductile iron pipe (DI-CL-54) using an open cut installation.
2. Alternative 2: Replacement of 325 linear feet of 4-inch diameter pipe with 325 linear feet of 8-inch diameter ductile iron pipe (DI-CL-54) using a directional drilling installation.



Lead Service Line Replacements

There are no alternatives to lead service line replacements. Per the 2018 State of Michigan Lead and Copper Rule, water suppliers are required to replace all lead service lines by January 1, 2041, including portions on both public and private property. Removing only part of the lead service line is prohibited unless emergency repairs are necessary. Galvanized service lines that are or were attached to a lead service line must also be replaced. A water supply can use a different replacement schedule based on the water supply's asset management plan if they receive permission from EGLE. To comply with the requirements of this rule, the City must replace its galvanized service lines.

Monetary Evaluation

Water Main Replacements

The opinions of probable costs were prepared for Project 1: McPherson Street, Project 2: North State Street, Project 3: 2nd Street, and Project 4: Alley north of Main. The only water main replacement material considered was ductile iron DI-CL-54. Installation methods considered included open cut and directional drill.

The cost opinions are organized by construction area and are provided in Appendix E of this report. A summary of the present worth for the alternative for the four water main replacement projects are presented in Table 8. Operation and maintenance costs would be similar for each of the alternatives and were therefore omitted from the evaluation. Present worth analysis was performed using a 2% interest rate evaluated over the 20 year project life. Subtotal present worth is calculated by subtracting the present worth of salvage value from the capital cost.

Table 8: Projects 1 through 4 Alternatives Present Worth Comparison

Category	Alternative 1: Open Cut Water Main Installation	Alternative 2: Directional Drill Water Main Installation
Project 1		
Capital Cost	\$500,000	\$600,000
Salvage Value	\$60,000	\$90,000
Present Worth of Salvage Value	\$40,000	\$61,000
Subtotal Present Worth	\$460,000	\$539,000
Project 2		
Capital Cost	\$890,000	\$1,080,000
Salvage Value	\$110,000	\$170,000
Present Worth of Salvage Value	\$74,000	\$114,000
Subtotal Present Worth	\$816,000	\$966,000
Project 3		
Capital Cost	\$760,000	\$940,000
Salvage Value	\$100,000	\$150,000
Present Worth of Salvage Value	\$67,000	\$101,000
Subtotal Present Worth	\$693,000	\$839,000
Project 4		
Capital Cost	\$390,000	\$460,000
Salvage Value	\$50,000	\$70,000
Present Worth of Salvage Value	\$34,000	\$47,000
Subtotal Present Worth	\$356,000	\$413,000
Combined Total Present Worth	\$2,325,000	\$2,757,000



Lead Service Line Replacements

As reported in the 2021 Consumer Confidence Report, the City identified 46 service lines that are likely connected to galvanized piping and can be subsequently assumed to have previously been connected to a lead service line. The City also has 433 service lines that are of unknown material. Per the 2018 State of Michigan Lead and Copper Rule, water suppliers are required to replace all lead service lines by January 1, 2041, including portions on both public and private property. Galvanized service lines that are or were attached to a lead service line must also be replaced. Assuming that each service line is of consistent length (40 linear feet) and is replaced with 1-inch copper pipe with a stop box, the estimated cost per line is \$8,000 plus a 15% engineering fee. Therefore, the capital cost for 46 service lines is \$423,200. A summary of the present worth for the replaced of the 46 known galvanized lines is presented in Table 9.

Table 9: Service Line Replacement Present Worth

Category	Replacement of 46 known Galvanized Lines
Capital Cost	\$423,200
Salvage Value	\$220,000
Present Worth of Salvage Value	\$148,000
Total Present Worth	\$275,200

Environmental Evaluation

The alternatives presented above are not expected to result in major environmental impact. Table 10 below depicts the environmental impact from each alternative.

Table 10: Environmental Impact

Category	Environmental Impact					
	Air	Wetland	Floodplain	Water/Land Resources	Historical /Tribal Resources	Endangered Flora and Fauna
No Action	None	None	None	None	None	None
Optimum Performance of Existing System	N/A	N/A	N/A	N/A	N/A	N/A
Regionalization	N/A	N/A	N/A	N/A	N/A	N/A
Proposed Improvements	Low/Standard Construction	Low/Standard Construction	Low/Standard Construction	Low/Standard Construction	Low/Standard Construction	Low/Standard Construction

The proposed projects will address the necessary improvements and repairs to the drinking water distribution system which are urgently needed to maintain compliance with state and federal requirements, improve the function and reliability of the system, and to protect public health. Temporary and/or low impact to the environment and to the public is expected during construction. All permit requirements will be adhered to.

While the 2nd Street replacement project is located in close proximity to the existing wetlands, any potential impact will be minimized through the use of directional drilling. Furthermore, mitigation of



potential impacts will be properly performed to protect the environment and the public and will be in accordance with all permit requirements.

There are no projects in the vicinity of the historical site within the City of Stanton.

The review of the MNFI database identified no rare, endangered, and threatened species that may be present in the project areas. The MNFI database identifies the type of habitat that is needed to support individual endangered, threatened, or species of special concern. If the needed habitat is no longer present in the area due to changes and development in the area, the observation is considered historical, and the individual species is not anticipated to be present.

The USFWS, on the other hand, identified 7 additional species that may be present in the project areas, as summarized in Table 11.

Table 11: USFWSI Rare Species Review Summary

Species	Potential Impact (worst case – varies by project)
Eastern Massasauga	May affect
Indiana Bat	May affect, not likely to adversely affect (NLAA)
Karner Blue Butterfly	May affect
Monarch Butterfly	May affect
Northern Long-eared Bat	May affect, not likely to adversely affect (NLAA)
Tricolored Bat	May affect, not likely to adversely affect (NLAA)
Whooping Crane	May affect

Most of the work is proposed at the same sites where existing facilities are located and in areas already developed. There is minimal habitat present for the listed species and no or low project impact is expected. When the limits of ground-disturbing activities are further refined during the design phases for the various projects, additional review will be made to determine if the habitats for the species will be impacted.

Presence of Contamination

According to EGLE’s Inventory of Facilities accessible through the Remediation Information Data Exchange, there are 11 Part 201 and Part 213 sites within 5 miles of the project locations. Five of the sites are Part 201 and six are Part 213 sites. A summary of addresses is provided in Table 12 below. These locations are also shown in Figure 7.

Table 12: Part 201 and Part 213 Sites Located in Stanton

	Site Name	Site Address	Site Classification
1	227 East Main Street	227 East Main Street	Part 201
2	271 W Day Street	271 W Day Street	Part 201
3	417 & 419 East Main Street	417 & 419 East Main Street	Part 201
4	618 East Main Street	618 East Main Street	Part 201
5	Former City of Stanton Landfill	Grove Street	Part 201
6	County Seat Amoco	707 E Main St	Part 213
7	Former Elevator	314 E WALNUT	Part 213
8	A.N Russell & Sons Inc	300 N STATE ST	Part 213
9	Stanton Shell	288 E Main	Part 213
10	Zerka’s Party Store Inc	134 W Main St	Part 213
11	Montcalm County Road Commission	619 W Main St	Part 213

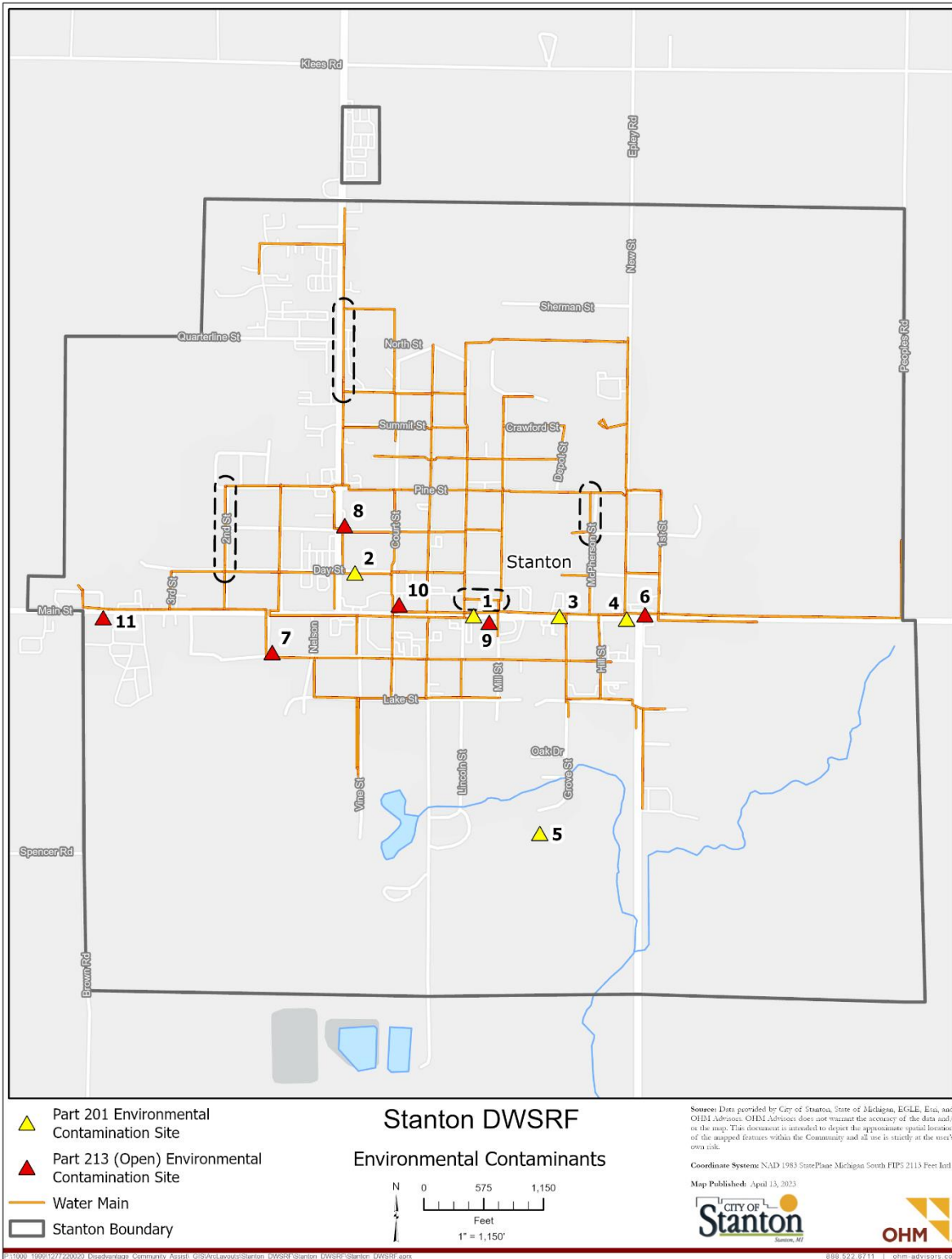


Figure 7: Environmental Contaminants in Stanton, MI



It does appear that planned improvement Project 4 is in the vicinity of one Part 201 and one Part 213 site. Depending on the direction of groundwater flow and the length of time that the contamination has been present, there is a possibility that the contaminants have migrated off-site. The impact of Part 201 and Part 213 sites will require that water main placed in the vicinity of these sites be reviewed for compatibility. Specifics on the exact pollutants are not available; however, commonly accepted engineering practices related precautionary measures are proposed to be taken at each location to minimize the likelihood that construction of the new water main or service lines further spread the contamination or result in contaminant exposure to residents or workers. Water mains in the presence of potential contaminants will be installed via directional drilling with ductile iron pipe. This method of installation and material will eliminate exposure to potential contaminants as well as reduce the risk for pipe failure due to a reaction with the pipe material. Specialized gaskets designed to withstand groundwater contamination at water main joints will be proposed in these areas to help prevent contaminants from entering the system.

Technical Considerations

Water Main Replacement

Replacing water mains that have a history of breakage and have passed or are reaching the end of their useful life will increase reliability of service to residents and customers.

Applicable EGLE procedures, Ten States Standards, as well as local ordinances shall be strictly adhered to during design and construction.

Alternatives comply with Act 399 and are designed to meet the standard recommended guidelines established in the “Recommended Standards for Waterworks” as published by the Great Lakes and Upper Mississippi Board of State Sanitary Engineers.

Lead Service Line Replacement

Replacing galvanized service lines connected to lead are critical to public health and must be completed to comply with the 2018 State of Michigan Lead and Copper Rule.

New/Increased Water Withdrawals

This section does not apply to this project, as little growth is anticipated within the City.



V. SELECTED ALTERNATIVE

Water Main Replacements

Project 1: McPherson Street

The selected alternative for this project is using directional drilling as the installation method. Directional drilling is the preferred installation method for the City. Directional drilling is presumed to result in a diminished environmental impact on the threatened and endangered species that have been identified as potentially existing in the vicinity of the project location. This installation method is also presumed to reduce the impact on the public during construction and will maintain the integrity of the surrounding infrastructure along the length of the water main install location.

Project 2: North State Street

The selected alternative for this project is using directional drilling as the installation method. Directional drilling is the preferred installation method for the City. Directional drilling is presumed to result in a diminished environmental impact on the threatened and endangered species that have been identified as potentially existing in the vicinity of the project location. This installation method is also presumed to reduce the impact on the public during construction and will maintain the integrity of the surrounding infrastructure along the length of the water main install location.

Project 3: 2nd Street

The selected alternative for this project is using directional drilling as the installation method. Directional drilling is the preferred installation method for the City. Directional drilling is presumed to result in a diminished environmental impact on the threatened and endangered species that have been identified as potentially existing in the vicinity of the project location. This project location is also in the vicinity of a wetland. Installing this water main using directional drilling is presumed to minimize wetland disruption. This installation method is also presumed to reduce the impact on the public during construction and will maintain the integrity of the infrastructure along the length of the water main install location.

Project 4: Alley north of Main Street

The selected alternative for this project is using directional drilling as the installation method. Directional drilling is the preferred installation method for the City. Directional drilling is presumed to result in a diminished environmental impact on the threatened and endangered species that have been identified as potentially existing in the vicinity of the project location. This installation method is also presumed to reduce the impact on the public during construction and will maintain the integrity of the infrastructure along the length of the water main install location. Additionally, Project 4 is located in the vicinity of two sites of potential contaminants. Water mains in the presence of potential contaminants will be installed via directional drilling to eliminate exposure to potential contaminants.

Lead Service Line Replacements

Per the 2018 State of Michigan Lead and Copper Rule, the City must replace its galvanized service lines. This is the only cause of action, and therefore is the selected alternative.



Design Parameters

A list of recent water main breaks can be found in Table 6, and the water mains to be replaced are shown in Figure 6. The selected material for water main replacement is ductile iron (DI CL-54). The water main replacement projects also include replacement of connected hydrants (a minimum of 1 hydrant every 500 linear feet) and the replacement of valves at a minimum of every 1,000 linear feet.

The following types of problems will be addressed by these projects:

- Water mains with a history of breakage will be replaced.
- Undersized water mains will be right sized to provide the desired level of service to the community.

The 46 identified galvanized service lines that are or were attached to a lead service line must also be replaced to comply with the 2018 State of Michigan Lead and Copper Rule. The selected material for service line replacement is 1-inch copper with a 1-inch stop box.

Applicable EGLE procedures, Ten States Standards, as well as local ordinances, shall be strictly adhered to during design and construction.

Useful Life

The weighted useful life for the selected projects was calculated to be 44.0 years. The useful life for each asset included in the cost opinions were determined based on the values provided in the DWSRF Project Planning Document Preparation Guidance and Professional Engineer’s opinion. Table 13 includes the useful life that was assumed for each asset included in the cost opinions and the present worth analysis.

Table 13: Useful Life of Assets

Asset	Useful Life (yrs)
Water Main	50
Fire Hydrant	30
Gate Valve and Well	30
Water Service Line	50

Water and Energy Efficiency

Energy is needed to extract raw water from wells and convey, treat, store, and distribute safe drinking water to the customers. Aging distribution systems, most of which are prone to water main breaks, allow extracted and treated drinking water to escape the distribution system thereby decreasing its energy efficiency. By replacing and maintaining aging water mains, the likelihood of main breaks is decreased, thus saving energy and water and increasing the efficiency of the system.



Schedule for Design and Construction

The City of Stanton is requesting consideration for fourth quarter funding under EGLE’s DWSRF program. The proposed design and construction schedule is summarized in Table 14.

Table 14: Design and Construction Schedule

Task	Submittal Date
Draft Design Documents Submittal to EGLE	February 16, 2024
Environmental Assessments Published No Later Than	April 24, 2024
Part I and Part II Application	May 15, 2024
Final Documents Submittal to EGLE	May 17, 2024
Finding of No Significant Impacts Clearance; Plans & Specs Approved	May 24, 2024
Bid Ad Published No Later Than	May 24, 2024
Part III of Application; Bid Data Submittal (With Tentative Contract Award)	July 8, 2024
EGLE Order of Approval Issued	August 7, 2024
Borrower's Pre-Closing with the MFA	August 21, 2024
MFA Closing	August 28, 2024
Notice to Proceed Issued	October 27, 2024
Construction Completed	December 20, 2026

Cost Summary

A summary of the cost by project area is presented in Table 15.

Table 15: Summary of Costs by Project Area

Category	Cost
Project 1 Cost	\$600,000
Project 2 Cost	\$1,080,000
Project 3 Cost	\$940,000
Project 4 Cost	\$460,000
Subtotal Water Mains	\$3,080,000
Lead Service Line Replacement Cost	\$423,200
Total Project Cost	\$3,503,200



User costs have been evaluated and an analysis is provided in Table 16. Loan repayment will be through an adjustment to current user rates.

Table 16. User Cost Analysis

Project Area Name	Initial Capital Investment	Annual Debt Retirement (20 yrs. @ 2.75% Interest)	Annual Cost per Household*	Quarterly Cost per Household *
Project 1 Cost	\$600,000	\$39,500	\$86.00	\$21.50
Project 2 Cost	\$1,080,000	\$71,000	\$127.00	\$31.75
Project 3 Cost	\$940,000	\$61,800	\$110.00	\$27.50
Project 4 Cost	\$460,000	\$30,300	\$54.00	\$13.50
Lead Service Line Replacement Cost	\$423,200	\$27,800	\$50.00	\$12.50
Overall Cost	3,503,200	\$230,400	\$427.00	\$106.75

* Average household of 2.4 people. (Source: Censusreporter.org)

Implementability

The selected alternative will be implemented by the City. All work is under the jurisdiction of the City and requires no inter-municipal agreements. Stanton has the legal, institutional, technical, financial, and managerial capacity to implement the projects. All work will be performed in road rights-of-way.



VI. ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS

Adoption of this alternative would improve the reliability of the distribution system by replacing aging water mains. In addition, public health would be protected through the replacement of lead service lines.

Direct Impacts

A. Construction Impacts

- 1. Water Main Replacements:** New water mains will replace existing water mains and will be installed using the directional drilling technique. This technique minimizes the amount of earth work necessary and therefore preserves the surrounding environment along the length of the replacement pipe. Impacts to the environment will be low, and standard construction practices and proper mitigation of impact will be observed and included in construction contracts. Construction work at the drilling site could result in dust, noise, and traffic disruptions. The existing water main will continue to be in service while the new water mains are installed. However, short term service disruption may occur when connection of the replacement main to the existing main is performed. Any disruption will be properly planned and coordinated with customers to minimize public impact.
- 2. Service Line Replacements:** New service lines will replace existing service lines. Impacts to the environment will be low, and standard construction practices and proper mitigation of impact will be observed and included in construction contracts. Construction work for this alternative could result in dust, noise, and possible traffic disruption at the service location. Short term service disruptions may also occur as service is switched to the new service line, but the disruptions will be properly planned and coordinated with customers to minimize public impact.

B. Operational Impacts

- 1. Water Main Replacements:** The replacement of water mains will have some impact on traffic in the vicinity of where the construction is occurring. The project may require lane closures along adjacent segments of road. The existing water mains will continue to be in service while the new water mains are installed. However, short term service disruption may occur when connection of the replacement main to the existing main is performed.
- 2. Service Line Replacements:** The replacement of service lines will have some impact on traffic in the vicinity of where the construction is occurring. The project may require lane closures along adjacent segments of road. The existing service line will continue to be in service while the new service line is installed. However, short term service disruption may occur when service is switch to the new service line.

C. Social Impacts

Impacts on materials, land, and energy are proposed to be minimized by selection of qualified contractors. Construction activities for the water mains and service line replacements will take place in previously served areas.



Indirect Impacts

There are no anticipated impacts to the rate, density, or type of development due to this project. The City is almost completely developed and has limited growth projected over the next 20 years. There are also no expected changes in land use resulting from this project. Impacts related to air quality may result from this project but are limited to direct impacts due to traffic and construction equipment.

There are no anticipated changes to the natural setting or ecosystem, however as per USFWS there are threatened and endangered species that may be present in the project areas. In the event any such species are observed during project activities, observations will be reported to the local county Michigan Department of Natural Resources (MDNR) office within 24 hours. Tree clearing will be avoided to the extent possible. If tree clearing is necessary, it will occur between October 1st and March 31st to avoid impacting bat species.

Impacts on cultural, human, social, and economic sources are expected to be minimal, and may occur during the construction phase as a result of the traffic routing around the construction area. These impacts are expected to be short-term.

There is no anticipated resource consumption over the useful life of the water system, and the project is not expected to generate waste. Aesthetic impacts are anticipated to be short-term and only occur during the construction phase. Following construction, all project areas will be reestablished to their previous conditions.

Cumulative Impacts

No cumulative impacts, for example population growth, are anticipated as a result of the improvement projects.



VII. MITIGATION

A. Short Term Impacts

Typical construction mitigation is expected for the selected alternative. Traffic control may be required during the replacement of the water mains. Access to some roads may be temporarily restricted to provide a safe working environment. Soil erosion and sedimentation control measures will be required to ensure nearby sanitary and storm lines are not impacted by the construction process. Vegetation disrupted by the construction process will be restored to its original condition. Service will be maintained for residents during construction, with short term disruptions expected during the connection of the new water main and service lines to the existing system.

Construction activities will begin in 2024. All Construction activities are anticipated to conclude in 2026.

B. Long-Term Impacts

No long-term impacts are anticipated as part of the water main or service line replacement projects. Projects are located at the same areas where existing water mains and service lines are located.

If tree clearing is required, the trees will be identified during the design phase. Protection measures will be taken to ensure that no endangered or threatened species will be affected during the tree clearing phase. Trees that are removed will be replaced.

C. Indirect Impacts

The proposed projects are intended to improve the reliability of the existing system by replacing aging water mains and replacing existing lead service lines. No system expansion is proposed. The project is not intended to induce growth within the project area.



VIII. PUBLIC PARTICIPATION

Public Meeting

A public meeting was held on May 9, 2023.

Public Meeting Advertisement

The public meeting notice was published on April 28, 2023, on the City of Stanton website, along with being posted at City Hall, the White Pine District Library, and at the Stanton Post Office. In addition, a copy of the draft Project Planning Document was provided for public review in person and on the City website. A copy of the advertisement for the public meeting can be found in Appendix F.

Public Meeting Summary

The public meeting presentation can be found in Appendix F.

Adoption of the Project Planning Document

The City Council adopted a resolution following the public meeting on May 9, 2023. A signed copy of the resolution is included in Appendix G, along with the DWSRF Submittal Form.



APPENDIX A

Water Reliability Study (2017)

Water System Reliability Study

WSSN #M10006360

Prepared for
City of Stanton
Montcalm County, Michigan

December 8, 2016

2160281

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EXECUTIVE SUMMARY

This report represents the update of the City of Stanton Water System Reliability Study. Based on the three primary components of the water distribution system (supply, water distribution network and the storage requirements), the following conclusions could be made:

- The water supply has met the regulations for microbiological, radioactive, inorganic and volatile organic contaminants.
- The present rated supply capacity of 0.58 mgd is adequate to meet the 20-year (2036) maximum day demand projections of 0.43 mgd. This represents 75% of the rated supply capacity.
- There are a few areas of the current system, located at dead ends, which receive less than suggested fire flow. Recommendations have been made in order to improve the fire flow at these locations.
- Currently 44% of the system is older 6-inch distribution main. The condition of these older mains should be monitored and considered for replacement when appropriate.
- The water system is able to provide a storage capacity of 1,500 gpm of fire flow for two hours based on projected Year 2036 demands. This is considered adequate for most customers.

I. INTRODUCTION

The City of Stanton is located in Montcalm County in central lower Michigan, approximately 40 miles northeast of the City of Grand Rapids. Residents and businesses in the City of Stanton rely on groundwater as the source of their drinking water. A layout of the City of Stanton water distribution system is shown in Figure 1.

The purpose of this report is to provide the results of an evaluation of the reliability of the City of Stanton water system. This study is intended to fulfill the requirements of Part 12 and Part 16 promulgated under Michigan's Safe Drinking Water Act, 1976, P.A. 399, as amended. The Act calls for a 20-year projection of water demands and an evaluation of each of the system components on a five year interval.

This report contains population projections, identifies current and projected water demands, and includes a computer assisted network analysis of the water distribution system. Based on the analysis, recommendations for improvements to the water supply system are made and cost estimates are presented for the improvements.

II. WATER DEMANDS

The City of Stanton distribution system supplies water to residents within the City limits. Land use within the city boundaries is mixed, with a significant amount of residential area, and some commercial and governmental districts, as the City acts as the Montcalm County seat.

There are no significant water users (>10% of total use) within the City's water supply system as shown in Table 1. The Montcalm County Clerk, located on the north side of town, has been the City's largest water user and has occasionally been a significant water user, consuming over 10-percent, but has not done so consistently. Figure 2 and Table 2 show the historical total water supplied to the system. Figure 2 shows the average day and maximum day demands have fluctuated substantially over recent years. Historical pumpage data from 2011 to 2015 is provided in Appendix C.

The population projections for the community are based on historical water use and population projections for the City of Stanton from the West Michigan Regional Planning Commission (WMRPC). The latest population projections for Montcalm County through Year 2030 show an

average 1.07 percent annual growth rate. This is less than the 1.49 percent historical average annual growth from 1970 to 2010. Conversely, for the City, the population declined by approximately 0.57 percent annually from 2000 to 2010. The WMRPC shows a very slight increase (basically flat at 0.0035 percent) despite the recent reductions. A conservative growth rate of 0.35 percent annual growth was used. Details are provided in Table 3 and Figure 2.

Water demand projections are based on this projected population rate increase for the community. For this evaluation, the system-wide water consumption is projected to increase over the next 20 years by 0.35 percent per year.

From this data, the following is estimated: average day demand, which is the average daily water use for the year; maximum day demand, which is the highest daily use for the year; and peak hour demand, which is the estimated maximum hour of water use during the year. Figure 3 graphically illustrates the historical water use along with projections. Water system demands are projected through Year 2036 as shown in Table 3.

Demands are projected and probability ranges are determined for each demand condition. The demands presented herein are the maximum expected projections accounting for increased usage during hot and dry years. The average day system demand for Year 2016 is estimated to be 0.150 million gallons per day (mgd) and is projected to increase to approximately 0.152 mgd by Year 2036. The maximum day demand ratio has varied significantly over the past 5 years, with the highest maximum day demand at 0.400 mgd. A maximum day to average day demand ratio of 2.5 was used for projections. Based on a multiplier of 2.5, the projected maximum day demands are 0.405 mgd (matching the recent 5-year maximum), 0.413 mgd, 0.420 mgd, 0.427 mgd, and 0.434 mgd for Years 2016, 2021, 2026, 2031 and 2036, respectively.

III. WATER SUPPLY SOURCE

The City of Stanton water supply is groundwater. Currently, the City obtains water from two 12-inch diameter wells located in a single well field at the northeastern corner of the city. The wells were installed in 1965 and 1982. Polyphosphate and sodium hypochlorite are added to the water at the well house prior to entering the distribution system. The polyphosphate (84%) is added first for iron sequestering, then sodium hypochlorite (12.5%) is added for disinfection.

Well #2 has a permit capacity of 400 gallons per minute (gpm) and Well #3 has a permit capacity of 500 gpm. Well #2 was last rehabilitated in 2012 and according to an inspection done in August of 2016 is in excellent condition. Well #3 was also inspected at this time and is recommended for cleaning.

The pumps at Wells #2 and #3 are both vertical turbine pumps. Inspection in August, 2016 indicated that each pump was operating below pump capacity and should be overhauled. Pump data can be seen in Table 5.

IV. WATER SYSTEM INFRASTRUCTURE

A. Storage Facilities

The City of Stanton water distribution system includes one (1) 200,000 gallon elevated storage tank on the north side of town on Camburn Street. This tank currently meets the needs of the City by providing equalization storage and 1,500 gpm of fire flow for 2 hours.

Specifics on storage volume requirements follow:

1. Fire Demand Requirements

There is no regulatory requirement that a water supplier must size its water distribution system to provide fire protection. Most systems, however, do provide water for fire protection of property, public safety, and public welfare.

With the existing storage and supply capacity available, the City can provide 1,500 gpm for two hours to customers. A combination of storage and pumping is used to supply fire demands. To achieve fire protection of 3,500 gpm for three hours while maintaining system pressures, additional storage is needed within the distribution system.

2. Equalization

When peak system demands occur in the City, the elevated storage tank is used to provide water in addition to that provided by the pumps at the well; otherwise known as equalization storage.

The suggested equalization volume is based on providing one (1) hour of peak hour demand and the remaining duration of maximum day demands. Recommendations have been prepared based on this methodology.

3. Overall Storage

The Recommended Standards for Water Works indicates that storage facilities should have sufficient capacity, as determined from engineering studies, to meet domestic demands, and where fire protection is provided, fire flow demands.

Table 6 provides data on the existing storage tank. Fire and overall storage estimates are shown in Table 7 for the system including equalization storage and emergency storage. The results of the water storage analysis are discussed later in this report.

B. Water Distribution Mains

The City of Stanton serves an area of approximately 0.75 square miles with an extensive network of transmission and distribution mains. The system consists of approximately 12.5 miles of water mains ranging from 4 to 12 inches in diameter. A breakdown of the water mains by size is presented in Table 8.

The age of the pipes in the distribution system vary from new to over 50 years old. Table 9 provides an estimate of the age of water mains in the system. The City has periodically replaced pipes in the system as needed, with major projects in 1982 and 2013.

Table 10 provides a summary of the water main material in the system. A majority of the pipes are ductile iron, with the remaining pipes listed as cast iron. Again, the condition of mains should be observed and addressed when necessary.

The latest project in 2013 vastly improved the system transmission with the installation of nearly 1.5 miles of 12-inch main. With minimal transmission prior to 2013, however, additional improvements should be considered to improve transmission throughout the entirety of the system.

V. WATER SYSTEM ANALYSIS

A. Water Storage Analysis

1. Existing System

Ten State Standards states in Section 7.01: "Storage facilities should have sufficient capacity, as determined from engineering studies, to meet domestic demands and where fire protection is provided, fire flow demands".

With City of Stanton's desire to provide fire protection to customers, a common practice is to determine the storage needs while accounting for maximum daily demands, maximum hourly demands and fire demands. An analysis was performed for these demands with consideration for the supply capacity.

Table 8 shows the results, indicating that under Year 2016 demands for the entire system there is sufficient storage to supply customer demand and emergency storage for residential customers. The supply capacity of 0.58 mgd and existing storage of 200,000 gallons is currently able to provide 1,500 gpm of fire flow for two hours.

2. Future Conditions

The system-wide storage was analyzed for Year 2036 demand projections. The analysis was completed based on demand projections and the existing supply capacity.

This analysis of storage and supply needs through 2036 is shown in Table 7, indicating that the system-wide storage is able to provide 1,500 gpm fire demands for two hours, but is insufficient to sustain 2,000 gpm of fire flow for two hours. Additional storage or supply would be required to meet the 2,000 gpm demand.

B. Distribution System Analysis

The City of Stanton Water Supply System network was analyzed using the water distribution software WaterCAD V8i. With its interface in AutoCAD, WaterCAD software performs complex hydraulic analyses on a distribution system and presents the model results in a graphical format. The model requires input of lengths, sizes, and roughness factors (Hazen-

Williams coefficients) for pipes; ground elevations and demands for nodes; and storage tank elevations and volumes.

1. Model Development

The WaterCAD model was developed including all water mains 4-inches and larger. Projected average day, maximum day and fire demands were included for Years 2016 and 2036.

Hydrant flow tests were completed to assist with determining the transmission capabilities of a system. Model calibration was completed by comparing measured and modeled static pressures at a given location under typical conditions and the residual pressures at that same location for a given hydrant flow. The hydrant test data provides information for model calibration; that is, model parameters can be adjusted so that predicted results compare favorably to measured results. In addition, the test data can provide information to determine locations at which a valve might be partially closed, or locations at which an unknown connection could exist.

City of Stanton water system personnel and Prein&Newhof employees performed the majority of hydrant flow tests on September 29, 2016, with additional tests performed on November 29, 2016. The results of these tests are shown in Table 11. The tests were performed at a variety of locations dispersed throughout the system and provide data to adjust roughness coefficients and demands when necessary to simulate results.

Using the hydrant test data, the model was calibrated as follows:

- Simulate system conditions using initial assumptions for parameters
- Adjust water main roughness coefficients and system demand distribution
- Perform a sensitivity analysis on adjusted results
- Fine tune results based on previous steps

Table 12 compares the calibrated model results to the nine hydrant test sites. The model reasonably simulates the hydrant test results. Static and residual pressures are within 3.5 psi at all hydrant test locations. In all cases, the modelled fire flow results (to 20 psi) are within 10-percent of the field fire flow extrapolations. Given the potential fluctuations in system

demands and other unknowns such as tank level, the calibration results can be considered reliable.

The 6-inch, 8-inch, and 12-inch mains have Hazen-Williams coefficients ranging from 110 to 130. Newer pipes were assumed to have a Hazen-Williams coefficient of 130 to 140.

2. Existing System

The calibrated model allowed for simulations to be performed for various demand conditions. Resulting pressures were reviewed to determine the adequacy of the system under high or low demands. Pressures during non-emergency conditions should not fall below 35 psi, nor should pressures in the system exceed approximately 85 psi.

Since emergency fire flows are generally the highest water demand which will be experienced by a distribution system, available fire flows are typically used as the standard for measuring system performance. In general, the available fire flow represents the flow available at a given location without creating a low pressure problem anywhere in the system. The minimum system pressure which should be maintained at all times is 20 psi. While recommended fire flows vary based on many factors, the generally suggested fire flows are 1,000 to 1,500 gpm for residential customers, 2,500 gpm for commercial customers, and 3,500 gpm for industrial customers. At present, the City can provide 1,500 gpm for 2 hours.

Table 13 provides results of simulations for existing conditions. The table shows the resulting pressures for average day and maximum day demands and the available fire flows during maximum day demands. The locations shown represent a cross-section of areas across City of Stanton as well as noted areas of concern.

a. Low Pressures

Results indicate that pressures during non-emergency conditions are adequate throughout the system.

b. High Pressures

The model results indicate that there no areas of high pressure concern.

c. Less than Suggested Fire Flow Available

The model results show that the system transmission capacity is good. In addition, the available fire flows meet that which is suggested in many locations throughout the system. However, the available fire flows are less than suggested in some areas at the end of dead end mains. These locations include:

Residential:

- West Main Street
- North Peoples Road
- South Vine Street

Non-Residential

- South Sheridan Road
- North State Street

3. Future Conditions

Simulations were also performed for Year 2036 conditions to determine where improvements to the existing infrastructure may be needed. All water main Hazen-Williams coefficients were reduced to simulate aging over the next 20 years. Resulting pressures and available fire flows were reviewed to determine the adequacy of the existing system under future demands.

Table 14 provides a summary of model results with Year 2036 demands and the existing infrastructure. The results indicate that pressures would again be generally adequate with the exception of the few locations listed in the previous section. The available fire flows in most cases will be further reduced from existing fire flow capabilities because of the aging of the main and additional demands on the system from the projected growth of City of Stanton over the 20-year period.

In some areas where looping is not always feasible, it is not always desirable to upsize the existing water mains due to the associated increase in stagnation that could degrade the water quality.

Following is a summary of deficiencies that were identified and evaluated:

a. West end of Main Street

A trio of hydrants along West Main Street, one in the Sunshine Canyon apartment complex and two on the street, do not receive adequate fire flow due to what is suspected to be a partially-closed valve. Some investigative work was done during hydrant testing to determine the general area of the problem. Replacing old 6-inch main with 8-inch main would not only remove the problem but also provide increased fire flow. Connecting mains at the Cemetery and Main intersection would also provide a more direct route for water to flow to the west end of the City.

b. North State Street

Existing 6-inch does not provide sufficient fire flow to the Montcalm County complex on North State Street. Replacing the 6-inch with 8-inch north of Cedar Street would double the available flow at the dead end main and provide adequate fire flow for the City's largest water user.

c. East Main Street and Peoples Road

A stretch of 6-inch main as well as a long dead end restricts fire flow to the east end of town. Replacing the 6-inch main with 8-inch main would improve fire flow by over 400 gpm at three hydrants, resulting in fire flow of over 1,000 gpm at each.

d. Vine Street and Lake Street

A lack of connection at the intersection of Vine St and Lake St results in diminished fire flow to this residential area. Connecting the two mains and replacing the abandoned main on Court St between Walnut St and Lake St would greatly improve fire flow. Additionally, the 4-inch main that runs parallel to the existing 6-inch main on Vine St could be abandoned.

e. South State Street

The length of the dead end main in this location makes it difficult to increase fire flows without also increasing stagnation of the water in the main. In order to improve flow to this area, it is recommended that mains be upsized from 6" to 8" in three locations: Lake

St between Grove St and State St; Grove St between Lake Street and Walnut St; and Hill St between Lake St and Walnut St.

VI. RELIABILITY ISSUES

A. Redundancy

The City of Stanton water distribution system has been constructed to best serve customers throughout the City. The water storage tank is located in the northern part of the water distribution system on Camburn Street. It is important that the transmission mains provide adequate looping and redundancy of supply throughout the City in case of emergency such as a large water main break. The City greatly improved its redundancy in 2013 by installing nearly 1.5 miles of 12-inch main. Still, additional improvement is needed to close the transmission loop and further improve redundancy. Closing gaps in the transmission loop will help maintain system service levels, even while a larger main is under repair or out of service. Some potential locations for transmission main looping include:

- Walnut Street, between Court Street and Hill Street, and north on Hill Street to Main Street
- Pine Street, between Mill Street and New Street

B. Water Quality

The City of Stanton's drinking water continues to meet or exceed all regulations established in the State Safe Drinking Water Standards. Operators routinely test for contaminants in the drinking water according to Federal and State laws.

A summary of the water quality data as presented in the City of Stanton 2014 Water Quality Report is included in Appendix E. There have been no violations of the State and Federal Regulations.

C. Backup Power

The well house is equipped with a 75 kW diesel generator for emergency power. A summary of the existing generator is provided in Table 17.

D. Water Loss

Unaccounted-for water often is a significant source of lost revenue. Sources of unbilled water include water used during fire-fighting, hydrant flushing, main breaks and leakage, and street sweeping, as well as others. The remaining unbilled water that is unaccounted for is described as “lost water”.

Water billing data has been gathered for 2011 through 2015 and is presented in Table 19 and graphically in Figure 7. In 2011 and 2012, the unbilled water averaged 39.7 percent. After significant upgrades to the system, from 2013 through 2015, the unbilled water averaged 20.3 percent. These amounts do not, however, consider the known uses of unbilled water described previously. The City should track unbilled known water use to better understand where this water is going. An actual water loss of less than 10 percent is considered acceptable and should be the goal of the City in the future.

E. Deteriorating Main

The City of Stanton Water Distribution System has a strong transmission network, and is relatively well looped. However, the system does have some old 4- and 6-inch main cast iron pipe, most of which was constructed in the 1960s or earlier. These old mains should be observed and replaced if the condition warrants or when other utility or street work is completed.

F. Dead End Mains

Whenever possible, dead end mains should be looped. Water can become stagnant in dead end mains, often affecting the quality of water distributed to nearby customers. Thus, whenever feasible, dead end mains should be removed by closing loops, thereby improving the circulation of water and fire protection.

Given the spread of the City, there are a number of dead end mains that feasibly cannot be looped; however, the City should strive to remove these whenever possible as well as require looped mains in new developments.

VII. RECOMMENDATIONS

The following categories of improvements to the City of Stanton Water System were used to prioritize the recommended system improvements.

Improvements to Address Problems with Existing Infrastructure

- Comply with Federal and State Regulations
- Improve general level of service
- Improve redundancy of transmission

Improvements Required to Expand Service for Projected Growth

- Improvements to existing infrastructure to serve new areas
- Improvements which would enhance the level of service

Recommendations have been separated into projects and general recommendations. Prioritization is provided for the Capital Improvements Plan and is based on the above criteria. The following are recommended:

A. Recommended Projects

The following are recommended projects based on the results of this study. The projects are listed in a capital improvements plan in Table 20 and shown on the General Plan Map in Figure 8.

- P-1: Well House work - replace meter at Well #2 and replace electrical box at well house.
- P-2: Rehabilitate Well #3 and overhaul Pump #3.
- P-3: Replace 600' of 6" with 8" on Main Street west of Third Street.
- P-4: Install 150' of 8" to connect water main at Main Street and Cemetery Street. Replace 150' of 4" with 8" on Lincoln Street north of Main Street. Replace 350' of 4" with 8" in alley between Lincoln Street and Mill Street. Install 50' of 6" to connect water main at Vine Street and Lake Street. Additionally, disconnect services on Vine Street from 4" water main and reconnect to 6" water main and abandon 4" main.
- P-5: Replace 450' of 3/4" with 8" on State Street between Main Street and Day Street. Replace 450' of 2" with 8" on Vine Street between Walnut Street and Main Street. Replace 450' of 4" with 8" on Court Street between Walnut Street and Lake Street.

- P-6: Install 350' of 8" from State Street to dead end of Bellevue Street. Install 300' of 6" on Ridge Street from Mill Street to the east.
- P-7: Replace 900' of 6" with 8" on Lake Street between Grove Street and State Street.
Replace 450' of 6" with 8" on Grove Street between Walnut Street and Lake Street.
Replace 450' of 6" with 8" on Hill Street between Grove Street and Lake Street.
- P-8: Replace 1300' of 6" with 8" on Main Street between First Street and Peoples Road.
- P-9: Replace 850' of 6" with 8" on State Street north of Cedar Street
- P-10: Add Variable Frequency Drives to Pump Motors
- P-11: Install Well #4
- P-12: Louver Replacement at Well House
- P-13: Add LP/Natural Gas Generator
- P-14: Recoat Exterior of Elevated Tank

B. General Recommendations

1. Develop Water Accountability Program

The unbilled water volume has been greater than suggested over the past six years. The City should further develop the program to track known unbilled water use. When combined with billed water data, the City will be able to more accurately determine the true lost water (unaccounted-for water) and estimate corresponding financial impacts.

2. Reliability Study Meeting Part 12 and Part 16 of the SDWA

This report represents the 5-year update of the Water System Reliability Study. Demand projections should be reviewed periodically. City of Stanton should continue to update the Water System Reliability Study about every five years unless a waiver is justified and approved by the MDEQ.

3. Cross-Connection Control Program

City of Stanton has an ordinance for Cross-Connection Control (updated in 2015) and an approved Cross-Connection Control Program in place.

4. Meter Testing Program

The City meters all customers using Sensus Meters. The City is currently in the middle of a meter change-out program.

The City should develop a systematic program of meter testing/change-out to help maintain accurate customer billing. This could provide a significant increase in system revenue over time. While each system is different, the typical recommended testing period is every 10 years for residential meters and every 3 years for commercial and industrial meters.

5. Hydrant Flushing/Maintenance Program

Hydrant flushing is an important maintenance activity to remove sediment and improve water quality. City of Stanton currently flushes all (approximately 112) hydrants in the City once per year in the fall or spring.

The City of Stanton should continue the maintenance program including flushing, inspection and painting, and make modifications based on the effectiveness. The City also should provide good record keeping of maintenance activities performed at each hydrant.

6. Valve Exercising Program

The City of Stanton valve exercising program includes exercising each valve once per year during the hydrant flushing procedure. The City recently took time to locate buried valves and raise them up to grade.

Valve exercising enhances the reliability of the system and improves public protection. While the current program appears adequate, it is recommended that the City continually monitor the effectiveness of the program.

7. Tank Inspection Program

The MDEQ recommends that storage tanks be inspected approximately every 5 years for preventative maintenance. The structural integrity, tank coatings, and tank components are typically inspected. Storage tank data, including the dates of last inspections, are included in Table 6. It is recommended that City of Stanton make an effort to comply with a 5-year scheduling plan based on the last inspections listed in the table.

8. Transmission Mains

In order to provide increased reliability, a transmission loop should eventually be completed in the City. A transmission loop provides redundancy in a system and allows water to reach all sections of the City even in the case of a large main break. Therefore to improve reliability, transmission main (12") should be installed when completing other utility projects in the following areas:

- Pine Street between Mill Street and New Street
- Walnut Street between Court Street and Hill Street
- Hill between Walnut Street and Main Street.

9. Dead End Mains

Whenever possible, dead end mains should be looped. Water tends to become stagnant in dead end mains, often affecting the quality of water provided to nearby customers. Thus, whenever feasible, dead end mains should be removed by closing loops, thereby improving the circulation of water and fire protection.

Locations of dead end mains include:

- South State Street
- Peoples Road
- West Main Street
- North State Street
- Bellevue Street
- Ridge Street
- Lake Street

10. Deteriorating Main

The City distribution system condition is mixed, with some older and newer main. The City should continually monitor the condition of mains, specifically the older cast iron main, to identify any main that has deteriorated and should be replaced. Tuberculation in water mains results in a decrease in the usable diameter of the pipe, decreasing water transmission and fire protection.

Main deterioration in the City can also be attributed to freezing, which can result in main breaks.

VIII. COST ESTIMATES

An opinion of Probable Project Costs has been prepared for each of the projects listed above. The Cost Opinions have been prepared including an allowance of approximately 25% above the estimated construction cost. This allowance is intended to include the cost of construction contingencies (issues which are presently unknown), legal fees, engineering design and construction services (including preliminary and final design, soil borings, topographic survey, bidding assistance, construction staking, compaction testing, construction inspection and project administration during the entire project) and administrative expenses related to the project.

No provisions have been made in the cost estimate for cost of land or right-of-way purchase or easements. Cost Opinions for recommended projects are included in Table 18.

Tables

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City of Stanton
Water System Reliability Study

Table 1
Large Water Users

Customer	Year		Average Water Use	
	2014 (MG)	2015 (MG)	Volume (MG)	% of Total
Montcalm County Clerk	3.716	4.439	4.078	9.6%
Stanton Mobile Home Park	2.804	2.230	2.517	5.9%
American Gas and Oil	0.914	0.973	0.944	2.2%
Mike Burket	0.420	0.427	0.424	1.0%

City of Stanton
Water System Reliability Study

Table 2
Historical Water Supply Data

Year	Average Day (MGD)	Maximum Day (MGD)	Annual Max. Day/Avg. Day Ratio
1998	0.150	0.480	3.20
1999	0.136	0.235	1.73
2000	0.142	0.195	1.37
2001	0.143	0.384	2.69
2002	0.205	0.493	2.40
2003	0.210	0.487	2.32
2004	0.175	0.460	2.63
2005	0.137	0.398	2.91
2006	0.125	0.269	2.15
2007	0.138	0.301	2.18
2008	0.129	0.196	1.52
2009	0.128	0.411	3.21
2010	0.119	0.400	3.36
2011	0.114	0.404	3.54
2012	0.149	0.219	1.47
2013	0.111	0.209	1.88
2014	0.120	0.168	1.40
2015	0.113	0.195	1.72
5 yr Avg	0.121	0.239	2.00
5 yr Max	0.149	0.404	3.54

Source: City of Stanton

City of Stanton
Water System Reliability Study

Table 3
City of Stanton Population Projections

Community	HISTORIC CENSUS POPULATION					PROJECTED				
	1970	1980	1990	2000	2010	2020	2025	2030	2035	2036
City of Stanton	1,089	1,315	1,504	1,504	1,417	1,467	1,492	1,517	1,542	1,547
Montcalm County	39,682	47,555	53,059	61,266	63,342	70,074	73,450	76,805	80,181	80,856

Data Source: West Michigan Regional Planning Commission; U.S. Census of Population

City of Stanton
Water System Reliability Study

Table 4
Water Use Projections

Year	Average Day (mgd)	Maximum Day (mgd)	Peak Hour (mgd)
2016	0.150	0.405	0.811
2021	0.150	0.413	0.825
2026	0.151	0.420	0.839
2031	0.151	0.427	0.853
2036	0.152	0.434	0.868

Note: Increase based on population projections from WMRPC

Table 5
Pump Data

Pump No.	Year Installed	Location	Type	Nominal Capacity (mgd)	Motor (hp)
2	1965	Well No. 2	Vertical Turbine	0.53	30
3	1982	Well No. 3	Vertical Turbine	0.53	40

Notes: 1. Current capacities from the 2015 Sanitary Survey completed by the MDEQ are presented.

City of Stanton
Water System Reliability Study

Table 6
Storage Tank Data

Tank I.D.	#1
Location	Camburn St.
Volume (MG)	0.2
Type	Elevated Single Pedestal
Material	Steel
Overflow Elev. (ft)	135
Date Constructed	1981
Last Inspection	2014
Last Painted Inside	2015
Last Painted Outside	2004
Normal HWL (ft)	26
Normal LWL (ft)	20.5
Head Range (ft)	5.5
High Alarm	Yes
Low Alarm	Yes

City of Stanton
Water System Reliability Study

Table 7
Storage Volume Data

Year	Rated Capacity (gpm)	Maximum Day Demand (gpm)	Peak Hour Demand (gpm)	Fire-Flow Required (gpm)	Duration (hours)	Water Supplied (gallons)	Customer Demand (gallons)	Needed Fire Storage (gallons)	Needed Storage Volume (gallons)	Storage Volume Provided (gallons) *	Recommended Additional Storage Volume (gallons)
2016	400	282	563	1,500	2	48,000	51,000	180,000	183,000	200,000	0
2016	400	282	563	2,000	2	48,000	51,000	240,000	243,000	200,000	43,000
2016	800	282	563	2,000	2	96,000	51,000	240,000	195,000	200,000	0
2026	400	291	583	1,500	2	48,000	52,000	180,000	184,000	200,000	0
2026	400	291	583	2,000	2	48,000	52,000	240,000	244,000	200,000	44,000
2026	800	291	583	2,000	2	96,000	52,000	240,000	196,000	200,000	0
2036	400	301	602	1,500	2	48,000	54,000	180,000	186,000	200,000	0
2036	400	301	602	2,000	2	48,000	54,000	240,000	246,000	200,000	46,000
2036	800	301	602	2,000	2	96,000	54,000	240,000	198,000	200,000	0

- Notes:
1. Capacity represents Firm Pumping Capacity of the wells
 2. Fire demand and duration based on Table 1-1 of AWWA M-31 Manual
 3. Water Supply Volume based on firm capacity for the given duration
 4. Customer Demand Volume based on one hour of peak demand and maximum day demands for the remaining duration.
 5. Emergency Storage based on Fire Flow Demand over the duration.
 6. Example Calculation: Year 2036 – 2500gpm for 2 hours
 Firm Pump Capacity = 2,100gpm
 Water Supplied = firm pump capacity x duration = 2,100gpm x 2hrs x 60min/hr = 252,000gal
 Typ Customer Demand=1hr of peak hour demand+1hr of max day demand=1hr x 1,436gpm + 1hr x 2,298gpm = 224,000 gal
 Fire Demand = standard fire flow x duration = 2,500gpm x 2hr x 60min/hr = 300,000gal
 Recommended Stor Vol = Typ. Customer Demand + Fire Demand - Water Supplied = 224,000 + 300,000 – 252,000 = 272,000gal
 Storage Volume Provided = total of two elevated storage tanks = 300,000 gallons
 Recommended Additional Storage Volume = Recommended Storage Volume - Storage Volume Provided = 0

City of Stanton
Water System Reliability Study

Table 8
Distribution Main Sizes and Lengths

Water Main Diameter (inches)	Approximate Length of Water Main (miles)	Percent
4	0.36	2.9
6	5.49	44.1
8	4.99	40.0
12	1.62	13.0
Total	12.46	100.0

Source: City of Stanton records.

Table 9
Distribution Main Age

Water Main Age (years)	Length (mi)	Percent
1960-1969	0.82	6.6
1970-1979	0	0.0
1980-1989	6.43	51.6
1990-1999	0.21	1.7
2000-2009	0	0.0
2010-present	1.88	15.1
Unknown	3.13	25.1
Total	12.47	100.1

Source: City of Stanton records.

Table 10
Distribution Main Material

Water Main Material	Length (mi)	Percent
Cast Iron	0.82	6.6
Ductile Iron	8.52	68.3
Unknown	3.13	25.1
Total	12.47	100.0

Source: City of Stanton records.

City of Stanton
Water System Reliability Study

Table 11
Hydrant Test Results

Test No.	Static Hydrant Location	Flow Hydrant Location	Flow (gpm)	Static Pressure (psi)	Residual Pressure (psi)
1	Peoples N of Main	Peoples & Main	750	56	24
2	M-66 S of Lake	M-66 and Lake	1000	82	44
3	Walnut & Grove	1 - Main & Grove 2 - Grove & Walnut	2170	71	58
4	Dead end of Ridge St	1 - Crawford & N Mill 2 - Crawford & Railroad	1740	53	32
5	M-66 N of Campbell	1 - M-66 N of Quarterline 2 - M-66 S of Campbell	1880	52	35
6	Pine & First	1 - Pine & Second 2 - Pine & State	1980	65	55
7	Main W of Third	1 - Third & Day 2 - Main & Second	1950	72	54
8	Dead end of Vine	1 - Lake & Vine 2 - Lake & Court	1820	76	44
9	Mill & Day	1 - Lincoln & Day 2 - Main & Mill	2930	65	55

Notes: Hydrant Tests performed by City and P&N on September 29, 2016 and November 29, 2016.

City of Stanton
Water System Reliability Study

Table 12
Comparison of Calibrated Model to Field Test Pressures

Test No.	Static Hydrant Location	Hydrant Test Flow (gpm)	Field Tests			Model Results			Percent Difference
			Static Pressure, psi	Residual Pressure, psi	Available Fire Flow at 20 psi (gpm)	Static Pressure, psi	Residual Pressure, psi	Available Fire Flow at 20 psi (gpm)	
1	Peoples N of Main	750	56	24	790	56.5	20.5	750	-5%
2	M-66 S of Lake	1000	82	44	1290	80.3	35.9	1170	-9%
3	Walnut & Grove	2170	71	58	4540	72.1	59.6	4690	3%
4	Dead end of Ridge St	1740	53	32	2220	53.3	32.4	2240	1%
5	M-66 N of Campbell	1880	52	35	2640	52.7	31.7	2380	-10%
6	Pine & First	1980	65	55	4460	63.7	53.7	4390	-2%
7	Main W of Third	1950	72	54	3450	70.6	55.6	3760	-9%
8	Dead end of Vine	1820	76	44	2470	75.8	42.4	2410	-2%
9	Mill & Day	2930	65	55	6600	66.5	55.5	6380	-3%

Notes: Hydrant Tests performed by City and P&N on September 29, 2016 and November 29, 2016.

City of Stanton
Water System Reliability Study

Table 13
Model Results for 2016 (Existing Conditions)

Junction Number	Location	Description	Avg Day Pressure (psi)	Max Day Pressure (psi)	Available Fire Flow (gpm)
J-161	Upper Elementary School – 710 N. State Street	School	51	51	4,570
J-16	Stanton Schools – 621 N. New Street	School	59	59	3,945
J-147	Sheridan Community Hospital Clinics – 620 W. Main Street	Medical	71	71	1,825
J-161	Montcalm County Jail – 659 N. State Street	County Facility	51	51	4,570
J-37	McDonalds – 329 E. Main Street	Commercial	71	71	5,000
J-165	Dollar General Store – 505 N. State Street	Commercial	61	62	5,000
J-106	Stanton Park Apartments – 200 E. First Street	Residential	59	59	3,180
J-146	Sunshine Canyon Apartments – 650 W. Main Street	Residential	70	70	619
J-1	Pine and 2 nd Street	Residential	68	68	2,086
J-87	South State Street, south of Lake Street	Residential	80	80	953
J-55	Lake and Vine Street	Residential	71	71	1,539
J-3	Bellevue and Court Street	Residential	58	58	3,853
J-184	Day and Mill Street	Residential	66	66	4,889
J-20	Pine and 1 st Avenue	Residential	55	55	2,043
J-135	Peoples, north of Main Street	Residential	53	54	681

- Notes:
1. Results are based on a tank water surface elevation 5' below full.
 2. Available Fire Flows are based on maximum day demands with one pump operating.
 3. ISO typically suggests an available fire flow of 1,000-1,500 gpm for residential areas, 2,500 gpm for commercial areas and 3,500 gpm for industrial areas. The recommended available fire flows represents that which is necessary for full credit toward insurance rating, but it is not required.
 4. Locations represent the extremities of the system plus other important locations within the system.
 5. Assumes one well is operating for maximum day demand conditions and available fire flows.

City of Stanton
Water System Reliability Study

Table 14
Model Results for Year 2036 Demands with Existing Infrastructure

Junction Number	Location	Description	Avg Day Pressure (psi)	Max Day Pressure (psi)	Available Fire Flow (gpm)
J-161	Upper Elementary School – 710 N. State Street	School	51	51	4,516
J-16	Stanton Schools – 621 N. New Street	School	59	60	3,837
J-147	Sheridan Community Hospital Clinics – 620 W. Main Street	Medical	71	71	1,706
J-161	Montcalm County Jail – 659 N. State Street	County Facility	51	51	4,516
J-37	McDonalds – 329 E. Main Street	Commercial	71	71	5,000
J-165	Dollar General Store – 505 N. State Street	Commercial	61	61	4,879
J-106	Stanton Park Apartments – 200 E. First Street	Residential	59	59	3,015
J-146	Sunshine Canyon Apartments – 650 W. Main Street	Residential	70	70	553
J-1	Pine and 2 nd Street	Residential	68	68	1,916
J-87	South State Street, south of Lake Street	Residential	80	80	870
J-55	Lake and Vine Street	Residential	71	71	1,434
J-3	Bellevue and Court Street	Residential	58	58	3,745
J-184	Day and Mill Street	Residential	66	66	4,836
J-20	Pine and 1 st Avenue	Residential	55	55	1,898
J-135	Peoples, north of Main Street	Residential	53	53	633

- Notes:
1. Results are based on a tank water surface elevation 5' below full.
 2. Available Fire Flows are based on maximum day demands with one pump operating.
 3. ISO typically suggests an available fire flow of 1,000-1,500 gpm for residential areas, 2,500 gpm for commercial areas and 3,500 gpm for industrial areas. The recommended available fire flows represents that which is necessary for full credit toward insurance rating, but it is not required.
 4. Locations represent the extremities of the system plus other important locations within the system.
 5. Assumes one well is operating for maximum day demand conditions and available fire flows.

City of Stanton
Water System Reliability Study

Table 15
Model Results for Year 2036 Demands w/ Recommended Improvements

Junction Number	Location	Description	Avg Day Pressure (psi)	Max Day Pressure (psi)	Available Fire Flow (gpm)
J-161	Upper Elementary School – 710 N. State Street	School	51	51	4,936
J-16	Stanton Schools – 621 N. New Street	School	59	60	4,235
J-147	Sheridan Community Hospital Clinics – 620 W. Main Street	Medical	71	71	2,497
J-161	Montcalm County Jail – 659 N. State Street	County Facility	51	51	4,936
J-37	McDonalds – 329 E. Main Street	Commercial	71	71	5,000
J-165	Dollar General Store – 505 N. State Street	Commercial	61	61	4,897
J-106	Stanton Park Apartments – 200 E. First Street	Residential	59	59	3,220
J-146	Sunshine Canyon Apartments – 650 W. Main Street	Residential	70	70	1,710
J-1	Pine and 2 nd Street	Residential	68	68	2,832
J-87	South State Street, south of Lake Street	Residential	80	80	987
J-55	Lake and Vine Street	Residential	71	71	2,793
J-3	Bellevue and Court Street	Residential	58	58	4,448
J-184	Day and Mill Street	Residential	66	66	4,808
J-20	Pine and 1 st Avenue	Residential	55	55	1,946
J-135	Peoples, north of Main Street	Residential	53	53	994

- Notes:
1. Results are based on a tank water surface elevation 5' below full.
 2. Available Fire Flows are based on maximum day demands with one pump operating.
 3. ISO typically suggests an available fire flow of 1,000-1,500 gpm for residential areas, 2,500 gpm for commercial areas and 3,500 gpm for industrial areas. The recommended available fire flows represents that which is necessary for full credit toward insurance rating, but it is not required.
 4. Locations represent the extremities of the system plus other important locations within the system.
 5. Assumes one pump is operating for maximum day demand conditions and available fire flows.

City of Stanton
Water System Reliability Study

Table 16
Existing Emergency Power

Location	Wells
Type	Generator
Power Rating	75 kW
Fuel Type	Diesel
Starting Frequency	Weekly
Load Testing Frequency	Weekly

Table 17
Historical Water Loss

Year	Water Sold (MGAL)	Water Produced (MGAL)	Unbilled Water (MGAL)	Unbilled % ¹
2011	29.77	46.60	16.83	36.1%
2012	32.10	56.52	24.42	43.2%
2013	35.55	40.67	5.12	12.6%
2014	32.02	43.88	10.86	27.0%
2015	32.54	41.36	8.82	21.3%
Average – Last 5 Years	32.396	45.806	13.410	29.3%

Notes: 1. Known, unbilled water use (e.g. hydrant flusing) was not estimated. So this is unbilled percentage instead of true water loss.

City of Stanton
Water System Reliability Study

Table 18
Water Distribution System Capital Improvements Plan

Improvement Project	Opinion of Probable Project Cost
Short-Term Project (0-5 Years)	
P-1. Well House work – replace meter at Well #2 and replace electrical box at well house	\$15,000
P-2. Rehabilitate Well #3 and overhaul Pump #3	\$100,000
P-3. Replace 600' of 6" with 8" on Main Street west of Third Street.	\$95,000
P-4. Install 150' of 8" to connect water main at Main Street and Cemetery Street. Replace 150' of 4" with 8" on Lincoln Street north of Main Street. Replace 350' of 4" with 8" in alley between Lincoln Street and Mill Street. Install 50' of 6" to connect water main at Vine Street and Lake Street. Additionally, on Vine Street disconnect services from 4" and reconnect to 6". Abandon 4".	\$145,000
P-5. Replace 450' of 3/4" with 8" on State Street between Main Street and Day Street. Replace 450' of 2" with 8" on Vine Street between Walnut Street and Main Street. Replace 450' of 4" with 8" on Court Street between Walnut Street and Lake Street.	\$210,000
P-6. Install 350' of 8" from State Street to dead end of Bellevue Street. Install 300' of 6" on Ridge Street from Mill Street to the east.	\$95,000
P-7. Replace 900' of 6" with 8" on Lake Street between Grove Street and State Street. Replace 450' of 6" with 8" on Grove Street between Walnut Street and Lake Street. Replace 450' of 6" with 8" on Hill Street between Grove Street and Lake Street.	\$280,000
P-8. Replace 1300' of 6" with 8" on Main Street between First Street and Peoples Road.	\$205,000
P-9. Replace 850' of 6" with 8" on State Street north of Cedar Street.	\$135,000
Short-Term Total	\$1,280,000
Long-Term Project (5-15 Years)	
P-10: Add Variable Frequency Drives to Pump Motors	\$30,000
P-11. Install Well #4	\$325,000
<i>Continued on Next Page</i>	

City of Stanton
Water System Reliability Study

Table 18, continued
Water Distribution System Capital Improvements Plan

Improvement Project	Opinion of Probable Project Cost
P-12. Louver Replacement at Well House	\$25,000
P-13. Add LP/Natural Gas Generator	\$65,000
P-14. Recoat Exterior of Elevated Tank	\$80,000
Long-Term Total	\$525,000
Grand Total	\$1,805,000

- Notes: 1. Opinion of Cost includes 25 percent allowance for engineering and contingencies.
 2. The Opinion of Cost is based on 2016 dollars.
 3. Costs opinions do not include cost of land or easement acquisition.

Figure

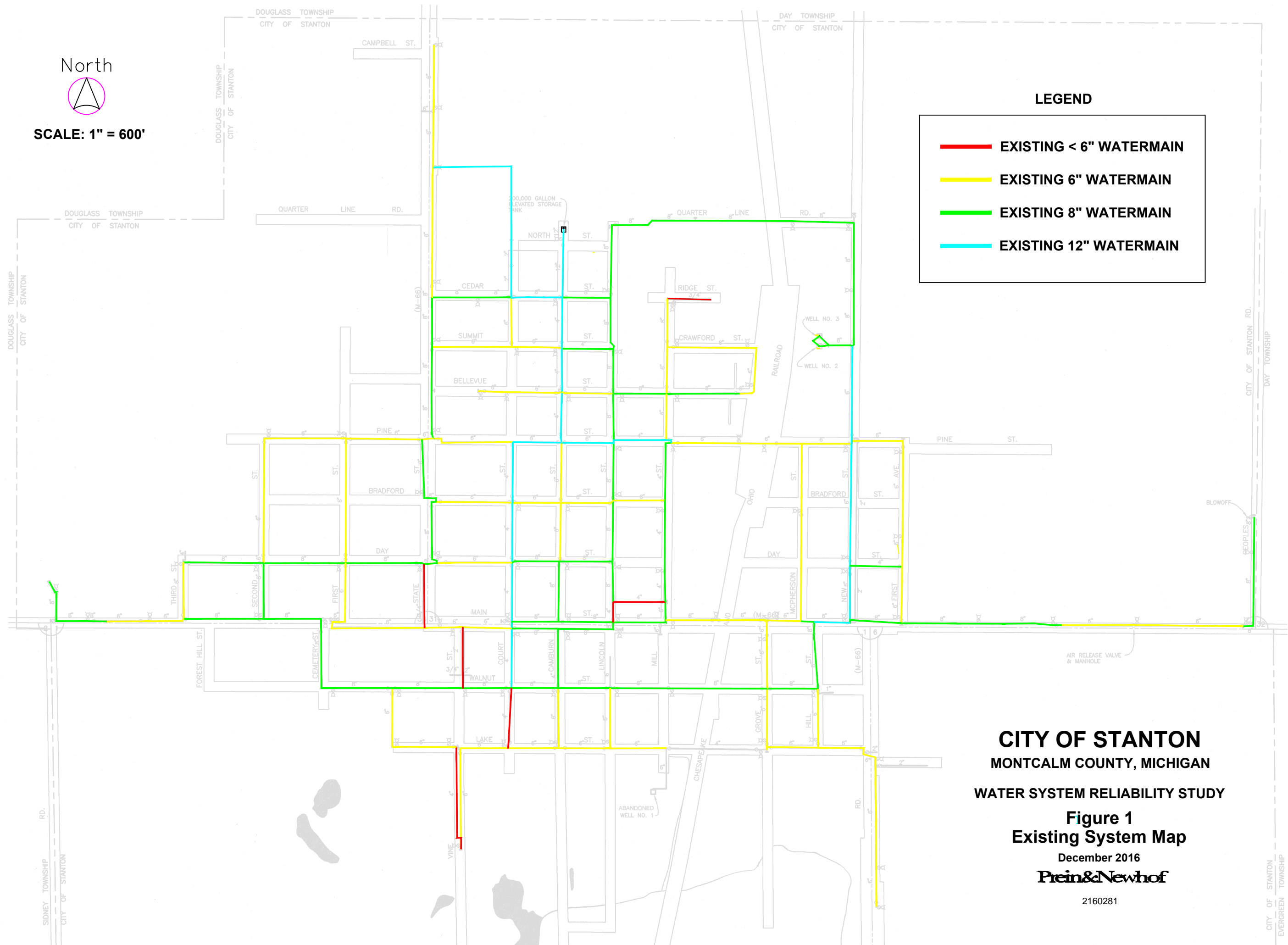
- Figure 1 Existing Water Distribution System
- Figure 2 Population and Water Use Data Projections
- Figure 3 Historical and Projected Water System Demands – Overall System
- Figure 4 Historical Water Loss
- Figure 5 General Plan Map



SCALE: 1" = 600'

LEGEND

- EXISTING < 6" WATERMAIN
- EXISTING 6" WATERMAIN
- EXISTING 8" WATERMAIN
- EXISTING 12" WATERMAIN



CITY OF STANTON
MONTCALM COUNTY, MICHIGAN
WATER SYSTEM RELIABILITY STUDY

Figure 1
Existing System Map

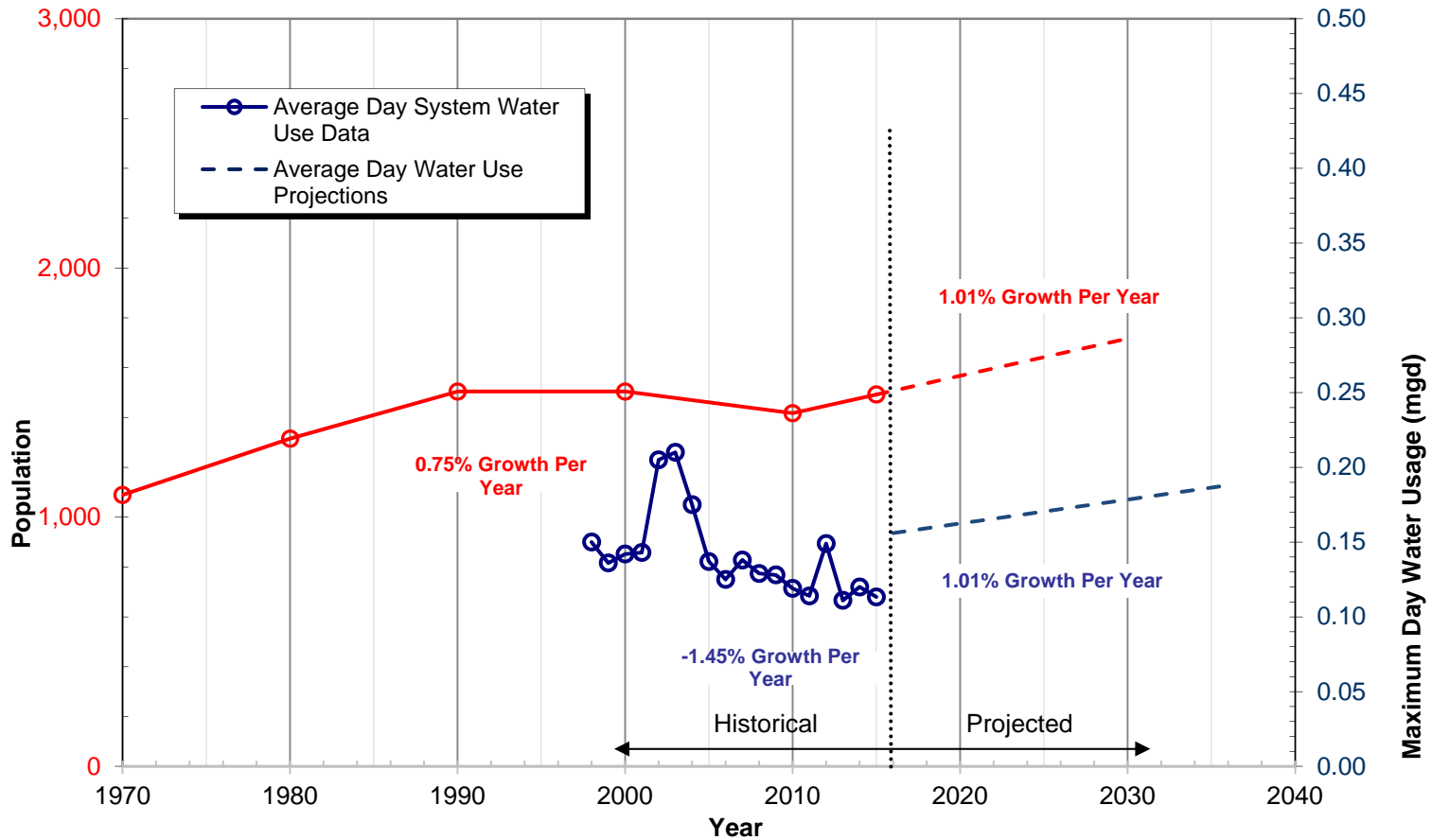
December 2016

Prein&Newhof

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City of Stanton Water System Reliability Study

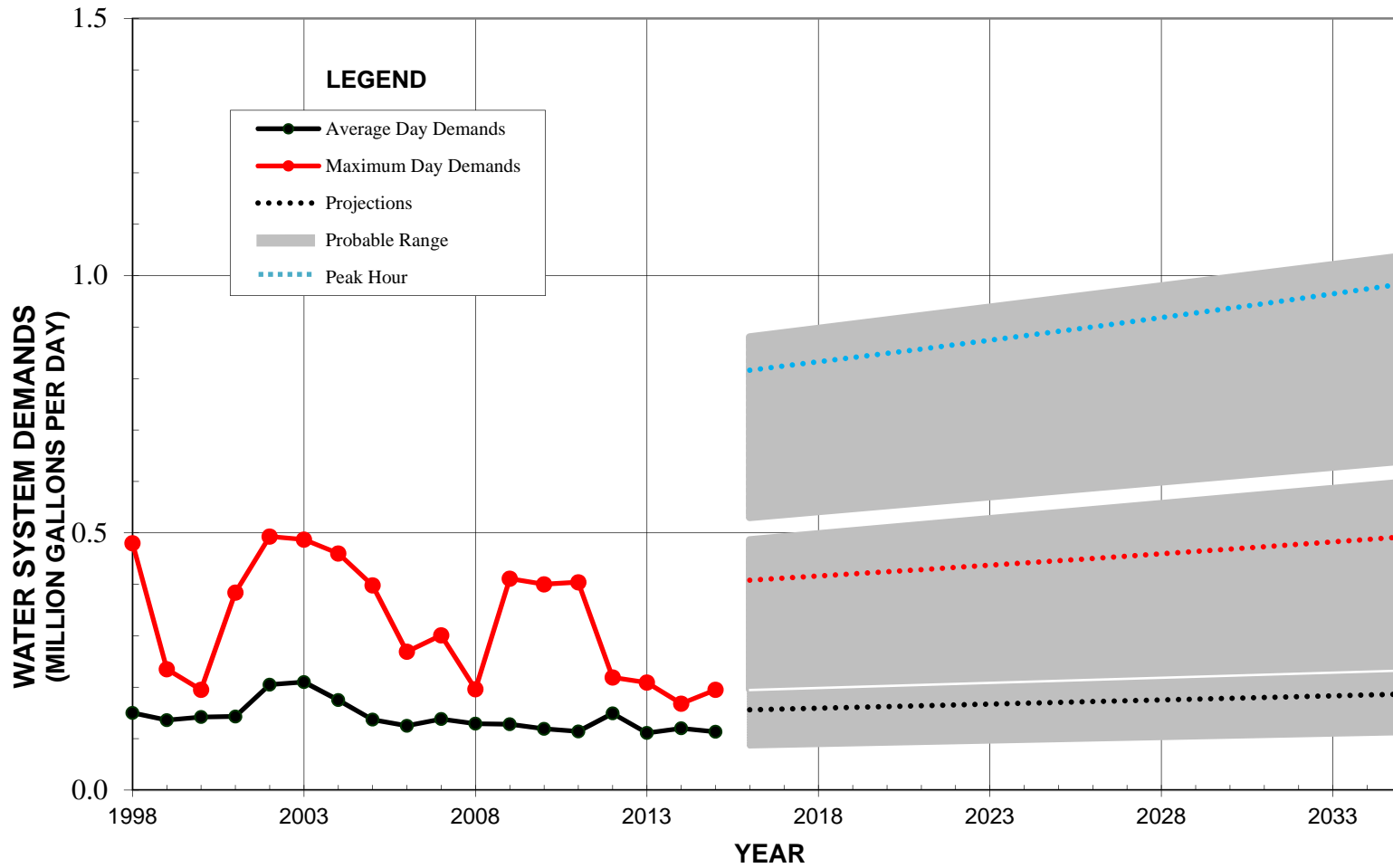
Historic and Projected Populations Figure 2



*Projections based on data provided by West Michigan Regional Planning Commission

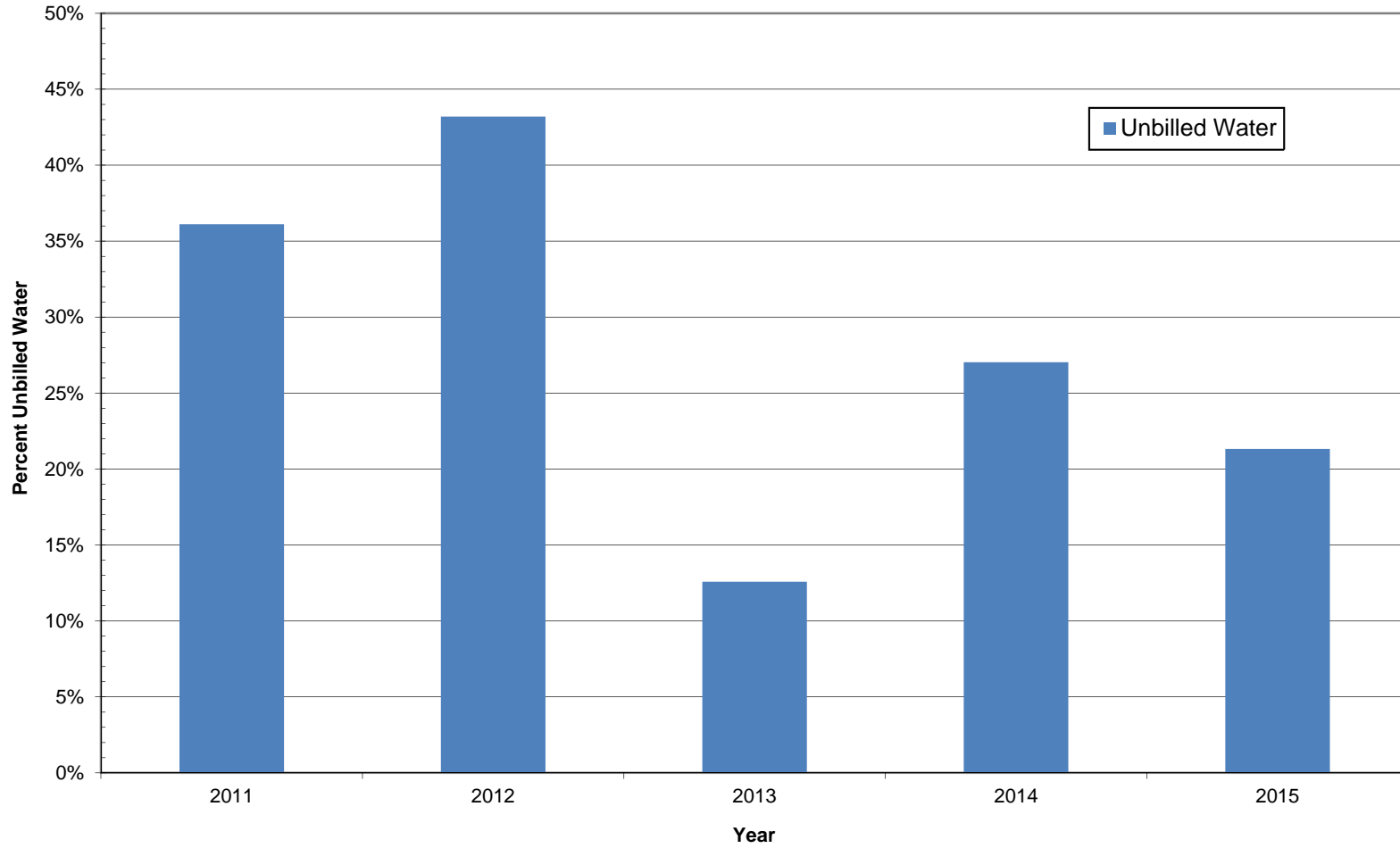
City of Stanton Water System Reliability Study

Historic and Projected Water System Demands Figure 3



City of Stanton Water System Reliability Study

Historic Water Loss Figure 4

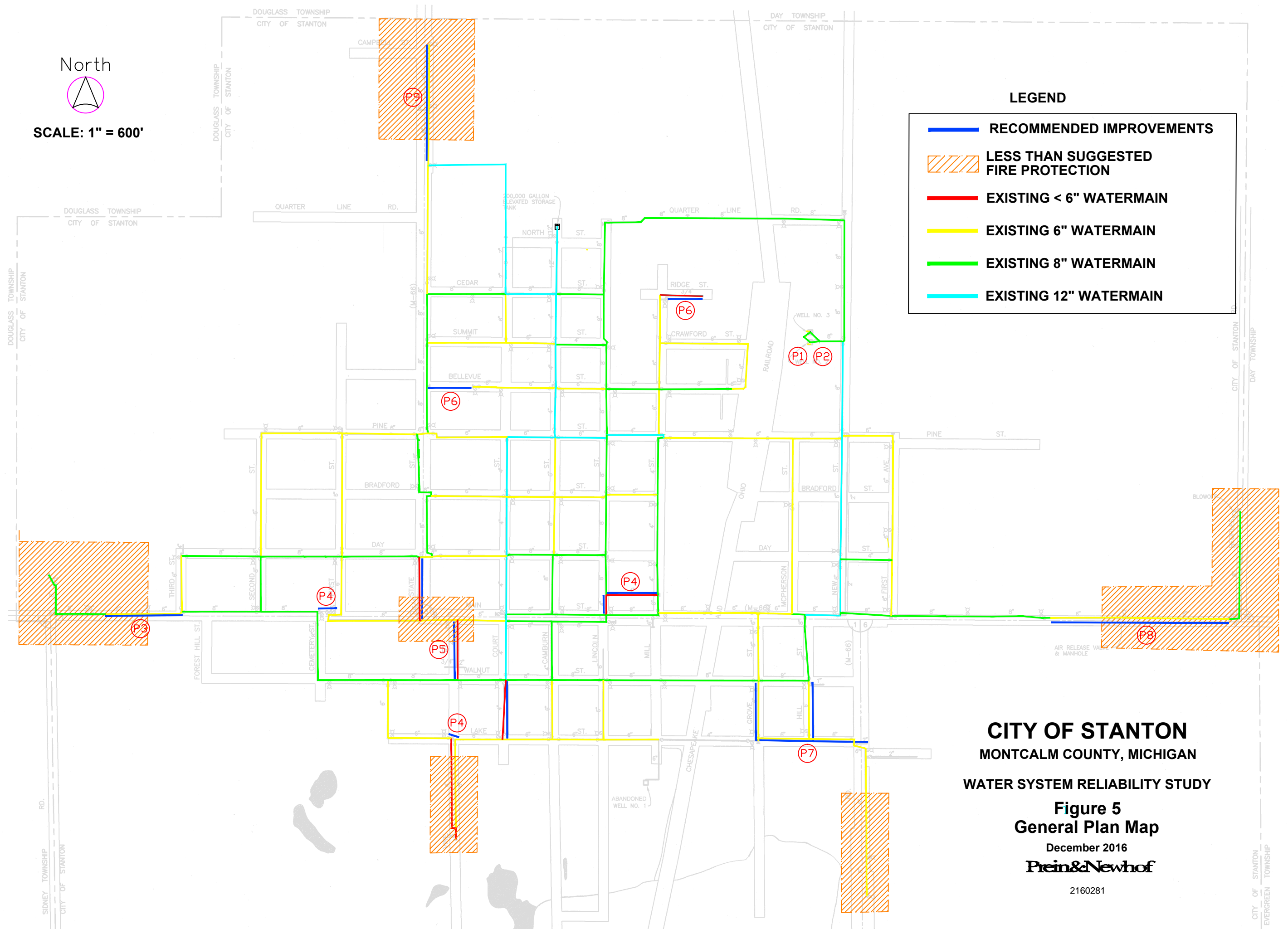




SCALE: 1" = 600'

LEGEND

-  RECOMMENDED IMPROVEMENTS
-  LESS THAN SUGGESTED FIRE PROTECTION
-  EXISTING < 6" WATERMAIN
-  EXISTING 6" WATERMAIN
-  EXISTING 8" WATERMAIN
-  EXISTING 12" WATERMAIN



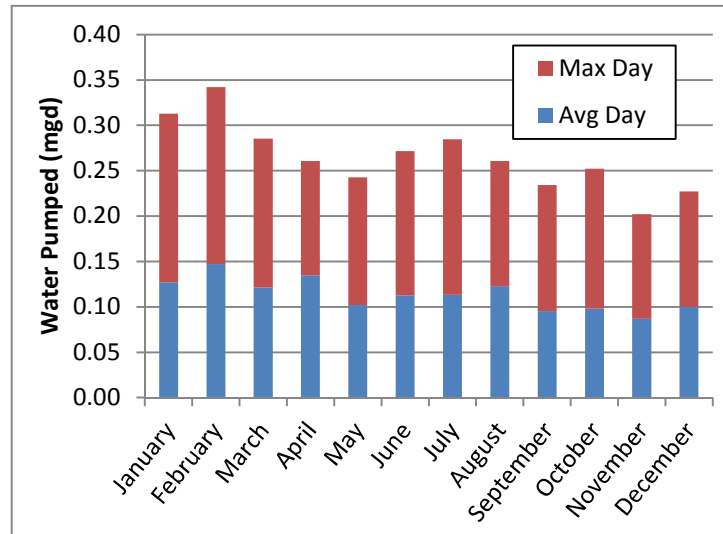
CITY OF STANTON
 MONTCALM COUNTY, MICHIGAN
 WATER SYSTEM RELIABILITY STUDY

Figure 5
General Plan Map
 December 2016
Prein&Newhof

Historic Water Pumped

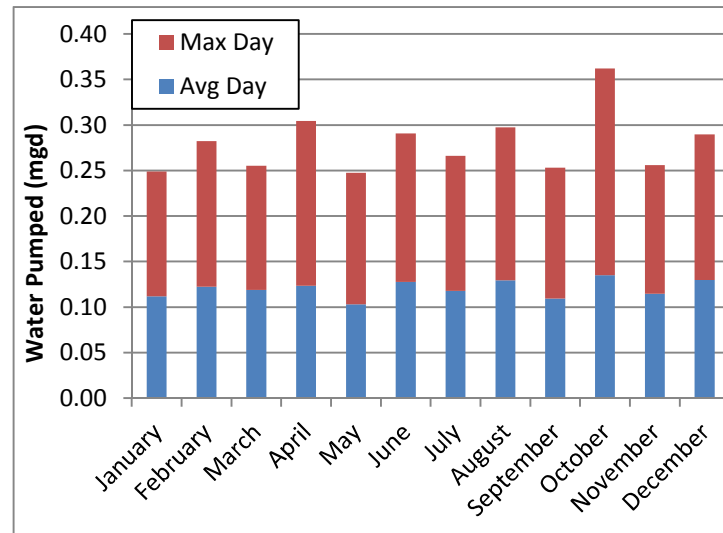
Annual Pumpage 2015

	Well #2 (MG)	Well #3 (MG)	Total (MG)	Avg Day (MGD)	Max Day (MGD)	Min Day (MGD)
January	0.000	3.943	3.943	0.127	0.186	0.098
February	4.116	0.000	4.116	0.147	0.195	0.092
March	0.000	3.770	3.797	0.122	0.164	0.851
April	3.822	0.218	4.040	0.135	0.126	0.086
May	0.000	3.161	3.161	0.102	0.141	0.076
June	3.380	0.000	3.380	0.113	0.159	0.059
July	0.030	3.478	3.508	0.113	0.171	0.084
August	3.555	0.248	3.803	0.123	0.138	0.088
September	0.000	2.857	2.857	0.095	0.139	0.066
October	3.048	0.000	3.048	0.098	0.154	0.044
November	0.000	2.606	2.606	0.087	0.115	0.054
December	3.100	0.000	3.100	0.100	0.127	0.064
Yearly	21.051	20.280	41.358	0.113	0.195	0.044



Annual Pumpage 2014

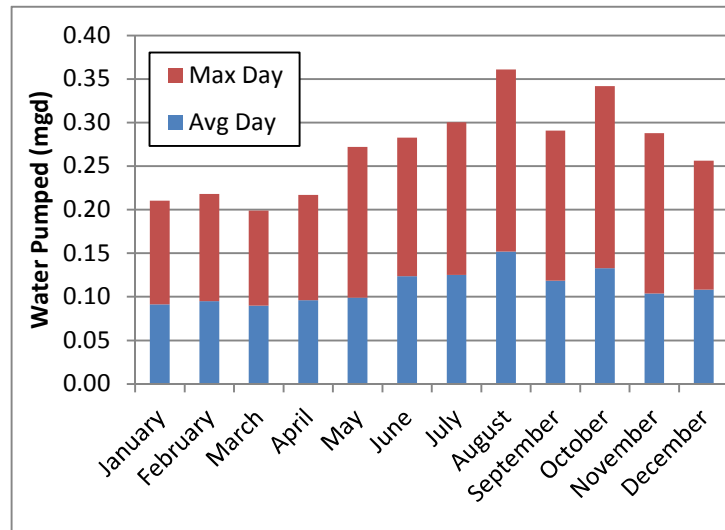
	Well #2 (MG)	Well #3 (MG)	Total (MG)	Avg Day (MGD)	Max Day (MGD)	Min Day (MGD)
January	0.000	3.465	3.465	0.112	0.137	0.081
February	3.421	0.000	3.421	0.122	0.160	0.082
March	0.000	3.681	3.681	0.119	0.137	0.093
April	3.667	0.038	3.705	0.124	0.181	0.082
May	0.110	3.081	3.191	0.103	0.145	0.010
June	3.827	0.000	3.827	0.128	0.163	0.097
July	0.000	3.655	3.655	0.118	0.148	0.085
August	4.014	0.000	4.014	0.130	0.168	0.094
September	0.000	3.280	3.280	0.109	0.144	0.074
October	4.044	0.140	4.184	0.135	0.227	0.061
November	0.000	3.440	3.440	0.115	0.141	0.068
December	4.019	0.000	4.019	0.130	0.160	0.092
Yearly (mgd)	1.925	1.732	43.881	0.120	0.227	0.010



** October Max Day not used due to hydrant flushing

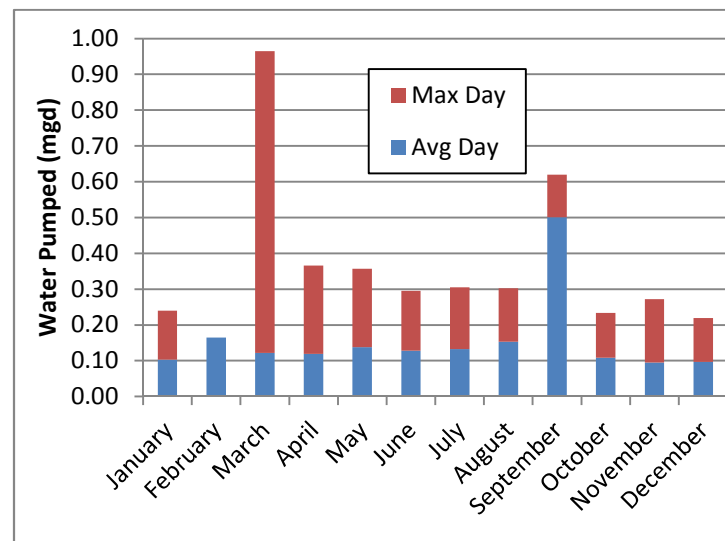
Annual Pumpage 2013

	Well #2 (MG)	Well #3 (MG)	Total (MG)	Avg Day (MGD)	Max Day (MGD)	Min Day (MGD)
January	0.000	2.836	2.836	0.092	0.119	0.059
February	2.661	0.000	2.661	0.095	0.123	0.058
March	0.000	2.784	2.784	0.090	0.109	0.071
April	2.881	0.000	2.881	0.096	0.121	0.073
May	0.000	3.068	3.068	0.099	0.173	0.079
June	3.609	0.100	3.709	0.124	0.159	0.068
July	0.000	3.877	3.877	0.125	0.175	0.084
August	4.558	0.150	4.708	0.152	0.209	0.103
September	0.000	3.553	3.553	0.118	0.172	0.091
October	4.001	0.120	4.121	0.133	0.209	0.092
November	0.077	3.033	3.110	0.104	0.184	0.079
December	3.271	0.087	3.358	0.108	0.148	0.061
Yearly (mgd)	1.755	1.634	40.667	0.111	0.209	0.058



Annual Pumpage 2012

	Well #2 (MG)	Well #3 (MG)	Total (MG)	Avg Day (MGD)	Max Day (MGD)	Min Day (MGD)
January	3.196	0.000	3.196	0.103	0.137	0.031
February	4.769	0.000	4.769	0.164	NA	NA
March	0.000	3.777	3.777	0.122	0.843	0.083
April	0.447	3.125	3.572	0.119	0.247	0.090
May	4.264	0.000	4.264	0.138	0.219	0.070
June	0.000	3.846	3.846	0.128	0.167	0.096
July	4.119	0.000	4.119	0.133	0.172	0.090
August	1.405	3.330	4.735	0.153	0.150	0.085
September	7.441	7.590	15.031	0.501	0.119	0.119
October	3.277	0.084	3.361	0.108	0.125	0.089
November	0.140	2.712	2.852	0.095	0.177	0.059
December	2.995	0.000	2.995	0.097	0.123	0.062
Yearly (mgd)	2.671	2.039	56.516	0.155	0.843	0.031

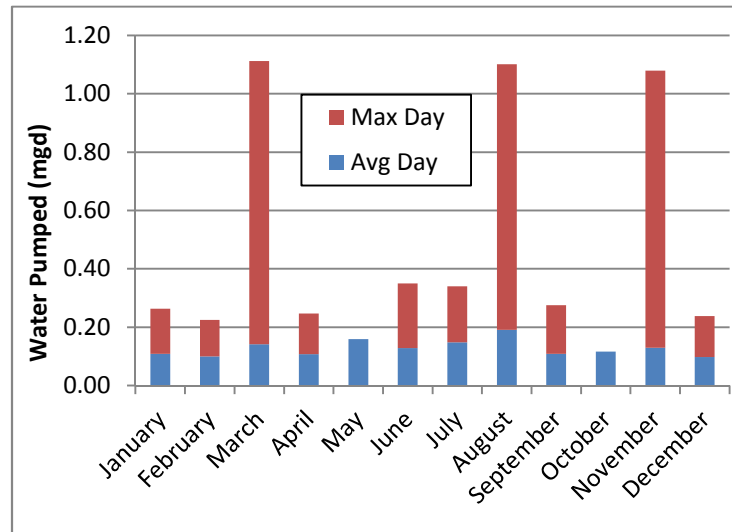


** March Max day not used due to hydrant flushing

Annual Pumpage 2011

	Well #2 (MG)	Well #3 (MG)	Total (MG)	Avg Day (MGD)	Max Day (MGD)	Min Day (MGD)
January	3.252	0.000	3.252	0.108	0.155	0.046
February	0.000	2.791	2.791	0.100	0.125	0.010
March	4.384	0.000	4.384	0.141	0.970	0.092
April	0.000	3.218	3.218	0.107	0.140	0.044
May	4.928	0.000	4.928	0.159	NA	NA
June	0.000	3.847	3.847	0.128	0.222	0.052
July	4.444	0.000	4.444	0.148	0.192	0.108
August	0.205	5.709	5.914	0.191	0.910	0.086
September	3.274	0.000	3.274	0.109	0.166	0.032
October	0.000	3.627	3.627	0.117	NA	nA
November	3.881	0.000	3.881	0.129	0.950	0.020
December	0.000	3.036	3.036	0.098	0.140	0.077
Yearly (mgd)	2.031	1.852	46.596	0.128	0.970	0.010

** May Max day was used from the DEQ Sanitary Survey



Model Input/Output

CITY OF STANTON
2011 WATER SYSTEM RELIABILITY STUDY

MODEL INPUT - EXISTING INFRASTRUCTURE

Label	Start Node	Stop Node	Diameter (in)	Approx Length (ft)	Hazen-Williams C
P-4	J-4	J-5	8	360	Ductile Iron
P-12	J-5	J-12	8	330	Ductile Iron
P-16	J-13	J-4	4	350	Ductile Iron
P-17	J-11	J-13	6	340	Ductile Iron
P-23	J-18	J-19	6	340	Ductile Iron
P-24	J-19	J-20	6	440	Ductile Iron
P-29	J-24	J-19	6	830	Ductile Iron
P-30	J-24	J-25	6	390	Ductile Iron
P-34	J-28	J-18	6	460	Ductile Iron
P-44	J-37	J-38	6	670	Ductile Iron
P-47	J-40	J-41	6	380	Ductile Iron
P-51	J-44	J-37	8	370	Ductile Iron
P-53	J-45	J-46	8	420	Ductile Iron
P-54	J-46	J-47	8	410	Ductile Iron
P-57	J-48	J-50	8	360	Ductile Iron
P-58	J-50	J-51	6	320	Ductile Iron
P-60	J-1	J-52	6	560	Ductile Iron
P-67	J-55	J-57	6	320	Ductile Iron
P-68	J-57	J-58	4	420	Ductile Iron
P-70	J-58	J-60	6	410	Ductile Iron
P-71	J-60	J-61	8	50	Ductile Iron
P-73	J-62	J-63	6	330	Ductile Iron
P-75	J-63	J-63	6	520	Ductile Iron
P-96	J-82	J-81	6	370	Ductile Iron
P-100	J-82	J-85	6	420	Ductile Iron
P-102	J-81	J-86	6	440	Ductile Iron
P-103	J-86	J-87	6	1020	Ductile Iron
P-122	J-2	J-101	6	570	Ductile Iron
P-123	J-28	J-102	6	750	Ductile Iron
P-124	J-102	J-103	8	90	Ductile Iron
P-133	J-105	J-57	6	350	Ductile Iron
P-137	J-12	T-2	12	460	Ductile Iron
P-139	J-106	J-24	4	360	Ductile Iron
P-140	J-22	J-107	8	1090	Ductile Iron
P-141	J-106	J-107	6	380	Ductile Iron
P-155	J-63	J-111	4	410	Ductile Iron
P-156	J-111	J-60	4	450	Ductile Iron
P-157	J-111	J-112	6	600	Ductile Iron
P-160	J-112	J-113	0.8	430	Ductile Iron
P-161	J-3	J-114	6	570	Ductile Iron
P-162	J-114	J-13	4	290	Ductile Iron
P-166	J-114	J-115	4	350	Ductile Iron
P-167	J-62	J-116	6	400	Ductile Iron
P-168	J-116	J-45	8	360	Ductile Iron
P-170	J-61	J-117	8	320	Ductile Iron

CITY OF STANTON
2011 WATER SYSTEM RELIABILITY STUDY

MODEL INPUT - EXISTING INFRASTRUCTURE

Label	Start Node	Stop Node	Diameter (in)	Approx Length (ft)	Hazen-Williams C
P-171	J-117	J-44	8	370	Ductile Iron
P-172	J-116	J-117	8	420	Ductile Iron
P-177	J-118	J-85	8	350	Ductile Iron
P-179	J-34	J-50	8	500	Ductile Iron
P-184	J-4	J-48	8	300	Ductile Iron
P-185	J-54	J-121	8	560	Ductile Iron
P-187	J-113	J-122	6	260	Ductile Iron
P-189	J-16	J-123	8	840	Ductile Iron
P-200	R-3	WELL 2	8	60	Ductile Iron
P-201	WELL 2	J-100	8	60	Ductile Iron
P-202	R-3	WELL 3	8	60	Ductile Iron
P-203	WELL 3	J-100	8	90	Ductile Iron
P-205	J-127	J-105	6	410	Ductile Iron
P-206	J-42	J-127	8	400	Ductile Iron
P-211	J-50	J-130	6	370	Ductile Iron
P-212	J-130	J-150	4	430	Ductile Iron
P-219	J-12	J-13	4	350	Ductile Iron
P-220	J-101	J-63	4	410	Ductile Iron
P-221	J-1	J-54	6	850	Ductile Iron
P-222	J-52	J-121	6	850	Ductile Iron
P-224	J-122	J-60	6	340	Ductile Iron
P-225	J-40	J-82	4	690	Ductile Iron
P-226	J-42	J-85	8	1020	Ductile Iron
P-227	J-118	J-81	6	400	Ductile Iron
P-228	J-85	J-38	6	510	Ductile Iron
P-229	J-100	J-16	8	160	Ductile Iron
P-232	J-25	J-24	2	460	Ductile Iron
P-234	J-107	J-25	8	370	Ductile Iron
P-237	J-19	J-24	2	980	Ductile Iron
P-238	J-130	J-18	6	890	Ductile Iron
P-240	J-51	J-15	6	330	Ductile Iron
P-241	J-51	J-136	6	550	Ductile Iron
P-242	J-136	J-34	6	460	Ductile Iron
P-243	J-114	J-48	6	350	Ductile Iron
P-244	J-48	J-47	8	320	Ductile Iron
P-245	J-47	J-115	6	370	Ductile Iron
P-246	J-47	J-130	4	410	Ductile Iron
P-247	J-115	J-62	6	410	Ductile Iron
P-250	J-101	J-115	6	330	Ductile Iron
P-252	J-139	J-11	6	540	Ductile Iron
P-254	J-56	J-140	6	400	Ductile Iron
P-256	J-58	J-127	8	320	Ductile Iron
P-257	J-127	J-141	4	400	Ductile Iron
P-258	J-141	J-60	8	310	Ductile Iron
P-259	J-141	J-44	8	420	Ductile Iron

CITY OF STANTON
2011 WATER SYSTEM RELIABILITY STUDY

MODEL INPUT - EXISTING INFRASTRUCTURE

Label	Start Node	Stop Node	Diameter (in)	Approx Length (ft)	Hazen-Williams C
P-260	J-55	J-142	6	690	Ductile Iron
P-261	J-170	J-142	4	720	Ductile Iron
P-262	J-54	J-143	8	550	Ductile Iron
P-263	J-143	J-144	6	380	Ductile Iron
P-264	J-144	J-145	8	540	Ductile Iron
P-265	J-145	J-54	8	380	Ductile Iron
P-267	J-144	J-147	6	240	Ductile Iron
P-270	J-121	J-112	8	530	Ductile Iron
P-272	J-116	J-111	8	330	Ductile Iron
P-273	J-44	J-148	4	140	Ductile Iron
P-274	J-148	J-45	8	270	Ductile Iron
P-276	J-149	J-37	6	120	Ductile Iron
P-277	J-148	J-149	4	360	Ductile Iron
P-278	J-46	J-150	6	350	Ductile Iron
P-281	J-63	J-151	8	470	Ductile Iron
P-282	J-151	J-112	8	90	Ductile Iron
P-284	J-105	J-41	6	350	Ductile Iron
P-286	J-41	J-152	8	620	Ductile Iron
P-287	J-118	J-103	8	460	Ductile Iron
P-289	J-153	J-139	8	340	Ductile Iron
P-290	J-11	J-154	6	340	Ductile Iron
P-291	J-154	J-12	8	350	Ductile Iron
P-292	J-153	J-154	8	540	Ductile Iron
P-293	J-38	J-102	6	250	Ductile Iron
P-295	J-155	J-135	8	810	Ductile Iron
P-298	J-62	J-46	6	360	Ductile Iron
P-299	J-22	J-156	6	500	Ductile Iron
P-300	J-156	J-155	6	730	Ductile Iron
P-301	J-140	J-157	8	960	Ductile Iron
P-302	J-157	J-145	8	390	Ductile Iron
P-303	J-121	J-158	6	440	Ductile Iron
P-304	J-158	J-113	6	720	Ductile Iron
P-305	J-157	J-158	6	160	Ductile Iron
P-306	J-16	J-19	6	670	Ductile Iron
P-307	J-20	J-159	6	570	Ductile Iron
P-308	J-159	J-106	6	210	Ductile Iron
P-309	J-5	J-160	8	1740	Ductile Iron
P-310	J-160	J-123	8	420	Ductile Iron
P-311	J-109	J-161	6	830	Ductile Iron
P-312	J-161	J-153	6	890	Ductile Iron
P-316	J-163	J-149	4	210	Ductile Iron
P-317	J-150	J-164	4	70	Ductile Iron
P-318	J-164	J-163	4	410	Ductile Iron
P-319	J-139	J-165	8	300	Ductile Iron
P-320	J-165	J-2	8	320	Ductile Iron

CITY OF STANTON
2011 WATER SYSTEM RELIABILITY STUDY

MODEL INPUT - EXISTING INFRASTRUCTURE

Label	Start Node	Stop Node	Diameter (in)	Approx Length (ft)	Hazen-Williams C
P-321	J-3	J-165	8	320	Ductile Iron
P-322	J-152	J-44	8	260	Ductile Iron
P-323	J-52	J-166	6	520	Ductile Iron
P-324	J-166	J-2	6	80	Ductile Iron
P-325	J-166	J-63	8	520	Ductile Iron
P-326	J-154	J-167	12	390	Ductile Iron
P-330	J-147	J-169	6	300	Ductile Iron
P-331	J-169	J-146	8	630	Ductile Iron
P-332	J-167	J-161	12	1040	Ductile Iron
P-333	J-55	J-170	8	30	Ductile Iron
P-334	J-170	J-56	6	440	Ductile Iron
P-335	J-140	J-171	8	480	Ductile Iron
P-336	J-171	J-58	8	330	Ductile Iron
P-337	J-122	J-171	8	420	Ductile Iron

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2016 DEMANDS WITH EXISTING INFRASTRUCTURE

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-1	909	68	68	2,090
J-2	915	65	65	5,000
J-3	930	58	58	3,850
J-4	946	52	52	5,000
J-5	941	54	54	5,000
J-11	950	50	50	3,460
J-12	945	52	52	5,000
J-13	953	48	49	5,000
J-16	928	59	60	3,950
J-18	918	64	64	3,100
J-19	927	60	60	3,870
J-20	938	55	55	2,040
J-22	932	58	58	1,760
J-24	936	56	56	3,820
J-25	927	60	60	3,770
J-28	918	64	64	2,260
J-34	919	63	63	2,930
J-37	901	71	71	5,000
J-38	905	69	69	3,870
J-40	885	78	78	1,620
J-41	895	74	74	2,810
J-42	910	67	67	4,530
J-44	912	66	66	5,000
J-45	919	63	63	4,970
J-46	929	59	59	5,000
J-47	935	56	56	5,000
J-48	943	53	53	5,000
J-50	937	55	55	3,730
J-51	941	54	54	2,040
J-52	918	64	64	2,740
J-54	908	68	68	3,740
J-55	900	71	71	1,540
J-56	900	71	71	1,820
J-57	905	69	69	1,840
J-58	925	61	61	5,000
J-60	922	62	62	5,000
J-61	922	62	62	5,000
J-62	926	60	60	4,610

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2016 DEMANDS WITH EXISTING INFRASTRUCTURE

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-63	930	58	58	5,000
J-63	908	68	68	4,960
J-81	905	69	69	2,630
J-82	897	73	73	2,620
J-85	899	72	72	4,370
J-86	902	71	71	1,660
J-87	880	80	80	950
J-100	920	63	63	3,560
J-101	929	59	59	5,000
J-102	915	65	65	3,910
J-103	918	64	64	3,820
J-105	912	66	66	2,700
J-106	929	59	59	3,180
J-107	927	60	60	3,020
J-109	948	51	51	950
J-111	925	61	61	5,000
J-112	915	65	65	4,380
J-113	924	61	61	2,040
J-114	939	55	55	5,000
J-115	928	59	59	5,000
J-116	923	61	62	5,000
J-117	917	64	64	5,000
J-118	914	65	66	4,100
J-121	910	67	67	4,220
J-122	925	61	61	2,340
J-123	940	54	54	2,970
J-127	918	64	64	5,000
J-130	933	57	57	5,000
J-135	942	53	54	680
J-136	923	61	62	2,070
J-139	931	58	58	4,910
J-140	900	71	71	3,810
J-141	915	65	65	5,000
J-142	890	76	76	1,260
J-143	902	71	71	3,020
J-144	902	71	71	2,970
J-145	909	68	68	3,530
J-146	903	70	70	620

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2016 DEMANDS WITH EXISTING INFRASTRUCTURE

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-147	902	71	71	1,830
J-148	915	65	65	3,780
J-149	905	69	69	5,000
J-150	924	61	61	5,000
J-151	917	64	64	4,270
J-152	908	68	68	3,850
J-153	937	55	55	4,730
J-154	950	50	50	5,000
J-155	928	59	60	710
J-156	939	55	55	1,020
J-157	912	66	66	3,320
J-158	914	65	65	2,200
J-159	932	58	58	2,320
J-160	930	58	59	3,080
J-161	948	51	51	4,570
J-164	924	61	61	4,940
J-165	923	61	62	5,000
J-166	915	65	65	4,870
J-167	950	50	50	5,000
J-169	900	71	71	720
J-171	925	61	61	3,950
J-172	942	(N/A)	(N/A)	#VALUE!
J-173	902.99	70	70	3,380

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2036 DEMANDS WITH EXISTING INFRASTRUCTURE

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-1	909	68	68	1,920
J-2	915	65	65	4,980
J-3	930	58	58	3,750
J-4	946	52	52	5,000
J-5	941	54	54	5,000
J-11	950	50	50	3,230
J-12	945	52	52	5,000
J-13	953	48	49	5,000
J-16	928	59	60	3,840
J-18	918	64	64	2,890
J-19	927	60	60	3,760
J-20	938	55	55	1,900
J-22	932	58	58	1,740
J-24	936	56	56	3,710
J-25	927	60	60	3,660
J-28	918	64	64	2,090
J-34	919	63	63	2,940
J-37	901	71	71	5,000
J-38	905	69	69	3,660
J-40	885	78	78	1,490
J-41	895	74	74	2,610
J-42	910	67	67	4,460
J-44	912	66	66	5,000
J-45	919	63	63	4,930
J-46	929	59	59	5,000
J-47	935	56	56	5,000
J-48	943	53	53	5,000
J-50	937	55	55	3,830
J-51	941	54	54	2,060
J-52	918	64	64	2,540
J-54	908	68	68	3,650
J-55	900	71	71	1,430
J-56	900	71	71	1,700
J-57	905	69	69	1,710
J-58	925	61	61	5,000
J-60	922	62	62	5,000
J-61	922	62	62	5,000
J-62	926	60	60	4,360

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2036 DEMANDS WITH EXISTING INFRASTRUCTURE

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-63	930	58	58	5,000
J-63	908	68	68	4,780
J-81	905	69	69	2,460
J-82	897	73	73	2,450
J-85	899	72	72	4,260
J-86	902	71	71	1,550
J-87	880	80	80	870
J-100	920	63	63	3,490
J-101	929	59	59	5,000
J-102	915	65	65	3,790
J-103	918	64	64	3,710
J-105	912	66	66	2,510
J-106	929	59	59	3,110
J-107	927	60	60	2,940
J-109	948	51	51	880
J-111	925	61	61	5,000
J-112	915	65	65	4,240
J-113	924	61	61	1,870
J-114	939	55	55	5,000
J-115	928	59	59	5,000
J-116	923	61	61	5,000
J-117	917	64	64	5,000
J-118	914	65	66	4,010
J-121	910	67	67	4,080
J-122	925	61	61	2,150
J-123	940	54	54	2,930
J-127	918	64	64	5,000
J-130	933	57	57	5,000
J-135	942	53	53	630
J-136	923	61	61	1,990
J-139	931	58	58	4,800
J-140	900	71	71	3,780
J-141	915	65	65	5,000
J-142	890	76	76	1,170
J-143	902	71	71	2,950
J-144	902	71	71	2,900
J-145	909	68	68	3,460
J-146	903	70	70	550

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2036 DEMANDS WITH EXISTING INFRASTRUCTURE

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-147	902	71	71	1,710
J-148	915	65	65	3,760
J-149	905	69	69	5,000
J-150	924	61	61	5,000
J-151	917	64	64	4,140
J-152	908	68	68	3,830
J-153	937	55	55	4,640
J-154	950	50	50	5,000
J-155	928	59	60	660
J-156	939	55	55	960
J-157	912	66	66	3,270
J-158	914	65	65	2,020
J-159	932	58	58	2,180
J-160	930	58	59	3,050
J-161	948	51	51	4,520
J-164	924	61	61	4,870
J-165	923	61	61	4,880
J-166	915	65	65	4,680
J-167	950	50	50	5,000
J-169	900	71	71	640
J-171	925	61	61	3,920
J-172	942	(N/A)	(N/A)	#VALUE!
J-173	902.99	70	70	3,170
J-182	948	51	51	1,260
J-183	900.6	71	71	630
J-184	911.48	66	66	4,840
J-187	910.95	67	67	4,540

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2036 DEMANDS WITH RECOMMENDED IMPROVEMENTS

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-1	909	68	68	2,830
J-2	915	65	65	5,000
J-3	930	58	58	4,210
J-4	946	52	52	5,000
J-5	941	54	54	5,000
J-11	950	50	50	3,290
J-12	945	52	52	5,000
J-13	953	48	49	5,000
J-16	928	59	60	4,190
J-18	918	64	64	4,330
J-19	927	60	60	4,170
J-20	938	55	55	1,940
J-22	932	58	58	1,460
J-24	936	56	56	4,040
J-25	927	60	60	3,970
J-28	918	64	64	2,220
J-34	919	63	63	2,820
J-37	901	71	71	5,000
J-38	905	69	69	3,740
J-40	885	78	78	1,540
J-41	895	74	74	2,880
J-42	910	67	67	4,400
J-44	912	66	66	5,000
J-45	919	63	63	5,000
J-46	929	59	59	5,000
J-47	935	56	56	5,000
J-48	943	53	53	5,000
J-50	937	55	55	3,750
J-51	941	54	54	2,040
J-52	918	64	64	3,520
J-54	908	68	68	3,830
J-55	900	71	71	2,790
J-56	900	71	71	2,550
J-57	905	69	69	4,750
J-58	925	61	61	5,000
J-60	922	62	62	5,000
J-61	922	62	62	5,000
J-62	926	60	60	4,440

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2036 DEMANDS WITH RECOMMENDED IMPROVEMENTS

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-63	930	58	58	5,000
J-63	908	68	68	4,980
J-81	905	69	69	3,830
J-82	897	73	73	3,970
J-85	899	72	72	4,440
J-86	902	71	71	2,840
J-87	880	80	80	980
J-100	920	63	63	3,690
J-101	929	59	59	5,000
J-102	915	65	65	4,130
J-103	918	64	64	4,030
J-105	912	66	66	3,580
J-106	929	59	59	3,200
J-107	927	60	60	2,870
J-109	948	51	51	2,160
J-111	925	61	61	5,000
J-112	915	65	65	4,800
J-113	924	61	61	4,030
J-114	939	55	55	5,000
J-115	928	59	59	5,000
J-116	923	61	61	5,000
J-117	917	64	64	5,000
J-118	914	65	65	4,160
J-121	910	67	67	4,240
J-122	925	61	61	4,370
J-123	940	54	54	2,730
J-127	918	64	64	5,000
J-130	933	57	57	5,000
J-135	942	53	53	990
J-136	923	61	61	1,970
J-139	931	58	58	4,960
J-140	900	71	71	4,380
J-141	915	65	65	5,000
J-142	890	76	76	1,320
J-143	902	71	71	2,970
J-144	902	71	71	2,940
J-145	909	68	68	3,710
J-146	903	70	70	1,710

CITY OF STANTON
2016 WATER SYSTEM RELIABILITY STUDY

MODEL OUTPUT - 2036 DEMANDS WITH RECOMMENDED IMPROVEMENTS

Label	Elevation (ft)	Pressure (psi)		Available Fire Flow (gpm)
		Avg Day	Max Day	
J-147	902	71	71	2,500
J-148	915	65	65	5,000
J-149	905	69	69	5,000
J-150	924	61	61	5,000
J-151	917	64	64	4,550
J-152	908	68	68	3,980
J-153	937	55	55	5,000
J-154	950	50	50	5,000
J-155	928	59	59	1,170
J-156	939	55	55	1,320
J-157	912	66	66	3,910
J-158	914	65	65	3,370
J-159	932	58	58	2,220
J-160	930	58	59	2,800
J-161	948	51	51	4,940
J-164	924	61	61	4,840
J-165	923	61	61	4,920
J-166	915	65	65	4,920
J-167	950	50	50	5,000
J-169	900	71	71	2,140
J-170	900	71	71	2,750
J-171	925	61	61	4,770
J-172	942	53	53	1,020
J-173	902.99	70	70	3,220



APPENDIX B

Overburdened Worksheet



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
**OVERBURDENED AND SIGNIFICANTLY OVERBURDENED COMMUNITY STATUS
DETERMINATION WORKSHEET**

The following data is required from each State Revolving Fund (SRF) applicant requesting a determination for overburdened and significantly overburdened community status.

The most recent census and tax data are available in a searchable table on EGLE's [State Revolving Fund – Overburdened Community Definition and Scoring Criteria Development](#) webpage along with an excel worksheet to help determine blended Median Annual Household Income (MAHI) and blended taxable value per capita for regional systems. The MAHI and taxable value per capita table will be used to make all FY24 determinations. Applicants are encouraged to visit this page prior to completing this form to see if they qualify based on MAHI (blended MAHI if applicable) or taxable value per capita (blended taxable value per capita if applicable) alone. If so, they only need to fill out lines 1 and 2 of this form, electronically sign it on page 2, and submit.

Alternately, if the applicant's MAHI or blended MAHI is above the state average - \$63,498 for FY24 – they cannot be determined as being overburdened or significantly overburdened for FY24 funding and should not complete or turn in this form.

For applicants whose MAHI or blended MAHI is below \$63,498 but do not automatically qualify based on MAHI or taxable value per capita alone, please complete the entire form and return to:

Mark Conradi
conradim@michigan.gov

Name of Applicant

Please check the box indicating which funding source this determination is for:

DWSRF

CWSRF

1. Is this a regional system? A regional system refers to any system that serves more than one municipality (cities, townships, and/or villages)

Yes

No

If yes, refer to the instructions at the end of this form to complete calculations for a blended MAHI and blended taxable value per capita. Additionally, page 3 of this form will also need to be completed.

2. Median Annual Household Income from table on the overburdened webpage (blended if applicable)

3. Taxable Value Per Capita from table on the overburdened webpage (blended if applicable)

4. Total amount of anticipated debt for the proposed project (amount of loan requested for FY24 loan)

5. Annual payments on the existing debt for the system

6. Total operation, maintenance, and replacement expenses (OM&R) for the system on an annual basis

7. Number of residential equivalent users (REUs) in the system

***I (_____) hereby certify that the information in this form is complete, true, and correct to the best of my knowledge.**

Jennifer L Morris

Signature

Date

For determinations made using anticipated debt, a final determination will be made based upon the awarded loan amount and not the anticipated amount provided on this form.



APPENDIX C

Threatened and Endangered Species Reports

April 4th, 2023

Michigan Natural Features Inventory (MNFI) Web Database Review – City of Stanton CIP

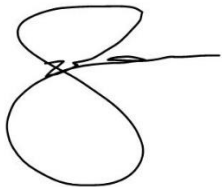
OHM has reviewed the Threatened and Endangered Species list generated by the MNFI Web Database, conducted on April 4th, 2023. During this Review, the project location was checked against known localities for rare species, and **0** State threatened, endangered, or species of special concern have been documented within the 1.5 mile project area buffer. Additionally, ESA Section 7 species were generated via the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) website. Determinations for Federally listed species will be made utilizing the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) website.

The work for these projects involve maintenance of existing storm and sanitary sewer systems and installation of new watermain at multiple locations throughout the city of Stanton.

OHM Advisors has made the determination that no additional effort is required related to potential field surveys for listed species. In the event known threatened and endangered species are observed during project activities, observations will be reported to local county MDNR office within 24 hours.

If additional information is needed, please contact me via email at wade.rose@ohm-advisors.com.

Sincerely,



Wade Rose, OHM Advisors Ecologist



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:
Project code: 2023-0066273
Project Name: McPherson Street Water Improvements

April 07, 2023

Subject: Verification letter for 'McPherson Street Water Improvements' for specified federally threatened and endangered species and designated critical habitat that may occur in your proposed project area consistent with the Michigan Determination Key for project review and guidance for federally listed species (Michigan Dkey).

Dear Kayla McRobb:

The U.S. Fish and Wildlife Service (Service) received on **April 07, 2023** your effect determination(s) for the 'McPherson Street Water Improvements' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance in the Service's Michigan DKey, you made the following effect determination(s) for the proposed action.

Species	Listing Status	Determination
Eastern Massasauga (=rattlesnake) (<i>Sistrurus catenatus</i>)	Threatened	NLAA
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	NLAA
Karner Blue Butterfly (<i>Lycaeides melissa samuelis</i>)	Endangered	No effect
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No effect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	NLAA
Whooping Crane (<i>Grus americana</i>)	Endangered Experimental Population, Non-Essential	May affect

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "may affect, not likely to adversely affect" (NLAA) determination for Federally listed species in Michigan. If we do not notify you within that timeframe, you may

proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Michigan Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, the Michigan Ecological Services Field Office may request additional information to verify the effects determination reached through the Michigan DKey.

Your agency has met consultation requirements by informing the Service of your “No Effect” determination(s). No consultation for is required for species that you determined will not be affected by the Action.

Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions and the Service’s 30-day review period. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

Tricolored Bat:

Tricolored bat was proposed for listing as endangered on September 13, 2022. White-nose syndrome (WNS) has caused estimated declines of more than 90 percent in affected tricolored bat colonies and is currently present across 59 percent of the species’ range.

During winter, tricolored bats hibernate in caves, abandoned mines, and tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

In Michigan, the tricolored bat was rare pre-WNS and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter (September through mid-March) in or near hibernation sites. Most known hibernacula are abandoned mines in the western Upper Peninsula, although the species has been detected hibernating in three additional Lower Peninsula sites. Observed hibernating populations have been small (e.g., <10 individuals per site) since before WNS. With very few exceptions, the species has not been observed in Michigan in the summer, and no maternity colonies have been documented, despite repeated and extensive mist netting and other survey efforts in suitable summer habitat.

Trees near potential hibernacula are more likely to have tricolored bats present during the fall/spring and possibly summer months. Clearing trees near hibernacula during certain times of the year could result in adverse effects to this species. Trees outside of these areas may be occupied by migrating tricolored bats seasonally, but cutting trees outside these areas is extremely unlikely to result in adverse effects (discountable).

If a final rule is published listing the tricolored bat as endangered, the Service will provide additional information on evaluating projects for potential impacts to tricolored bat.

Bats of Conservation Concern:

Implementing protective measures for bats, including both federally listed and non-listed species, indirectly helps to protect Michigan's agriculture and forests. Bats are significant predators of nocturnal insects, including many crop and forest pests. For example, Whitaker (1995) estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011) noted the "loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year, and Maine and Boyles (2015) estimated that the suppression of herbivory by insectivorous bats is worth >1 billion USD globally on corn alone. In captive trials, northern long-eared bats were found to significantly reduce the egg-laying activity of mosquitoes, suggesting bats may also play an important role in controlling insect-borne disease (Reiskind and Wund 2009). Mosquitoes have also been found to be a consistent component of the diet of Indiana bats and are eaten most heavily during pregnancy (6.6%; Kurta and Whitaker 1998). Taking proactive steps to help protect bats may be very valuable to agricultural and forest product yields and pest management costs in and around a project area. Such conservation measures include limiting tree clearing during the bat active season (April through October varies by location) and/or the non-volant period (June through July), when young bats are unable to fly, and minimizing the extent of impacts to forests, wetlands, and riparian habitats.

Whooping Crane Nonessential Experimental Population:

For Federal projects outside a National Wildlife Refuge or National Park, we treat the nonessential experimental population (NEP) of whooping crane as proposed for listing and only two provisions of section 7 would apply: section 7(a)(1) and section 7(a)(4). Section 7(a)(4) requires Federal agencies to confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species. You indicated that the Action is not likely to result in jeopardy of the NEP of whooping crane. As such, your obligations under section 7 for whooping crane are complete.

Bald and Golden Eagles:

Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the "taking" of bald and golden eagles and defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Eagle Act's implementing regulations define disturb as "...to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially

interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit <https://www.fws.gov/library/collections/all-about-eagles>. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at <https://www.fws.gov/media/national-bald-eagle-management-guidelines-0>.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Monarch butterfly and other pollinators

In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan’s pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g., ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

<https://www.fws.gov/initiative/monarchs>

<https://www.fws.gov/library/collections/pollinators>

Wetland impacts:

Section 404 of the Clean Water Act of 1977 (CWA) regulates the discharge of dredged or fill material into waters (including wetlands) of the United States. Regulations require that activities permitted under the CWA (including wetland permits issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)) not jeopardize the continued existence of species listed as endangered or threatened. Permits issued by the U.S. Army Corps of Engineers must also consider effects to listed species pursuant to section 7 of the Endangered Species Act. The Service provides comments to the agencies that may include permit conditions to help avoid or minimize impacts to wildlife resources including listed species. For this project, we consider the conservation measures you agreed to in the determination key and/or as part of your proposed action to be non-discretionary. If you apply for a wetland permit, these conservation measures should be explicitly incorporated as permit conditions. Include a copy of this letter in your wetland permit application to streamline the threatened and endangered species review process.

Bat References

Boyles, J.G., P.M. Cryan, G.F. McCracken, T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332(1):41-42.

Kurta, A. and J.O. Whitaker. 1998. Diet of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. *The American Midland Naturalist* 140(2):280-286.

Reiskind, M.H. and M.A. Wund. 2009. Experimental assessment of the impacts of northern long-eared bats on ovipositing *Culex* (Diptera: Culicidae) mosquitoes. *Journal of Medical Entomology* 46(5):1037-1044.

Whitaker, Jr., J.O. 1995. Food of the big brown bat *Eptesicus fuscus* from maternity colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

Eastern massasauga

Materials used for erosion control and site restoration must be wildlife-friendly. Do not use erosion control products containing plastic mesh netting or other similar material that could entangle eastern massasauga rattlesnake (EMR). Several products for soil erosion and control exist that do not contain plastic netting including net-less erosion control blankets (for example, made of excelsior), loose mulch, hydraulic mulch, soil binders, unreinforced silt fences, and straw bales. Others are made from natural fibers (such as jute) and loosely woven together in a manner that allows wildlife to wiggle free.

To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at <https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet>), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w).

During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

Whooping crane

The project will not occur within a National Wildlife Refuge or National Park

Listed bats

Any cutting/trimming of potential roost trees for Indiana bat (trees ≥ 5 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark) or northern long-eared bat (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark) must occur OUTSIDE the non-volant ("pup") season for Indiana bat (June 1 through July 31). Prescribed fire and/or pesticide/herbicide application must also occur outside June-July where potential roost trees are present.

Tree cutting/trimming and/or prescribed burning will not clear ≥ 20 contiguous acres of forest or fragment a connective corridor between 2 or more forest patches of at least 5 acres.

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

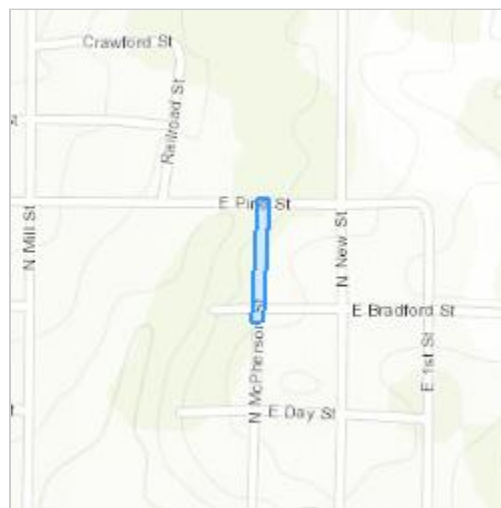
McPherson Street Water Improvements

2. Description

The following description was provided for the project 'McPherson Street Water Improvements':

Replace 6" water main with 6" pipe. Replace entire roadway.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.295269250000004,-85.0755383993712,14z>



QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

No

4. Is the action being funded, authorized, or carried out by a Federal agency?

Yes

5. Does the action involve the installation or operation of wind turbines?

No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

Yes

7. Does the action involve constructing a new communication tower or modifying an existing communications tower?

No

8. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

No

10. Will your action permanently affect hydrology?

No

11. Will your action temporarily affect hydrology?

No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, etc.)?

No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, etc.)?

No

14. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

Yes

15. Is the action a utility-scale solar development project?

No

16. [Hidden semantic] Does the action intersect the MOBU AOI?

Automatically answered

Yes

17. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

Yes

18. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

Automatically answered

Yes

19. Does your action involve prescribed fire?

No

20. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 16 through April 14)?

No

21. Will this action occur entirely in the Eastern massasauga rattlesnake active season (April 15 through October 15)?

No

22. Will the action result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of uplands of potential Eastern massasauga rattlesnake habitat (uplands associated with high quality wetland habitat) to other land uses?

No

23. Will you use [wildlife safe materials](#) for erosion control and site restoration and eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare Eastern massasauga rattlesnake?

Yes

24. Will you watch MDNR's ["60-Second Snakes: The Eastern Massasauga Rattlesnake \(EMR\)"](#) video, review the [EMR factsheet](#) or call 517-351-2555 to increase human safety and awareness of EMR?

Yes

25. Will all action personnel report any Eastern massasauga rattlesnake observations, or observation of any other listed threatened or endangered species, during action implementation to the Service within 24 hours?
Yes
26. [Hidden Semantic] Does the action intersect the Karner blue butterfly area of influence?
Automatically answered
Yes
27. Will the action occur in oak savanna, oak or pine barrens, openings within oak forest, old fields in association with oak forest, or openings or rights-of-way with abundant native grasses and wildflowers?
No
28. [Hidden Semantic] Does the action area intersect the whooping crane (ex. Pop) area of influence?
Automatically answered
Yes
29. Have you determined that the action will have no effect on individuals within the whooping crane nonessential experimental population (NEP)?
No
30. Does the action occur within a National Wildlife Refuge or National Park?
No
31. For Federal projects outside a National Wildlife Refuge or National Park, we treat the nonessential experimental population of whooping crane as proposed for listing and only two provisions of section 7 would apply: section 7(a)(1) and section 7(a)(4). Section 7(a)(4) requires Federal agencies to confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species. Is your project likely to jeopardize the continued existence of whooping crane?
No
32. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?
No
33. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide [Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines](#) been conducted within the action area?
No
34. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting bats?
No
35. Does the action include removal/modification of an existing bridge or culvert?
No
-

36. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?

No

37. Does the action include one or more of the following: (1) tree cutting/trimming, (2) prescribed fire, (3) pesticide (including insecticide and/or rodenticide), and/or (4) herbicide/fungicide application?

Yes

38. Does the action include herbicide application?

No

39. Will the action clear >10 acres of contiguous forest (i.e., connected by 1,000 feet or less) or fragment a riparian or other connective forested corridor (e.g., tree line) between 2 or more forest patches of at least 5 acres? For more information, see [Appendix II](#).

No

40. Does the action area contain potential NLEB bat roost trees (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices, cavities and/or exfoliating bark)? For more information, see [Appendix IV](#).

Yes

41. Does the action area contain potential Indiana bat roost trees (trees ≥ 5 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark)? For more information, see [Appendix III](#).

Yes

42. Does the action include emergency cutting/trimming of hazard trees in order to prevent imminent loss of human life and/or property?

No

43. [Semantic] Is any portion of the action area within 5 miles of a known Indiana or northern long-eared bat hibernaculum?

Automatically answered

No

44. Will all tree cutting/trimming, prescribed fire, and/or pesticide (i.e., insecticide, rodenticide) application occur OUTSIDE the non-volant ("pup") season for bat (that is, no cutting/trimming, prescribed fire, or pesticide application during June 1 through July 31)?

Note: Based on the project's location, conducting these activities outside the months of June and July may be sufficient to avoid adverse effects to/take of bat.

Yes

45. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

Automatically answered

Yes

46. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

Automatically answered

Yes

47. [Hidden semantic] Does the action intersect the Tricolored bat AOI/SLA/range?

Automatically answered

Yes

48. The tricolored bat was proposed for listing as endangered on September 13, 2022. In Michigan, the tricolored bat was rare pre-white nose syndrome (WNS) and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter. With very few exceptions, the species has not been observed in Michigan in the summer months, and no maternity colonies have been found. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

Are you making a no effect determination on this project for the tricolored bat?

No

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Kayla McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: kayla.mcrobb@ohm-advisors.com
Phone: 7347659699



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:
Project Code: 2023-0066273
Project Name: McPherson Street Water Improvements

April 07, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Official Species List

The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (<https://ipac.ecosphere.fws.gov/>) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in making determinations for listed species for some projects. In many cases, the determination key

will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit <https://www.fws.gov/media/mifo-ipac-instructions> (and click on the attachment). Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: <https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance>. If you evaluate the details of your project and conclude “no effect,” document your findings, and your listed species review is complete; you do not need our concurrence on “no effect” determinations. If you cannot conclude “no effect,” you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects** and **projects that include installing communications towers that use guy wires**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds

Please see the “Migratory Birds” section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/program/eagle-management/eagle-permits> to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Michigan Ecological Services Field Office

2651 Coolidge Road Suite 101

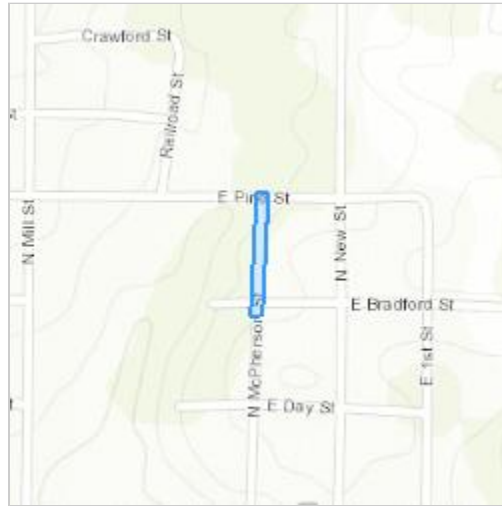
East Lansing, MI 48823-6360

(517) 351-2555

PROJECT SUMMARY

Project Code: 2023-0066273
Project Name: McPherson Street Water Improvements
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground
Project Description: Replace 6" water main with 6" pipe. Replace entire roadway.
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.29526925000004,-85.0755383993712,14z>



Counties: Montcalm County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/WA3LJDDYQJE6DLYVFKZNIEA6GY/documents/generated/6982.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/WA3LJDDYQJE6DLYVFKZNIEA6GY/documents/generated/6983.pdf	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non- Essential

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ipac.ecosphere.fws.gov/project/WA3LJDDYQJE6DLYVFKZNIEA6GY/documents/generated/5280.pdf	Threatened

INSECTS

NAME	STATUS
Karner Blue Butterfly <i>Lycaeides melissa samuelis</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

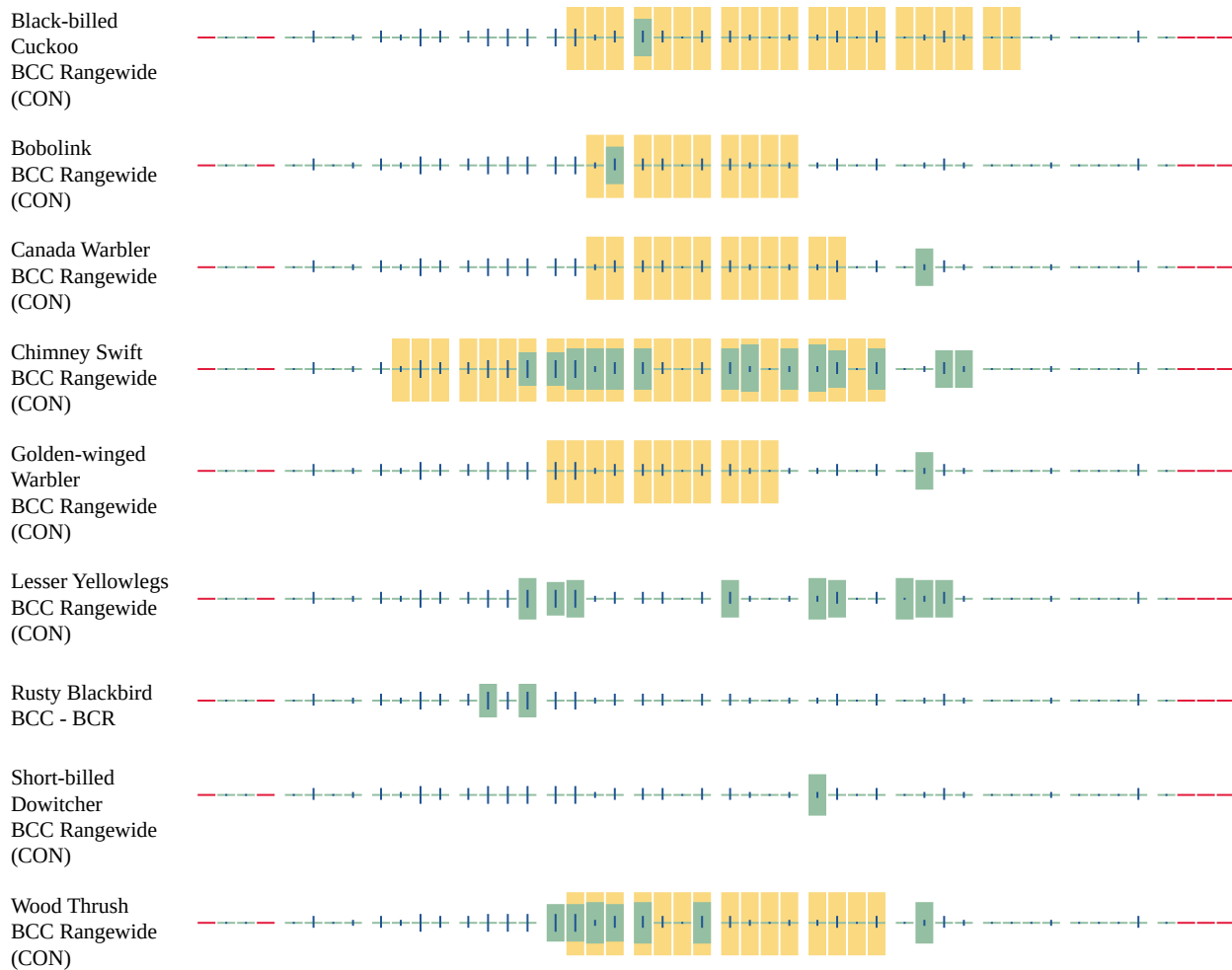
NAME	BREEDING SEASON
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Kayla McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: kayla.mcrobb@ohm-advisors.com
Phone: 7347659699



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:
Project code: 2023-0066279
Project Name: North State Street Water Improvements

April 07, 2023

Subject: Verification letter for the project named 'North State Street Water Improvements' for specified threatened and endangered species that may occur in your proposed project location consistent with the Michigan Endangered Species Determination Key (Michigan DKey)

Dear Seth McRobb:

The U.S. Fish and Wildlife Service (Service) received on **April 07, 2023** your effect determination(s) for the 'North State Street Water Improvements' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Michigan DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Eastern Massasauga (=rattlesnake) (<i>Sistrurus catenatus</i>)	Threatened	NLAA
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	No effect
Karner Blue Butterfly (<i>Lycaeides melissa samuelis</i>)	Endangered	No effect
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No effect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	No effect
Whooping Crane (<i>Grus americana</i>)	Endangered Experimental Population, Non-Essential	No effect

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "may affect, not likely to adversely affect" (NLAA) determination for Federally listed species in Michigan. If we do not notify you within that timeframe, you may

proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Michigan Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, the Michigan Ecological Services Field Office may request additional information to verify the effects determination reached through the Michigan DKey.

Your agency has met consultation requirements by informing the Service of your “No Effect” determination(s). No consultation is required for species that you determined will not be affected by the Action.

Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions and the Service’s 30-day review period. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. If the Federal agency concurs with your determination, the project as proposed has completed section 7 consultation. All documents and supporting correspondence should be provided to the Federal agency for their records.

Bats of Conservation Concern:

Implementing protective measures for bats, including both federally listed and non-listed species, indirectly helps to protect Michigan’s agriculture and forests. Bats are significant predators of nocturnal insects, including many crop and forest pests. For example, Whitaker (1995) estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011) noted the “loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year, and Maine and Boyles (2015) estimated that the suppression of herbivory by insectivorous bats is worth >1 billion USD globally on corn alone. In captive trials, northern long-eared bats were found to significantly reduce the egg-laying activity of mosquitoes, suggesting bats may also play an important role in controlling insect-borne disease (Reiskind and Wund 2009). Mosquitoes have also been found to

be a consistent component of the diet of Indiana bats and are eaten most heavily during pregnancy (6.6%; Kurta and Whitaker 1998). Taking proactive steps to help protect bats may be very valuable to agricultural and forest product yields and pest management costs in and around a project area. Such conservation measures include limiting tree clearing during the bat active season (April through October varies by location) and/or the non-volant period (June through July), when young bats are unable to fly, and minimizing the extent of impacts to forests, wetlands, and riparian habitats.

Bald and Golden Eagles:

Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the “taking” of bald and golden eagles and defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” The Eagle Act’s implementing regulations define disturb as “...to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit <https://www.fws.gov/library/collections/all-about-eagles>. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at <https://www.fws.gov/media/national-bald-eagle-management-guidelines-0>.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Monarch butterfly and other pollinators

In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain

natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan's pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g., ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

<https://www.fws.gov/initiative/monarchs>

<https://www.fws.gov/library/collections/pollinators>

Wetland impacts:

Section 404 of the Clean Water Act of 1977 (CWA) regulates the discharge of dredged or fill material into waters (including wetlands) of the United States. Regulations require that activities permitted under the CWA (including wetland permits issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)) not jeopardize the continued existence of species listed as endangered or threatened. Permits issued by the U.S. Army Corps of Engineers must also consider effects to listed species pursuant to section 7 of the Endangered Species Act. The Service provides comments to the agencies that may include permit conditions to help avoid or minimize impacts to wildlife resources including listed species. For this project, we consider the conservation measures you agreed to in the determination key and/or as part of your proposed action to be non-discretionary. If you apply for a wetland permit, these conservation measures should be explicitly incorporated as permit conditions. Include a copy of this letter in your wetland permit application to streamline the threatened and endangered species review process.

Bat References

Boyles, J.G., P.M. Cryan, G.F. McCracken, T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332(1):41-42.

Kurta, A. and J.O. Whitaker. 1998. Diet of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. *The American Midland Naturalist* 140(2):280-286.

Reiskind, M.H. and M.A. Wund. 2009. Experimental assessment of the impacts of northern long-eared bats on ovipositing *Culex* (Diptera: Culicidae) mosquitoes. *Journal of Medical Entomology*

46(5):1037-1044.

Whitaker, Jr., J.O. 1995. Food of the big brown bat *Eptesicus fuscus* from maternity colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at <https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet>), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w).

During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

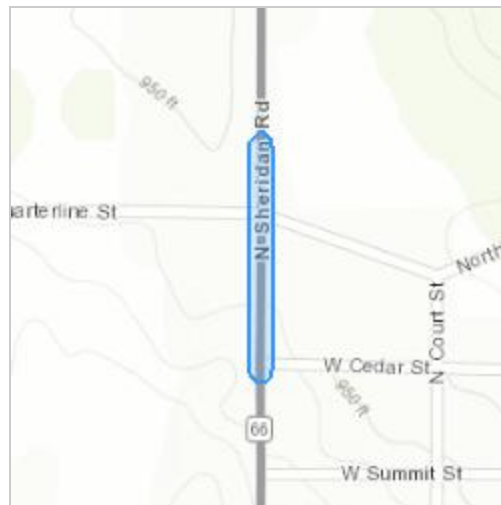
North State Street Water Improvements

2. Description

The following description was provided for the project 'North State Street Water Improvements':

Replace existing 6-inch diameter watermain on North State Street, north of Cedar Street with 8-inch diameter pipe.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.29942965,-85.0847983,14z>



QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

No

4. Is the action being funded, authorized, or carried out by a Federal agency?

Yes

5. Does the action involve the installation or operation of wind turbines?

No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

Yes

7. Does the action involve constructing a new communication tower or modifying an existing communications tower?

No

8. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

No

10. Will your action permanently affect hydrology?

No

11. Will your action temporarily affect hydrology?

No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, etc.)?

No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, etc.)?

No

14. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

Yes

15. Is the action a utility-scale solar development project?

No

16. [Hidden semantic] Does the action intersect the MOBU AOI?

Automatically answered

Yes

17. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

Yes

18. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

Automatically answered

Yes

19. Does your action involve prescribed fire?

No

20. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 16 through April 14)?

No

21. Will this action occur entirely in the Eastern massasauga rattlesnake active season (April 15 through October 15)?

No

22. Will the action result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of uplands of potential Eastern massasauga rattlesnake habitat (uplands associated with high quality wetland habitat) to other land uses?

No

23. Will you use [wildlife safe materials](#) for erosion control and site restoration and eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare Eastern massasauga rattlesnake?

N/A

24. Will you watch MDNR's ["60-Second Snakes: The Eastern Massasauga Rattlesnake \(EMR\)"](#) video, review the [EMR factsheet](#) or call 517-351-2555 to increase human safety and awareness of EMR?

Yes

25. Will all action personnel report any Eastern massasauga rattlesnake observations, or observation of any other listed threatened or endangered species, during action implementation to the Service within 24 hours?
Yes
26. [Hidden Semantic] Does the action intersect the Karner blue butterfly area of influence?
Automatically answered
Yes
27. Will the action occur in oak savanna, oak or pine barrens, openings within oak forest, old fields in association with oak forest, or openings or rights-of-way with abundant native grasses and wildflowers?
No
28. [Hidden Semantic] Does the action area intersect the whooping crane (ex. Pop) area of influence?
Automatically answered
Yes
29. Have you determined that the action will have no effect on individuals within the whooping crane nonessential experimental population (NEP)?
Yes
30. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?
No
31. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide [Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines](#) been conducted within the action area?
No
32. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting bats?
No
33. Does the action include removal/modification of an existing bridge or culvert?
No
34. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?
No
35. Does the action include one or more of the following: (1) tree cutting/trimming, (2) prescribed fire, (3) pesticide (including insecticide and/or rodenticide), and/or (4) herbicide/fungicide application?
No
-

36. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

Automatically answered

Yes

37. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

Automatically answered

Yes

38. [Hidden semantic] Does the action intersect the Tricolored bat AOI/SLA/range?

Automatically answered

Yes

39. The tricolored bat was proposed for listing as endangered on September 13, 2022. In Michigan, the tricolored bat was rare pre-white nose syndrome (WNS) and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter. With very few exceptions, the species has not been observed in Michigan in the summer months, and no maternity colonies have been found. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

Are you making a no effect determination on this project for the tricolored bat?

Yes

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Seth McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: seth.mcrobb@ohm-advisors.com
Phone: 7346440115



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:
Project Code: 2023-0066279
Project Name: North State Street Water Improvements

April 07, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Official Species List

The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (<https://ipac.ecosphere.fws.gov/>) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in making determinations for listed species for some projects. In many cases, the determination key

will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit <https://www.fws.gov/media/mifo-ipac-instructions> (and click on the attachment). Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: <https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance>. If you evaluate the details of your project and conclude “no effect,” document your findings, and your listed species review is complete; you do not need our concurrence on “no effect” determinations. If you cannot conclude “no effect,” you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects** and **projects that include installing communications towers that use guy wires**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds

Please see the “Migratory Birds” section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/program/eagle-management/eagle-permits> to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Michigan Ecological Services Field Office

2651 Coolidge Road Suite 101

East Lansing, MI 48823-6360

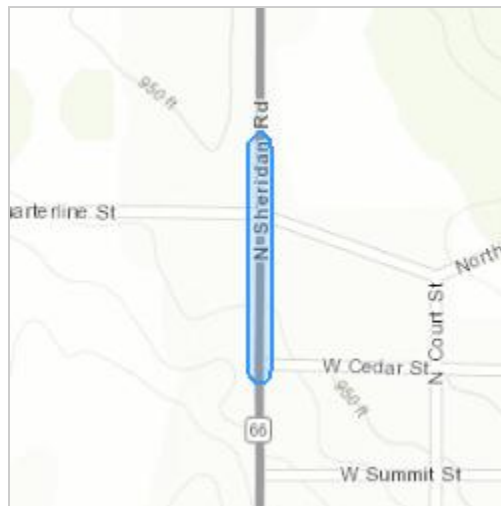
(517) 351-2555

PROJECT SUMMARY

Project Code: 2023-0066279
Project Name: North State Street Water Improvements
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground
Project Description: Replace existing 6-inch diameter watermain on North State Street, north of Cedar Street with 8-inch diameter pipe.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.29942965,-85.0847983,14z>



Counties: Montcalm County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/Y5ZGMMH7DZF5FDBHS757I4GC3Y/documents/generated/6982.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/Y5ZGMMH7DZF5FDBHS757I4GC3Y/documents/generated/6983.pdf	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non- Essential

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ipac.ecosphere.fws.gov/project/Y5ZGMMH7DZF5FDBHS757I4GC3Y/documents/generated/5280.pdf	Threatened

INSECTS

NAME	STATUS
Karner Blue Butterfly <i>Lycaeides melissa samuelis</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

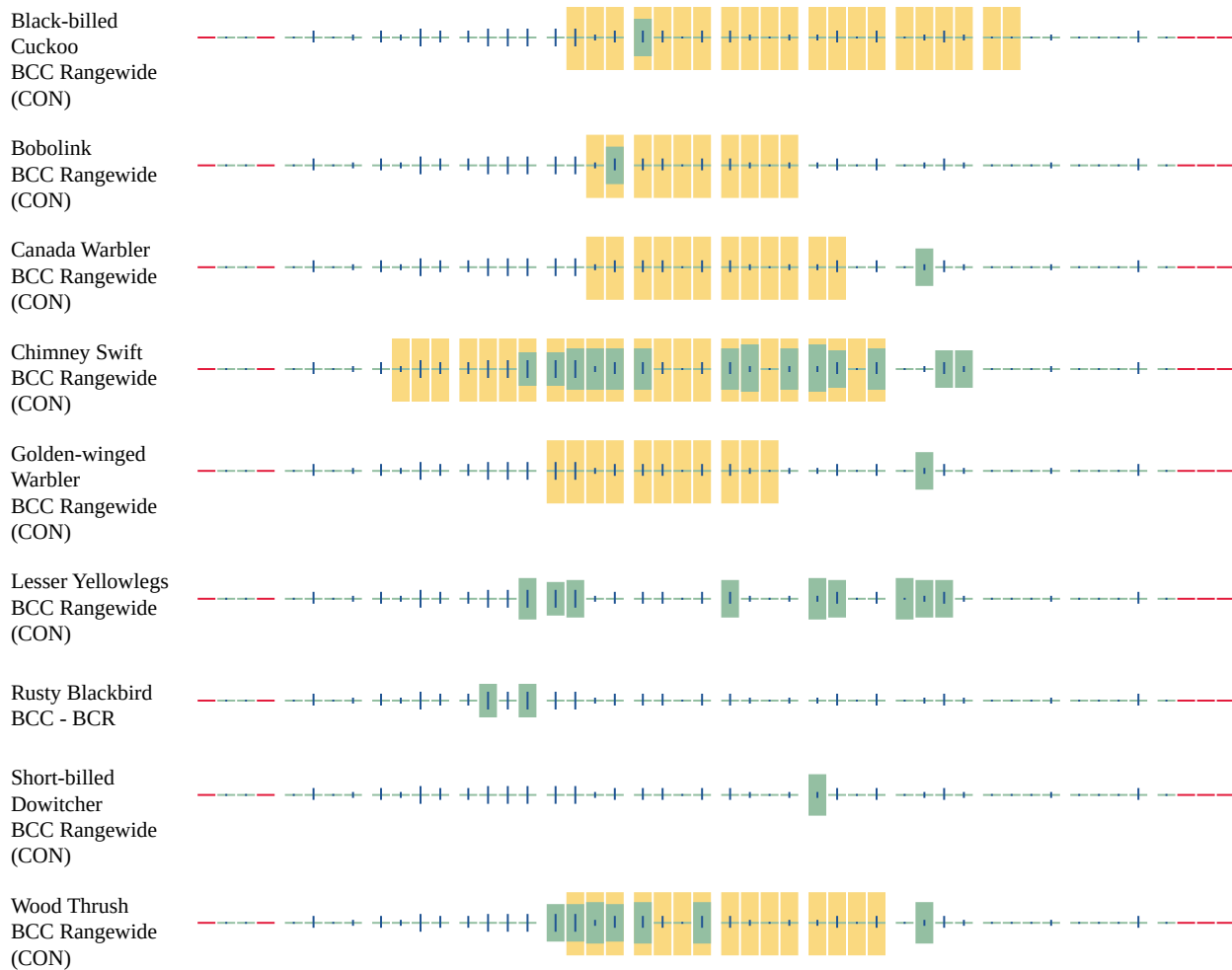
NAME	BREEDING SEASON
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Seth McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: seth.mcrobb@ohm-advisors.com
Phone: 7346440115



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:
Project code: 2023-0066282
Project Name: 2nd Street Water Improvements

April 07, 2023

Subject: Verification letter for '2nd Street Water Improvements' for specified federally threatened and endangered species and designated critical habitat that may occur in your proposed project area consistent with the Michigan Determination Key for project review and guidance for federally listed species (Michigan Dkey).

Dear Kayla McRobb:

The U.S. Fish and Wildlife Service (Service) received on **April 07, 2023** your effect determination(s) for the '2nd Street Water Improvements' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance in the Service's Michigan DKey, you made the following effect determination(s) for the proposed action.

Species	Listing Status	Determination
Eastern Massasauga (=rattlesnake) (<i>Sistrurus catenatus</i>)	Threatened	NLAA
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	NLAA
Karner Blue Butterfly (<i>Lycaeides melissa samuelis</i>)	Endangered	No effect
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No effect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	NLAA
Whooping Crane (<i>Grus americana</i>)	Endangered Experimental Population, Non-Essential	May affect

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "may affect, not likely to adversely affect" (NLAA) determination for Federally listed species in Michigan. If we do not notify you within that timeframe, you may

proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Michigan Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, the Michigan Ecological Services Field Office may request additional information to verify the effects determination reached through the Michigan DKey.

Your agency has met consultation requirements by informing the Service of your “No Effect” determination(s). No consultation for is required for species that you determined will not be affected by the Action.

Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions and the Service’s 30-day review period. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

Tricolored Bat:

Tricolored bat was proposed for listing as endangered on September 13, 2022. White-nose syndrome (WNS) has caused estimated declines of more than 90 percent in affected tricolored bat colonies and is currently present across 59 percent of the species’ range.

During winter, tricolored bats hibernate in caves, abandoned mines, and tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

In Michigan, the tricolored bat was rare pre-WNS and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter (September through mid-March) in or near hibernation sites. Most known hibernacula are abandoned mines in the western Upper Peninsula, although the species has been detected hibernating in three additional Lower Peninsula sites. Observed hibernating populations have been small (e.g., <10 individuals per site) since before WNS. With very few exceptions, the species has not been observed in Michigan in the summer, and no maternity colonies have been documented, despite repeated and extensive mist netting and other survey efforts in suitable summer habitat.

Trees near potential hibernacula are more likely to have tricolored bats present during the fall/spring and possibly summer months. Clearing trees near hibernacula during certain times of the year could result in adverse effects to this species. Trees outside of these areas may be occupied by migrating tricolored bats seasonally, but cutting trees outside these areas is extremely unlikely to result in adverse effects (discountable).

If a final rule is published listing the tricolored bat as endangered, the Service will provide additional information on evaluating projects for potential impacts to tricolored bat.

Bats of Conservation Concern:

Implementing protective measures for bats, including both federally listed and non-listed species, indirectly helps to protect Michigan's agriculture and forests. Bats are significant predators of nocturnal insects, including many crop and forest pests. For example, Whitaker (1995) estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011) noted the "loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year, and Maine and Boyles (2015) estimated that the suppression of herbivory by insectivorous bats is worth >1 billion USD globally on corn alone. In captive trials, northern long-eared bats were found to significantly reduce the egg-laying activity of mosquitoes, suggesting bats may also play an important role in controlling insect-borne disease (Reiskind and Wund 2009). Mosquitoes have also been found to be a consistent component of the diet of Indiana bats and are eaten most heavily during pregnancy (6.6%; Kurta and Whitaker 1998). Taking proactive steps to help protect bats may be very valuable to agricultural and forest product yields and pest management costs in and around a project area. Such conservation measures include limiting tree clearing during the bat active season (April through October varies by location) and/or the non-volant period (June through July), when young bats are unable to fly, and minimizing the extent of impacts to forests, wetlands, and riparian habitats.

Whooping Crane Nonessential Experimental Population:

For Federal projects outside a National Wildlife Refuge or National Park, we treat the nonessential experimental population (NEP) of whooping crane as proposed for listing and only two provisions of section 7 would apply: section 7(a)(1) and section 7(a)(4). Section 7(a)(4) requires Federal agencies to confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species. You indicated that the Action is not likely to result in jeopardy of the NEP of whooping crane. As such, your obligations under section 7 for whooping crane are complete.

Bald and Golden Eagles:

Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the "taking" of bald and golden eagles and defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Eagle Act's implementing regulations define disturb as "...to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially

interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit <https://www.fws.gov/library/collections/all-about-eagles>. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at <https://www.fws.gov/media/national-bald-eagle-management-guidelines-0>.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Monarch butterfly and other pollinators

In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan’s pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g., ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

<https://www.fws.gov/initiative/monarchs>

<https://www.fws.gov/library/collections/pollinators>

Wetland impacts:

Section 404 of the Clean Water Act of 1977 (CWA) regulates the discharge of dredged or fill material into waters (including wetlands) of the United States. Regulations require that activities permitted under the CWA (including wetland permits issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)) not jeopardize the continued existence of species listed as endangered or threatened. Permits issued by the U.S. Army Corps of Engineers must also consider effects to listed species pursuant to section 7 of the Endangered Species Act. The Service provides comments to the agencies that may include permit conditions to help avoid or minimize impacts to wildlife resources including listed species. For this project, we consider the conservation measures you agreed to in the determination key and/or as part of your proposed action to be non-discretionary. If you apply for a wetland permit, these conservation measures should be explicitly incorporated as permit conditions. Include a copy of this letter in your wetland permit application to streamline the threatened and endangered species review process.

Bat References

Boyles, J.G., P.M. Cryan, G.F. McCracken, T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332(1):41-42.

Kurta, A. and J.O. Whitaker. 1998. Diet of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. *The American Midland Naturalist* 140(2):280-286.

Reiskind, M.H. and M.A. Wund. 2009. Experimental assessment of the impacts of northern long-eared bats on ovipositing *Culex* (Diptera: Culicidae) mosquitoes. *Journal of Medical Entomology* 46(5):1037-1044.

Whitaker, Jr., J.O. 1995. Food of the big brown bat *Eptesicus fuscus* from maternity colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

Eastern massasauga

Materials used for erosion control and site restoration must be wildlife-friendly. Do not use erosion control products containing plastic mesh netting or other similar material that could entangle eastern massasauga rattlesnake (EMR). Several products for soil erosion and control exist that do not contain plastic netting including net-less erosion control blankets (for example, made of excelsior), loose mulch, hydraulic mulch, soil binders, unreinforced silt fences, and straw bales. Others are made from natural fibers (such as jute) and loosely woven together in a manner that allows wildlife to wiggle free.

To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at <https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet>), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w).

During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

Whooping crane

The project will not occur within a National Wildlife Refuge or National Park

Listed bats

Any cutting/trimming of potential roost trees for Indiana bat (trees ≥ 5 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark) or northern long-eared bat (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark) must occur OUTSIDE the non-volant ("pup") season for Indiana bat (June 1 through July 31). Prescribed fire and/or pesticide/herbicide application must also occur outside June-July where potential roost trees are present.

Tree cutting/trimming and/or prescribed burning will not clear ≥ 20 contiguous acres of forest or fragment a connective corridor between 2 or more forest patches of at least 5 acres.

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

2nd Street Water Improvements

2. Description

The following description was provided for the project '2nd Street Water Improvements':

Replace existing 6" watermain with 6" pipe. Replace road surface in project area.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.29536365,-85.08880824414197,14z>



QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

No

4. Is the action being funded, authorized, or carried out by a Federal agency?

Yes

5. Does the action involve the installation or operation of wind turbines?

No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

Yes

7. Does the action involve constructing a new communication tower or modifying an existing communications tower?

No

8. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

No

10. Will your action permanently affect hydrology?

No

11. Will your action temporarily affect hydrology?

No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, etc.)?

No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, etc.)?

No

14. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

Yes

15. Is the action a utility-scale solar development project?

No

16. [Hidden semantic] Does the action intersect the MOBU AOI?

Automatically answered

Yes

17. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

Yes

18. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

Automatically answered

Yes

19. Does your action involve prescribed fire?

No

20. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 16 through April 14)?

No

21. Will this action occur entirely in the Eastern massasauga rattlesnake active season (April 15 through October 15)?

No

22. Will the action result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of uplands of potential Eastern massasauga rattlesnake habitat (uplands associated with high quality wetland habitat) to other land uses?

No

23. Will you use [wildlife safe materials](#) for erosion control and site restoration and eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare Eastern massasauga rattlesnake?

Yes

24. Will you watch MDNR's ["60-Second Snakes: The Eastern Massasauga Rattlesnake \(EMR\)"](#) video, review the [EMR factsheet](#) or call 517-351-2555 to increase human safety and awareness of EMR?

Yes

25. Will all action personnel report any Eastern massasauga rattlesnake observations, or observation of any other listed threatened or endangered species, during action implementation to the Service within 24 hours?
Yes
26. [Hidden Semantic] Does the action intersect the Karner blue butterfly area of influence?
Automatically answered
Yes
27. Will the action occur in oak savanna, oak or pine barrens, openings within oak forest, old fields in association with oak forest, or openings or rights-of-way with abundant native grasses and wildflowers?
No
28. [Hidden Semantic] Does the action area intersect the whooping crane (ex. Pop) area of influence?
Automatically answered
Yes
29. Have you determined that the action will have no effect on individuals within the whooping crane nonessential experimental population (NEP)?
No
30. Does the action occur within a National Wildlife Refuge or National Park?
No
31. For Federal projects outside a National Wildlife Refuge or National Park, we treat the nonessential experimental population of whooping crane as proposed for listing and only two provisions of section 7 would apply: section 7(a)(1) and section 7(a)(4). Section 7(a)(4) requires Federal agencies to confer with the Service on actions that are likely to jeopardize the continued existence of a proposed species. Is your project likely to jeopardize the continued existence of whooping crane?
No
32. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?
No
33. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide [Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines](#) been conducted within the action area?
No
34. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting bats?
No
35. Does the action include removal/modification of an existing bridge or culvert?
No
-

36. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?

No

37. Does the action include one or more of the following: (1) tree cutting/trimming, (2) prescribed fire, (3) pesticide (including insecticide and/or rodenticide), and/or (4) herbicide/fungicide application?

Yes

38. Does the action include herbicide application?

No

39. Will the action clear >10 acres of contiguous forest (i.e., connected by 1,000 feet or less) or fragment a riparian or other connective forested corridor (e.g., tree line) between 2 or more forest patches of at least 5 acres? For more information, see [Appendix II](#).

No

40. Does the action area contain potential NLEB bat roost trees (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices, cavities and/or exfoliating bark)? For more information, see [Appendix IV](#).

Yes

41. Does the action area contain potential Indiana bat roost trees (trees ≥ 5 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark)? For more information, see [Appendix III](#).

Yes

42. Does the action include emergency cutting/trimming of hazard trees in order to prevent imminent loss of human life and/or property?

No

43. [Semantic] Is any portion of the action area within 5 miles of a known Indiana or northern long-eared bat hibernaculum?

Automatically answered

No

44. Will all tree cutting/trimming, prescribed fire, and/or pesticide (i.e., insecticide, rodenticide) application occur OUTSIDE the non-volant ("pup") season for bat (that is, no cutting/trimming, prescribed fire, or pesticide application during June 1 through July 31)?

Note: Based on the project's location, conducting these activities outside the months of June and July may be sufficient to avoid adverse effects to/take of bat.

Yes

45. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

Automatically answered

Yes

46. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

Automatically answered

Yes

47. [Hidden semantic] Does the action intersect the Tricolored bat AOI/SLA/range?

Automatically answered

Yes

48. The tricolored bat was proposed for listing as endangered on September 13, 2022. In Michigan, the tricolored bat was rare pre-white nose syndrome (WNS) and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter. With very few exceptions, the species has not been observed in Michigan in the summer months, and no maternity colonies have been found. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

Are you making a no effect determination on this project for the tricolored bat?

No

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Kayla McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: kayla.mcrobb@ohm-advisors.com
Phone: 7347659699



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:
Project Code: 2023-0066282
Project Name: 2nd Street Water Improvements

April 07, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Official Species List

The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (<https://ipac.ecosphere.fws.gov/>) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in making determinations for listed species for some projects. In many cases, the determination key

will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit <https://www.fws.gov/media/mifo-ipac-instructions> (and click on the attachment). Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: <https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance>. If you evaluate the details of your project and conclude “no effect,” document your findings, and your listed species review is complete; you do not need our concurrence on “no effect” determinations. If you cannot conclude “no effect,” you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects** and **projects that include installing communications towers that use guy wires**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds

Please see the “Migratory Birds” section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/program/eagle-management/eagle-permits> to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Michigan Ecological Services Field Office

2651 Coolidge Road Suite 101

East Lansing, MI 48823-6360

(517) 351-2555

PROJECT SUMMARY

Project Code: 2023-0066282
Project Name: 2nd Street Water Improvements
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground
Project Description: Replace existing 6" watermain with 6" pipe. Replace road surface in project area.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.29536365,-85.08880824414197,14z>



Counties: Montcalm County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/XZHUCT6XYNANL3KJZT6E3KRZA/documents/generated/6982.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/XZHUCT6XYNANL3KJZT6E3KRZA/documents/generated/6983.pdf	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non- Essential

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ipac.ecosphere.fws.gov/project/XZHUXT6XYNANNL3KJZT6E3KRZA/documents/generated/5280.pdf	Threatened

INSECTS

NAME	STATUS
Karner Blue Butterfly <i>Lycaeides melissa samuelis</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

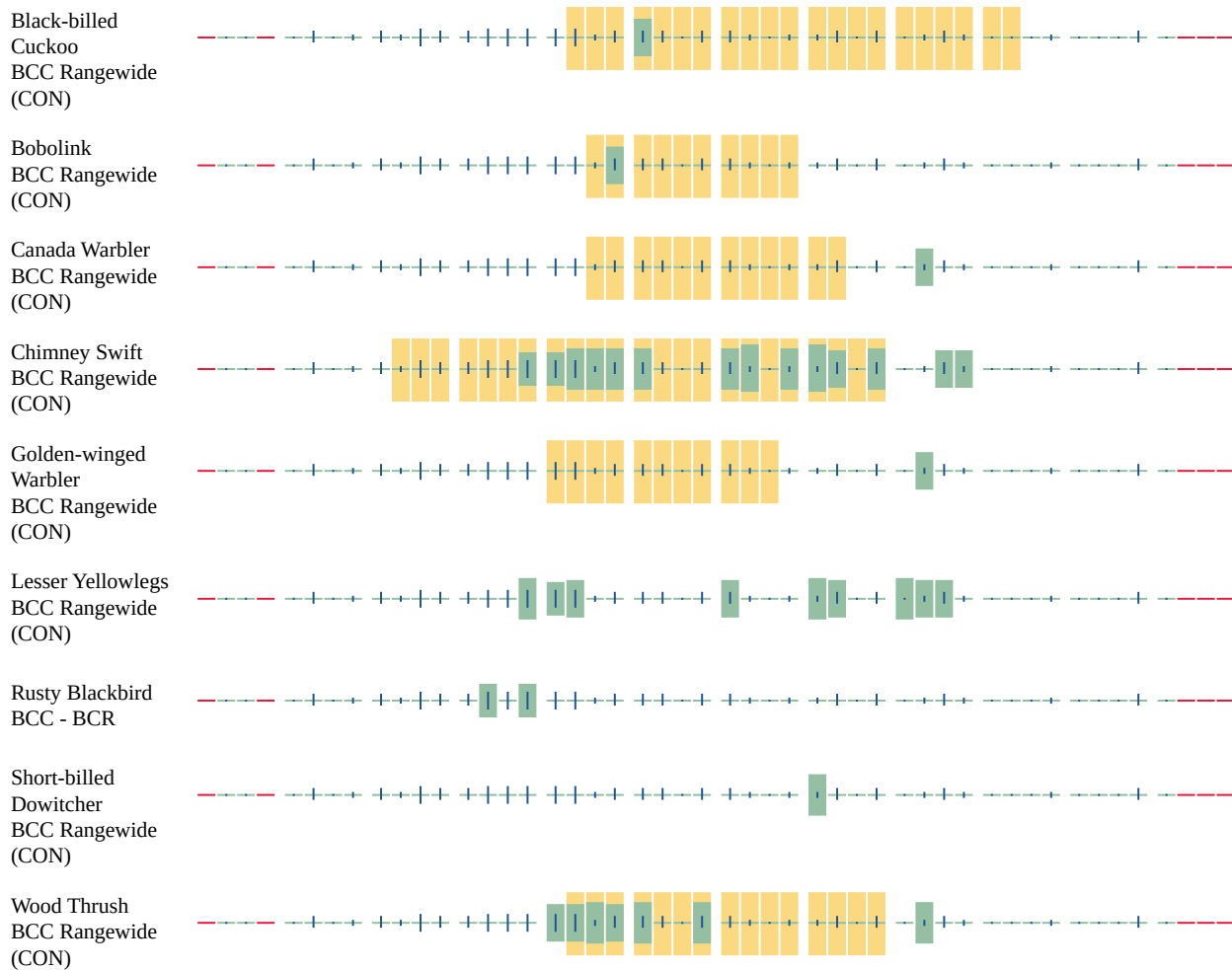
NAME	BREEDING SEASON
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
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In Reply Refer To:
Project code: 2023-0066275
Project Name: Alley Water Improvements

April 07, 2023

Subject: Verification letter for the project named 'Alley Water Improvements' for specified threatened and endangered species that may occur in your proposed project location consistent with the Michigan Endangered Species Determination Key (Michigan DKey)

Dear Seth McRobb:

The U.S. Fish and Wildlife Service (Service) received on **April 07, 2023** your effect determination(s) for the 'Alley Water Improvements' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Michigan DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Eastern Massasauga (=rattlesnake) (<i>Sistrurus catenatus</i>)	Threatened	NLAA
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	No effect
Karner Blue Butterfly (<i>Lycaeides melissa samuelis</i>)	Endangered	No effect
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	No effect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	No effect
Whooping Crane (<i>Grus americana</i>)	Endangered Experimental Population, Non-Essential	No effect

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for Federally listed species in Michigan. If we do not notify you within that timeframe, you may

proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Michigan Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, the Michigan Ecological Services Field Office may request additional information to verify the effects determination reached through the Michigan DKey.

Your agency has met consultation requirements by informing the Service of your “No Effect” determination(s). No consultation is required for species that you determined will not be affected by the Action.

Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions and the Service’s 30-day review period. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. If the Federal agency concurs with your determination, the project as proposed has completed section 7 consultation. All documents and supporting correspondence should be provided to the Federal agency for their records.

Bats of Conservation Concern:

Implementing protective measures for bats, including both federally listed and non-listed species, indirectly helps to protect Michigan’s agriculture and forests. Bats are significant predators of nocturnal insects, including many crop and forest pests. For example, Whitaker (1995) estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011) noted the “loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year, and Maine and Boyles (2015) estimated that the suppression of herbivory by insectivorous bats is worth >1 billion USD globally on corn alone. In captive trials, northern long-eared bats were found to significantly reduce the egg-laying activity of mosquitoes, suggesting bats may also play an important role in controlling insect-borne disease (Reiskind and Wund 2009). Mosquitoes have also been found to

be a consistent component of the diet of Indiana bats and are eaten most heavily during pregnancy (6.6%; Kurta and Whitaker 1998). Taking proactive steps to help protect bats may be very valuable to agricultural and forest product yields and pest management costs in and around a project area. Such conservation measures include limiting tree clearing during the bat active season (April through October varies by location) and/or the non-volant period (June through July), when young bats are unable to fly, and minimizing the extent of impacts to forests, wetlands, and riparian habitats.

Bald and Golden Eagles:

Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the “taking” of bald and golden eagles and defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” The Eagle Act’s implementing regulations define disturb as “...to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit <https://www.fws.gov/library/collections/all-about-eagles>. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at <https://www.fws.gov/media/national-bald-eagle-management-guidelines-0>.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Monarch butterfly and other pollinators

In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain

natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan's pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g., ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

<https://www.fws.gov/initiative/monarchs>

<https://www.fws.gov/library/collections/pollinators>

Wetland impacts:

Section 404 of the Clean Water Act of 1977 (CWA) regulates the discharge of dredged or fill material into waters (including wetlands) of the United States. Regulations require that activities permitted under the CWA (including wetland permits issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)) not jeopardize the continued existence of species listed as endangered or threatened. Permits issued by the U.S. Army Corps of Engineers must also consider effects to listed species pursuant to section 7 of the Endangered Species Act. The Service provides comments to the agencies that may include permit conditions to help avoid or minimize impacts to wildlife resources including listed species. For this project, we consider the conservation measures you agreed to in the determination key and/or as part of your proposed action to be non-discretionary. If you apply for a wetland permit, these conservation measures should be explicitly incorporated as permit conditions. Include a copy of this letter in your wetland permit application to streamline the threatened and endangered species review process.

Bat References

Boyles, J.G., P.M. Cryan, G.F. McCracken, T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332(1):41-42.

Kurta, A. and J.O. Whitaker. 1998. Diet of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. *The American Midland Naturalist* 140(2):280-286.

Reiskind, M.H. and M.A. Wund. 2009. Experimental assessment of the impacts of northern long-eared bats on ovipositing *Culex* (Diptera: Culicidae) mosquitoes. *Journal of Medical Entomology*

46(5):1037-1044.

Whitaker, Jr., J.O. 1995. Food of the big brown bat *Eptesicus fuscus* from maternity colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at <https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet>), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w).

During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

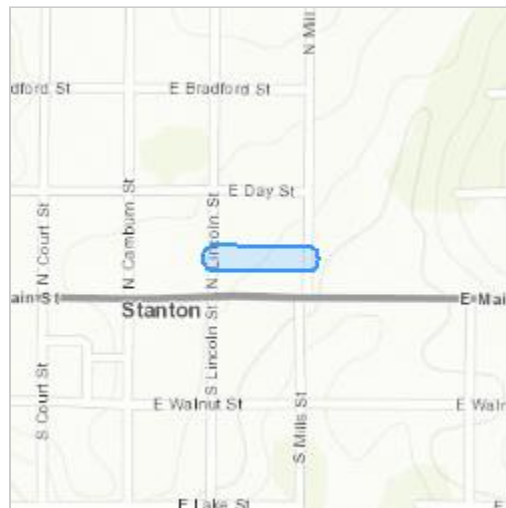
Alley Water Improvements

2. Description

The following description was provided for the project 'Alley Water Improvements':

Replace existing 4-inch diameter watermain in the alley between Lincoln Street and Mill Street, north of Main Street, with 8-inch diameter pipe. Replace pavement as needed in alley.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.2929934,-85.0795734,14z>



QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

No

4. Is the action being funded, authorized, or carried out by a Federal agency?

Yes

5. Does the action involve the installation or operation of wind turbines?

No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

Yes

7. Does the action involve constructing a new communication tower or modifying an existing communications tower?

No

8. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

No

10. Will your action permanently affect hydrology?

No

11. Will your action temporarily affect hydrology?

No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, etc.)?

No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, etc.)?

No

14. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

Yes

15. Is the action a utility-scale solar development project?

No

16. [Hidden semantic] Does the action intersect the MOBU AOI?

Automatically answered

Yes

17. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

Yes

18. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

Automatically answered

Yes

19. Does your action involve prescribed fire?

No

20. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 16 through April 14)?

No

21. Will this action occur entirely in the Eastern massasauga rattlesnake active season (April 15 through October 15)?

No

22. Will the action result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of uplands of potential Eastern massasauga rattlesnake habitat (uplands associated with high quality wetland habitat) to other land uses?

No

23. Will you use [wildlife safe materials](#) for erosion control and site restoration and eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare Eastern massasauga rattlesnake?

N/A

24. Will you watch MDNR's ["60-Second Snakes: The Eastern Massasauga Rattlesnake \(EMR\)"](#) video, review the [EMR factsheet](#) or call 517-351-2555 to increase human safety and awareness of EMR?

Yes

25. Will all action personnel report any Eastern massasauga rattlesnake observations, or observation of any other listed threatened or endangered species, during action implementation to the Service within 24 hours?
Yes
26. [Hidden Semantic] Does the action intersect the Karner blue butterfly area of influence?
Automatically answered
Yes
27. Will the action occur in oak savanna, oak or pine barrens, openings within oak forest, old fields in association with oak forest, or openings or rights-of-way with abundant native grasses and wildflowers?
No
28. [Hidden Semantic] Does the action area intersect the whooping crane (ex. Pop) area of influence?
Automatically answered
Yes
29. Have you determined that the action will have no effect on individuals within the whooping crane nonessential experimental population (NEP)?
Yes
30. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?
No
31. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide [Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines](#) been conducted within the action area?
No
32. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting bats?
No
33. Does the action include removal/modification of an existing bridge or culvert?
No
34. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?
No
35. Does the action include one or more of the following: (1) tree cutting/trimming, (2) prescribed fire, (3) pesticide (including insecticide and/or rodenticide), and/or (4) herbicide/fungicide application?
No
-

36. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

Automatically answered

Yes

37. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

Automatically answered

Yes

38. [Hidden semantic] Does the action intersect the Tricolored bat AOI/SLA/range?

Automatically answered

Yes

39. The tricolored bat was proposed for listing as endangered on September 13, 2022. In Michigan, the tricolored bat was rare pre-white nose syndrome (WNS) and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter. With very few exceptions, the species has not been observed in Michigan in the summer months, and no maternity colonies have been found. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

Are you making a no effect determination on this project for the tricolored bat?

Yes

IPAC USER CONTACT INFORMATION

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
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In Reply Refer To:
Project Code: 2023-0066275
Project Name: Alley Water Improvements

April 07, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Official Species List

The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (<https://ipac.ecosphere.fws.gov/>) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in making determinations for listed species for some projects. In many cases, the determination key

will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit <https://www.fws.gov/media/mifo-ipac-instructions> (and click on the attachment). Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: <https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance>. If you evaluate the details of your project and conclude “no effect,” document your findings, and your listed species review is complete; you do not need our concurrence on “no effect” determinations. If you cannot conclude “no effect,” you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects** and **projects that include installing communications towers that use guy wires**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds

Please see the “Migratory Birds” section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/program/eagle-management/eagle-permits> to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Michigan Ecological Services Field Office

2651 Coolidge Road Suite 101

East Lansing, MI 48823-6360

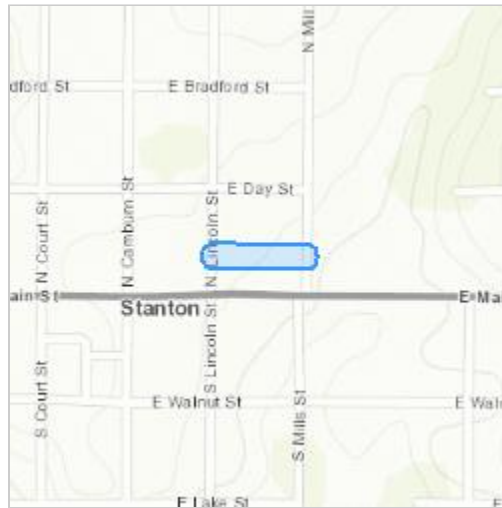
(517) 351-2555

PROJECT SUMMARY

Project Code: 2023-0066275
Project Name: Alley Water Improvements
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground
Project Description: Replace existing 4-inch diameter watermain in the alley between Lincoln Street and Mill Street, north of Main Street, with 8-inch diameter pipe.
Replace pavement as needed in alley.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.2929934,-85.0795734,14z>



Counties: Montcalm County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/NZ6GCIVFK5HVLEDPQHJX5LMIJU/documents/generated/6982.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/NZ6GCIVFK5HVLEDPQHJX5LMIJU/documents/generated/6983.pdf	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non- Essential

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ipac.ecosphere.fws.gov/project/NZ6GCIVFK5HVLEDPQHJX5LMIJU/documents/generated/5280.pdf	Threatened

INSECTS

NAME	STATUS
Karner Blue Butterfly <i>Lycaeides melissa samuelis</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

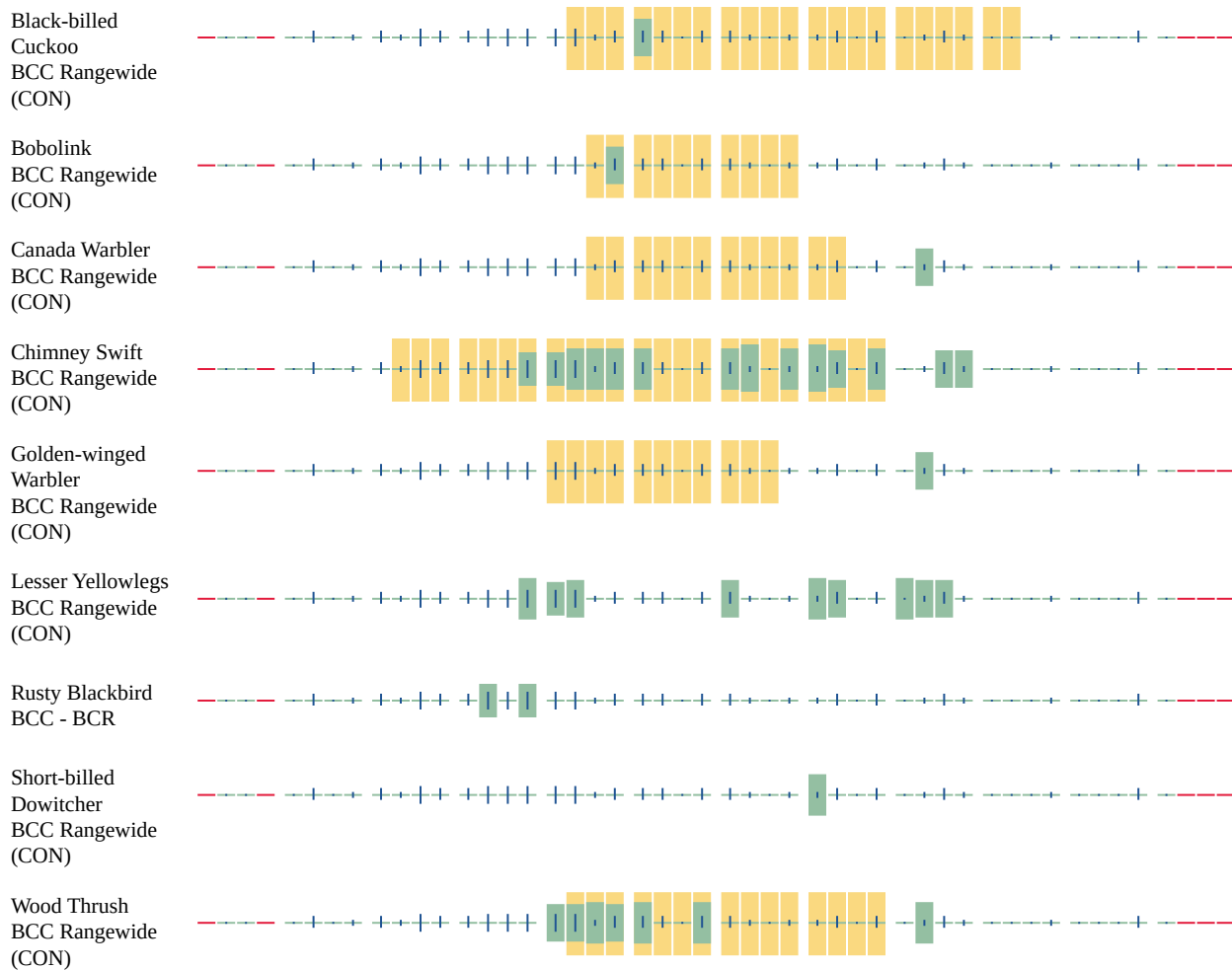
NAME	BREEDING SEASON
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Seth McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: seth.mcrobb@ohm-advisors.com
Phone: 7346440115



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:

April 06, 2023

Project code: 2023-0065603

Project Name: Stanton Lead & copper Rule Water Service Replacement -SRF

Subject: Consistency letter for 'Stanton Lead & copper Rule Water Service Replacement -SRF' for specified federally threatened and endangered species and designated critical habitat that may occur in your proposed project area consistent with the Michigan Determination Key for project review and guidance for federally listed species (Michigan Dkey).

Dear Kayla McRobb:

The U.S. Fish and Wildlife Service (Service) received on **April 06, 2023** your effect determination(s) for the 'Stanton Lead & copper Rule Water Service Replacement -SRF' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Michigan DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Eastern Massasauga (=rattlesnake) (<i>Sistrurus catenatus</i>)	Threatened	May affect
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	NLAA
Karner Blue Butterfly (<i>Lycaeides melissa samuelis</i>)	Endangered	May affect
Monarch Butterfly (<i>Danaus plexippus</i>)	Candidate	May affect
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed	NLAA
Whooping Crane (<i>Grus americana</i>)	Endangered Experimental Population, Non-Essential	No effect

Please carefully review this letter. Your Endangered Species Act requirements are not complete.

Eastern Massasauga (EMR):

EMR may be present in the Action area. The following projects are not within the scope of the Michigan DKey: prescribed fire; new roads or trails that create a permanent barrier to EMR movement; projects that alter hydrology permanently, or temporarily if during the inactive season; projects that are large in scale; and projects that do not apply recommended conservation measures. Project-specific review is needed for these types of projects. **Please coordinate with the Michigan Ecological Services Field Office to further evaluate effects of the Action on EMR.**

Tricolored Bat:

Tricolored bat was proposed for listing as endangered on September 13, 2022. White-nose syndrome (WNS) has caused estimated declines of more than 90 percent in affected tricolored bat colonies and is currently present across 59 percent of the species' range.

During winter, tricolored bats hibernate in caves, abandoned mines, and tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

In Michigan, the tricolored bat was rare pre-WNS and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter (September through mid-March) in or near hibernation sites. Most known hibernacula are abandoned mines in the western Upper Peninsula, although the species has been detected hibernating in three additional Lower Peninsula sites. Observed hibernating populations have been small (e.g., <10 individuals per site) since before WNS. With very few exceptions, the species has not been observed in Michigan in the summer, and no maternity colonies have been documented, despite repeated and extensive mist netting and other survey efforts in suitable summer habitat.

Trees near potential hibernacula are more likely to have tricolored bats present during the fall/spring and possibly summer months. Clearing trees near hibernacula during certain times of the year could result in adverse effects to this species. Trees outside of these areas may be occupied by migrating tricolored bats seasonally, but cutting trees outside these areas is extremely unlikely to result in adverse effects (discountable).

If a final rule is published listing the tricolored bat as endangered, the Service will provide additional information on evaluating projects for potential impacts to tricolored bat.

Bats of Conservation Concern:

Implementing protective measures for bats, including both federally listed and non-listed species, indirectly helps to protect Michigan's agriculture and forests. Bats are significant predators of nocturnal insects, including many crop and forest pests. For example, Whitaker (1995) estimated that a single colony of 150 big brown bats (*Eptesicus fuscus*) would eat nearly 1.3 million pest insects each year. Boyles et al. (2011) noted the "loss of bats in North America could lead to agricultural losses estimated at more than \$3.7 billion/year, and Maine and Boyles (2015) estimated that the suppression of herbivory by insectivorous bats is worth >1 billion USD globally on corn alone. In captive trials, northern long-eared bats were found to significantly reduce the egg-laying activity of mosquitoes, suggesting bats may also play an important role in controlling insect-borne disease (Reiskind and Wund 2009). Mosquitoes have also been found to

be a consistent component of the diet of Indiana bats and are eaten most heavily during pregnancy (6.6%; Kurta and Whitaker 1998). Taking proactive steps to help protect bats may be very valuable to agricultural and forest product yields and pest management costs in and around a project area. Such conservation measures include limiting tree clearing during the bat active season (April through October varies by location) and/or the non-volant period (June through July), when young bats are unable to fly, and minimizing the extent of impacts to forests, wetlands, and riparian habitats.

Karner Blue Butterfly:

Karner blue butterfly may be present in the Action area. Projects that disturb wild lupine (the host plant) or result in habitat loss for Karner blue butterfly need additional project-specific review. **Please coordinate with the Michigan Ecological Services Field Office to further evaluate effects of the Action on Karner blue butterfly.**

Monarch:

In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. Please refer to our recommendations in the Monarch and Pollinators section, below.

Bald and Golden Eagles:

Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the “taking” of bald and golden eagles and defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” The Eagle Act’s implementing regulations define disturb as “...to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit <https://www.fws.gov/library/collections/all-about-eagles>. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at <https://www.fws.gov/media/national-bald-eagle-management-guidelines-0>.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Monarch butterfly and other pollinators

In December 2020, after an extensive status assessment of the monarch butterfly, we determined that listing the monarch under the Endangered Species Act is warranted but precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Therefore, the Service added the monarch butterfly to the candidate list. The Service will review its status each year until we are able to begin developing a proposal to list the monarch.

The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

For all projects, we recommend the following best management practices (BMPs) to benefit monarch and other pollinators.

Monarch and Pollinator BMP Recommendations

Consider monarch and other pollinators in your project planning when possible. Many pollinators are declining, including species that pollinate key agricultural crops and help maintain natural plant communities. Planting a diverse group of native plant species will help support the nutritional needs of Michigan's pollinators. We recommend a mix of flowering trees, shrubs, and herbaceous plants so that something is always blooming and pollen is available during the active periods of the pollinators, roughly early spring through fall (mid-March to mid-October). To benefit a wide variety of pollinators, choose a wide range of flowers with diverse colors, heights, structure, and flower shape. It is important to provide host plants for any known butterfly species at your site, including native milkweed for Monarch butterfly. Incorporating a water source (e.g., ephemeral pool or low area) and basking areas (rocks or bare ground) will provide additional resources for pollinators.

Many pollinators need a safe place to build their nests and overwinter. During spring and summer, leave some areas unmowed or minimize the impacts from mowing (e.g., decrease frequency, increase vegetation height). In fall, leave areas unraked and leave plant stems standing. Leave patches of bare soil for ground nesting pollinators.

Avoid or limit pesticide use. Pesticides can kill more than the target pest. Some pesticide residues can kill pollinators for several days after the pesticide is applied. Pesticides can also kill natural predators, which can lead to even worse pest problems.

Planting native wildflowers can also reduce the need to mow and water, improve bank stabilization by reducing erosion, and improve groundwater recharge and water quality.

Resources:

<https://www.fws.gov/initiative/monarchs>

<https://www.fws.gov/library/collections/pollinators>

Coordination with the Service is not complete if additional coordination is advised above for any species. Please email our office at MIFO_DKey@fws.gov and attach a copy of this letter, so we can discuss methods to avoid or minimize potential adverse effects to those species.

Bat References

Boyles, J.G., P.M. Cryan, G.F. McCracken, T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. *Science* 332(1):41-42.

Kurta, A. and J.O. Whitaker. 1998. Diet of the Endangered Indiana Bat (*Myotis sodalis*) on the Northern Edge of Its Range. *The American Midland Naturalist* 140(2):280-286.

Reiskind, M.H. and M.A. Wund. 2009. Experimental assessment of the impacts of northern long-eared bats on ovipositing *Culex* (Diptera: Culicidae) mosquitoes. *Journal of Medical Entomology* 46(5):1037-1044.

Whitaker, Jr., J.O. 1995. Food of the big brown bat *Eptesicus fuscus* from maternity colonies in Indiana and Illinois. *American Midland Naturalist* 134(2):346-360.

Summary of conservation measures for your project You agreed to the following conservation measures to avoid adverse effects to listed species and our concurrence is only valid if the measures are fully implemented. These must be included as permit conditions if a permit is required and/or included in any contract language.

Eastern massasauga

Materials used for erosion control and site restoration must be wildlife-friendly. Do not use erosion control products containing plastic mesh netting or other similar material that could entangle eastern massasauga rattlesnake (EMR). Several products for soil erosion and control exist that do not contain plastic netting including net-less erosion control blankets (for example, made of excelsior), loose mulch, hydraulic mulch, soil binders, unreinforced silt fences, and straw bales. Others are made from natural fibers (such as jute) and loosely woven together in a manner that allows wildlife to wiggle free.

To increase human safety and awareness of EMR, those implementing the project must first review the EMR factsheet (available at <https://www.fws.gov/media/eastern-massasauga-rattlesnake-fact-sheet>), and watch MDNR's "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w).

During project implementation, report sightings of any federally listed species, including EMR, to the Service within 24 hours.

Do not impact more than 0.5 acres of suitable EMR habitat .

The project will not result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of EMR upland habitat (uplands associated with high quality wetland habitat) to other land uses.

The project will not result in a permanent barrier to snake movement, such as a new road or widening of an existing road, changing the road substrate from dirt to pavement, new trail or canal or other permanent barrier.

Listed bats

Any cutting/trimming of potential roost trees for Indiana bat (trees ≥ 5 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark) or northern long-eared bat (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark) must occur OUTSIDE the non-volant ("pup") season for Indiana bat (June 1 through July 31). Prescribed fire and/or pesticide/herbicide application must also occur outside June-July where potential roost trees are present.

Tree cutting/trimming and/or prescribed burning will not clear ≥ 20 contiguous acres of forest or fragment a connective corridor between 2 or more forest patches of at least 5 acres.

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Any cutting/trimming of potential roost trees for northern long-eared bat (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices, cavities, and/or exfoliating bark) will be limited to the inactive season (September 1 through April 30). Prescribed fire and/or pesticide/herbicide

application will also occur during the inactive season where potential roost trees are present.

Tree cutting/trimming and/or prescribed burning will not clear ≥ 20 contiguous acres of forest or fragment a connective corridor between 2 or more forest patches of at least 5 acres.

The action will not include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s).

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

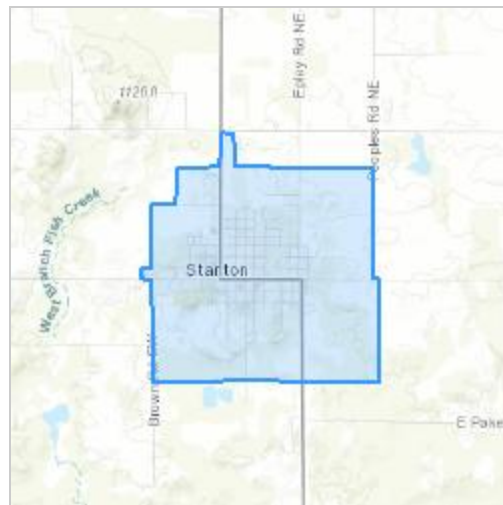
Stanton Lead & copper Rule Water Service Replacement -SRF

2. Description

The following description was provided for the project 'Stanton Lead & copper Rule Water Service Replacement -SRF':

Replacement of at least 8 lead service lines in Stanton per year.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.29676105,-85.07913902012454,14z>



QUALIFICATION INTERVIEW

1. Are there any possible effects to any listed species or to designated critical habitat from your project or effects from any other actions or projects subsequently made possible by your project?

Select "Yes" even if the expected effects to the species or critical habitat are expected to be 1) extremely unlikely (discountable), 2) can't meaningfully be measured, detected, or evaluated (insignificant), or 3) wholly beneficial.

Select "No" to confirm that the project details and supporting information allow you to conclude that listed species and their habitats will not be exposed to any effects (including discountable, insignificant, or beneficial effects) and therefore, you have made a "no effect" determination for all species. If you are unsure, select YES to answer additional questions about your project.

Yes

2. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

Yes

3. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action? (e.g., a new or re-issued hydropower license, a land management plan, or other kinds of documents that provide direction for projects or actions that may be conducted over a long term (>10 years) without the need for additional section 7 consultation).

No

4. Is the action being funded, authorized, or carried out by a Federal agency?

Yes

5. Does the action involve the installation or operation of wind turbines?

No

6. Are there at least 30 days prior to your action occurring? Endangered species consultation must be completed before taking any action that may have effects to listed species. The Service also needs 30 days to review projects before we can verify conclusions in some dkey output letters. For example, if you have already started some components of the project on the ground (e.g., removed vegetation) before completing this key, answer “no” to this question. The only exception is if you have a Michigan Field Office pre-approved emergence survey (i.e., if you have conducted pre-approved emergence surveys for listed bats before tree removal, you can still answer yes to this question).

Yes

7. Does the action involve constructing a new communication tower or modifying an existing communications tower?

No

8. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

No

9. Does your project include water withdrawal (ground or surface water) greater than 10,000 gallons/day?

No

10. Will your action permanently affect hydrology?

No

11. Will your action temporarily affect hydrology?

No

12. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new storm-water outfall discharge, dams, other in-stream work, etc.)?

No

13. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, etc.)?

Yes

14. Are you applying for one of the following Michigan EGLE/Army Corps of Engineers joint permit application Minor Permit (MP) Categories:
MP 3 - Boat Hoist; MP 5 - Boal Wells; MP 7 - Completed Enforcement Actions; MP 12 - Dock;
MP 21 - Fish and Wildlife Habitat Structures;
MP 22 - Ford Stream Crossings for Commercial Forestry Operations;
MP 28 - Maintenance and Repair of Serviceable Structures;
MP 45 - Temporary Recreational Structures;
MP 48 - Wetland Habitat Restoration and Enhancement?

Verify the MP category number and associated description matches your project/application (https://www.michigan.gov/documents/egle/WRD-Minor-Project-Categories_733320_7.pdf). If you don't know what category applies for your project, answer no to this question.

No

15. Are you applying for one of the following Michigan EGLE/Army Corps of Engineers joint permit application General Permit (GP) Categories:
GP A - Aids to Navigation;
GP C - Clear Span Bridge;
GP E - Culverts - Small;
GP J - Dry Fire Hydrant;
GP O - Minor Permit Revisions and Transfers;
GP Q - Mooring Buoy;
GP W - Scientific Measuring Devices;
GP X - Snow Road Stream Crossings for Forestry Operations;
GP Z - Spring Piles and Piling Clusters;
GP DD - Wetland Habitat Restoration and Enhancement?

Verify the GP category number and associated description matches your project/application (https://www.michigan.gov/documents/deq/wrd-general-permit-categories_555828_7.pdf). If you don't know what category applies for your project, answer no to this question.

No

16. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

Yes

17. Is the action a utility-scale solar development project?

No

18. [Hidden semantic] Does the action intersect the MOBU AOI?

Automatically answered

Yes

19. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary. If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project. Are you making a "no effect" determination for monarch?

No

20. Is this project funded, authorized, or carried out by the U.S. Fish and Wildlife Service?

No

21. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

Automatically answered

Yes

22. Will your action impact less than 0.5 acres of [suitable Eastern massasauga rattlesnake habitat](#)?

Yes

23. Does your action involve prescribed fire?

No

24. Will this action occur entirely in the Eastern massasauga rattlesnake inactive season (October 16 through April 14)?

No

25. Will this action occur entirely in the Eastern massasauga rattlesnake active season (April 15 through October 15)?

No

26. Will the action result in permanent loss of more than one acre of wetland or conversion of more than 10 acres of uplands of potential Eastern massasauga rattlesnake habitat (uplands associated with high quality wetland habitat) to other land uses?

No

27. Will you use [wildlife safe materials](#) for erosion control and site restoration and eliminate the use of erosion control products containing plastic mesh netting or other similar material that could ensnare Eastern massasauga rattlesnake?

Yes

28. Will you watch MDNR's "[60-Second Snakes: The Eastern Massasauga Rattlesnake \(EMR\)](#)" video, review the [EMR factsheet](#) or call 517-351-2555 to increase human safety and awareness of EMR?

Yes

29. Will all action personnel report any Eastern massasauga rattlesnake observations, or observation of any other listed threatened or endangered species, during action implementation to the Service within 24 hours?

Yes

30. Will your action create a new road, alter an existing road, or convert the surface of an existing road from a non-paved to a paved surface?

No

31. Will your action result in a new or increased permanent barrier to snake movement? For example, widening an existing road or trail, new linear features such as trails, fences, walls, canals, or other permanent barriers have the potential to fragment habitat and alter movement and dispersal.

No

32. It is important to understand where potential [hibernation habitat](#) for eastern massasauga occurs at the project site. Has a qualified herpetologist conducted a habitat assessment of the site, including assessing whether potential EMR hibernacula are present on the action site? Or have you otherwise delineated potential [hibernation habitat](#) on the site?

No

33. [Hidden Semantic] Does the action intersect the Karner blue butterfly area of influence?

Automatically answered

Yes

34. Will the action occur in oak savanna, oak or pine barrens, openings within oak forest, old fields in association with oak forest, or openings or rights-of-way with abundant native grasses and wildflowers?

Yes

35. Is the larval host plant, wild lupine, present on site? If unsure, select YES.

Yes

36. Can you avoid disturbance to areas with lupine?

No

37. [Hidden Semantic] Does the action area intersect the whooping crane (ex. Pop) area of influence?

Automatically answered

Yes

38. Have you determined that the action will have no effect on individuals within the whooping crane nonessential experimental population (NEP)?

Yes

39. The project has the potential to affect federally listed bats. Does the action area contain any known or potential bat hibernacula (natural caves, abandoned mines, or underground quarries)?
No
40. Has a presence/absence bat survey or field-based habitat assessment following the Service's Range-wide [Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines](#) been conducted within the action area?
No
41. Does the action involve removal/modification of a human structure (barn, house or other building) known to contain roosting bats?
No
42. Does the action include removal/modification of an existing bridge or culvert?
No
43. Does the action include temporary or permanent lighting of roadway(s), facility(ies), and/or parking lot(s)?
No
44. Does the action include one or more of the following: (1) tree cutting/trimming, (2) prescribed fire, (3) pesticide (including insecticide and/or rodenticide), and/or (4) herbicide/fungicide application?
Yes
45. Does the action include herbicide application?
No
46. Will the action clear >10 acres of contiguous forest (i.e., connected by 1,000 feet or less) or fragment a riparian or other connective forested corridor (e.g., tree line) between 2 or more forest patches of at least 5 acres? For more information, see [Appendix II](#).
No
47. Does the action area contain potential NLEB bat roost trees (trees ≥ 3 inches in diameter [at breast height] with cracks, crevices, cavities and/or exfoliating bark)? For more information, see [Appendix IV](#).
Yes
48. Does the action area contain potential Indiana bat roost trees (trees ≥ 5 inches in diameter [at breast height] with cracks, crevices and/or exfoliating bark)? For more information, see [Appendix III](#).
Yes
49. Does the action include emergency cutting/trimming of hazard trees in order to prevent imminent loss of human life and/or property?
No
-

50. [Semantic] Is any portion of the action area within 5 miles of a known Indiana or northern long-eared bat hibernaculum?

Automatically answered

No

51. Your project intersected modeled bat habitat.

Will all tree cutting/trimming, prescribed fire, and/or pesticide (i.e., insecticide, rodenticide) application be restricted to the inactive (hibernation) season for listed bats (that is, conducted during October 1 through April 14)?

Yes

52. Will the action clear >10 acres of modeled bat habitat?

To determine whether it is >10 acres, you can download the shapefile or kmz here: [Indiana bat model](#). For more information on the development of the Indiana bat habitat suitability model, see [Appendix I](#).

No

53. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

Automatically answered

Yes

54. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

Automatically answered

Yes

55. [Hidden semantic] Does the action intersect the Tricolored bat AOI/SLA/range?

Automatically answered

Yes

56. The tricolored bat was proposed for listing as endangered on September 13, 2022. In Michigan, the tricolored bat was rare pre-white nose syndrome (WNS) and is exceedingly rare post-WNS. The species has been observed in 12 Michigan counties to date, largely during the fall or winter. With very few exceptions, the species has not been observed in Michigan in the summer months, and no maternity colonies have been found. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

Are you making a no effect determination on this project for the tricolored bat?

No

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Kayla McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: kayla.mcrobb@ohm-advisors.com
Phone: 7347659699



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443

In Reply Refer To:

April 06, 2023

Project Code: 2023-0065603

Project Name: Stanton Lead & copper Rule Water Service Replacement -SRF

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Official Species List

The attached species list identifies any Federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Under 50 CFR 402.12(e) (the regulations that implement section 7 of the Endangered Species Act), the accuracy of this species list should be verified after 90 days. You may verify the list by visiting the IPaC website (<https://ipac.ecosphere.fws.gov/>) at regular intervals during project planning and implementation. To update an Official Species List in IPaC: from the My Projects page, find the project, expand the row, and click Project Home. In the What's Next box on the Project Home page, there is a Request Updated List button to update your species list. Be sure to select an "official" species list for all projects.

Consultation requirements and next steps

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize Federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-Federal representative) must consult with the Fish and Wildlife Service if they determine their project may affect listed species or critical habitat.

There are two approaches to evaluating the effects of a project on listed species.

Approach 1. Use the All-species Michigan determination key in IPaC. This tool can assist you in making determinations for listed species for some projects. In many cases, the determination key

will provide an automated concurrence that completes all or significant parts of the consultation process. Therefore, we strongly recommend screening your project with the **All-Species Michigan Determination Key (Dkey)**. For additional information on using IPaC and available Determination Keys, visit <https://www.fws.gov/media/mifo-ipac-instructions> (and click on the attachment). Please carefully review your Dkey output letter to determine whether additional steps are needed to complete the consultation process.

Approach 2. Evaluate the effects to listed species on your own without utilizing a determination key. Once you obtain your official species list, you are not required to continue in IPaC, although in most cases using a determination key should expedite your review. If the project is a Federal action, you should review our section 7 step-by-step instructions before making your determinations: <https://www.fws.gov/office/midwest-region-headquarters/midwest-section-7-technical-assistance>. If you evaluate the details of your project and conclude “no effect,” document your findings, and your listed species review is complete; you do not need our concurrence on “no effect” determinations. If you cannot conclude “no effect,” you should coordinate/consult with the Michigan Ecological Services Field Office. The preferred method for submitting your project description and effects determination (if concurrence is needed) is electronically to EastLansing@fws.gov. Please include a copy of this official species list with your request.

For all **wind energy projects** and **projects that include installing communications towers that use guy wires**, please contact this field office directly for assistance, even if no Federally listed plants, animals or critical habitat are present within your proposed project area or may be affected by your proposed project.

Migratory Birds

Please see the “Migratory Birds” section below for important information regarding incorporating migratory birds into your project planning. Our Migratory Bird Program has developed recommendations, best practices, and other tools to help project proponents voluntarily reduce impacts to birds and their habitats. The Bald and Golden Eagle Protection Act prohibits the take and disturbance of eagles without a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <https://www.fws.gov/program/eagle-management/eagle-permits> to help you avoid impacting eagles or determine if a permit may be necessary.

Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your consideration of threatened and endangered species during your project

planning. Please include a copy of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Michigan Ecological Services Field Office

2651 Coolidge Road Suite 101

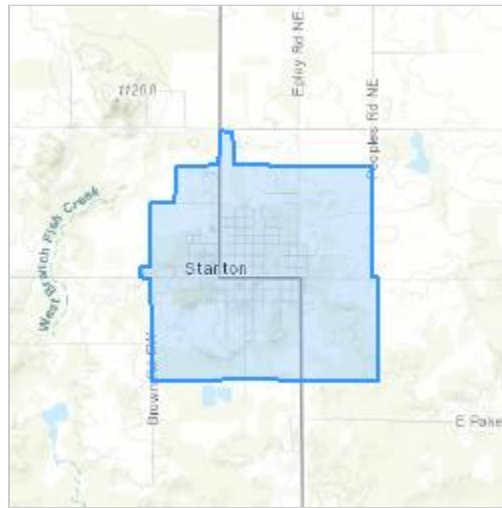
East Lansing, MI 48823-6360

(517) 351-2555

PROJECT SUMMARY

Project Code: 2023-0065603
Project Name: Stanton Lead & copper Rule Water Service Replacement -SRF
Project Type: Water Supply Pipeline - Maintenance/Modification - Below Ground
Project Description: Replacement of at least 8 lead service lines in Stanton per year.
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.29676105,-85.07913902012454,14z>



Counties: Montcalm County, Michigan

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/KOGXVTS27RHI7AISDWS3DTUXAI/documents/generated/6982.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/KOGXVTS27RHI7AISDWS3DTUXAI/documents/generated/6983.pdf	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane <i>Grus americana</i> Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ For all Projects: Project is within Tier1 Habitat ▪ For all projects: Project is within Tier2 Habitat ▪ For all Projects: Project is within EMR Range Species profile: https://ecos.fws.gov/ecp/species/2202 General project design guidelines: https://ipac.ecosphere.fws.gov/project/KOGXVTS27RHI7AISDWS3DTUXAI/documents/generated/5280.pdf	Threatened

INSECTS

NAME	STATUS
Karner Blue Butterfly <i>Lycaeides melissa samuelis</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

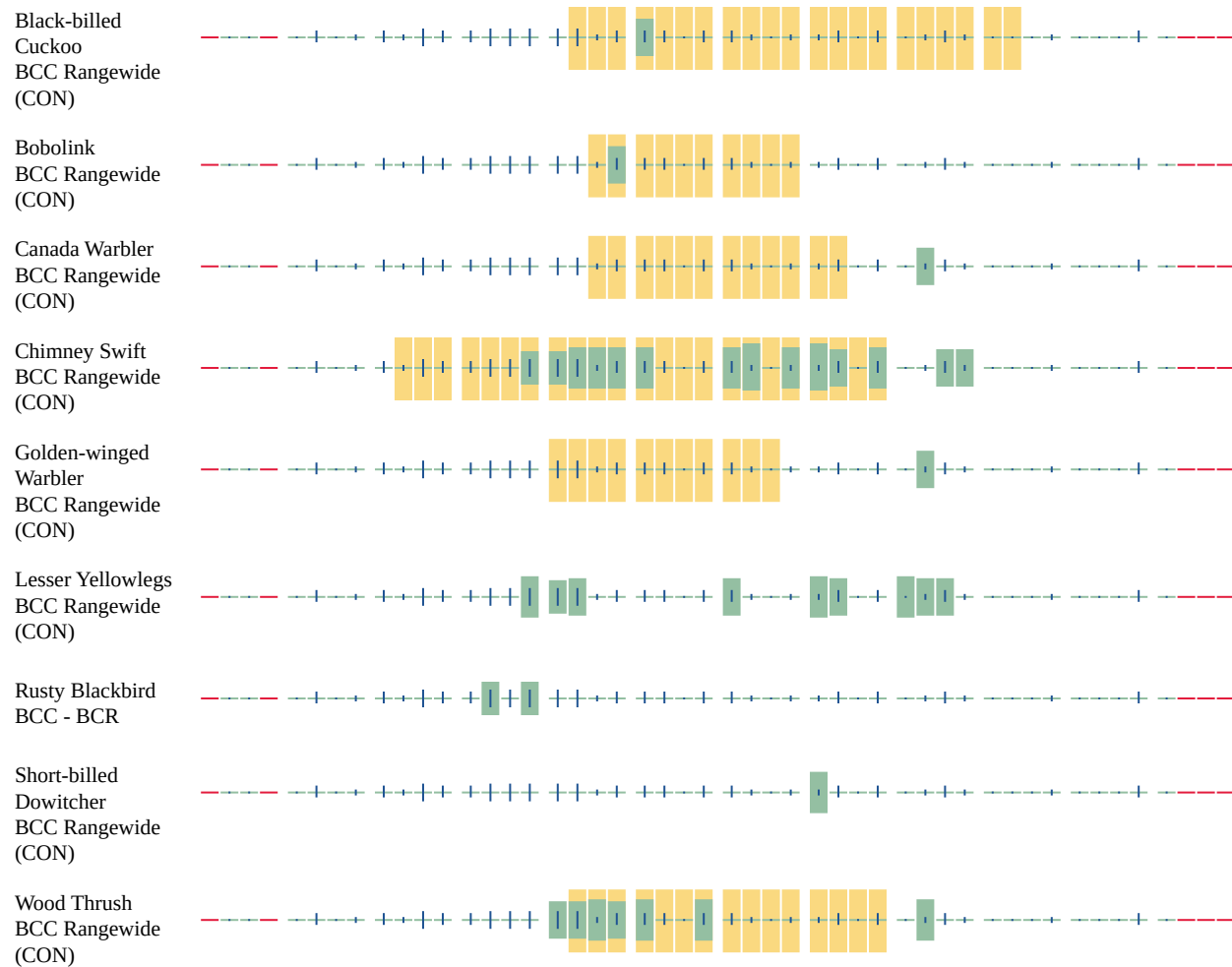
NAME	BREEDING SEASON
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see



Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.
PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

Agency: Stanton city
Name: Kayla McRobb
Address: 34000 Plymouth Rd
City: Livonia
State: MI
Zip: 48150
Email: kayla.mcrobb@ohm-advisors.com
Phone: 7347659699



April 4th, 2023

Michigan Natural Features Inventory (MNFI) Web Database Review – City of Stanton CIP Lead & Copper Rule Water Service Replacement, Montcalm County

OHM has reviewed the Threatened and Endangered Species list generated by the MNFI Web Database, conducted on April 4th, 2023. During this Review, the project location was checked against known localities for rare species, and **0** State threatened, endangered, or species of special concern have been documented within the 1.5 mile project area buffer. Additionally, ESA Section 7 species were generated via the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) website. Determinations for Federally listed species will be made utilizing the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) website.

The work for this project will include the replacement of approximately 8 lead water services with approved material from the mainline to the house.

OHM Advisors has made the determination that no additional effort is required related to potential field surveys for listed species. In the event known threatened and endangered species are observed during project activities, observations will be reported to local county MDNR office within 24 hours.

If additional information is needed, please contact me via email at wade.rose@ohm-advisors.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Wade Rose". The signature is stylized with a large loop at the bottom and a horizontal line extending to the right.

Wade Rose, OHM Advisors Ecologist

[MNFI Home](#) [Contact Us](#) [Plant List](#) [Animal List](#) [Abstracts](#) [Help](#)



Michigan Natural Features Inventory

Web Database Search

Search Results for Town 10N, Range 07W, Section 1 and Montcalm County

No Records Found



Query Results Generated on Apr 04, 2023

Database Updated on Mar 20, 2023

[New Search](#)

[Refine Search](#)

[◀ Previous 25 Records](#)

[Next 25 Records ▶](#)

No records were found in the database matching your criteria

[MNFI Home](#) [Contact Us](#) [Plant List](#) [Animal List](#) [Abstracts](#) [Help](#)



Michigan Natural Features Inventory

Web Database Search

Search Results for Town 11N, Range 06W, Section 31 and Montcalm County

No Records Found



Query Results Generated on Apr 04, 2023

Database Updated on Mar 20, 2023

[New Search](#)

[Refine Search](#)

[◀ Previous 25 Records](#)

[Next 25 Records ▶](#)

No records were found in the database matching your criteria

[MNFI Home](#) [Contact Us](#) [Plant List](#) [Animal List](#) [Abstracts](#) [Help](#)



Michigan Natural Features Inventory

Web Database Search

Search Results for Town 11N, Range 07W, Section 36 and Montcalm County

No Records Found



Query Results Generated on Apr 04, 2023

Database Updated on Mar 20, 2023

[New Search](#)

[Refine Search](#)

[◀ Previous 25 Records](#)

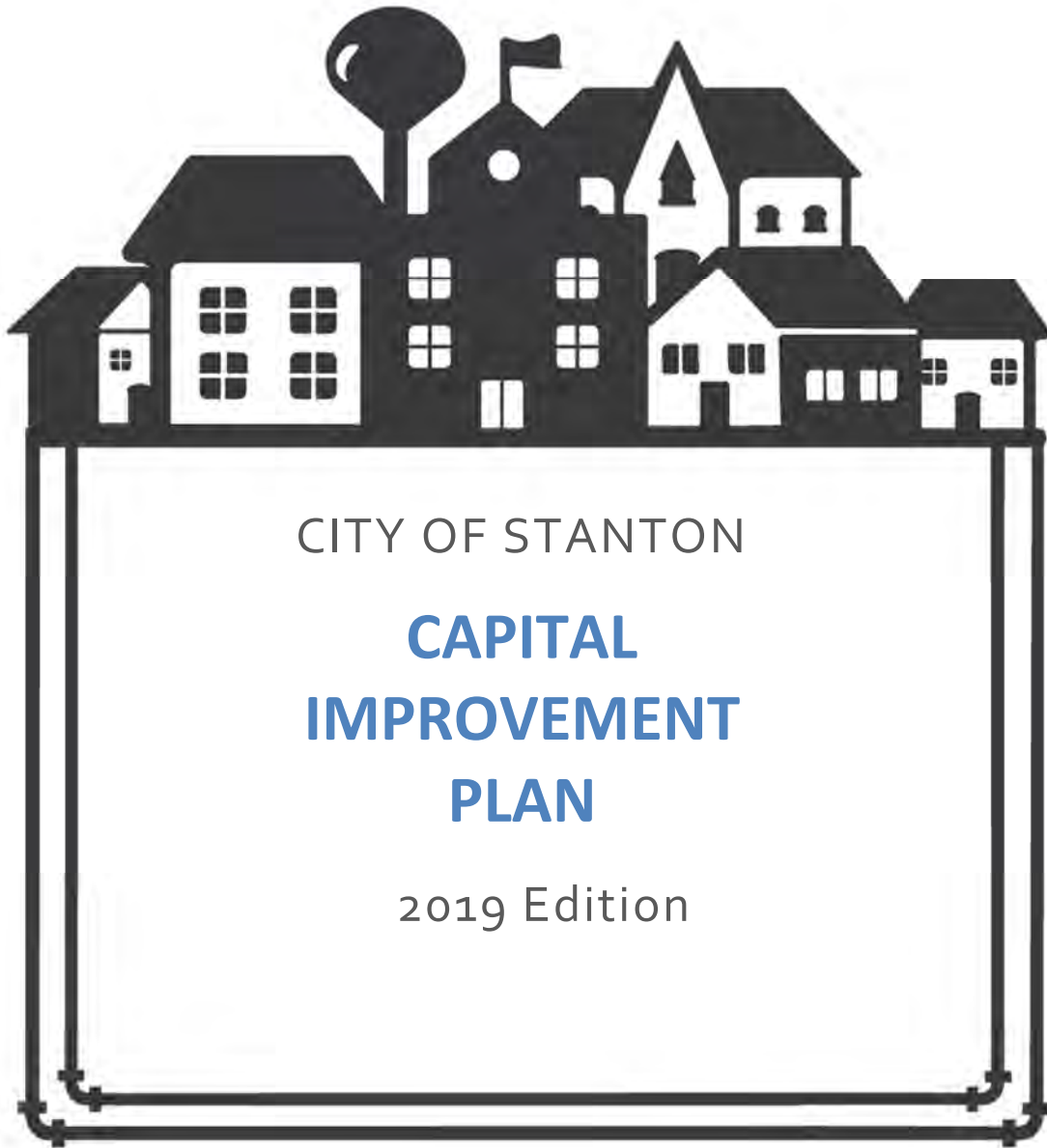
[Next 25 Records ▶](#)

No records were found in the database matching your criteria



APPENDIX D

Capital Improvements Plan (2019)



Prepared by
Prein&Newhof
2130666

Contents

Introduction

Part One: Capital Improvements

Overview Map

Project Summaries

Part Two: Financial Strategy

Implementation Timeline

Non-Pipe Assets

Sewer Forecast

Water Forecast

Introduction

The City of Stanton's public infrastructure includes drinking water supply and delivery systems, wastewater collection and treatment systems, storm drainage systems, and public streets. These systems are aging, and certain parts need to be repaired or replaced to keep up with deterioration over time.

Waiting until something breaks to make emergency repairs is expensive. A more proactive approach can minimize life cycle costs using the following steps:

- Evaluate the condition and capacity of assets to determine improvement needs.
- Implement a maintenance program for the small needs.
- Implement a Capital Improvement Plan for the big needs.
- Develop financial strategies to fund all planned work before needs become emergencies.

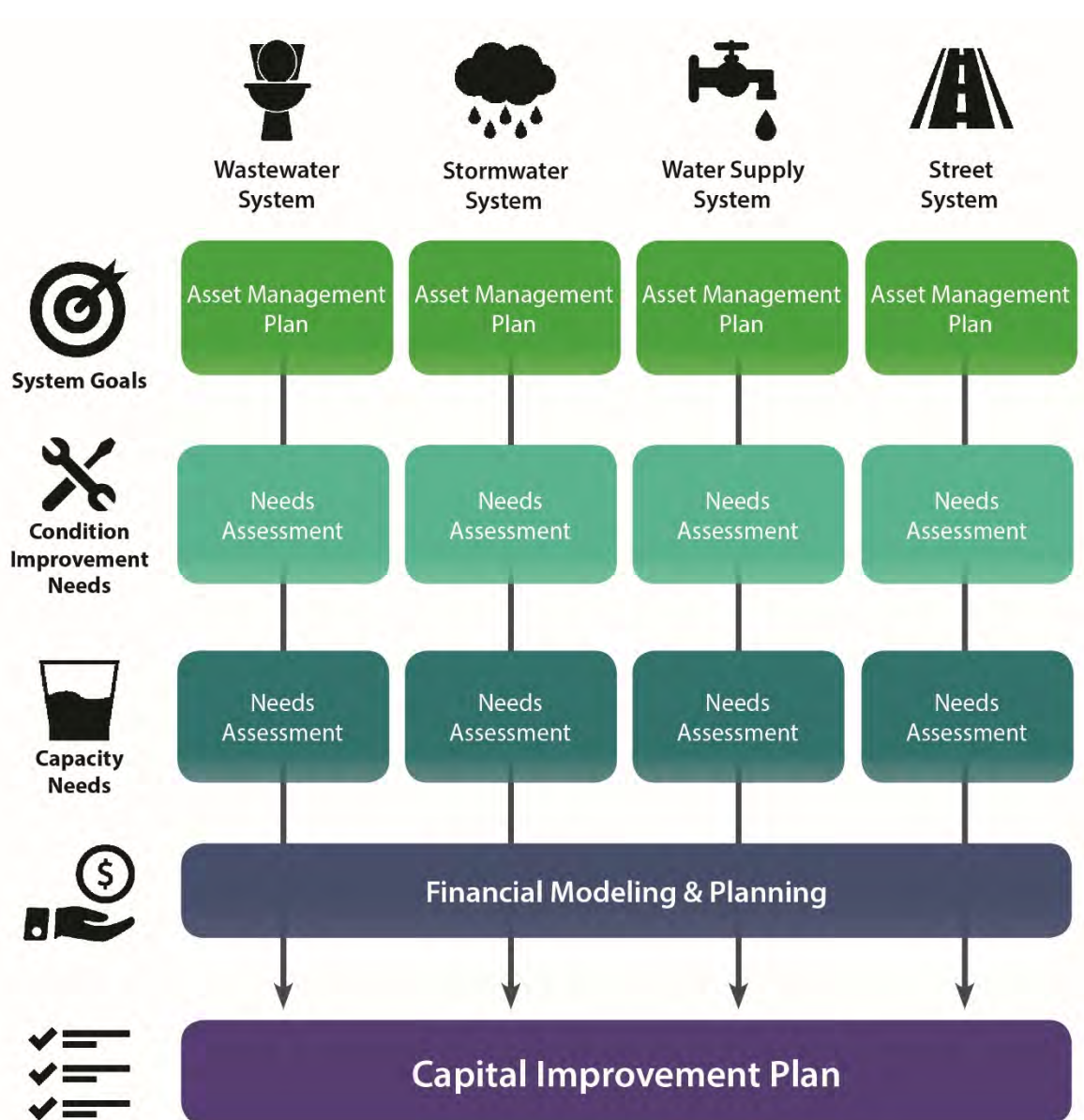
The City of Stanton is actively managing the needs of these systems. The needs have been evaluated, and financial strategies have been considered. This Capital Improvement Plan presents the City of Stanton's infrastructure priorities that have been established within a 10-year planning period, a timeline for accomplishing the needed improvements, and a financial strategy to implement the plan.

Planning Framework

Asset management is programmatic way of managing the needs of infrastructure. The asset management plan for each system guides the program and establishes goals for the system. By implementing the asset management program, the needs of each system are determined and prioritized. Each system has two kinds of needs: condition improvement needs and capacity improvement needs.

Condition improvements may be needed to repair aging and deteriorated parts of the system.

Capacity improvements may be needed to ensure that infrastructure will meet the current and future needs of the people.



Current Needs Assessments

The City of Stanton has completed the following needs assessments upon which this Capital Improvement plan has been developed:

System	Condition Improvement Needs Assessments	Capacity Improvement Needs Assessments
Wastewater System	2019 Wastewater System Evaluation 2017 Smoke Testing Report	Sewer Flow Study P&N Report: December, 2019
Stormwater System	2019 Stormwater System Evaluation	Sewer Flow Study P&N Report: November, 2019
Water Supply System	2017 Water Asset Management Plan	2017 Water System Reliability Study
Street System	2017 PASER Ratings	No Current Traffic Studies (not typical for local streets)

Coordinating the Systems to Minimize Cost

When capital improvements are planned considering both kinds of needs across all infrastructure systems, the potential for tearing up good streets to work on underground utilities can be reduced and overall cost can be minimized. This requires financial planning for all infrastructure systems together and a capital improvement plan that is coordinated across all infrastructure systems.

Ongoing Capital Improvement Planning

Capital improvement planning is an ongoing process. Plans are expected to change as new information becomes available and economic conditions change. While the various studies to determine the needs may be updated at differing times, this Capital Improvement Plan is intended to be updated annually to always reflect the current plan moving forward.

Part One: Capital Improvements

Overview Map

Project Summaries

CITY OF STANTON
 MONTCALM COUNTY, MI
 STORMWATER SYSTEM
CAPITAL IMPROVEMENT PLAN
 DECEMBER, 2019
 Prein&Newhof
 2130666




LEGEND

CIP Project Year

-  2020
-  2021
-  2022
-  2023
-  2024
-  2025
-  2026
-  2027
-  2028
-  2029
-  2030





Spot Repair-Storm

CIP Year

-  2022
-  2023
-  2025
-  2026

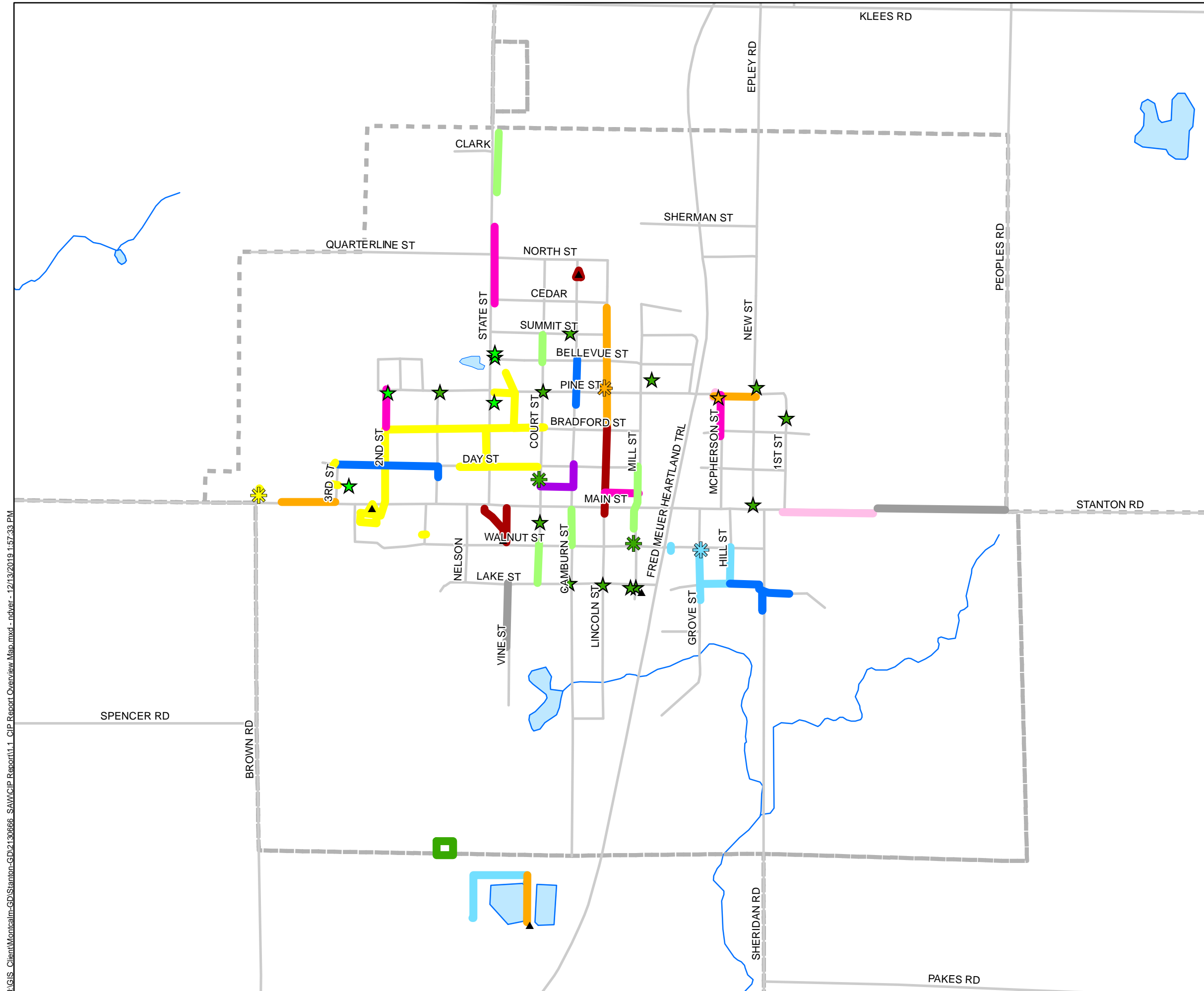
Spot Repair-Wastewater

CIP Year

-  2022
-  2024
-  2025
-  Pump Station



1 inch : 1,000 feet



Project Summary: Storm Sewer Cleaning and Televising (Non-Participating)

Project Description: Cleaning and televising of 5% of the storm system per year. Clean 1/3 of catch basins per year. This project is not eligible for USDA funding.

Need: Televising of the storm system was done in 2017-2018 as part of the SAW Grant, so continued televising can be delayed for a few years. With replacement of the current City-owned jetter, the City DPW can continue cleaning pipes as needed in the meantime. Contract out catch basin cleaning of 1/3 per year.



Starting in 2024, cleaning and televising of 5% of the system annually will assist with root removal, storm water conveyance, and updating the AMP with continued pipe condition assessments.

Sewer cleaning and televising is not eligible for USDA funding and is designated as “Non-Participating.”

Planned Year: Annual

Contracted work:

2020-2023 Clean Catch Basins

2024-Future Clean and Televising Storm Sewer, Clean Catch Basins

Anticipated Project Costs:

Street/Storm Fund	\$2,000-\$6,000 per year
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Project Summary: Sanitary Sewer Cleaning and Televising (Non-Participating)

Project Description: Cleaning and televising 10% of sanitary sewer pipes per year. Septic tanks cleaned every 5 years (1/3 of septic tanks per year for 3 years, 2 years off). This project is not eligible for USDA funding.



Need: Televising of the sanitary system was done in 2017-2018 as part of the SAW Grant, so continued televising can be delayed for a few years. With replacement of the current City-owned jetter, the City DPW can continue cleaning pipes as needed in the meantime. Contract out yearly septic tank cleaning.

Starting in 2024, cleaning and televising of 10% of the system annually will assist with root removal, wastewater conveyance, and updating the AMP with continued pipe condition assessments.

Sewer cleaning and televising is not eligible for USDA funding and is designated as “Non-Participating.”

Planned Year: Annual

Contracted Work:

2021-2023, 2026-2028... Clean Septic Tanks

2024-Future Clean and Televising Sanitary Sewer

Anticipated Project Costs:

Sanitary Sewer Fund	\$5,000-\$26,500 per year
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Project Summary: Lead & Copper Rule Water Service Replacement

Project Description: Yearly replacement of approximately 8 lead water services with approved material from the mainline to the house.

Need: The State of Michigan’s Lead and Copper Rule requires replacement of 5% of the City’s total lead water services per year. Current estimates assume 153 City water services may be lead pipe. 5% per year equals replacement of approximately 8 water services each year for 20 years. Lead water service replacement has also been incorporated



into construction project estimates if the age of the water pipe is older than 1980, assuming lead water services may be encountered during construction. This project would be in addition to any water service replacement done during a utility construction project, assuming 8 total per year.

Estimated 2/3 of the length of the water service would be City owned and could be eligible for USDA funding. Water service pipe on private property is currently not eligible for USDA funding and is designated as “Non-Participating.”

Planned Year: Annual

Anticipated Project Costs:

Participating	Water Fund	\$11,000-\$27,000
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Non-Participating	Water Fund	\$6,000-\$13,000
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Project Summary: East Main Street Water Service Connection

Project No: 202001

Project Description: Connect five existing water services by directional drill to large diameter watermain on north side of Main Street east of 1st Street.

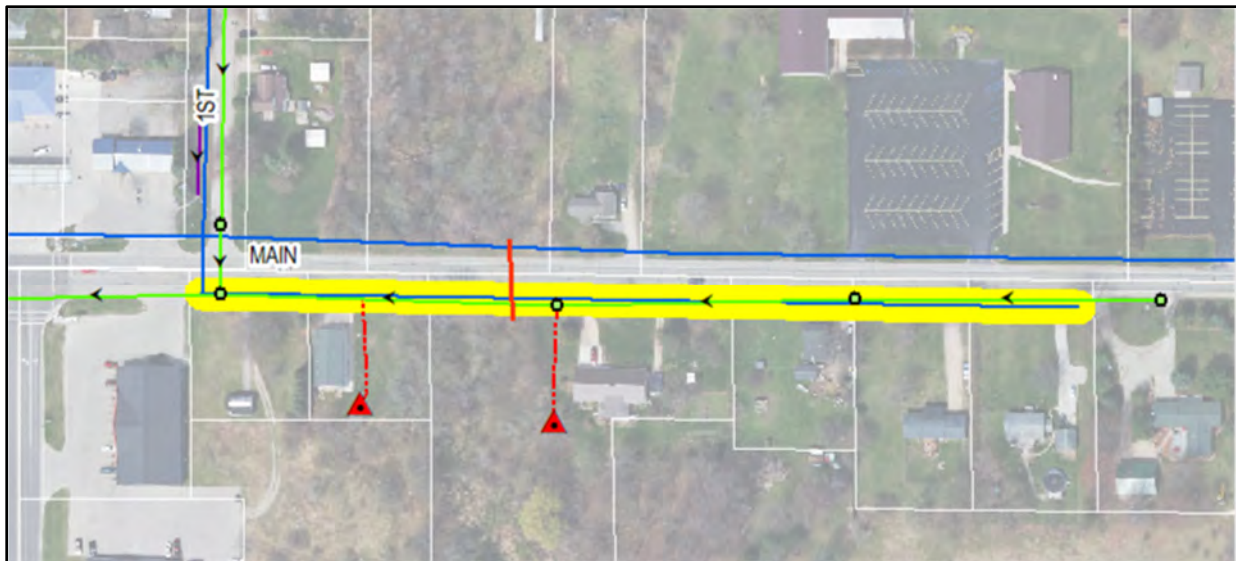
Need: Multiple water services are connected to a small diameter main that has experienced multiple breaks.

Planned Year: 2020

Anticipated Project Costs: The total cost is estimated at \$87,200.

Water Fund	\$87,200
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100% of road reconstruction costs are allocated to the Water Fund.
Costs account for 2% inflation and 25% Engineering & Contingencies.



Project Summary: Pine Street Culvert

Project No: 202002

Project Description: Replace existing 36-inch diameter culvert with 48-inch diameter culvert on Pine Street just west of McPherson Street.

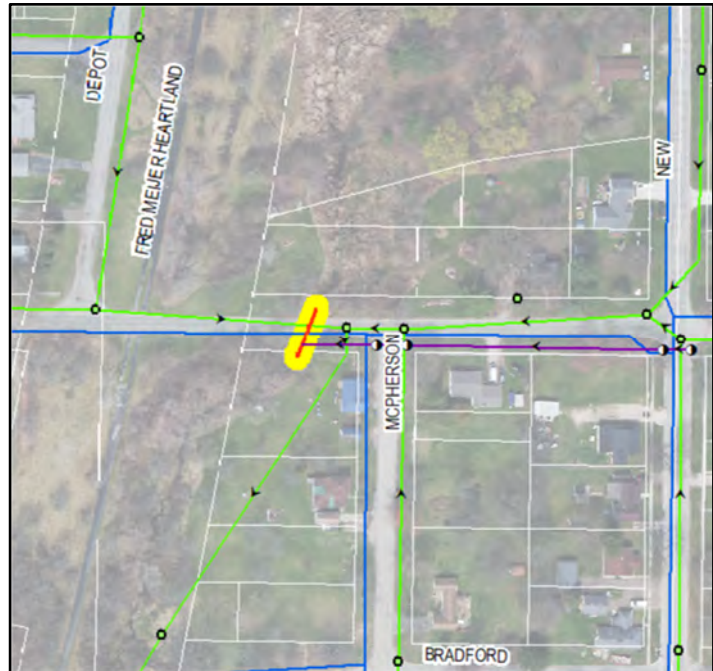
Need: The culvert ends are failing, which is threatening road stability.

Planned Year: 2020

Anticipated Project Costs: The total cost is estimated at \$119,700.

Street/Storm Fund	\$119,700
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Costs account for 2% inflation and 25% Engineering & Contingencies.



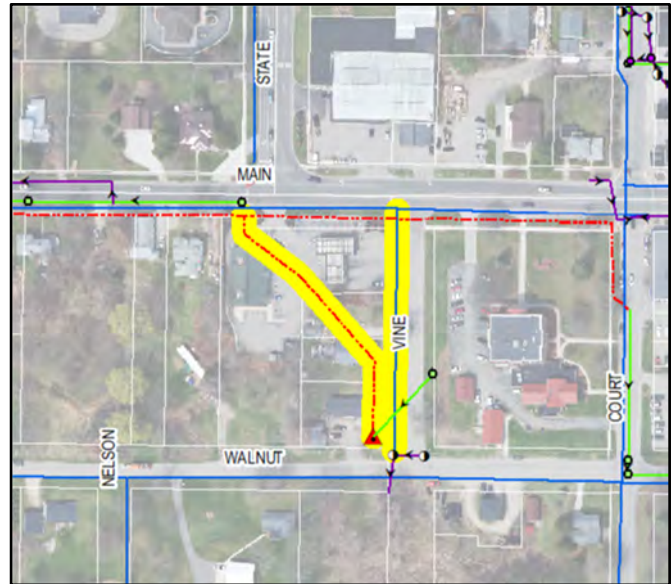
Project Summary: Vine Watermain and Force Main

Project No: 202101

Project Description: Replace existing 2-inch diameter watermain between Main Street and Walnut Street with larger diameter pipe and replace existing 2-inch diameter force main on Vine Street between Walnut Street and Main Street. Estimated project costs account for replacement of possible lead water services in the construction area.

Need: The watermain is undersized, and the force main has had multiple breaks.

Planned Year: 2021



Anticipated Project Costs: The total cost is estimated at \$330,300.

Water Fund	\$197,400
Sanitary Sewer Fund	\$132,900

100% of road reconstruction costs are allocated to the Water Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: Lincoln Street Storm, Sanitary & Water Improvements

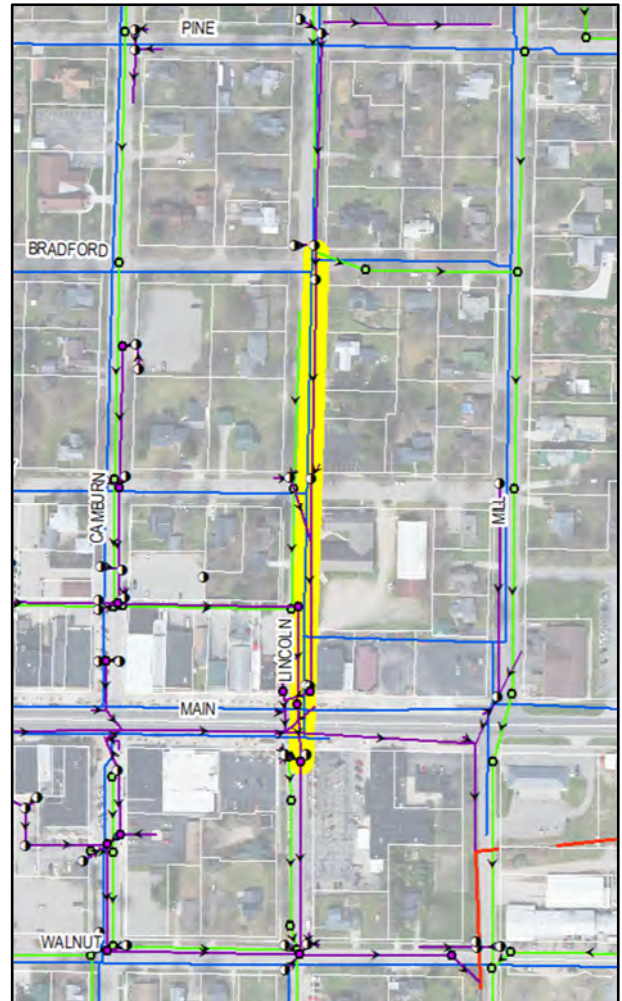
Project No: 202102

Project Description: Replace sanitary sewer, storm sewer, and watermain on Lincoln Street from Main Street to Bradford Street. Replace existing 4-inch diameter watermain with 8-inch diameter pipe, replace existing 12-inch diameter storm sewer, and replace existing 4-inch diameter sanitary sewer with 8-inch diameter pipe. Bore and jack under Main Street. Reconstruct Lincoln Street road pavement from Main Street to Bradford Street and sidewalk on both sides of the road.

Need: The watermain is undersized for fire flow, the storm sewer has structural issues, and the sanitary sewer material is tar paper (Orangeburg) pipe that has reached the end of its useful lifecycle.

Planned Year: 2021

Anticipated Project Costs: The total cost is estimated at \$519,700.



Street Fund	\$104,200
Water Fund	\$95,100
Sanitary Sewer Fund	\$320,400

20% of road reconstruction costs are allocated to the Water Fund. 80% of road reconstruction costs are allocated to the Sanitary Fund. The remaining cost in the Street Fund covers storm sewer replacement. Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: Camburn Lift Station Improvements

Project No: 202103

Project Description: Rehabilitate Camburn Lift Station with new pumps, valves, and piping. Replace the wet well lid with a new access hatch and safety grate. Replace the control panel’s plywood backing with a stainless-steel strut frame. Install new conduit for the float switches to meet electrical code, add surge protection to the main electrical service, and replace the generator receptacle to match the City standard.



Need: Camburn Lift Station was constructed in 1990 and is generally in fair to poor condition. The primary deficiencies include various levels of equipment corrosion, structural deterioration, and electrical code violations. Rehabilitation of the station is a priority of the DPW.

Planned Year: 2021

Anticipated Project Costs: The total cost is estimated at \$129,100.

Sanitary Sewer Fund	\$129,100
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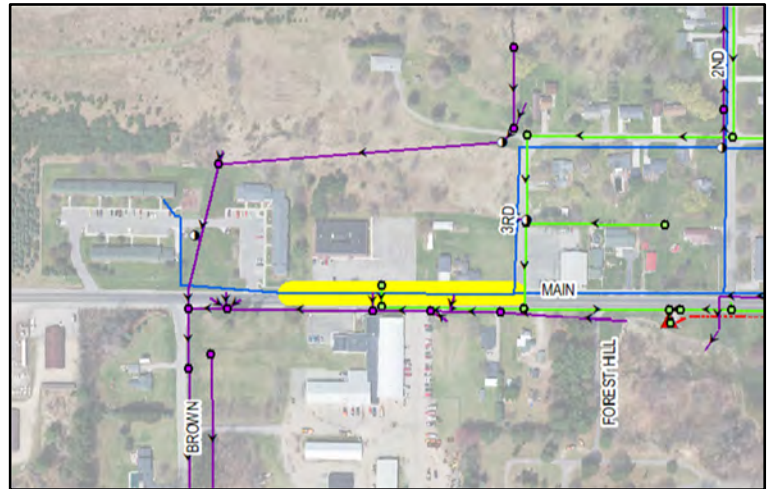
Costs account for 2% inflation and 33% Engineering & Contingencies.

Project Summary: West Main Street Watermain

Project No: 202201

Project Description: Replace existing 4-inch diameter watermain with 8-inch diameter pipe on Main Street west of 3rd Street. Replace existing 6-inch diameter sanitary sewer across Main Street. Reconstruct sidewalk along north side of road. Estimated project costs account for replacement of possible lead water services in the construction area.

Need: The watermain pipe is undersized, which does not provide adequate fire flow to the apartments.



Planned Year: 2022

Anticipated Project Costs: The total cost is estimated at \$181,100.

Water Fund	\$169,950
Sanitary Sewer Fund	\$11,150

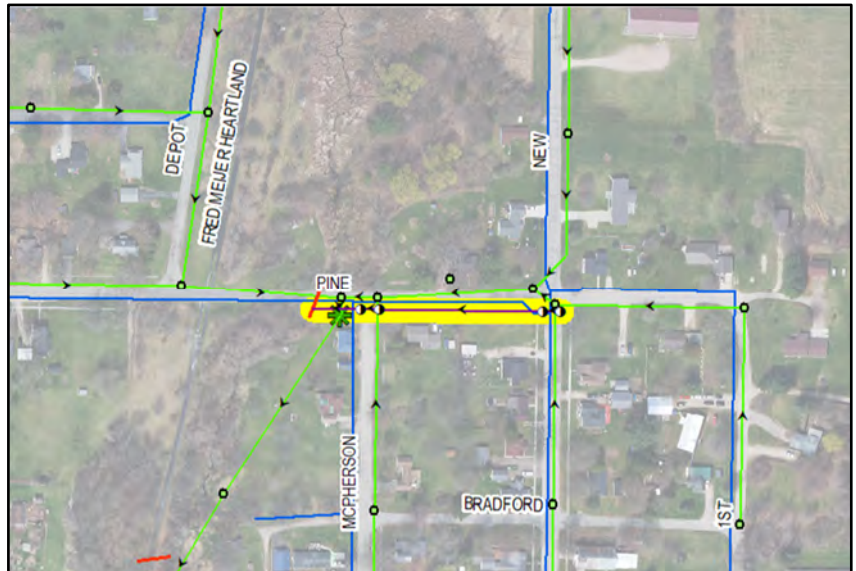
100% of road reconstruction costs are allocated to the Water Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: Pine Street Storm Improvements

Project No: 202202

Project Description: Replace existing 12-inch diameter storm sewer on Pine Street from the culvert to New Street. Sanitary sewer spot repair at Pine Street & McPherson Street. Reconstruct road pavement in the project area. Estimated project costs account for replacement of possible lead water services in the construction area. Replace 40 feet of 6-inch diameter watermain at Pine Street and McPherson Street during construction to prepare for future project 202901.



Need: Concrete storm sewer is broken and cracked. The sanitary sewer spot repair is to replace a manhole where the structure is in poor condition. Watermain on McPherson Street has a high break history and is planned for replacement in 2029.

Planned Year: 2022

Anticipated Project Costs: The total cost is estimated at \$178,200.

Street/Storm Fund	\$141,800
Water Fund	\$29,700
Sanitary Sewer Fund	\$6,700

20% of road reconstruction costs are allocated to the Water Fund (to be adjusted if lead water services are not found and preparation for 202901 is not done).

Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: Lincoln Street Sanitary Sewer

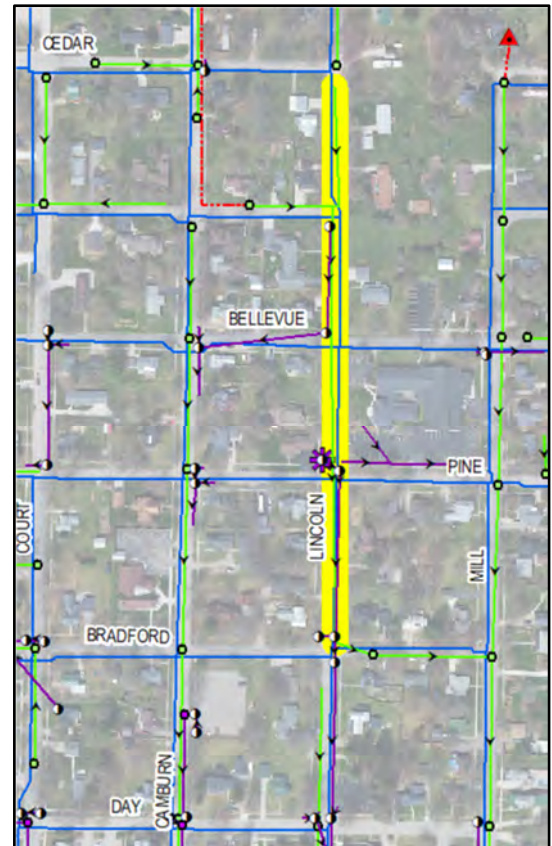
Project No: 202203

Project Description: Install manholes and televise to check condition of sanitary sewer on Lincoln Street from Bradford Street to Cedar Street. If in poor condition, replace existing 8-inch diameter pipe with 8-inch diameter PVC pipe. Reconstruct entire road from Bradford Street to Cedar Street. Install a sanitary manhole at Pine Street and Court Street. Storm sewer spot repair north of Pine Street.

Need: This sanitary sewer does not have manholes, which causes maintenance issues due to inaccessibility. The condition is also unknown as the pipe is inaccessible to a camera. The spot repair is intended to repair a storm manhole with lining coming off the wall.

Planned Year: 2022

Anticipated Project Costs: The total cost is estimated at \$610,800.



Street Fund	\$6,700
Sanitary Sewer Fund	\$604,100

100% of road reconstruction costs are allocated to the Sanitary Sewer Fund. Storm sewer reconstruction costs are allocated to the Street Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: WWTF Pond 2 Berm Repair

Project No: 202204

Project Description: Make necessary berm repairs and improve slope protection to keep the existing clay liners intact. Priority should be given to areas of rodent intrusion and visible berm failure, beginning with the east berm of Pond 2.

Need: Ponds 2 and 3 were originally constructed with clay liners, which are no longer acceptable for new construction. The east berm of Pond 2 is showing signs of sloughing (slope failure), and there are numerous signs of rodent intrusion in the pond berms. Sloughing of slopes, erosion, and holes burrowed by animals may compromise the clay liner, which may lead to permit violations. If the berms fail, installation of a costly composite liner will likely be required.



Planned Year: 2022

Anticipated Project Costs: The total cost is estimated at \$94,500.

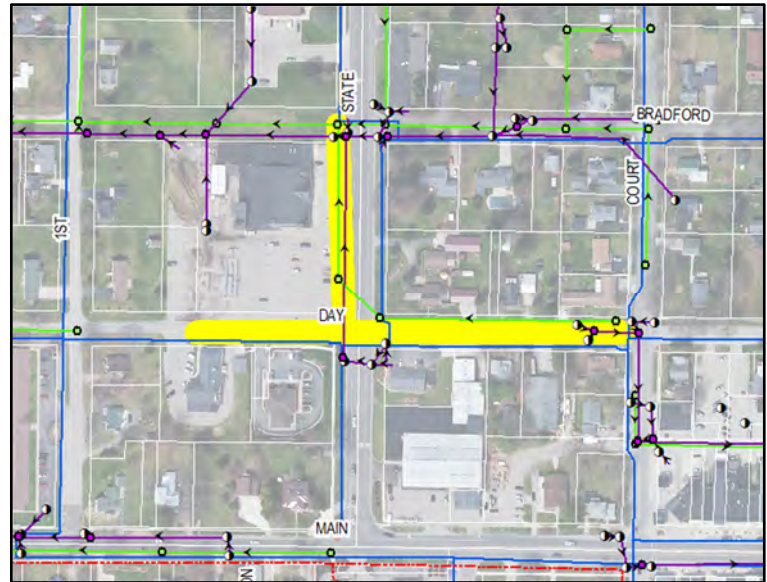
Sanitary Sewer Fund	\$94,500
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Costs account for 2% inflation and 33% Engineering & Contingencies.

Project Summary: State Street Sanitary

Project No: 202301

Project Description: Replace existing 8-inch diameter sanitary sewer on State Street from Bradford Street to Day Street. Replace sanitary main east of State Street to Court Street. Install 300 feet of 8-inch diameter sanitary sewer on Day Street west of State Street to better serve the American Legion. Reconstruct road on Day Street from State Street to Court Street and State Street to 1st Street. Reconstruct sidewalk along State Street from Day Street to Bradford Street. Estimated project costs account for replacement of possible lead water services in the construction area (State Street to Court Street).



Need: The existing clay sewer is in poor condition, and the long lateral to the American Legion has frequent backups.

Planned Year: 2023

Anticipated Project Costs: The total cost is estimated at \$445,800.

Water Fund	\$26,000
Sanitary Sewer Fund	\$419,800

100% of road reconstruction costs are allocated to the Sanitary Sewer Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: West Lift Station Improvements

Project No: 202302

Project Description: Replace the valves at West Lift Station and replace or coat the suction piping to protect against further corrosion. Upgrade the electrical and controls equipment as necessary to meet electrical code requirements. Replace the generator. Seal the meter chamber or install a sump pump to prevent prolonged submergence of the flow meter. Replace the meter. Provide support for the station slab by adding soil or flowable fill under its base.



Need: West Lift Station was constructed in 2001 and is generally in fair condition. The original valves are difficult to actuate, the suction piping is corroding, the meter chamber fills with water, the meter malfunctions, the generator battery is defective, the station slab is cracking, and there are various electrical and controls issues.

Planned Year: 2023

Anticipated Project Costs: The total cost is estimated at \$212,200.

Sanitary Sewer Fund	\$212,200
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Costs account for 2% inflation and 33% Engineering & Contingencies.

Project Summary: Bradford Extended Storm Sewer Improvements and Detention Pond

Project No: 202303

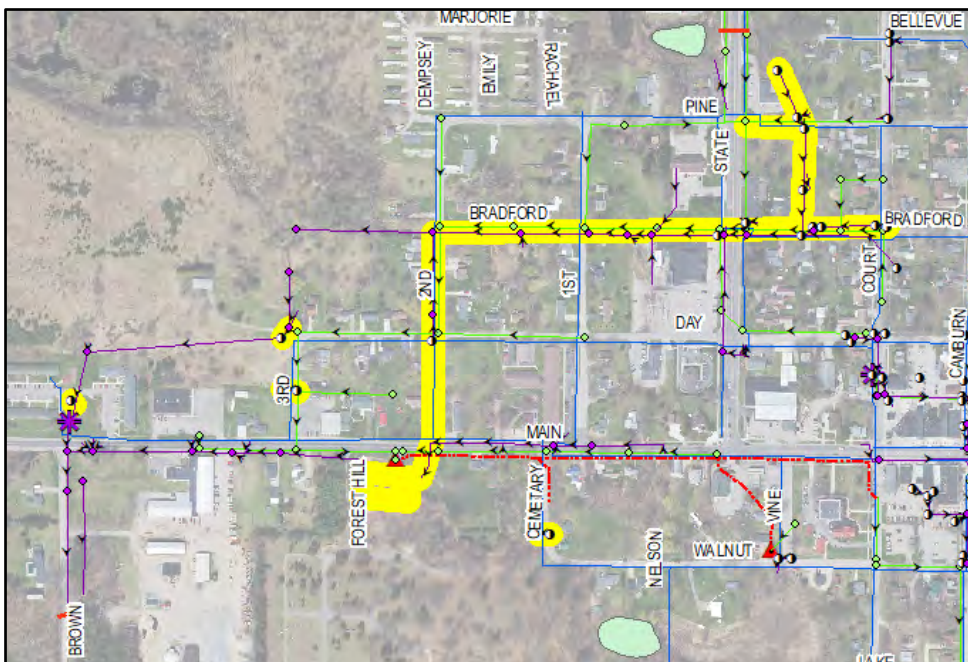
Project Description: Replace storm sewer with 12-inch diameter pipe from Pine Street to north of Pine Street, 18-inch diameter pipe in the yards from Bradford Street to Pine Street, 30-inch diameter pipe on Bradford Street from east of 1st Street to east of State Street, and 42-inch diameter pipe on Bradford Street from 2nd Street to east of 1st Street. Install new 48-inch diameter storm sewer on 2nd Street from Bradford Street to south of Main Street and increase the capacity of the detention pond southeast of Forest Hill Street and Main Street. Replace storm sewer beneath the driveway at Day Street and 3rd Street. Replace the catch basin lead in the green area at the apartments and a spot repair to the storm sewer to the south. Install new storm sewer at Pine Street and State Street to connect to the reconstructed storm pipe to the east. Replace the storm sewer under Cemetery Street north of Walnut Street. Replace watermain on 2nd Street from Bradford Street to Day Street.

Need: Flooding occurs in several areas on the west side of the City due to an under-capacity storm sewer system. New storm sewer at Pine Street and State Street is intended to alleviate flooding in this intersection. The storm pipe under Day Street has fractures, joint offsets, and surface spalling. The catch basin lead at the apartments has a wood 4x4 in the pipe restricting flow. The spot repair at the apartments is to repair a broken pipe. The storm pipe under Cemetery Street is broken and offset. The storm pipe under 3rd Street is buckling. The watermain on 2nd Street has a high break history.

Planned Year: 2023

Anticipated Project Costs: The total cost is estimated at \$1,708,000.

Street/Storm Fund	\$1,514,500
Water Fund	\$193,500



25% of road reconstruction costs are allocated to the Water Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: North Court Street Watermain

Project No: 202401

Project Description: Replace existing 1-inch diameter watermain on North Court Street south of Summit Street with 6-inch diameter pipe from Summit Street to Bellevue Street, and reconstruct North Court Street road pavement from Summit Street to Bellevue Street.

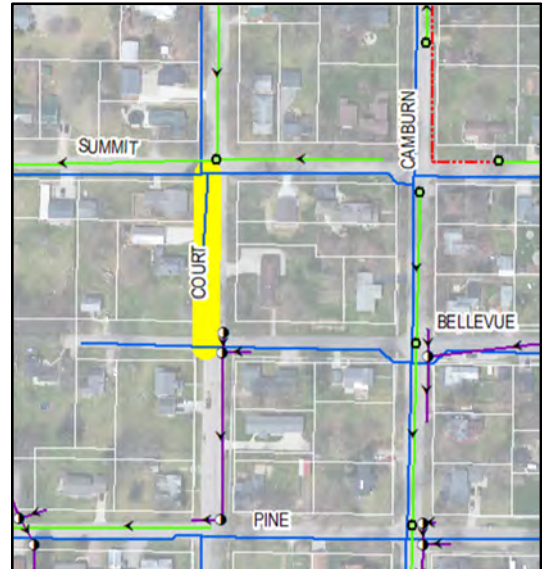
Need: This watermain is undersized and has a history of breaks. Connection of watermain pipe from Summit Street to Bellevue Street will create better water quality and increased fire flow on North Court Street.

Planned Year: 2024

Anticipated Project Costs: The total cost is estimated at \$144,900.

Water Fund	\$ 144,900
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100% of road reconstruction costs are allocated to the Water Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.



Project Summary: South Court Street Watermain

Project No: 202402

Project Description: Replace existing 1-inch diameter watermain on South Court Street from Walnut Street to Lake Street with 8-inch diameter pipe. Reconstruct road pavement on Court Street between Walnut Street and Lake Street. Estimated project costs account for replacement of possible lead water services in the construction area.

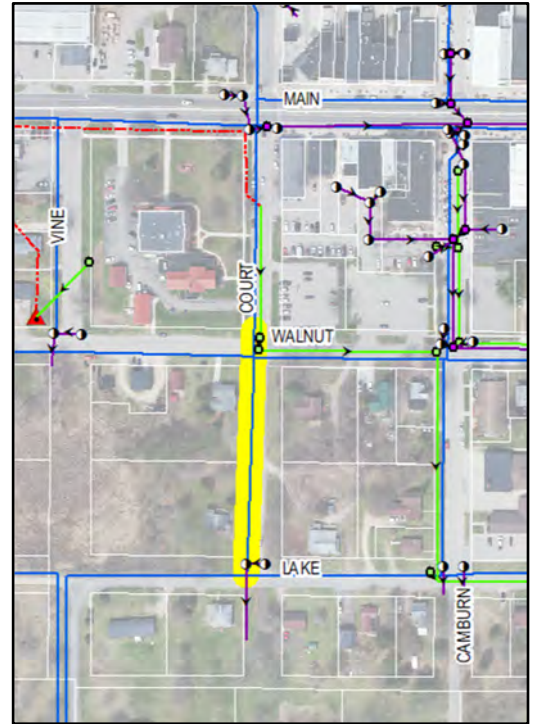
Need: This undersized watermain is affecting fire flow.

Planned Year: 2024

Anticipated Project Costs: The total cost is estimated at \$180,000.

Water Fund	\$180,000
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100% of road reconstruction costs are allocated to the Water Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.



Project Summary: Pipe Lining

Project No: 202403

Project Description: Rehabilitate 8-inch diameter sanitary sewer on North State Street at Clark Street with Cured-in-Place lining (CIPP). Five sanitary sewer lining spot repairs are planned.

After utility intrusion removal by utility company, rehabilitate storm sewer on Camburn Street from Main Street south to Walnut Street with CIPP.

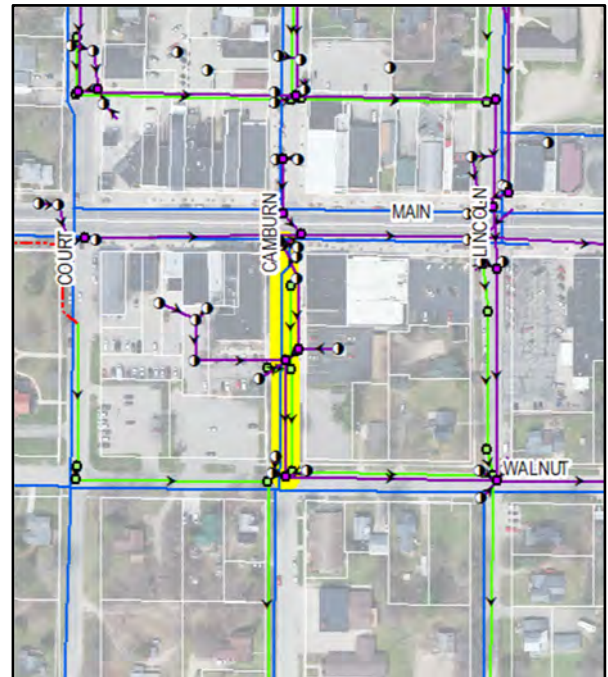
Need: Sanitary sewer on State Street has multiple cracks and holes, and storm sewer on Camburn Street has holes from utility intrusions, broken areas, and root intrusion. Spot repairs are planned for areas of broken pipe and holes where the remainder of the pipe is in good condition.

Planned Year: 2024

Anticipated Project Costs: The total cost is estimated at \$125,400.

Street/Storm Fund	\$5,900
Sanitary Sewer Fund	\$119,500

Mobilization costs have been allocated to the Sanitary Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.



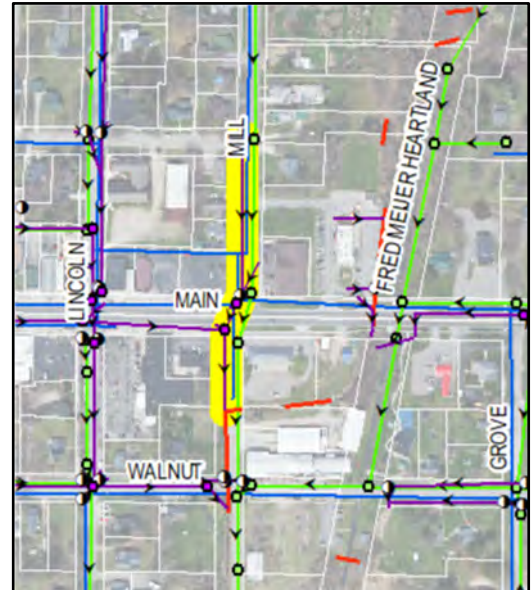
Project Summary: Mill Street Storm

Project No: 202404

Project Description: Replace 18-inch diameter storm sewer on Mill Street south of Main Street. Replace 8-inch diameter storm sewer north of Main Street (Main to Day) with 12-inch diameter pipe. Reconstruction of Mill Street pavement from Day Street to Walnut Street with the exception of Main Street. Estimated project costs account for replacement of possible lead water services in the construction area (South of Main Street).

Need: Concrete storm sewer is cracked and undersized.

Planned Year: 2024



Anticipated Project Costs: The total cost is estimated at \$316,700.

Street/Storm Fund	\$264,100
Water Fund	\$52,600

20% of road reconstruction costs have been allocated to the Water Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: WWTF Inlet Structure Improvements

Project No: 202501

Project Description: Repair the corroding areas of the structure with grout and coat a portion of the interior of the structure to prevent future corrosion. To enable future isolation and bypass as needed, install a permanent bypass connection on the influent force main to discharge directly into Aerated Pond 1.

Need: The concrete near the water surface at the bottom of the inlet structure is corroding, and there is no way to isolate and bypass the structure for maintenance.



Planned Year: 2025

Anticipated Project Costs: The total cost is estimated at \$85,600.

Sanitary Sewer Fund	\$85,600
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Costs account for 2% inflation and 33% Engineering & Contingencies.

Project Summary: Sewer Spot Repairs

Project No: 202502

Project Description: Repair structural deficiencies in pipe and structures with excavation and replacement. Locations for five storm sewer spot repairs and six sanitary sewer spot repairs have been identified.

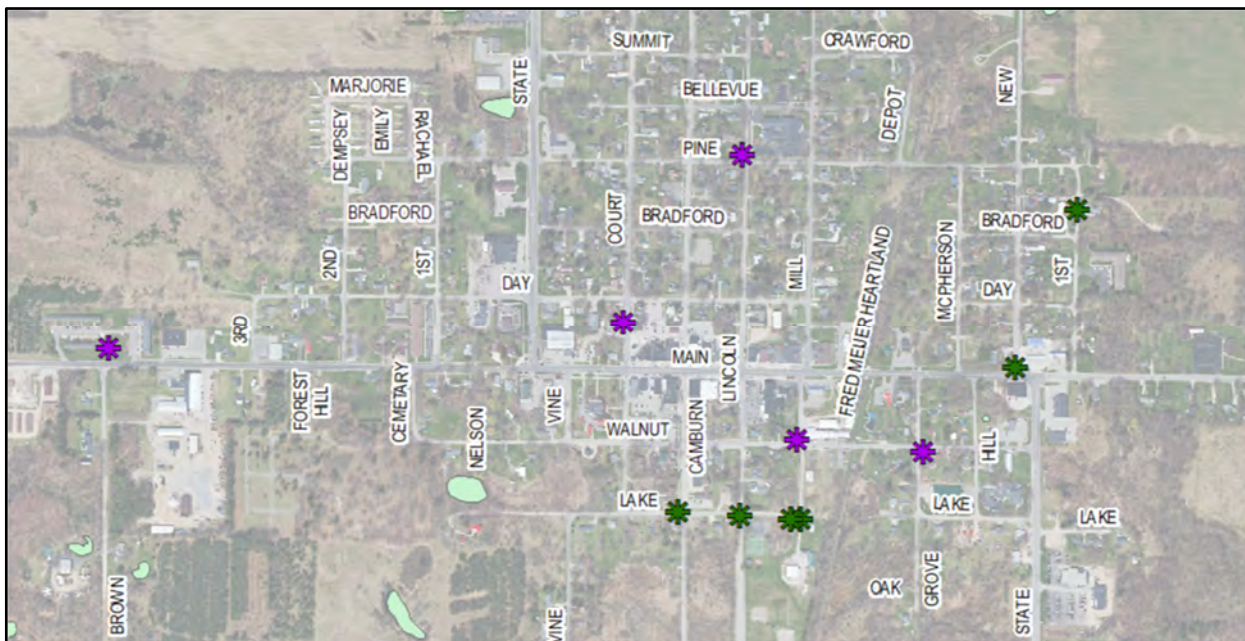
Need: Place manholes in sanitary sewer junctions to assist with maintenance. Replace manholes with structural deficiencies. Repair cracks and holes in pipe where the rest of the pipe is in good shape. Specific locations and deficiency descriptions can be found the City’s GIS system.

Planned Year: 2025

Anticipated Project Costs: The total cost is estimated at \$152,100.

Street/Storm Fund	\$28,200
Sanitary Sewer Fund	\$123,900

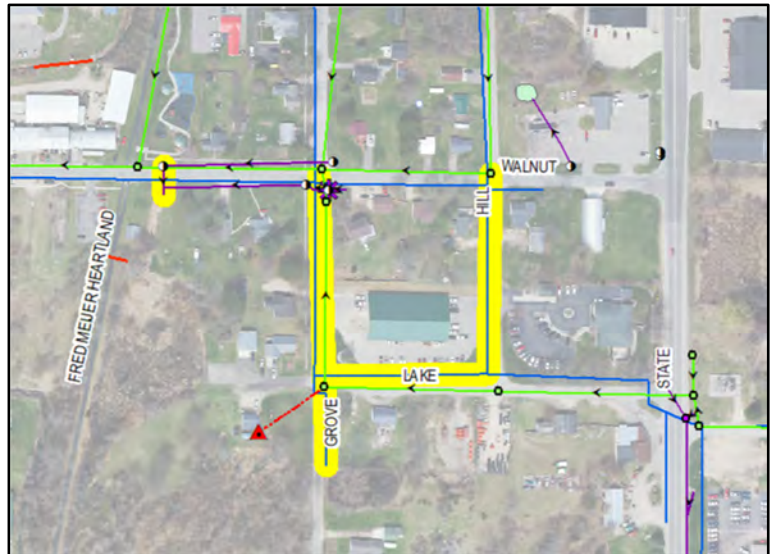
Costs account for 2% inflation and 25% Engineering & Contingencies.



Project Summary: Lake, Grove, and Hill Water Improvements

Project No: 202601

Project Description: Replace 6-inch diameter watermain pipe in Grove Street and Hill Street from Lake Street to Walnut Street, and Lake Street from Grove Street to Hill Street with 8-inch diameter pipe. Replace existing 1-inch diameter stub on South Grove Street with 6-inch diameter pipe. Replace storm pipe at Grove Street and Walnut Street and crossing Walnut Street at the east edge of the trail. Storm sewer spot repair #9. Replace pavement in project area.



Need: The watermain pipe in this project area is undersized for adequate fire flow on State Street, and there is an existing undersized water service on South Grove Street. Storm sewer under Walnut Street on the east side of the trail has a large sag with stagnant water. The proposed storm sewer spot repair is intended to fix a large storm sewer joint offset while the area is under construction.

Planned Year: 2026

Anticipated Project Costs: The total cost is estimated at \$505,100.

Street/Storm Fund	\$34,200
Water Fund	\$470,900

100% of road reconstruction costs are allocated to the Water Fund. Storm sewer replacement costs are allocated to the Street Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: WWTF Pond 2 Bypass

Project No: 202602

Project Description: Install transfer piping from the Pond 1 outlet transfer structure to the Pond 3 inlet transfer structure to facilitate isolation of Pond 2 and the transfer of wastewater directly from Pond 1 to Pond 3.

Need: There is currently no way to isolate and bypass Pond 2 using existing infrastructure. This makes routine maintenance or sludge removal from Pond 2 more difficult and compromises the operational capabilities of the WWTF.



Planned Year: 2026

Anticipated Project Costs: The total cost is estimated at \$440,000.

Sanitary Sewer Fund	\$440,000
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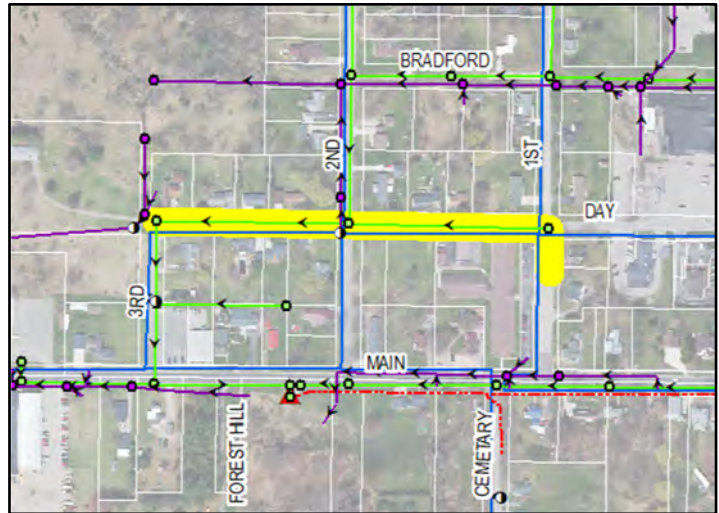
Costs account for 2% inflation and 33% Engineering & Contingencies.

Project Summary: Day Street Sanitary Sewer

Project No: 202701

Project Description: Replace existing 6-inch diameter sanitary sewer in Day Street from 1st Street to 2nd Street with 8-inch diameter pipe and 10-inch diameter sanitary sewer in Day Street from 2nd Street to 3rd Street with new 10-inch diameter pipe. Reconstruct the road pavement in the project area.

Need: The existing clay sewer has multiple sags and structural issues and has reached the end of its useful lifecycle.



Planned Year: 2027

Anticipated Project Costs: The total cost is estimated at \$442,500.

Sanitary Sewer Fund	\$442,500
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100% of road reconstruction costs are allocated to the Sanitary Sewer Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: Camburn Street Storm Sewer

Project No: 202702

Project Description: Replace existing 8-inch diameter storm sewer on Camburn Street and Bellevue Street and Camburn Street and Pine Street with 12-inch diameter pipe. Replace road pavement and sidewalk as needed.

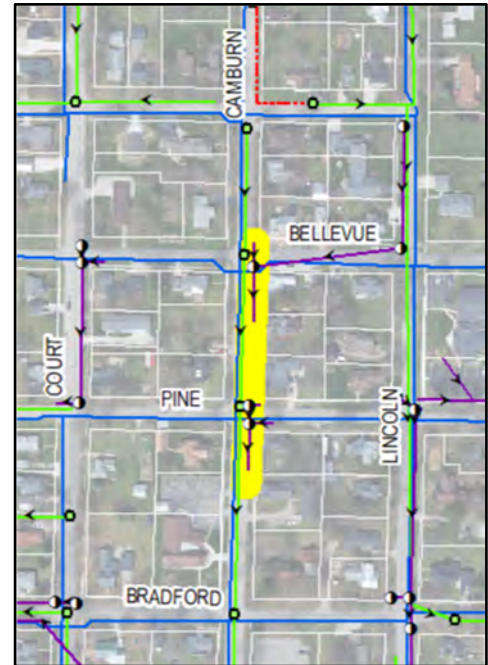
Need: The existing storm sewer has structural deficiencies (multiple fractures, broken, deformed) and is undersized.

Planned Year: 2027

Anticipated Project Costs: The total cost is estimated at \$191,200.

Street/Storm Fund	\$191,200
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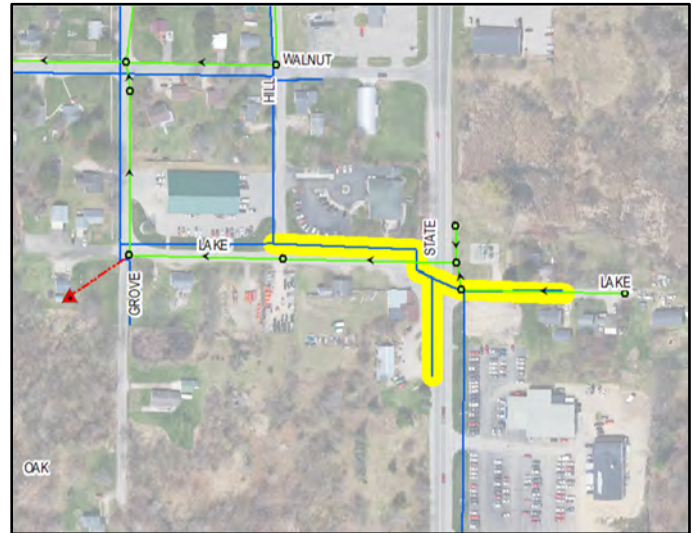
Costs account for 2% inflation and 25% Engineering & Contingencies.



Project Summary: East Lake Street Water Improvements

Project No: 202703

Project Description: Replace existing 6-inch diameter watermain on Lake Street from Hill Street to State Street and State Street south of Lake Street with 8-inch diameter pipe. Replace existing 1-inch diameter pipe on Lake Street east of State Street with 6-inch diameter pipe. Connect buildings currently connected to existing 1-inch diameter main on South State Street to 6-inch diameter main on the east side. Replace road pavement as needed in project area.



Need: The watermain pipe provides low fire flow on State Street, and the water service on Lake Street east of State Street is undersized.

Planned Year: 2027

Anticipated Project Costs: The total cost is estimated at \$334,000.

Water Fund	\$334,000
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100% of road reconstruction costs are allocated to the Water Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.

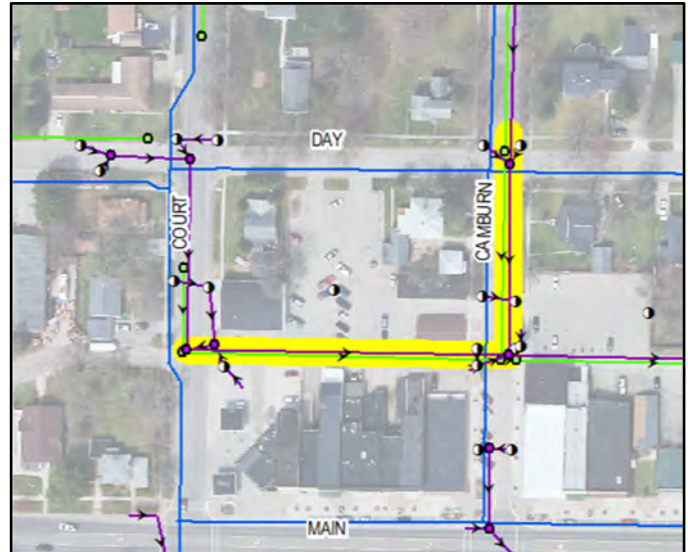
Project Summary: North Camburn Street Storm Sewer

Project No: 202801

Project Description: Replace existing 15-inch diameter storm sewer in the alley from Court Street to Camburn Street with 18-inch diameter pipe, and replace existing 12-inch diameter storm pipe in Camburn Street from the alley to Day Street with 15-inch diameter pipe. Replace pavement in project area.

Need: The storm sewer pipe is undersized in this project area.

Planned Year: 2028



Anticipated Project Costs: The total cost is estimated at \$338,900.

Street/Storm Fund	\$338,900
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Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: WWTF CMP Replacements

Project No: 202802

Project Description: Replace the original CMP piping with ductile iron pipe.

Need: Some of the transfer piping at the WWTF is corrugated metal pipe (CMP) that is more than 50 years old. As the piping approaches the end of its useful service life, its risk of failure increases.

Planned Year: 2028

Anticipated Project Costs: The total cost is estimated at \$88,500.



Sanitary Sewer Fund	\$88,500
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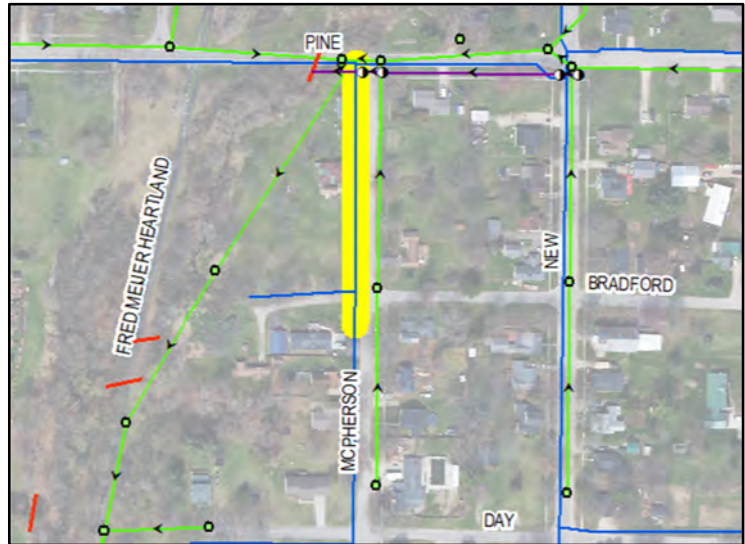
Costs account for 2% inflation and 33% Engineering & Contingencies.

Project Summary: McPherson Street Water Improvements

Project No: 202901

Project Description: Replace existing 6-inch diameter water pipe on McPherson Street from Bradford Street to Pine Street with 6-inch diameter pipe. Replace entire road in project area. Estimated project costs account for replacement of possible lead water services in the construction area.

Need: This watermain pipe has a history of breaks.



Planned Year: 2029

Anticipated Project Costs: The total cost is estimated at \$179,500.

Water Fund	\$179,500
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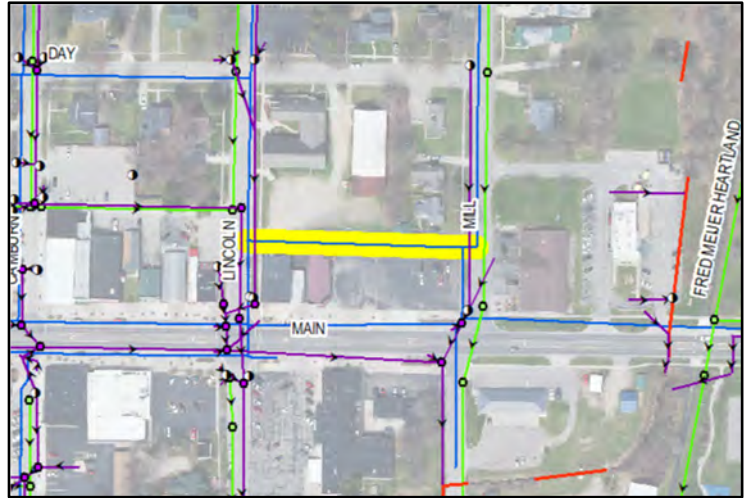
100% of road reconstruction costs are allocated to the Water Fund. Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: Alley Water Improvements

Project No: 202902

Project Description: Replace existing 4-inch diameter watermain in the alley between Lincoln Street and Mill Street, north of Main Street, with 8-inch diameter pipe. Replace pavement as needed in alley. Estimated project costs account for replacement of possible lead water services in the construction area.

Need: The 4-inch watermain pipe is undersized for adequate fire flow.



Planned Year: 2029

Anticipated Project Costs: The total cost is estimated at \$130,600.

Water Fund	\$130,600
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100% of road reconstruction costs have been allocated to the Water Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

Project Summary: North State Street Water Improvements

Project No: 202903

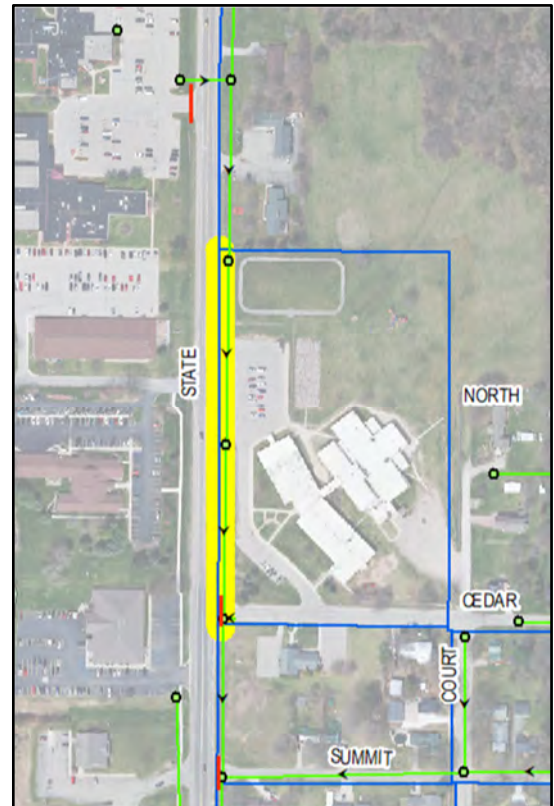
Project Description: Replace existing 6-inch diameter watermain on North State Street, north of Cedar Street with 8-inch diameter pipe. Current cost estimate assumes no road pavement is disturbed during construction. Estimated project costs account for replacement of possible lead water services in the construction area.

Need: This watermain pipe is undersized for adequate fire flow.

Planned Year: 2029

Anticipated Project Costs: The total cost is estimated at \$170,900.

Water Fund	\$170,900
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100% of surface reconstruction costs have been allocated to the Water Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

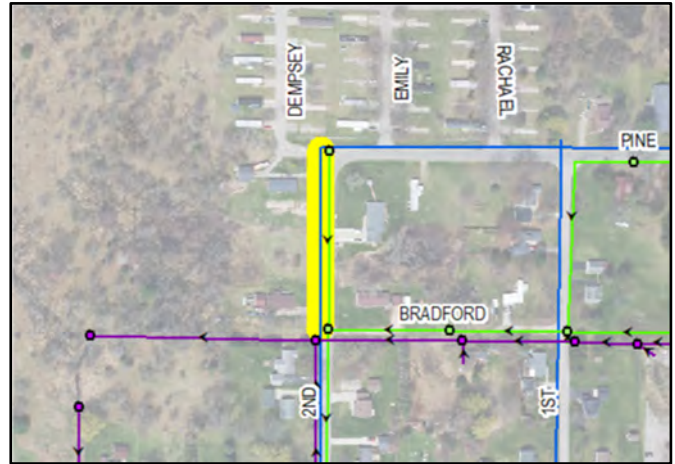
Project Summary: 2nd Street Water Improvements

Project No: 202904

Project Description: Replace existing 6-inch diameter watermain pipe on 2nd Street from Day Street to Pine Street with 6-inch diameter pipe. Replace road surface in project area.

Need: This water pipe has a high break history.

Planned Year: 2029



Anticipated Project Costs: The total cost is estimated at \$205,200.

Water Fund	\$205,200
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100% of road reconstruction costs have been allocated to the Water Fund.

Costs account for 2% inflation and 25% Engineering & Contingencies.

Part Two: Financial Strategy

Implementation Timeline

Non-Pipe Assets

Sewer Forecast

Water Forecast

Implementation Timeline - City of Stanton CIP

Planned FY ⁽¹⁾	Project No.	Project Title	Total Est. City Cost ⁽²⁾	Street Fund	Water Fund	Sanitary Fund	Storm Fund	% Road Cost from	
								Water Fund	Sanitary Fund
2020	202001	E Main St Water Service Connection	\$87,200	\$0	\$87,125	\$0	\$0	100%	0%
2020	202002	Pine St Culvert	\$119,700	\$46,241	\$0	\$0	\$73,399	0%	0%
2020	Annual	Catch Basin Cleaning Non-Participating	\$2,000	\$0	\$0	\$0	\$1,928	0%	0%
2020 Participating			\$206,900	\$46,241	\$87,125	\$0	\$73,399		
2020 Non-Participating			\$2,000	\$0	\$0	\$0	\$1,928		
2020 Total			\$208,700	\$46,241	\$87,125	\$0	\$75,327		
2021	202101	Vine Water Main and Force Main	\$330,300	\$0	\$197,357	\$132,911	\$0	100%	0%
2021	202102	Lincoln St Storm + Sanitary + Water	\$519,700	\$0	\$95,117	\$320,384	\$104,170	20%	80%
2021	202103	Camburn LS Improvements	\$129,100	\$0	\$0	\$129,010	\$0	0%	100%
2021	Annual	Lead & Copper Rule Participating	\$16,900	\$0	\$16,831	\$0	\$0	100%	0%
2021	Annual	Lead & Copper Rule Non-Participating	\$8,400	\$0	\$8,399	\$0	\$0	100%	0%
2021	Annual	Septic Tank Cleaning Non-Participating	\$5,500	\$0	\$0	\$5,410	\$0	0%	100%
2021	Annual	Catch Basin Cleaning Non-Participating	\$2,000	\$0	\$0	\$0	\$1,966	0%	0%
2021 Participating			\$996,000	\$0	\$309,305	\$582,304	\$104,170		
2021 Non-Participating			\$15,900	\$0	\$8,399	\$5,410	\$1,966		
2021 Total			\$1,011,600	\$0	\$317,703	\$587,714	\$106,136		
2022	202201	W Main St Water Main	\$181,100	\$0	\$169,922	\$11,143	\$0	100%	0%
2022	202202	Pine Storm Improvements	\$178,200	\$29,375	\$29,665	\$6,633	\$112,432	20%	0%
2022	202203	Lincoln St Sanitary Sewer	\$610,800	\$0	\$0	\$604,102	\$6,633	0%	100%
2022	202204	Pond 2 Berm Repair	\$94,500	\$0	\$0	\$94,448	\$0	0%	100%
2022	Annual	Septic Tank Cleaning	\$5,000	\$0	\$0	\$4,988	\$0	0%	100%
2022	Annual	Lead & Copper Rule Participating	\$15,100	\$0	\$15,067	\$0	\$0	100%	0%
2022	Annual	Lead & Copper Rule Non-Participating	\$7,500	\$0	\$7,484	\$0	\$0	100%	0%
2022	Annual	Catch Basin Cleaning Non-Participating	\$2,500	\$0	\$0	\$0	\$2,483	0%	0%
2022 Participating			\$1,084,700	\$29,375	\$214,653	\$721,312	\$119,065		
2022 Non-Participating			\$10,000	\$0	\$7,484	\$0	\$2,483		
2022 Total			\$1,094,400	\$29,375	\$222,138	\$721,312	\$121,548		
2023	202301	State Sanitary	\$445,800	\$0	\$25,978	\$419,811	\$0	0%	100%
2023	202302	West LS Improvements	\$212,200	\$0	\$0	\$212,157	\$0	0%	100%
2023	202303	Bradford extended Storm + Detention Pond w/ Water Main	\$1,708,000	\$0	\$193,531	\$0	\$1,514,448	25%	0%
2023	Annual	Lead & Copper Rule Participating	\$11,100	\$0	\$11,016	\$0	\$0	100%	0%
2023	Annual	Lead & Copper Rule Non-Participating	\$5,500	\$0	\$5,491	\$0	\$0	100%	0%
2023	Annual	Septic Tank Cleaning Non-Participating	\$5,600	\$0	\$0	\$5,520	\$0	0%	100%
2023	Annual	Catch Basin Cleaning Non-Participating	\$2,100	\$0	\$0	\$0	\$2,046	0%	0%
2023 Participating			\$2,377,100	\$0	\$230,526	\$631,967	\$1,514,448		
2023 Non-Participating			\$13,200	\$0	\$5,491	\$5,520	\$2,046		
2023 Total			\$2,390,000	\$0	\$236,017	\$637,488	\$1,516,494		

Implementation Timeline - City of Stanton CIP

Planned FY ⁽¹⁾	Project No.	Project Title	Total Est. City Cost ⁽²⁾	Street Fund	Water Fund	Sanitary Fund	Storm Fund	% Road Cost from	
								Water Fund	Sanitary Fund
2024	202401	N Court Water Main	\$144,900	\$0	\$144,894	\$0	\$0	100%	0%
2024	202402	S Court St Water Main	\$180,000	\$0	\$179,957	\$0	\$0	100%	0%
2024	202403	Lining - N State San & S Camburn Stm	\$125,400	\$0	\$0	\$119,531	\$5,865	0%	100%
2024	202404	Mill St Storm	\$316,700	\$63,567	\$52,514	\$0	\$200,543	20%	0%
2024	Annual	Lead & Copper Rule Participating	\$13,500	\$0	\$13,456	\$0	\$0	100%	0%
2024	Annual	Lead & Copper Rule Non-Participating	\$6,700	\$0	\$6,693	\$0	\$0	100%	0%
2024	Annual	Sanitary Sewer Cleaning/Tving Non-Participating	\$19,100	\$0	\$0	\$19,061	\$0	0%	100%
2024	Annual	Storm Sewer Cleaning/Tving Non-Participating	\$5,600	\$0	\$0	\$0	\$5,554	0%	0%
2024 Participating			\$780,500	\$63,567	\$390,821	\$119,531	\$206,408		
2024 Non-Participating			\$31,400	\$0	\$6,693	\$19,061	\$5,554		
2024 Total			\$1,421,200	\$461,081	\$397,514	\$350,553	\$211,966		
2025	202501	Inlet Structure Improvements	\$85,600	\$0	\$0	\$85,588	\$0	0%	100%
2025	202502	Sanitary Spot Repairs	\$123,900	\$0	\$0	\$123,878	\$0	0%	100%
2025	202502	Storm Spot Repairs	\$28,200	\$0	\$0	\$0	\$28,154	0%	100%
2025	Annual	Lead & Copper Rule Participating	\$25,000	\$0	\$24,975	\$0	\$0	100%	0%
2025	Annual	Lead & Copper Rule Non-Participating	\$12,500	\$0	\$12,469	\$0	\$0	100%	0%
2025	Annual	Sanitary Sewer Cleaning/Tving Non-Participating	\$19,500	\$0	\$0	\$19,447	\$0	0%	100%
2025	Annual	Storm Sewer Cleaning/Tving Non-Participating	\$5,700	\$0	\$0	\$0	\$5,665	0%	0%
2025 Participating			\$262,700	\$0	\$24,975	\$209,466	\$28,154		
2025 Non-Participating			\$37,700	\$0	\$12,469	\$19,447	\$5,665		
2025 Total			\$300,200	\$0	\$37,445	\$228,913	\$33,819		
2026	202601	Lake, Grove, and Hill Water Improvements	\$505,100	\$0	\$470,858	\$0	\$34,173	100%	0%
2026	202602	Pond 2 Bypass Pipe	\$440,000	\$0	\$0	\$439,947	\$0	0%	100%
2026	Annual	Lead & Copper Rule Participating	\$25,500	\$0	\$25,475	\$0	\$0	100%	0%
2026	Annual	Lead & Copper Rule Non-Participating	\$12,800	\$0	\$12,719	\$0	\$0	100%	0%
2026	Annual	Sanitary Sewer Cleaning/Tving Non-Participating	\$26,500	\$0	\$0	\$26,475	\$0	0%	100%
2026	Annual	Storm Sewer Cleaning/Tving Non-Participating	\$5,800	\$0	\$0	\$0	\$5,778	0%	0%
2026 Participating			\$970,600	\$0	\$496,333	\$439,947	\$34,173		
2026 Non-Participating			\$45,100	\$0	\$12,719	\$26,475	\$5,778		
2026 Total			\$1,015,500	\$0	\$509,052	\$466,422	\$39,951		
2027	202701	Day St Sanitary	\$442,500	\$0	\$0	\$442,479	\$0	0%	100%
2027	202702	Camburn Storm	\$191,200	\$66,567	\$0	\$0	\$124,564	0%	0%
2027	202703	E Lake Water Improvements	\$334,000	\$0	\$333,912	\$0	\$0	100%	0%
2027	Annual	Lead & Copper Rule Participating	\$26,000	\$0	\$25,984	\$0	\$0	100%	0%
2027	Annual	Lead & Copper Rule Non-Participating	\$13,000	\$0	\$12,973	\$0	\$0	100%	0%
2027	Annual	Sanitary Sewer Cleaning/Tving Non-Participating	\$26,300	\$0	\$0	\$26,259	\$0	0%	100%
2027	Annual	Storm Sewer Cleaning/Tving Non-Participating	\$5,900	\$0	\$0	\$0	\$5,893	0%	0%
2027 Participating			\$993,700	\$66,567	\$359,896	\$442,479	\$124,564		
2027 Non-Participating			\$45,200	\$0	\$12,973	\$26,259	\$5,893		
2027 Total			\$1,038,700	\$66,567	\$372,870	\$468,739	\$130,458		

Implementation Timeline - City of Stanton CIP

Planned FY ⁽¹⁾	Project No.	Project Title	Total Est. City Cost ⁽²⁾	Street Fund	Water Fund	Sanitary Fund	Storm Fund	% Road Cost from	
								Water Fund	Sanitary Fund
2028	202801	N Camburn Storm	\$338,900	\$103,874	\$0	\$0	\$234,961	0%	0%
2028	202802	CMP Replacements	\$88,500	\$0	\$0	\$88,437	\$0	0%	100%
2028	Annual	Lead & Copper Rule Participating	\$26,600	\$0	\$26,504	\$0	\$0	100%	0%
2028	Annual	Lead & Copper Rule Non-Participating	\$13,300	\$0	\$13,233	\$0	\$0	100%	0%
2028	Annual	Sanitary Sewer Cleaning/Tving Non-Participating	\$26,500	\$0	\$0	\$26,488	\$0	0%	100%
2028	Annual	Storm Sewer Cleaning/Tving Non-Participating	\$6,100	\$0	\$0	\$0	\$6,011	0%	0%
2028 Participating			\$454,000	\$103,874	\$26,504	\$88,437	\$234,961		
2028 Non-Participating			\$45,900	\$0	\$13,233	\$26,488	\$6,011		
2028 Total			\$499,600	\$103,874	\$39,737	\$114,925	\$240,972		
2029	202901	McPherson Water	\$179,500	\$0	\$179,437	\$0	\$0	100%	0%
2029	202902	Alley Water	\$130,600	\$0	\$130,572	\$0	\$0	100%	0%
2029	202903	N State Water	\$170,900	\$0	\$170,837	\$0	\$0	100%	0%
2029	202904	2nd St Water - Bradford to Pine	\$205,200	\$0	\$205,140	\$0	\$0	100%	0%
2029	Annual	Sanitary Sewer Cleaning/Tving Non-Participating	\$21,600	\$0	\$0	\$21,518	\$0	0%	100%
2029	Annual	Storm Sewer Cleaning/Tving Non-Participating	\$6,200	\$0	\$0	\$0	\$6,132	0%	0%
2029 Participating			\$686,200	\$0	\$685,986	\$0	\$0		
2029 Non-Participating			\$27,800	\$0	\$0	\$21,518	\$6,132		
2029 Total			\$713,700	\$0	\$685,986	\$21,518	\$6,132		
10-Year Total			\$9,693,200	\$707,139	\$2,905,586	\$3,597,583	\$2,482,803		

Notes:

⁽¹⁾ Unplanned repairs may necessitate adjustments in priority.

⁽²⁾ Total estimated cost is rounded up to the nearest \$100.

Non-Pipe Assets

Asset	Purchase Price	Percent Allocated to Wastewater Fund	Actual Cost to Wastewater Fund	Percent Allocated to Water Fund	Actual Cost to Water Fund	Replacement Date
Front Plow 9'2'	\$7,500.00	5%	\$375.00	5%	\$375.00	2020
Sewer Jetter	\$10,000.00	90%	\$9,000.00	0%	-	2020
International (orange)	\$80,000.00	20%	\$16,000.00	20%	\$16,000.00	2022
JB Backhoe	\$39,950.00	35%	\$13,982.50	35%	\$13,982.50	2022
Patch Trailer	\$25,000.00	25%	\$6,250.00	25%	\$6,250.00	2022
Well #2-Overhaul Pump	\$15,000.00	0%	-	100%	\$15,000.00	2022
Well #2-Well Cleaned	\$15,000.00	0%	-	100%	\$15,000.00	2022
Well #2-Overhaul Motor	\$5,000.00	0%	-	100%	\$5,000.00	2022
Well House #2-Roof	\$5,000.00	0%	-	100%	\$5,000.00	2022
GMC Truck	\$23,558.00	10%	\$2,355.80	10%	\$2,355.80	2023
Power Broom	\$2,500.00	5%	\$125.00	5%	\$125.00	2023
John Deere Tractor 1070	\$19,405.00	10%	\$1,940.50	10%	\$1,940.50	2023
Utility Locator (Ridgid)	\$4,654.00	100%	\$4,654.00	0%	-	2023
Well #3-Overhaul Motor	\$5,000.00	0%	-	100%	\$5,000.00	2023
Well House #2-Structure and Equipment	\$70,000.00	0%	-	100%	\$70,000.00	2024
Well House #2-Electrical	\$7,500.00	0%	-	100%	\$7,500.00	2024
Well House #2-Piping	\$5,000.00	0%	-	100%	\$5,000.00	2024
Chevy 1/2 ton Truck	\$25,000.00	10%	\$2,500.00	10%	\$2,500.00	2025
Hustler 60"	\$11,365.00	40%	\$4,546.00	5%	\$568.25	2025
Gravelly	\$10,000.00	40%	\$4,000.00	5%	\$500.00	2025
Cub Cadet (72")	\$8,200.00	40%	\$3,280.00	5%	\$410.00	2025
Water Tower-Exterior Coating	\$22,000.00	0%	-	100%	\$22,000.00	2025
Well House #2-Roof	\$5,000.00	0%	-	100%	\$5,000.00	2025
Well House #2-Electrical	\$7,500.00	0%	-	100%	\$7,500.00	2025
Skag Mower 61"	\$10,000.00	40%	\$4,000.00	5%	\$500.00	2027
Water Tower-Stand By Generator	\$15,000.00	0%	-	100%	\$15,000.00	2027
Water Tower-Stand By Generator Fuel Tank	\$3,000.00	0%	-	100%	\$3,000.00	2027
Well #3-Overhaul Pump	\$15,041.00	0%	-	100%	\$15,041.00	2027
Well #3-Well Cleaned	\$14,280.00	0%	-	100%	\$14,280.00	2027
Handheld GPS Unit	\$10,000.00	40%	\$4,000.00	0%	-	2028
Well House #2-Structure and Equipment	\$70,000.00	0%	-	100%	\$70,000.00	2032
Well House #2-Piping	\$5,000.00	0%	-	100%	\$5,000.00	2032
Water Tower-Interior Coating	\$80,000.00	0%	-	100%	\$80,000.00	2035
Well #2-Casing and Screen	\$60,000.00	0%	-	100%	\$60,000.00	2040
Well #3-Casing and Screen	\$60,000.00	0%	-	100%	\$60,000.00	2057
Water Tower-Tank Structure	\$800,000.00	0%	-	100%	\$800,000.00	2081

Non-Pipe Asset 10-year Totals

	Wastewater Fund	Water Fund
2020	\$9,375.00	\$375.00
2021	\$0.00	\$0.00
2022	\$36,232.50	\$76,232.50
2023	\$9,075.30	\$9,421.30
2024	\$0.00	\$82,500.00
2025	\$14,326.00	\$38,478.25
2026	\$0.00	\$0.00
2027	\$4,000.00	\$47,821.00
2028	\$4,000.00	\$0.00
2029	\$0.00	\$0.00

CITY OF STANTON (MICHIGAN) SEWER FUND

COMPARATIVE STATEMENT OF NET POSITION

	As of			
	<u>6/30/2015</u>	<u>6/30/2016</u>	<u>6/30/2017</u>	<u>6/30/2018</u>
Assets	(----- Per Audit -----)			
Current assets:				
Cash and cash equivalents	\$179,308	\$167,137	\$205,256	\$133,638
Accounts receivable, net	30,083	27,562	25,119	30,043
Due from other governments	13,016	13,016	-	118,560
Total current assets	<u>222,407</u>	<u>207,715</u>	<u>230,375</u>	<u>282,241</u>
Noncurrent assets:				
Restricted cash and equivalents	32,062	48,107	-	-
USDA bond reserve	-	-	22,000	27,500
USDA RRI bond reserve	-	-	42,185	52,832
Capital assets, net of depreciation	3,168,103	3,068,095	2,968,087	2,869,849
Capital assets not being depreciated	4,765	4,765	4,765	4,765
Total noncurrent assets	<u>3,204,930</u>	<u>3,120,967</u>	<u>3,037,037</u>	<u>2,954,946</u>
Total Assets	<u>\$3,427,337</u>	<u>\$3,328,682</u>	<u>\$3,267,412</u>	<u>\$3,237,187</u>
Liabilities				
Current liabilities:				
Accounts payable	\$3,117	\$8,641	\$3,341	\$420
Accrued expense	297	587	690	677
Accrued interest payable	2,933	2,890	2,844	2,796
Current portion of long-term debt	19,000	20,000	21,000	21,000
Total current liabilities	<u>25,347</u>	<u>32,118</u>	<u>27,875</u>	<u>24,893</u>
Noncurrent liabilities:				
Long-term debt	<u>1,261,000</u>	<u>1,241,000</u>	<u>1,220,000</u>	<u>1,199,000</u>
Total Liabilities	<u>1,286,347</u>	<u>1,273,118</u>	<u>1,247,875</u>	<u>1,223,893</u>
Net Position				
Net investment in capital assets	1,892,868	1,811,860	1,731,852	1,654,614
Restricted for debt service	32,062	48,107	64,185	80,332
Unrestricted	<u>216,060</u>	<u>195,597</u>	<u>223,500</u>	<u>278,348</u>
Total Net Position	<u>2,140,990</u>	<u>2,055,564</u>	<u>2,019,537</u>	<u>2,013,294</u>
Total Liabilities and Net Position	<u>\$3,427,337</u>	<u>\$3,328,682</u>	<u>\$3,267,412</u>	<u>\$3,237,187</u>

* Draft 11/21/2019

CITY OF STANTON (MICHIGAN) SEWER FUND

COMPARATIVE STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Fiscal Year Ended			
	6/30/2015	6/30/2016	6/30/2017	6/30/2018
	(----- Per Audit -----)			
Operating Revenues				
Charges for services	\$221,479	\$228,191	\$225,403	\$235,793
Penalties	3,620	4,165	4,066	4,096
Other revenues	148	2,665	25	-
State grants	-	-	-	351,085
Total operating revenue	225,247	235,021	229,494	590,974
Operating Expenses				
Personal services	13,012	22,637	22,981	22,732
Supplies	1,664	3,715	1,750	1,425
Contracted services	21,384	23,211	26,100	365,874
Administrative expense	28,203	25,000	24,996	25,000
Other	94,755	111,469	56,327	49,534
Operating expenses before depreciation	159,018	186,032	132,154	464,565
Depreciation	93,065	100,008	100,008	100,362
Total operating expense	252,083	286,040	232,162	564,927
Net operating income (loss)	(26,836)	(51,019)	(2,668)	26,047
Non-Operating Revenue (Expenses)				
SAW grants	-	-	136,756	-
SAW grant expenses	-	-	(136,756)	-
State grant	13,016	-	-	-
Interest income	775	750	1,273	1,790
Interest expense	(34,637)	(35,157)	(34,632)	(34,080)
Total non-operating revenues (expenses)	(20,846)	(34,407)	(33,359)	(32,290)
Change in Net Position	(47,682)	(85,426)	(36,027)	(6,243)
Net Position - Beginning of year	2,188,672	2,140,990	2,055,564	2,019,537
Net Position - End of year	\$2,140,990	\$2,055,564	\$2,019,537	\$2,013,294

CITY OF STANTON (MICHIGAN) SEWER FUND

COMPARATIVE DETAIL OF OPERATING EXPENSES

	Fiscal Year Ended				Test Year	Multiplier
	6/30/2017	6/30/2018	6/30/2019	6/30/2020		
	-----Per Client-----					
Operating Expenditures						
Dept 536 - Sewer Expenditures						
590-536-702.441 Director Of Public Works	\$12,420	\$11,538	\$12,000	\$13,000	\$13,000	2.00%
590-536-702.442 Full Time	13,199	8,945	11,110	11,000	11,000	2.00%
590-536-702.443 Full-time	-	-	11,110	11,000	11,000	2.00%
590-536-702.500 Over Time Hours	-	13	1,000	2,000	2,000	0.00%
590-536-715.000 FITW/FICA	1,886	2,236	2,250	3,000	3,000	1.00%
590-536-726.000 Materials And Supplies	442	228	9,000	5,000	5,000	1.00%
590-536-727.000 Postage	1,370	1,197	1,200	2,200	2,200	1.00%
590-536-728.000 Conference And Training	300	310	2,700	2,500	2,500	1.00%
590-536-732.000 Administration Expense	-	25,000	25,000	35,000	35,000	1.00%
590-536-775.000 Repair, Maintenance	24,996	6,120	12,000	15,000	15,000	1.00%
590-536-801.000 Professional Services	15,621	360,974	10,000	12,000	12,000	2.00%
590-536-802.000 Membership Dues	-	-	100	-	-	1.00%
590-536-803.000 Pumping	10,784	210	14,500	14,000	14,000	1.00%
590-536-804.000 Sampling	2,002	4,690	8,000	10,000	10,000	1.00%
590-536-900.000 Printing And Publishing	1,238	256	400	500	500	1.00%
590-536-920.000 Utilities	11,192	35,859	39,000	40,000	40,000	1.00%
590-536-940.000 Equipment Rental	5,358	6,051	6,000	6,000	6,000	1.00%
590-536-956.000 Miscellaneous	5,175	938	5,080	2,500	2,500	1.00%
590-536-968.000 Depreciation Expense	-	-	-	- [1]	-	0.00%
590-536-981.000 Capital Outlay	-	-	-	- [2]	-	0.00%
590-536-991.000 Principal	-	-	-	- [3]	-	0.00%
590-536-992.000 Bond Reserve	19,600	-	15,900	15,900	5,500	0.00%
590-536-995.000 Interest Payment	-	-	-	- [3]	-	0.00%
Total Sewer Operating Expenditures	<u>\$125,583</u>	<u>\$464,565</u>	<u>\$186,350</u>	<u>\$200,600</u>	<u>\$190,200</u>	

[1] Depreciation is removed from this report as this study is performed on the cash basis

[2] Capital outlay is removed from this section of the report. This item is discussed later in the report.

[3] Principal and interest on debt are removed from this section of the report. These items are discussed later in the report.

CITY OF STANTON (MICHIGAN) SEWER FUND

**SCHEDULE OF AMORTIZATION OF \$1,199,000 PRINCIPAL AMOUNT OUTSTANDING
OF USDA BONDS, SERIES 2013**

Payment Date	Principal Balance (In Dollars)	Interest Rate (%)	Debt Service			Fiscal Year Total
			Principal	Interest	Total	
-----In Dollars-----						
12/01/19	\$1,199,000			\$16,486.25	\$16,486.25	
06/01/20	1,199,000	2.750	\$22,000	16,486.25	38,486.25	\$54,972.50
12/01/20	1,177,000			16,183.75	16,183.75	
06/01/21	1,177,000	2.750	22,000	16,183.75	38,183.75	54,367.50
12/01/21	1,155,000			15,881.25	15,881.25	
06/01/22	1,155,000	2.750	23,000	15,881.25	38,881.25	54,762.50
12/01/22	1,132,000			15,565.00	15,565.00	
06/01/23	1,132,000	2.750	24,000	15,565.00	39,565.00	55,130.00
12/01/23	1,108,000			15,235.00	15,235.00	
06/01/24	1,108,000	2.750	24,000	15,235.00	39,235.00	54,470.00
12/01/24	1,084,000			14,905.00	14,905.00	
06/01/25	1,084,000	2.750	25,000	14,905.00	39,905.00	54,810.00
12/01/25	1,059,000			14,561.25	14,561.25	
06/01/26	1,059,000	2.750	26,000	14,561.25	40,561.25	55,122.50
12/01/26	1,033,000			14,203.75	14,203.75	
06/01/27	1,033,000	2.750	26,000	14,203.75	40,203.75	54,407.50
12/01/27	1,007,000			13,846.25	13,846.25	
06/01/28	1,007,000	2.750	27,000	13,846.25	40,846.25	54,692.50
12/01/28	980,000			13,475.00	13,475.00	
06/01/29	980,000	2.750	28,000	13,475.00	41,475.00	54,950.00
12/01/29	952,000			13,090.00	13,090.00	
06/01/30	952,000	2.750	29,000	13,090.00	42,090.00	55,180.00
12/01/30	923,000			12,691.25	12,691.25	
06/01/31	923,000	2.750	29,000	12,691.25	41,691.25	54,382.50
12/01/31	894,000			12,292.50	12,292.50	
06/01/32	894,000	2.750	30,000	12,292.50	42,292.50	54,585.00
12/01/32	864,000			11,880.00	11,880.00	
06/01/33	864,000	2.750	31,000	11,880.00	42,880.00	54,760.00
12/01/33	833,000			11,453.75	11,453.75	
06/01/34	833,000	2.750	32,000	11,453.75	43,453.75	54,907.50
12/01/34	801,000			11,013.75	11,013.75	
06/01/35	801,000	2.750	33,000	11,013.75	44,013.75	55,027.50
12/01/35	768,000			10,560.00	10,560.00	
06/01/36	768,000	2.750	34,000	10,560.00	44,560.00	55,120.00
12/01/36	734,000			10,092.50	10,092.50	
06/01/37	734,000	2.750	35,000	10,092.50	45,092.50	55,185.00
12/01/37	699,000			9,611.25	9,611.25	
06/01/38	699,000	2.750	35,000	9,611.25	44,611.25	54,222.50
12/01/38	664,000			9,130.00	9,130.00	
06/01/39	664,000	2.750	36,000	9,130.00	45,130.00	54,260.00
12/01/39	628,000			8,635.00	8,635.00	
06/01/40	628,000	2.750	37,000	8,635.00	45,635.00	54,270.00
12/01/40	591,000			8,126.25	8,126.25	
06/01/41	591,000	2.750	38,000	8,126.25	46,126.25	54,252.50
12/01/41	553,000			7,603.75	7,603.75	
06/01/42	553,000	2.750	40,000	7,603.75	47,603.75	55,207.50
12/01/42	513,000			7,053.75	7,053.75	
06/01/43	513,000	2.750	41,000	7,053.75	48,053.75	55,107.50
12/01/43	472,000			6,490.00	6,490.00	
06/01/44	472,000	2.750	42,000	6,490.00	48,490.00	54,980.00
12/01/44	430,000			5,912.50	5,912.50	
06/01/45	430,000	2.750	43,000	5,912.50	48,912.50	54,825.00
12/01/45	387,000			5,321.25	5,321.25	
06/01/46	387,000	2.750	44,000	5,321.25	49,321.25	54,642.50
12/01/46	343,000			4,716.25	4,716.25	
06/01/47	343,000	2.750	45,000	4,716.25	49,716.25	54,432.50
12/01/47	298,000			4,097.50	4,097.50	
06/01/48	298,000	2.750	46,000	4,097.50	50,097.50	54,195.00
12/01/48	252,000			3,465.00	3,465.00	
06/01/49	252,000	2.750	48,000	3,465.00	51,465.00	54,930.00
12/01/49	204,000			2,805.00	2,805.00	
06/01/50	204,000	2.750	49,000	2,805.00	51,805.00	54,610.00
12/01/50	155,000			2,131.25	2,131.25	
06/01/51	155,000	2.750	50,000	2,131.25	52,131.25	54,262.50
12/01/51	105,000			1,443.75	1,443.75	
06/01/52	105,000	2.750	52,000	1,443.75	53,443.75	54,887.50
12/01/52	53,000			728.75	728.75	
06/01/53	53,000	2.750	53,000	728.75	53,728.75	54,457.50
Totals			<u>\$1,199,000</u>	<u>\$661,375.00</u>	<u>\$1,860,375.00</u>	<u>\$1,860,375.00</u>

CITY OF STANTON (MICHIGAN) SEWER FUND

CASH FLOW ANALYSIS

	<u>2019/20</u>		<u>2020/21</u>	<u>2021/22</u>		<u>2022/23</u>	<u>2023/24</u>	<u>2024/25</u>	<u>2025/26</u>	<u>2026/27</u>
		Two-Step Increase			Increases Per Year					
Assumptions										
Readiness to serve charge - units billed	437		437	437		437	437	437	437	437
Readiness to serve charge (monthly)	\$20.92	\$3.00	\$23.92	\$26.92	3.00%	\$27.73	\$28.56	\$29.42	\$30.30	\$31.21
Billable flow (annual) (in 1,000 gals)	29,049		29,049	29,049		29,049	29,049	29,049	29,049	29,049
User fee rate (per 1,000 gals)	\$3.43	\$0.50	\$3.93	\$4.43	3.00%	\$4.56	\$4.70	\$4.84	\$4.99	\$5.14
Additional units	205		205	205		205	205	205	205	205
Additional unit fee (monthly)	\$14.45	\$2.07	\$16.52	\$18.59	3.00%	\$19.15	\$19.72	\$20.31	\$20.92	\$21.55
Flat rate fee - customers	5		5	5		5	5	5	5	5
Flat rate fee (monthly)	\$31.99	\$4.59	\$36.58	\$41.17	3.00%	\$42.41	\$43.68	\$44.99	\$46.34	\$47.73
<i>Typical homeowner's monthly bill (assumes 4,500 gal/month)</i>	\$36.36		\$41.61	\$46.86		\$48.26	\$49.71	\$51.20	\$52.74	\$54.32
Revenues										
Readiness to serve charge	\$109,704		\$125,436	\$141,168		\$145,404	\$149,766	\$154,259	\$158,886	\$163,653
User fee rate	99,638		114,163	128,687		132,548	136,524	140,620	144,838	149,184
Additional unit fee	35,547		40,639	45,731		47,103	48,516	49,972	51,471	53,015
Flat rate fee	1,919		2,195	2,470		2,544	2,621	2,699	2,780	2,864
Other	5,000		5,000	5,000		5,000	5,000	5,000	5,000	5,000
Total revenues	251,809		287,433	323,057		332,599	342,427	352,550	362,976	373,715
Less: Total operating expenditures	(200,600)		(192,497)	(194,826)		(197,189)	(194,084)	(196,514)	(198,978)	(188,841)
Net operating revenue	51,209		94,936	128,231		135,410	148,343	156,036	163,998	184,874
Less: Current debt service payments	(54,973)		(54,368)	(54,763)		(55,130)	(54,470)	(54,810)	(55,123)	(54,408)
Estimated cash funded capital improvements	-		(25,368)	-		-	-	-	-	-
Estimated debt service #1 2021/22 Bonds [1]	-		-	(18,000)		(60,000)	(60,000)	(60,000)	(60,000)	(60,000)
Estimated debt service #2 2025/26 Bonds [2]	-		-	-		-	-	-	(14,000)	(45,000)
Estimated debt service #3 2033/34 Bonds [3]	-		-	-		-	-	-	-	-
Net cash flow	<u>(\$3,764)</u>		<u>\$15,200</u>	<u>\$55,468</u>		<u>\$20,280</u>	<u>\$33,873</u>	<u>\$41,226</u>	<u>\$34,876</u>	<u>\$25,466</u>
<i>Cash & investments [4]</i>	\$326,722	\$322,959	\$338,159	\$393,627		\$413,907	\$447,780	\$489,006	\$523,881	\$549,348

[1] Estimated debt service payments based on a \$1,529,616 40-year USDA bond issue at the current USDA intermediate rate (2.375%)

[2] Estimated debt service payments based on a \$1,165,507 40-year USDA bond issue at the current USDA intermediate rate (2.375%)

[3] Estimated debt service payments based on a \$749,722 40-year USDA bond issue at the current USDA intermediate rate (2.375%)

[4] Does not include restricted cash

CITY OF STANTON (MICHIGAN) SEWER FUND

(Continued)

CASH FLOW ANALYSIS

<u>2027/28</u>	<u>2028/29</u>	<u>2029/30</u>	<u>2030/31</u>	<u>2031/32</u>	<u>2032/33</u>	<u>2033/34</u>	<u>2034/35</u>	<u>2035/36</u>	<u>2036/37</u>	<u>2037/38</u>	<u>2038/39</u>	<u>2039/40</u>
437	437	437	437	437	437	437	437	437	437	437	437	437
\$32.14	\$33.11	\$34.10	\$35.12	\$36.18	\$37.26	\$38.38	\$39.53	\$40.72	\$41.94	\$43.20	\$44.49	\$45.83
29,049	29,049	29,049	29,049	29,049	29,049	29,049	29,049	29,049	29,049	29,049	29,049	29,049
\$5.29	\$5.45	\$5.61	\$5.78	\$5.95	\$6.13	\$6.32	\$6.51	\$6.70	\$6.90	\$7.11	\$7.32	\$7.54
205	205	205	205	205	205	205	205	205	205	205	205	205
\$22.20	\$22.86	\$23.55	\$24.26	\$24.98	\$25.73	\$26.50	\$27.30	\$28.12	\$28.96	\$29.83	\$30.73	\$31.65
5	5	5	5	5	5	5	5	5	5	5	5	5
\$49.16	\$50.63	\$52.15	\$53.72	\$55.33	\$56.99	\$58.70	\$60.46	\$62.27	\$64.14	\$66.07	\$68.05	\$70.09
\$168,563	\$173,619	\$178,828	\$184,193	\$189,719	\$195,410	\$201,272	\$207,311	\$213,530	\$219,936	\$226,534	\$233,330	\$240,330
153,659	158,269	163,017	167,907	172,945	178,133	183,477	188,981	194,651	200,490	206,505	212,700	219,081
54,606	56,244	57,931	59,669	61,459	63,303	65,202	67,158	69,173	71,248	73,385	75,587	77,855
2,950	3,038	3,129	3,223	3,320	3,419	3,522	3,628	3,736	3,848	3,964	4,083	4,205
5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
<u>384,777</u>	<u>396,170</u>	<u>407,905</u>	<u>411,769</u>	<u>424,122</u>	<u>436,846</u>	<u>449,952</u>	<u>463,450</u>	<u>477,354</u>	<u>491,674</u>	<u>506,424</u>	<u>521,617</u>	<u>537,266</u>
<u>(191,123)</u>	<u>(193,436)</u>	<u>(195,781)</u>	<u>(198,158)</u>	<u>(200,567)</u>	<u>(203,009)</u>	<u>(205,485)</u>	<u>(207,995)</u>	<u>(210,539)</u>	<u>(213,119)</u>	<u>(215,734)</u>	<u>(218,386)</u>	<u>(221,074)</u>
193,653	202,734	212,124	213,612	223,556	233,837	244,467	255,455	266,814	278,555	290,690	303,232	316,192
(54,693)	(54,950)	(55,180)	(54,383)	(54,585)	(54,760)	(54,908)	(55,028)	(55,120)	(55,185)	(54,223)	(54,260)	(54,270)
(121,020)	(21,518)	(40,000)	(208,261)	-	-	-	-	-	-	-	-	(98,100)
(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)	(60,000)
(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)	(45,000)
-	-	-	-	-	-	(9,000)	(29,000)	(29,000)	(29,000)	(29,000)	(29,000)	(29,000)
<u>(\$87,059)</u>	<u>\$21,266</u>	<u>\$11,944</u>	<u>(\$154,032)</u>	<u>\$63,971</u>	<u>\$74,077</u>	<u>\$75,559</u>	<u>\$66,428</u>	<u>\$77,694</u>	<u>\$89,370</u>	<u>\$102,468</u>	<u>\$114,972</u>	<u>\$29,822</u>
\$462,289	\$483,555	\$495,499	\$341,468	\$405,438	\$479,515	\$555,074	\$621,502	\$699,197	\$788,567	\$891,035	\$1,006,006	\$1,035,828

* Draft 11/21/2019

CITY OF STANTON (MICHIGAN) WATER FUND

COMPARATIVE STATEMENT OF NET POSITION

	As of		
	6/30/2016	6/30/2017	6/30/2018
	(----- Per Audit -----)		
Assets			
Current assets:			
Cash and cash equivalents	\$466,330	\$517,010	\$522,487
Accounts receivable, net	26,880	24,001	29,870
Total current assets	<u>493,210</u>	<u>541,011</u>	<u>552,357</u>
Noncurrent assets:			
Restricted cash and equivalents			
USDA bond reserve	59,167	26,400	33,000
USDA RRI bond reserve	-	52,673	65,978
Capital assets, net of depreciation	1,856,934	1,795,637	1,736,110
Total noncurrent assets	<u>1,916,101</u>	<u>1,874,710</u>	<u>1,835,088</u>
 Total Assets	 <u>\$2,409,311</u>	 <u>\$2,415,721</u>	 <u>\$2,387,445</u>
 Liabilities			
Current liabilities:			
Accounts payable	\$4,097	\$4,486	\$2,279
Accrued expense	556	675	560
Accrued interest payable	3,403	3,327	3,249
Bonds payable - current	33,000	34,000	34,000
Total current liabilities	<u>41,056</u>	<u>42,488</u>	<u>40,088</u>
Noncurrent liabilities:			
Bonds payable	1,452,000	1,418,000	1,384,000
 Total Liabilities	 <u>1,493,056</u>	 <u>1,460,488</u>	 <u>1,424,088</u>
 Net Position			
Net investment in capital assets	371,934	343,637	318,110
Restricted for bonds and RRI reserve	59,167	79,073	98,978
Unrestricted	485,154	532,523	546,269
 Total Net Position	 <u>916,255</u>	 <u>955,233</u>	 <u>963,357</u>
 Total Liabilities and Net Position	 <u>\$2,409,311</u>	 <u>\$2,415,721</u>	 <u>\$2,387,445</u>

*Draft 11/21/2019

CITY OF STANTON (MICHIGAN) WATER FUND

COMPARATIVE STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Fiscal Year Ended		
	6/30/2016	6/30/2017	6/30/2018
	(----- Per Audit -----)		
Operating Revenues			
Charges for services	\$238,623	\$241,190	\$243,431
Penalties	4,854	4,188	4,607
Other revenues	892	50	427
	<hr/>	<hr/>	<hr/>
Total operating revenue	244,369	245,428	248,465
	<hr/>	<hr/>	<hr/>
Operating Expenses			
Personal services	27,614	27,624	25,242
Supplies	2,746	1,812	2,919
Contracted services	7,903	11,992	10,543
Administrative expense	25,000	24,996	25,000
Other	98,285	40,895	80,071
	<hr/>	<hr/>	<hr/>
Operating expenses before depreciation	161,548	107,319	143,775
Depreciation	61,297	61,297	61,651
	<hr/>	<hr/>	<hr/>
Total operating expense	222,845	168,616	205,426
	<hr/>	<hr/>	<hr/>
Net operating income (loss)	21,524	76,812	43,039
	<hr/>	<hr/>	<hr/>
Non-Operating Revenue (Expenses)			
Interest income	1,657	2,928	4,937
Interest expense	(41,645)	(40,762)	(39,852)
	<hr/>	<hr/>	<hr/>
Total non-operating revenues (expenses)	(39,988)	(37,834)	(34,915)
	<hr/>	<hr/>	<hr/>
Change in Net Position	(18,464)	38,978	8,124
	<hr/>	<hr/>	<hr/>
Net Position - Beginning of year	934,719	916,255	955,233
	<hr/>	<hr/>	<hr/>
Net Position - End of year	\$916,255	\$955,233	\$963,357
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

*Draft 11/21/2019

CITY OF STANTON (MICHIGAN) WATER FUND

COMPARATIVE DETAIL OF OPERATING EXPENSES

	<u>Fiscal Year Ended</u>			<u>Test Year</u>	<u>Multiplier</u>	
	<u>6/30/2018</u>	<u>6/30/2019</u>	<u>6/30/2020</u>			
	(------Per Client-----)					
Operating Expenditures						
Dept 536 - Water Expenditures						
591-536-702.441	Director Of Public Works	\$8,080	\$11,556	\$14,000	\$14,000	2.00%
591-536-702.442	Full Time	20,200	10,603	25,000	25,000	2.00%
590-536-702.443	Part-time	1,010	-	-	-	0.00%
591-536-702.500	Over Time Hours	-	208	1,500	1,500	2.00%
591-536-708.000	Retirement	-	-	2,500	2,500	2.00%
591-536-715.000	FITW/FICA	2,000	2,930	4,000	4,000	2.00%
591-536-726.000	Materials And Supplies	1,500	1,839	2,000	2,000	1.00%
591-536-727.000	Postage	1,800	1,436	1,500	1,500	1.00%
591-536-728.000	Conference And Training	-	145	2,700	2,700	1.00%
591-536-732.000	Administration Expense	25,000	25,000	35,000	35,000	1.00%
591-536-775.000	Repair, Maintenance	59,100	19,811	15,000	15,000	1.00%
591-536-801.000	Professional Services	5,764	3,930	8,000	8,000	1.00%
591-536-802.000	Membership Dues	-	-	500	500	1.00%
591-536-804.000	Sampling	2,500	814	5,000	5,000	1.00%
591-536-850.000	Telephone	2,000	279	2,000	2,000	1.00%
591-536-900.000	Printing And Publishing	200	45	500	500	1.00%
591-536-920.000	Utilities	12,000	11,525	12,000	12,000	1.00%
591-536-940.000	Equipment Rental	5,000	7,626	10,000	10,000	1.00%
591-536-956.000	Miscellaneous	5,000	5,220	5,000	5,000	1.00%
591-536-981.000	Capital Outlay	-	-	- [1]	-	0.00%
591-536-991.000	Principal	-	-	- [2]	-	0.00%
591-536-992.000	Bond Reserve	19,600	-	19,600	6,600	0.00%
591-536-995.000	Interest Payment	-	-	- [2]	-	0.00%
591-536-997.000	Water Tower Maintenance	9,600	-	19,200	-	0.00%
	Total Water Operating Expenditures	<u>\$180,354</u>	<u>\$102,967</u>	<u>\$185,000</u>	<u>\$152,800</u>	

[1] Capital outlay is removed from this section of the report. This item is discussed later in the report.

[2] Principal and interest on debt are removed from this section of the report. These items are discussed later in the report.

CITY OF STANTON (MICHIGAN) WATER FUND

**SCHEDULE OF AMORTIZATION OF \$1,384,000 PRINCIPAL AMOUNT OUTSTANDING
OF USDA BONDS, SERIES 2013**

Payment Date	Principal Balance (In Dollars)	Interest Rate (%)	Debt Service			Fiscal Year Total
			Principal (-----In Dollars-----)	Interest	Total	
12/01/19	\$1,384,000			\$19,030.00	\$19,030.00	
06/01/20	1,384,000	2.750	\$35,000	19,030.00	54,030.00	\$73,060.00
12/01/20	1,349,000			18,548.75	18,548.75	
06/01/21	1,349,000	2.750	36,000	18,548.75	54,548.75	73,097.50
12/01/21	1,313,000			18,053.75	18,053.75	
06/01/22	1,313,000	2.750	26,000	18,053.75	44,053.75	62,107.50
12/01/22	1,287,000			17,696.25	17,696.25	
06/01/23	1,287,000	2.750	27,000	17,696.25	44,696.25	62,392.50
12/01/23	1,260,000			17,325.00	17,325.00	
06/01/24	1,260,000	2.750	28,000	17,325.00	45,325.00	62,650.00
12/01/24	1,232,000			16,940.00	16,940.00	
06/01/25	1,232,000	2.750	28,000	16,940.00	44,940.00	61,880.00
12/01/25	1,204,000			16,555.00	16,555.00	
06/01/26	1,204,000	2.750	29,000	16,555.00	45,555.00	62,110.00
12/01/26	1,175,000			16,156.25	16,156.25	
06/01/27	1,175,000	2.750	30,000	16,156.25	46,156.25	62,312.50
12/01/27	1,145,000			15,743.75	15,743.75	
06/01/28	1,145,000	2.750	31,000	15,743.75	46,743.75	62,487.50
12/01/28	1,114,000			15,317.50	15,317.50	
06/01/29	1,114,000	2.750	32,000	15,317.50	47,317.50	62,635.00
12/01/29	1,082,000			14,877.50	14,877.50	
06/01/30	1,082,000	2.750	33,000	14,877.50	47,877.50	62,755.00
12/01/30	1,049,000			14,423.75	14,423.75	
06/01/31	1,049,000	2.750	33,000	14,423.75	47,423.75	61,847.50
12/01/31	1,016,000			13,970.00	13,970.00	
06/01/32	1,016,000	2.750	34,000	13,970.00	47,970.00	61,940.00
12/01/32	982,000			13,502.50	13,502.50	
06/01/33	982,000	2.750	35,000	13,502.50	48,502.50	62,005.00
12/01/33	947,000			13,021.25	13,021.25	
06/01/34	947,000	2.750	36,000	13,021.25	49,021.25	62,042.50
12/01/34	911,000			12,526.25	12,526.25	
06/01/35	911,000	2.750	37,000	12,526.25	49,526.25	62,052.50
12/01/35	874,000			12,017.50	12,017.50	
06/01/36	874,000	2.750	38,000	12,017.50	50,017.50	62,035.00
12/01/36	836,000			11,495.00	11,495.00	
06/01/37	836,000	2.750	39,000	11,495.00	50,495.00	61,990.00
12/01/37	797,000			10,958.75	10,958.75	
06/01/38	797,000	2.750	40,000	10,958.75	50,958.75	61,917.50
12/01/38	757,000			10,408.75	10,408.75	
06/01/39	757,000	2.750	41,000	10,408.75	51,408.75	61,817.50
12/01/39	716,000			9,845.00	9,845.00	
06/01/40	716,000	2.750	43,000	9,845.00	52,845.00	62,690.00
12/01/40	673,000			9,253.75	9,253.75	
06/01/41	673,000	2.750	44,000	9,253.75	53,253.75	62,507.50
12/01/41	629,000			8,648.75	8,648.75	
06/01/42	629,000	2.750	45,000	8,648.75	53,648.75	62,297.50
12/01/42	584,000			8,030.00	8,030.00	
06/01/43	584,000	2.750	46,000	8,030.00	54,030.00	62,060.00
12/01/43	538,000			7,397.50	7,397.50	
06/01/44	538,000	2.750	47,000	7,397.50	54,397.50	61,795.00
12/01/44	491,000			6,751.25	6,751.25	
06/01/45	491,000	2.750	49,000	6,751.25	55,751.25	62,502.50
12/01/45	442,000			6,077.50	6,077.50	
06/01/46	442,000	2.750	50,000	6,077.50	56,077.50	62,155.00
12/01/46	392,000			5,390.00	5,390.00	
06/01/47	392,000	2.750	52,000	5,390.00	57,390.00	62,780.00
12/01/47	340,000			4,675.00	4,675.00	
06/01/48	340,000	2.750	53,000	4,675.00	57,675.00	62,350.00
12/01/48	287,000			3,946.25	3,946.25	
06/01/49	287,000	2.750	54,000	3,946.25	57,946.25	61,892.50
12/01/49	233,000			3,203.75	3,203.75	
06/01/50	233,000	2.750	56,000	3,203.75	59,203.75	62,407.50
12/01/50	177,000			2,433.75	2,433.75	
06/01/51	177,000	2.750	57,000	2,433.75	59,433.75	61,867.50
12/01/51	120,000			1,650.00	1,650.00	
06/01/52	120,000	2.750	59,000	1,650.00	60,650.00	62,300.00
12/01/52	61,000			838.75	838.75	
06/01/53	61,000	2.750	61,000	838.75	61,838.75	62,677.50
Totals			<u>\$1,384,000</u>	<u>\$753,417.50</u>	<u>\$2,137,417.50</u>	<u>\$2,137,417.50</u>

*Draft 11/21/2019

CITY OF STANTON (MICHIGAN) WATER FUND

CASH FLOW ANALYSIS

	<u>2019/20</u>		<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>	<u>2023/24</u>	<u>2024/25</u>	<u>2025/26</u>	<u>2026/27</u>
		Increases							
		Per Year							
Assumptions									
Readiness to serve charge - units billed	458		458	458	458	458	458	458	458
Readiness to serve charge (monthly)	\$19.25	3.00%	\$19.83	\$20.42	\$21.03	\$21.67	\$22.32	\$22.99	\$23.68
Billable flow (annual) (in 1,000 gals)	30,483		30,483	30,483	30,483	30,483	30,483	30,483	30,483
User fee rate (per 1,000 gals)	\$3.73	3.00%	\$3.84	\$3.96	\$4.08	\$4.20	\$4.32	\$4.45	\$4.59
Additional units	240		240	240	240	240	240	240	240
Additional unit fee (monthly)	\$13.28	3.00%	\$13.68	\$14.09	\$14.51	\$14.95	\$15.40	\$15.86	\$16.33
<i>Typical homeowner's monthly bill (assumes 4,500 gal/month)</i>	\$36.04		\$37.12	\$38.23	\$39.38	\$40.56	\$41.77	\$43.03	\$44.32
Revenues									
Readiness to serve charge	\$105,798		\$108,972	\$112,241	\$115,608	\$119,077	\$122,649	\$126,328	\$130,118
User fee rate	113,702		117,113	120,626	124,245	127,972	131,811	135,766	139,839
Additional unit fee	38,246		39,394	40,576	41,793	43,047	44,338	45,668	47,038
Other	8,000		8,000	8,000	8,000	8,000	8,000	8,000	8,000
Total revenues	<u>265,746</u>		<u>273,478</u>	<u>281,443</u>	<u>289,646</u>	<u>298,095</u>	<u>306,798</u>	<u>315,762</u>	<u>324,995</u>
Less: Total operating expenditures	<u>(185,000)</u>		<u>(154,732)</u>	<u>(156,693)</u>	<u>(158,683)</u>	<u>(154,102)</u>	<u>(156,152)</u>	<u>(158,232)</u>	<u>(160,344)</u>
Net operating revenue	80,746		118,746	124,750	130,963	143,993	150,646	157,530	164,651
Less: Current debt service payments	(73,060)		(73,098)	(62,108)	(62,393)	(62,650)	(61,880)	(62,110)	(62,313)
Estimated cash funded capital improvements	(38,825)		-	-	(69,485)	-	(92,645)	-	-
Estimated debt service #1 2021/22 Bonds [1]	-		-	(8,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)
Estimated debt service #2 2025/26 Bonds [2]	-		-	-	-	-	-	(14,000)	(47,000)
Estimated debt service #3 2030/31 Bonds [3]	-		-	-	-	-	-	-	-
Net cash flow	<u>(\$31,139)</u>		<u>\$45,649</u>	<u>\$54,643</u>	<u>(\$26,915)</u>	<u>\$55,343</u>	<u>(\$29,879)</u>	<u>\$55,420</u>	<u>\$29,339</u>
<i>Cash & investments</i>	\$519,023	\$487,884	\$533,533	\$588,175	\$561,261	\$616,604	\$586,725	\$642,145	\$671,484

[1] Estimated debt service payments based on a \$668,847 40-year USDA bond issue at the current USDA intermediate rate (2.375%)

[2] Estimated debt service payments based on a \$1,219,901 40-year USDA bond issue at the current USDA intermediate rate (2.375%)

[3] Estimated debt service payments based on a \$1,463,997 40-year USDA bond issue at the current USDA intermediate rate (2.375%)

CITY OF STANTON (MICHIGAN) WATER FUND

(Continued)

CASH FLOW ANALYSIS

<u>2027/28</u>	<u>2028/29</u>	<u>2029/30</u>	<u>2030/31</u>	<u>2031/32</u>	<u>2032/33</u>	<u>2033/34</u>	<u>2034/35</u>	<u>2035/36</u>	<u>2036/37</u>	<u>2037/38</u>	<u>2038/39</u>	<u>2039/40</u>
458	458	458	458	458	458	458	458	458	458	458	458	458
\$24.39	\$25.12	\$25.87	\$26.65	\$27.45	\$28.27	\$29.12	\$29.99	\$30.89	\$31.82	\$32.77	\$33.75	\$34.77
30,483	30,483	30,483	30,483	30,483	30,483	30,483	30,483	30,483	30,483	30,483	30,483	30,483
\$4.73	\$4.87	\$5.01	\$5.16	\$5.32	\$5.48	\$5.64	\$5.81	\$5.99	\$6.17	\$6.35	\$6.54	\$6.74
240	240	240	240	240	240	240	240	240	240	240	240	240
\$16.82	\$17.33	\$17.85	\$18.38	\$18.93	\$19.50	\$20.09	\$20.69	\$21.31	\$21.95	\$22.61	\$23.29	\$23.99
\$134,022	\$138,042	\$142,184	\$146,449	\$150,843	\$155,368	\$160,029	\$164,830	\$169,775	\$174,868	\$180,114	\$185,517	\$191,083
144,034	148,355	152,805	157,390	162,111	166,975	171,984	177,143	182,458	187,931	193,569	199,376	205,358
48,449	49,903	51,400	52,942	54,530	56,166	57,851	59,587	61,374	63,215	65,112	67,065	69,077
8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000
<u>334,505</u>	<u>344,300</u>	<u>354,389</u>	<u>364,781</u>	<u>375,484</u>	<u>386,509</u>	<u>397,864</u>	<u>409,560</u>	<u>421,607</u>	<u>434,015</u>	<u>446,795</u>	<u>459,959</u>	<u>473,518</u>
<u>(162,487)</u>	<u>(164,663)</u>	<u>(166,871)</u>	<u>(169,113)</u>	<u>(171,388)</u>	<u>(173,698)</u>	<u>(176,043)</u>	<u>(178,424)</u>	<u>(180,841)</u>	<u>(183,294)</u>	<u>(185,785)</u>	<u>(188,315)</u>	<u>(190,882)</u>
172,018	179,637	187,518	195,668	204,096	212,810	221,821	231,136	240,766	250,721	261,010	271,645	282,636
(62,488)	(62,635)	(62,755)	(61,848)	(61,940)	(62,005)	(62,043)	(62,053)	(62,035)	(61,990)	(61,918)	(61,818)	(62,690)
(91,837)	-	(16,500)	-	-	(6,900)	(78,412)	(119,000)	(24,800)	(107,000)	(21,300)	-	-
(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)	(26,000)
(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)	(47,000)
-	-	-	(18,000)	(57,000)	(57,000)	(57,000)	(57,000)	(57,000)	(57,000)	(57,000)	(57,000)	(57,000)
<u>(\$55,307)</u>	<u>\$44,002</u>	<u>\$35,263</u>	<u>\$42,820</u>	<u>\$12,156</u>	<u>\$13,905</u>	<u>(\$48,634)</u>	<u>(\$79,917)</u>	<u>\$23,931</u>	<u>(\$48,269)</u>	<u>\$47,792</u>	<u>\$79,827</u>	<u>\$89,946</u>
\$616,177	\$660,179	\$695,442	\$738,262	\$750,418	\$764,323	\$715,689	\$635,773	\$659,703	\$611,434	\$659,226	\$739,054	\$828,999

*Draft 11/21/2019





APPENDIX E

Opinion of Probable Cost

**Project Summary
Engineer's Opinion of Probable Project Cost**



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Open Cut Water Main Installation
McPherson St, Bradford to Pine
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$14,000	\$14,000
2	Audio Video Route Survey	1	LSUM	\$3,000	\$3,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$13,000	\$13,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$5,000	\$5,000
5	Water Main, CL-54, DI, 6 inch, Pavement	450	Ft	\$185	\$83,250
6					\$0
7	Fire Hydrant	2	Ea	\$10,000	\$20,000
8	Gate Valve and Well	2	Ea	\$7,000	\$14,000
9	Connection to Existing Water Main	2	Ea	\$4,000	\$8,000
10					
11					
12					
13	Restoration	100%		\$125,250	\$125,250
SUBTOTAL:					\$286,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$23,000
	General Requirements	4%			\$12,000
	Contingencies	20%			\$58,000
TOTAL CONSTRUCTION COST:					\$379,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$95,000
	Finance and Legal	5%			\$19,000
	Geotechnical Services	1.5%			\$6,000
TOTAL PROJECT COSTS:					\$120,000
ENGINEER'S OPINION OF PROJECT COST					\$500,000

Assumptions:

**Project Summary
Engineer's Opinion of Probable Project Cost**



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Directional Installation
McPherson St, Bradford to Pine
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$17,000	\$17,000
2	Audio Video Route Survey	1	LSUM	\$3,000	\$3,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$16,000	\$16,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$5,000	\$5,000
5	Water Main, CL-54, DI, 6 inch, Directionall Drill	450	Ft	\$285	\$128,250
6	Fire Hydrant	2	Ea	\$10,000	\$20,000
7	Gate Valve and Well	2	Ea	\$7,000	\$14,000
8	Connection to Existing Water Main	2	Ea	\$4,000	\$8,000
9					
10					
11					
12	Restoration	75%		\$170,250	\$127,688
SUBTOTAL:					\$339,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$28,000
	General Requirements	4%			\$14,000
	Contingencies	20%			\$68,000
TOTAL CONSTRUCTION COST:					\$449,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$113,000
	Finance and Legal	5%			\$23,000
	Geotechnical Services	1.5%			\$7,000
TOTAL PROJECT COSTS:					\$143,000
ENGINEER'S OPINION OF PROJECT COST					\$600,000

Assumptions:

**Project Summary
Engineer's Opinion of Probable Project Cost**



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Open Cut Water Main Installation
North State
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$25,000	\$25,000
2	Audio Video Route Survey	1	LSUM	\$5,000	\$5,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$23,000	\$23,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$9,000	\$9,000
5	Water Main, CL-54, DI, 8 inch, Pavement	820	Ft	\$210	\$172,200
6					
7	Fire Hydrant	2	Ea	\$10,000	\$20,000
8	Gate Valve and Well	2	Ea	\$7,000	\$14,000
9	Connection to Existing Water Main	4	Ea	\$4,000	\$16,000
10					
11					
12					
13	Restoration	100%		\$222,200	\$222,200
SUBTOTAL:					\$506,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$41,000
	General Requirements	4%			\$21,000
	Contingencies	20%			\$102,000
TOTAL CONSTRUCTION COST:					\$670,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$168,000
	Finance and Legal	5%			\$34,000
	Geotechnical Services	1.5%			\$11,000
TOTAL PROJECT COSTS:					\$213,000
ENGINEER'S OPINION OF PROJECT COST					\$890,000

Assumptions:

**Project Summary
Engineer's Opinion of Probable Project Cost**



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Directional Installation
North State
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$30,000	\$30,000
2	Audio Video Route Survey	1	LSUM	\$5,000	\$5,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$28,000	\$28,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$9,000	\$9,000
5	Water Main, CL-54, DI, 8 inch, Directionall Drill	820	Ft	\$315	\$258,300
6	Fire Hydrant	2	Ea	\$10,000	\$20,000
7	Gate Valve and Well	2	Ea	\$7,000	\$14,000
8	Connection to Existing Water Main	4	Ea	\$4,500	\$18,000
9					
10					
11					
12	Restoration	75%		\$310,300	\$232,725
SUBTOTAL:					\$615,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$50,000
	General Requirements	4%			\$25,000
	Contingencies	20%			\$123,000
TOTAL CONSTRUCTION COST:					\$813,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$204,000
	Finance and Legal	5%			\$41,000
	Geotechnical Services	1.5%			\$13,000
TOTAL PROJECT COSTS:					\$258,000
ENGINEER'S OPINION OF PROJECT COST					\$1,080,000

Assumptions:

**Project Summary
Engineer's Opinion of Probable Project Cost**



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Open Cut Water Main Installation
2nd Street
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$21,000	\$21,000
2	Audio Video Route Survey	1	LSUM	\$5,000	\$5,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$20,000	\$20,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$8,000	\$8,000
5	Water Main, CL-54, DI, 6 inch, Pavement	800	Ft	\$185	\$148,000
6					
7	Fire Hydrant	2	Ea	\$10,000	\$20,000
8	Gate Valve and Well	2	Ea	\$7,000	\$14,000
9	Connection to Existing Water Main	2	Ea	\$4,000	\$8,000
10					
11					
12					
13	Restoration	100%		\$190,000	\$190,000
SUBTOTAL:					\$434,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$35,000
	General Requirements	4%			\$18,000
	Contingencies	20%			\$87,000
TOTAL CONSTRUCTION COST:					\$574,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$144,000
	Finance and Legal	5%			\$29,000
	Geotechnical Services	1.5%			\$9,000
TOTAL PROJECT COSTS:					\$182,000
ENGINEER'S OPINION OF PROJECT COST					\$760,000

Assumptions:

**Project Summary
Engineer's Opinion of Probable Project Cost**



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Directional Installation
2nd Street
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$26,000	\$26,000
2	Audio Video Route Survey	1	LSUM	\$5,000	\$5,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$25,000	\$25,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$8,000	\$8,000
5	Water Main, CL-54, DI, 6 inch, Directionall Drill	800	Ft	\$285	\$228,000
6	Fire Hydrant	2	Ea	\$10,000	\$20,000
7	Gate Valve and Well	2	Ea	\$7,000	\$14,000
8	Connection to Existing Water Main	2	Ea	\$4,000	\$8,000
9					
10					
11					
12	Restoration	75%		\$270,000	\$202,500
SUBTOTAL:					\$537,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$43,000
	General Requirements	4%			\$22,000
	Contingencies	20%			\$108,000
TOTAL CONSTRUCTION COST:					\$710,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$178,000
	Finance and Legal	5%			\$36,000
	Geotechnical Services	1.5%			\$11,000
TOTAL PROJECT COSTS:					\$225,000
ENGINEER'S OPINION OF PROJECT COST					\$940,000

Assumptions:

Project Summary
Engineer's Opinion of Probable Project Cost



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Open Cut Water Main Installation
Alley north of Main
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$11,000	\$11,000
2	Audio Video Route Survey	1	LSUM	\$3,000	\$3,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$10,000	\$10,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$4,000	\$4,000
5	Water Main, CL-54, DI, 8 inch, Pavement	325	Ft	\$210	\$68,250
6					
7	Fire Hydrant	0	Ea	\$10,000	\$0
8	Gate Valve and Well	2	Ea	\$7,000	\$14,000
9	Connection to Existing Water Main	3	Ea	\$4,500	\$13,500
10					
11					
12					
13	Restoration	100%		\$95,750	\$95,750
SUBTOTAL:					\$220,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$18,000
	General Requirements	4%			\$9,000
	Contingencies	20%			\$44,000
TOTAL CONSTRUCTION COST:					\$291,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$73,000
	Finance and Legal	5%			\$15,000
	Geotechnical Services	1.5%			\$5,000
TOTAL PROJECT COSTS:					\$93,000
ENGINEER'S OPINION OF PROJECT COST					\$390,000

Assumptions:

**Project Summary
Engineer's Opinion of Probable Project Cost**



Owner: City of Stanton
 Project: DWSRF Project Planning Document FY2024
 Work: Directional Installation
Alley north of Main
 Conceptual Preliminary Final

Date: 4/4/2023
 Project No. 1277220020
 Prepared By: KLC
 Reviewer: _____
 Current ENR: 13745

Item No.	Item Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Mobilization, Max 5%	1	LSUM	\$13,000	\$13,000
2	Audio Video Route Survey	1	LSUM	\$5,000	\$5,000
3	Traffic Maintenance and Control, Max 5%	1	LSUM	\$12,000	\$12,000
4	Soil Erosion and Sedimentation Control	1	LSUM	\$4,000	\$4,000
5	Water Main, CL-54, DI, 8 inch, Directionall Drill	325	Ft	\$315	\$102,375
6	Fire Hydrant	0	Ea	\$10,000	\$0
7	Gate Valve and Well	2	Ea	\$7,000	\$14,000
8	Connection to Existing Water Main	3	Ea	\$4,500	\$13,500
9					
10					
11					
12	Restoration	75%		\$129,875	\$97,406
SUBTOTAL:					\$261,000
CONTRACTUAL REQUIREMENTS					
	General Conditions	8%			\$21,000
	General Requirements	4%			\$11,000
	Contingencies	20%			\$53,000
TOTAL CONSTRUCTION COST:					\$346,000
PROJECT COSTS					
	Design and Construction Engineering	25%			\$87,000
	Finance and Legal	5%			\$18,000
	Geotechnical Services	1.5%			\$6,000
TOTAL PROJECT COSTS:					\$111,000
ENGINEER'S OPINION OF PROJECT COST					\$460,000

Assumptions:



APPENDIX F

Public Meeting Documents



APPENDIX G

Submittal Form and Resolution For DWSRF Planning Document



APPENDIX H

Photographs and Miscellaneous Documents