

City of Marquette

Marquette, MI | 300 W Baraga Ave, MI 49855



City of Marquette

Wastewater and Water System Improvements State Revolving Fund (SRF)/Drinking Water Revolving Fund (DWRf) Project Plan

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1. EXECUTIVE SUMMARY

The City of Marquette (City) owns and operates a water and wastewater system that includes the Wastewater Treatment Facility (WTF), the Water Filtration Plant (WFP), several miles of water and sewer mains, wastewater lift stations, water booster stations and finished water storage tanks. This study compiled a Needs Analysis of the infrastructure, to determine the portions of the system in need of replacement or upgrading – and to establish a prioritization of these replacements over a five-year period.

The City completed a Water, Sewer and Stormwater Rate Study (October, 2018) for the water and sewer systems as part of the asset management planning process. The rate study included a comprehensive analysis of repair/replacement and capital needs for fiscal year 2019 through fiscal year 2023. The repair/replacement and capital improvements were an important element associated with the proposed rate increases included in the study. The City's intent with the project plan is to secure revolving loan funding to execute many of the projects identified in the rate analysis. The City will manage the annual expenditures to limit future rate increases to the recommended rates include in the rate analysis.

The Water, Sewer and Stormwater Rate Study is included in **Appendix A**.

1.1 PROJECT GOALS

This report has been prepared at the direction of the City of Marquette Water & Sewer Utility (Utility), and authorized by the City Commission on April 8, 2019. The Utility manages a diverse set of assets to meet level of service objectives. Asset management requires investment in maintenance repair and replacement and capital improvements to:

- Maintain regulatory compliance and operational performance
- Maintain a safe work environment
- Improve energy efficiency
- Conserve water and other resources

The Utility's plan includes projects necessary to achieve service level objectives that include safety, environmental compliance and efficiency. The proposed projects include:

- Upgrading the Lincoln Avenue Water Pump Station to improve energy efficiency and water system performance.
- Modifying the wastewater treatment plant's biosolids handling system to improve efficiency, reduce costs and reduce the environmental impact of solids disposal
- Replacing water distribution system pipes to Improve the water distribution system reliability and performance
- Replacing or lining wastewater collection system pipes to improve reliability and performance.

This report provides detailed information, environmental impact information, and the cost analysis for replacing and/or upgrading the systems. The goal is to fund the improvements with State Revolving Fund (SRF) and Drinking Water Revolving Fund (DWRF) through the Michigan Department of Environmental Quality (MDEQ).

1.2 PROPOSED PROJECTS

The project plan provides an overview, evaluates alternatives and makes recommendations for the following projects (or group of projects):

- Lincoln Avenue Booster Pump Station
- Wastewater Treatment Plant Solids Handling Improvements Project
- Street Improvement Maintenance Projects (SIMP) – With Water Main and Sanitary Sewer Replacements
- Street Reconstruction Projects (SIMP) – With Water Main and Sanitary Sewer Replacements
- Cured-In-Place Pipe Lining Projects

The total forecasted project costs for all the proposed water and sewer related activities over the five year planning period is \$12,924,068. Table 1-1 provides a summary of the costs associated with each group of projects.

Table 1-1 Project Plan Summary Cost Table by Major Project

Lincoln Avenue Water Pumping Station- Upgrade (DWRP eligible)	\$376,100
WWTP- Solids Handling Improvements (SRF eligible)	\$2,211,000
Water Distribution System (DWRP eligible)	\$5,478,461
Wastewater Treatment Collection System (SRF eligible)	\$4,858,507

1.2.1 LINCOLN AVENUE WATER PUMP STATION

The Lincoln Avenue Pump Station was constructed in 1991. The Utility is planning an analysis of the system hydraulics and efficiency to determine repair and replacement requirements. The Utility anticipates the improved energy efficiency and water conservation associated with this project will make it eligible for Green Project Reserve.

1.2.2 WASTEWATER TREATMENT FACILITY

The wastewater treatment facility is in good condition following major upgrades in 2008. The Utility is planning improvements to the solids handling system to reduce disposal costs and environmental impact and improve system reliability. The City is planning to submit this project for Green Project Reserve.

1.2.3 WASTEWATER COLLECTIONS AND WATER DISTRIBUTION

The Utility developed a pipeline cleaning and televising program as part of the Asset Management Planning Process funded in part by the Stormwater, Asset Management and Wastewater (SAW) grant funding. The program includes a methodology to rate pipes prioritize replacement. The Utility is using this information to evaluate and plan for the repair and replacement of water distribution and sewer collection system elements.

Additionally, the City coordinates the water and wastewater system needs with the street improvement maintenance projects and street reconstruction projects to manage costs and risks and improve service to the customers. The project plan includes a comprehensive, prioritized street replacement and street

improvement program that includes plans for replacing old and defective sanitary sewers as well as water mains that are either undersized and/or in poor condition.

1.3 REFERENCE DOCUMENTS

- City of Marquette Community Master Plan - Adopted August 11, 2015, Amended December 17, 2018: (https://marquettemi.gov/wp-content/uploads/2017/07/master_plan.pdf)
- City of Marquette Capital Improvement Plan 2017 – 2022 – August 8, 2016: (<https://marquettemi.gov/wp-content/uploads/2017/09/2017-2022CIP.pdf>)
- City of Marquette Water, Sewer and Stormwater Rate Study – Final Report, October 8, 2018: (<https://www.marquettemi.gov/wp-content/uploads/2018/10/Final-Marquette-Rate-Study-Report-10-8-18.pdf>)
- City of Marquette Asset Management Plan (SAW Grant) – November, 2018
- City of Marquette SRF/DWRF Project Plan – 2009
- City of Marquette Solids Handling Study – (multiple documents , 2018)

2. PROJECT PLAN CONTENT

2.1 STUDY AREA CHARACTERISTICS

2.1.1 DELINIATION OF STUDY AREA

The Water and Sewer service area covers the entire corporate limits of the City of Marquette as well as the eastern portion of Marquette Township and a portion of Chocolay Township. The area is served by one regionalized wastewater treatment facility located in the south end of the City. The area's potable water is provided by a water treatment facility that withdraws surface water from Lake Superior, located along the east edge of the City.

Lake Superior forms the City's eastern boundary. In addition, several small streams and creeks pass through the City limits and flow into Lake Superior. These include Orianna Brook and Whetstone Creek, which pass through the southern portion near the wastewater treatment plant. The Utility's wastewater treatment plant discharges into the Carp River.

Whetstone Creek, which is located west and south of the Baraga Avenue Lift Station, drains the central portion of the City and the Dead River drains the northern end of the City. The Dead River passes near the Granite Avenue Lift Station and enters Lake Superior north of the Hawley Street Lift Station and the UP Generating Station.

Figure 2-1 illustrates area served by the Utility including the location of lift stations, wastewater treatment facility and water filtration plant.

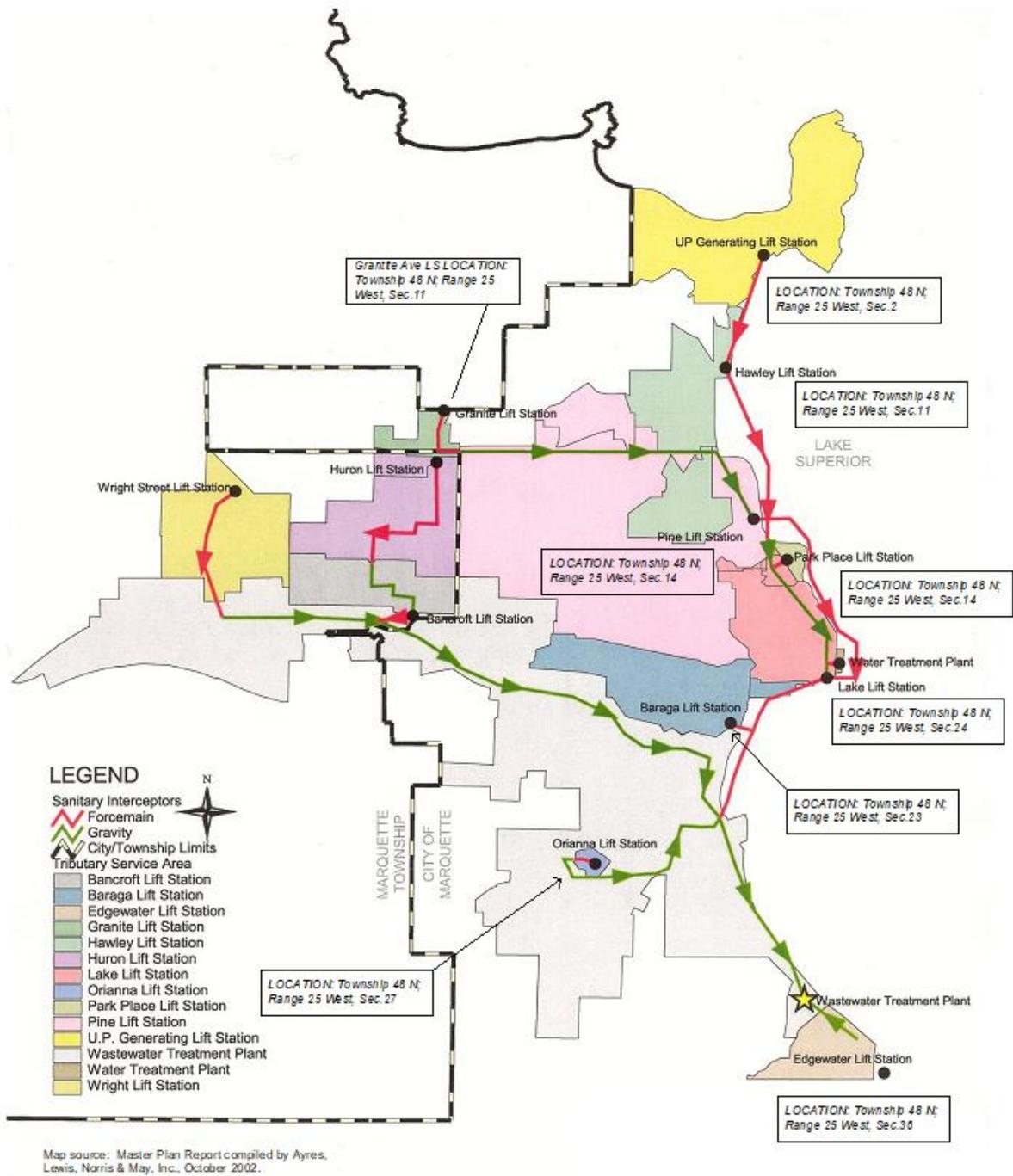


Figure 2-1 Study Area

2.1.2 LAND USES

The land uses within the study area are generally considered to be urban and suburban. The uses vary depending on the site.

Figure 2-2 represents the land use map for the service area. These land uses were developed as part of the City's Community Master Plan (August, 2015).

Numerous City-owned parks and recreation centers exist within the planning area including the Tourist Park Campground, located approximately 1/2 mile north of Wright Street in the north end of the City, and Presque Isle Park, located northeast of the UP Generating Station Lift Station. These recreational areas are not expected to be affected by these projects, due to their lack of proximity to water and wastewater treatment facilities. The parks may experience some short-term impacts when street reconstruction projects are undertaken. The impacts will be short duration (limited to weeks at a time).

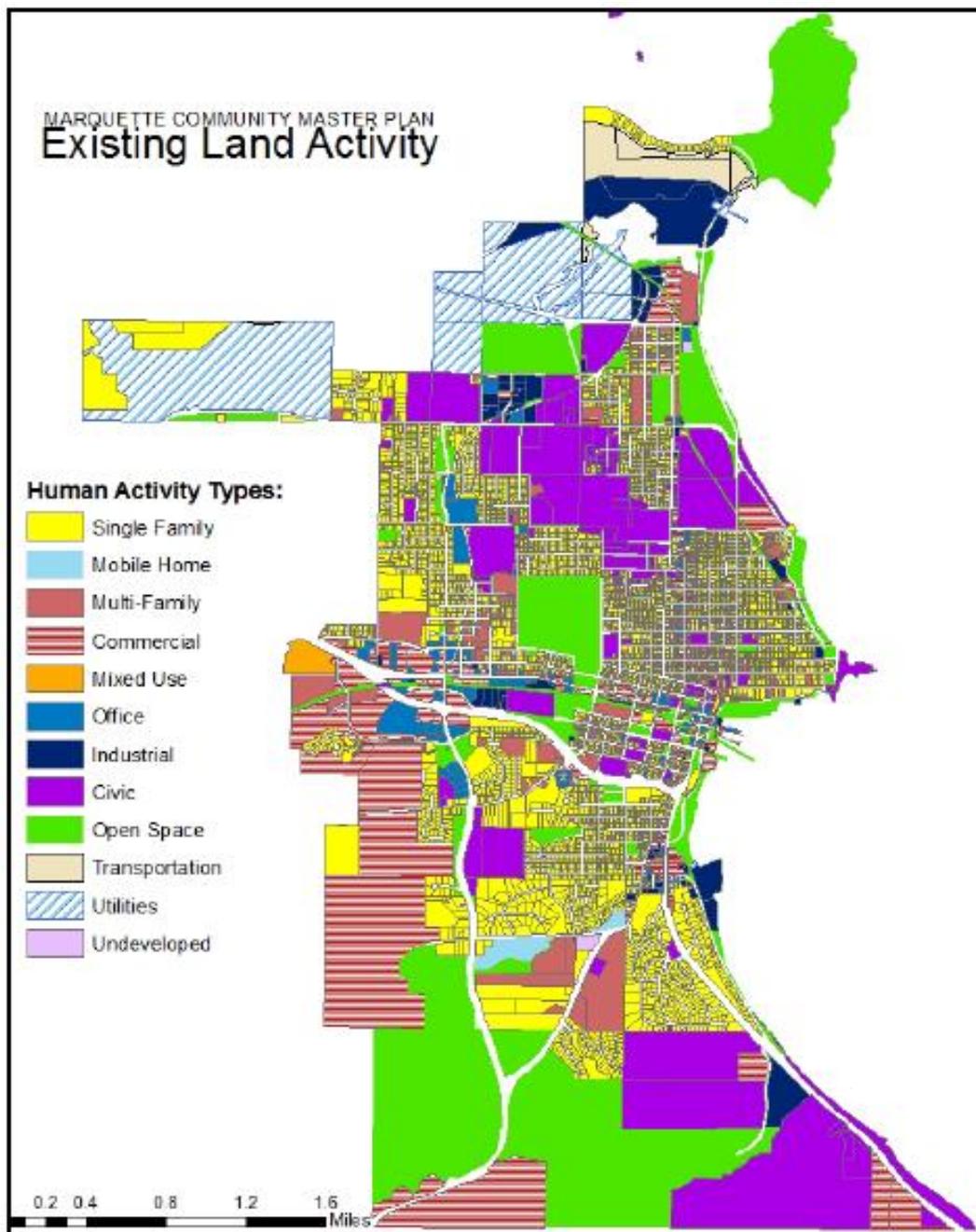


Figure 2-2 Existing Land Use Map (from City of Marquette Community Master Plan Adopted August 18, 2015)

2.1.3 20 YEAR GROWTH

Figure 2-3 illustrates future land use in the service area. The area presents the proposed pattern for land use over the next 20 years and reflects recommendations presented as part of the master planning document.

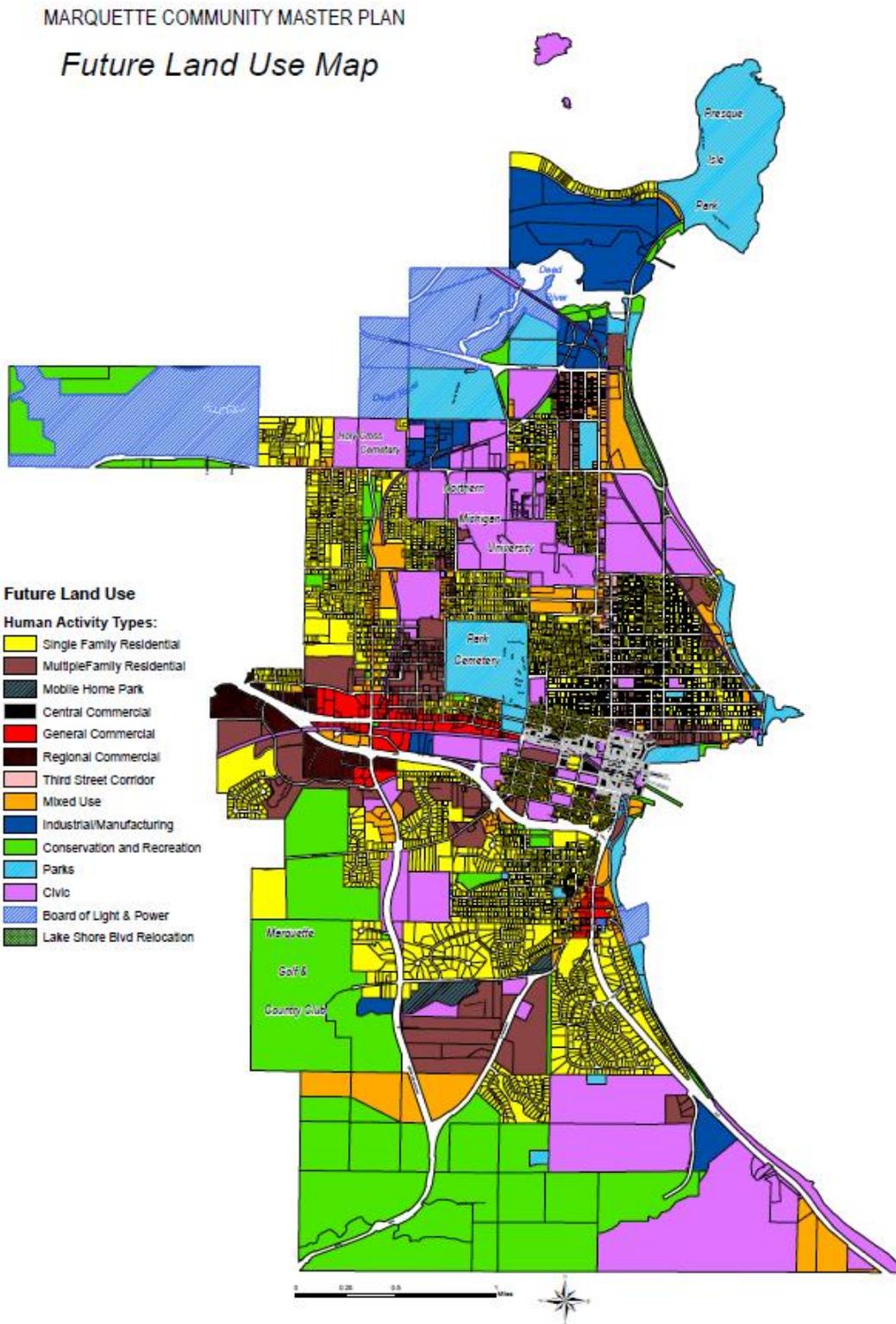


Figure 2-3 Future Land Use Map (from City of Marquette Community Master Plan Adopted August 18, 2015)

2.2 POPULATION DATA

The study area for the project encompasses the City of Marquette and portions of Marquette Township, and Chocolay Township. Table 2-1 and Table 2-2 provide a detailed description of the service area growth considered in the *2002 Master Plan*. The plan identified increases in the City of Marquette and Marquette Township sewer service population of 6,782 and 635 persons, respectively. These service population values were identified as ultimate population growth within the sewer service area. Most of the growth was anticipated in residential areas.

Table 2-1 City of Marquette Sewer Service Area Growth (20 years)

District No.	Future Land Use Type	Area (Acres)	Density (Acres/Unit)	Population Growth
1	Single Family Residential	27.3	0.5	150
2	Single Family Residential	16.4	0.5	90
3	Multi-Family Residential	20.2	0.2	278
4	Planned Urban Development	56.3	NA	NA
5	General Business	21.7	NA	NA
6	Planned Urban Development	127.0	NA	NA
7	Single Family Residential	27.0	NA	NA
8	Central Business District	13.6	NA	NA
9	Single Family Residential	14.1	NA	NA
10	Conservation and Recreation	9.0	NA	NA
11	Single Family Residential	259.8	NA	NA
12	Multi-Family Residential	396.1	0.5	2,179
13	Multi-Family Residential	278.5	0.2	3,829
14	Single Family Residential	46.6	0.5	256
Total		1,314		6,782

Table 2-2 Marquette Township Sewer Service Area Growth (20 years)

District No.	Future Land Use Type	Area (Acres)	Density (Acres/Unit)	Population Growth
15	Development District	94.0	1.5	61
16	Urban Residential	38.3	1.0	105
17	Development District	147.6	1.0	95
18	Development District	251.7	1.0	162
19	Development District	23.3	1.0	15
20	Urban Residential	80.0	1.0	219
Total		635		657

The projected 20-year service populations within the WTF service area were further developed during the *2005 Biosolids Handling Study*. The increase in sewer service population for the City of Marquette, Marquette Township, and Chocolay Township was established at 2,550, 1,250, and 600 persons, respectively, for a total increase in service population of 4,400 persons.

The United States Census Bureau includes statistics for the City of Marquette population. For April 1, 2010 the population was 21,370. The service area had lost 3.5% of the population (20,629) by July 1, 2017. For the purposes of project planning the service area population is assumed constant.

None of the Wastewater Growth Areas inside the project's service area are considered to be in ecologically sensitive areas. It is expected that increases should have minimal negative impact on air and water quality in the service area and no impact on agricultural land uses.

2.2.1 SURFACE AND GROUNDWATER

Water used for human activity within the service area is primarily sourced from Lake Superior. The City withdraws all of its potable water supply from Lake Superior and is treated at the water treatment plant.

The primary consumers of water in the area are Northern Michigan University, Marquette Correctional Center, and various schools, hospitals, and apartments in the area. These users use potable water from the City's public water supply. Marquette Township withdraws water from groundwater wells to supply to their customers. Some individual wells also exist in the study area; however, these are private wells that are used primarily for irrigation usage. The projects being considered under this plan are expected to have minimal, if any, impact on local groundwater supplies.

2.3 ECONOMIC CHARACTERISTICS

2.3.1 GENERAL ECONOMIC STRUCTURE AND EMPLOYERS

The basis for the local economy in Marquette is composed of a mixture of educational services, health care services, retail trade services, and miscellaneous industrial, manufacturing, and retail services. The 2010 Census data indicates that 33% of the industrial workforce is from educational/health care/social services. One of the largest employers is Northern Michigan University. The next largest category of workers, 13.5% of the industrial workforce, includes those in arts, entertainment, and recreation.

2.3.2 MEDIAN HOUSEHOLD INCOME

The United States Census (2013 – 2017) indicated that the median household income (MHI) within the City of Marquette was \$38,998.

2.3.3 AFFECT OF GROWTH ON TRENDS ON THE FACILITIES

The Utility projects little growth in population over the planning period. As discussed in the next section, the recently upgraded wastewater treatment process is currently operating below its estimated capacity for meeting required effluent quality. The existing water and wastewater treatment processes have sufficient treatment capacity.

2.4 EXISTING WATER AND WASTEWATER SYSTEMS

2.4.1 WATER TREATMENT AND STORAGE

The Marquette Area Water Filtration Plant (WFP), is located on the east side of the City of Marquette along Lake Superior, east of the intersection of Lake Street and East Arch Street.

The water system was first established in 1869. The existing treatment plant was originally built in 1979 and upgraded in 1997. The north side of the plant is the 1979 facility and the south end is the 1997 addition. The plant currently serves customers located within the City of Marquette and Marquette Township. Approximately 5,600 customers are located within the City of Marquette. Marquette Township is billed as one customer of the City, and it in turn bills approximately 780 customers within the Township.

Water flows into the filtration plant through an intake pipe that extends approximately 3,100 feet out into Lake Superior, which extends almost directly east from the facility. From the shore, the first 600 feet is 42" diameter pipe and the last 2500 feet is 36" diameter pipe. The water flows into the plant by gravity into an area called the wetwell or shorewell. Vertical turbine pumps, which are referred to as Low Lift Pumps (which are capable of pumping 4,300 gallons per minute) pump the water from this wetwell and into the plant. The plant is equipped with three of these pumps, all of which can run at varying speeds, by use of variable frequency drivers (VFDs).

2.4.1.1 Water Filtration Plant

The first step in the water treatment process within the plant uses 500-micron (0.02") strainers to remove materials such as sand and fresh water marine invertebrae. A process known as "microfiltration" then treats the water. The microfiltration process uses a large number of hollow fiber microporous membranes with a nominal pore size of only 0.2 microns. The water passes through the pores of these membranes where particles larger than 0.2 microns are rejected by the membranes and are then removed from the water. The particles include bacteria, algae, and other aquatic organisms that may be present. A 90-psi compressed air backwash cleans the membranes by forcing air backward through the membranes at 75-minute intervals. Untreated water then flushes away the debris, which is returned to the lake.

The filtered water from the microfiltration units is then chemically treated. Chlorine, which is generated on site using water softener salt, is added for virus inactivation and killing of any bacteria that may still be present in the water. The chlorine residual within the finished water also protects the water throughout the distribution system. Fluoride at a concentration of 1.0 mg/L is also added for tooth protection. Prior to leaving the facility, the water is also treated with sodium hydroxide to raise the pH and make it less corrosive. Following these chemical additions, the finished water is routed into a 500,000 gallon "chlorine contact" tank on the water plant site, where it has an average detention time of over four hours.

The water is pumped from the chlorine contact tank into the distribution system by High Service pumps. The plant is equipped with four of these pumps, which are located on the ground floor of the plant. Each high service pump is capable of pumping 2,300 gallons per minute of flow.

2.4.1.2 Water Distribution System

The distribution system has three main finished water storage tanks (Mountain Tank, Lincoln Tank and Cook Avenue Tank), each of which can hold 1,000,000 gallons of water. A fourth tank in the west end of Marquette Township has a capacity of 200,000 gallons.

The water supply system includes other related appurtenances including nearly 100 miles of various types of water mains ranging in diameter from 4" to 36"; approximately 5,500 main water meters and 762 lawn water meters; and 740 fire hydrants.

2.4.2 WASTEWATER TREATMENT AND SANITARY COLLECTION SYSTEM

The WTF is a regional facility located south of the City of Marquette, MI. The wastewater treatment facility consists of a main process building, six primary clarifiers, three aeration basins, two secondary clarifiers, a WAS holding tank, a digestion complex including three anaerobic digesters, two biosolids storage tanks, a dewatering wet well, and chlorine contact tanks. Figure 2-4 illustrates the treatment facility site and the major unit processes.

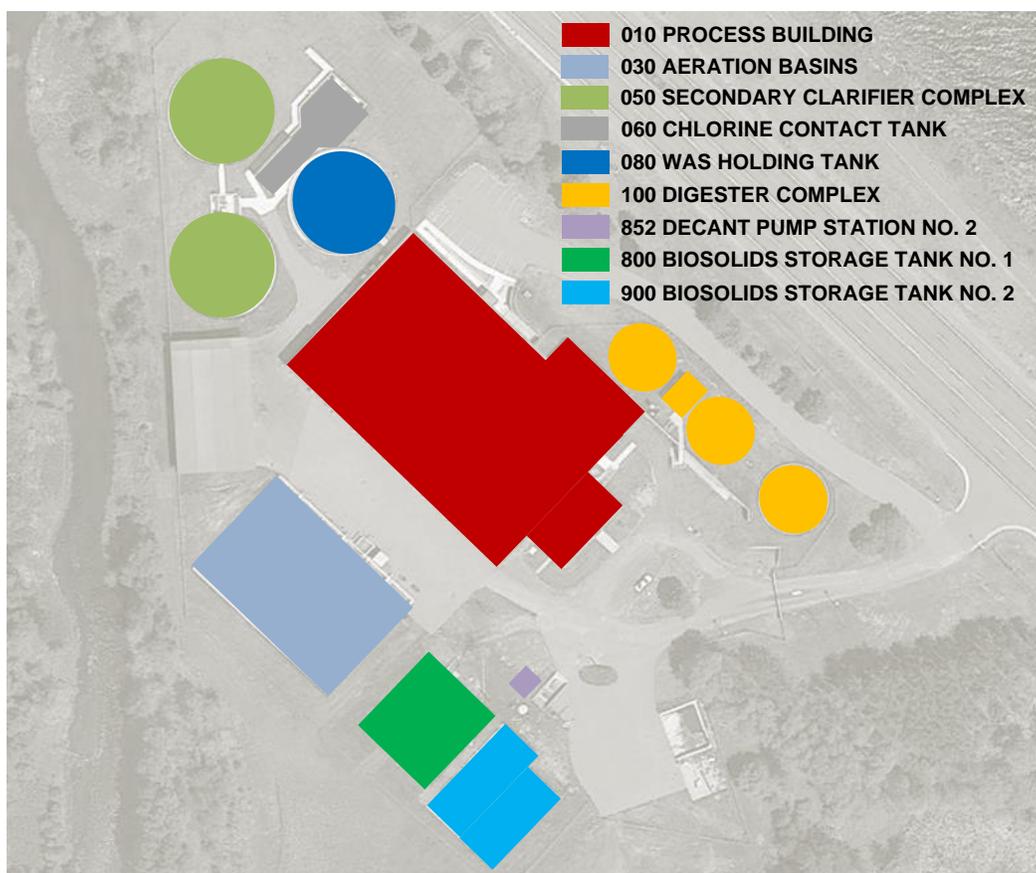


Figure 2-4 Wastewater Treatment Facility Site Diagram

2.4.2.1 Preliminary Treatment

Preliminary treatment includes influent flow metering, screening, and grit removal. The existing flow meter is adequate for the projected future wastewater flows. The existing screen is an escalator type influent screen with ¼ inch spacing between slots. Screenings are washed and compacted prior to landfill disposal. A vortex grit removal process is used to remove grit from the influent wastewater. Collected grit is concentrated and dewatered prior to landfill disposal. The existing influent screen and grit removal systems were installed in 1999 and are in good condition.

2.4.2.2 Primary Treatment

Screened and de-gritted influent flows into four primary clarifiers. The existing primary clarifiers are housed indoors within the process control building. Four primary clarifiers were constructed in 1951. The primary clarifiers provide 6,400 ft² of surface area and provide a peak flow capacity of 9.21 mgd. As stated previously, when the biological phosphorous removal system is taken off line, the plant staff adds ferric chloride to the primary clarifiers for phosphorous removal by chemical precipitation.

2.4.2.3 Secondary Treatment

The secondary treatment process consists of three aeration basins that were constructed in 2008. The Aeration Basins provide a medium for growth of microorganisms for removal of organic and nitrogenous pollutants. Each tank is fitted with fine bubble air diffusion equipment which provides oxygen to the microorganisms.

Wastewater in the form of “mixed liquor” flows from the Aeration Basins into two Secondary Clarifiers. These Secondary Clarifiers are covered with aluminum covers to protect against freezing during the winter months. The clarifiers and their support systems were constructed in 2008 and are in good condition.

2.4.2.4 Disinfection

Sodium hypochlorite is used for effluent disinfection and sodium bisulfite is used for effluent dechlorination. The existing sodium hypochlorite and sodium bisulfite feed pumps were recently replaced and are in good condition. The existing chlorine contact basin was constructed in 1951 and is in adequate condition. The basin has a volume of approximately 242,000 gallons and provides a peak flow capacity of 11.6 mgd.

Sodium hypochlorite, ferric chloride and sodium bisulfite are all stored in separate HDPE bulk tanks which were installed in 2008.

2.4.2.5 Phosphorus Removal and Chemical Feed Systems

The WTF normally removes phosphorus by biological removal in the Aeration Basins and enhanced phosphorus removal is normally achieved by adding small amounts of ferric chloride to the mixed liquor in the Aeration Basins. The plant is also equipped to feed ferric chloride to the primary clarifier influent during times when the biological phosphorus removal system is out of service. The existing ferric chloride feed pumps and polymer feed systems were recently replaced and are in good condition.

2.4.3 SOLIDS HANDLING

Solids generated in the secondary treatment system are discharged to a Waste Activated Sludge (WAS) Holding Tank. Sludge from the primary clarifiers is routed to the Anaerobic Digesters. The WAS from the holding tanks is pumped to a Combination Gravity Belt Thickener/Belt Filter Press that can be used for Gravity Belt Thickening as well as dewatering. The WAS is thickened by the Gravity Belt Thickener section of the unit then routed to the anaerobic digesters for reduction of volatile solids and pathogenic organisms. The digested biosolids are withdrawn from the digesters and normally land applied to reclaimed mine sites in the Marquette area. During times when the mine sites are not accessible or cannot be applied to due to weather conditions, the biosolids can be dewatered in the belt press and then stored on-site prior to disposal. The dried sludge storage capacity at the site is currently somewhat limited. The facility produces "Class B" biosolids suitable for land application. Biosolids are currently being used as a soil conditioner for reclamation of mined lands.

2.4.3.1 Biosolids Storage

The facility has two "Haag" tanks which provide 400,000 gallons biosolids storage. The storage tank is buried and provides a large settling area for thickening biosolids prior to disposal. Biosolids are mixed and pumped from the storage tank using a portable pumping system. The portable pumping system does not allow removal of the entire storage volume.

2.4.3.2 Biosolids Disposal

The facility operates a beneficial residual management program utilizing biosolids as a soil conditioner and fertilizer on Cliffs Mining Partnership property. The WTF has also applied biosolids to agricultural lands with less success.

2.4.4 COLLECTION SYSTEM

The City of Marquette sanitary sewer collection system is comprised of 87.5 miles of sewer lines, approximately 6,061 sewer laterals, 1,979 manholes, 22 control/regulating sewer line valves, and 11 pump stations that deliver wastewater to the treatment facility.

This collection system transports on average 3.2 million gallons of sewage to the wastewater treatment facility on a daily basis. The facility is operated by the City of Marquette and is owned by the City of Marquette (85%), Marquette Township (10%), and Chocolay Township (5%).

2.4.5 LOCATION OF TREATMENT AND COLLECTION SYSTEM FACILITIES

The locations of the wastewater lift stations, force main systems, and treatment facilities were presented in Figure 2-1; no industrial pre-treatment facilities are present in the service area. All sludge management facilities are located at the wastewater treatment plant site.

2.4.6 SEPTAGE RECEIVING FACILITIES

The facility accepts septage from individual recreational vehicles (RVs), but it does not accept wastes from commercial septage haulers.

2.4.7 LOCATION AND DESCRIPTION OF MAJOR INDUSTRIAL DISCHARGERS

The WTF does not have any significant industrial users discharging to the system.

2.4.8 DOCUMENTATION OF INFILTRATION AND INFLOW

An Infiltration/Inflow analysis was performed as part of the *2003 Project Plan - Wastewater Lift Station Improvements City of Marquette Michigan*. Results of this evaluation indicated that infiltration and Inflow were not considered excessive and that no further sewer system evaluation work was required.

2.4.9 SANITARY SEWERS

The sanitary sewers are maintained on a regular basis. The Utility has compiled a prioritized list of repair/replacement projects that are included in the project plan.

2.4.10 SYSTEM BYPASSES

The City of Marquette has reported 5 sanitary sewer overflows within the last 5 years. These overflows were due to illegal connections, pipe blockages, pipe breakages, or lift station failures, each of which have been corrected or repaired. Marquette Township has reported 4 sanitary sewer overflows within the last 5 years. These overflows were due to pipe breakages or valve failures, each of which have been corrected or repaired. Chocolay Township has not reported any sanitary sewer overflows within the last 5 years. No action is required to stop these sanitary sewer overflows since they did not occur due to hydraulic problems.

The collection system serving the WTF contains no combined sewers.

2.4.11 LIFT STATIONS

The existing collection system pumping stations were evaluated as part of the *2003 Project Plan Wastewater Lift Station Improvements City of Marquette Michigan*. The pump station deficiencies identified in that study were successfully constructed in 2005. The WTF does not have any wastewater pumping facilities located on site.

Table 2-3 Marquette Lift Stations

Structure	Location
100	Hawley Street Lift Station
200	Pine Street Lift Station
300	Lake Street Lift Station
400	Baraga Avenue Lift Station
500	Orianna Lift Station
600	Edgewater Lift Station
700	Uppg Lift Station
800	Park Place Lift Station
850	Island Beach Lift Station

Structure	Location
900	Granite Avenue Lift Station
950	Mattson Park Lift Station

2.5 ENVIRONMENTAL SETTING

2.5.1 CULTURAL RESOURCES

Cultural Resources within the study area include historic and archeological resources that are acknowledged by recognized agencies such as the State Historic Preservation Office (SHPO) and the Registry of National and State.

Another historic feature is the Arch and Ridge Streets Historic District, which also exists within the study area; with it being located several blocks north of the Baraga Avenue lift station and several blocks west of the Lake Street lift station. This district's properties include architecturally distinctive churches, residences, and public buildings. These landmarks are located within the study area but not in the vicinity of the street reconstruction projects, or improvements under consideration.

2.5.2 NATURAL ENVIRONMENT

Climate

The National Weather Service's records for the period from 1961 through 1996 for the Marquette area indicate that the annual mean temperature for the City ranged from 29.5°F to 48.9°F, for an average annual mean temperature of 39.2°F. The record maximum air temperature for the City was 99°F, which has occurred on three separate dates, and a minimum air temperature of -34°F was recorded in the City in 1979. Marquette averages 172.2 inches of snow per year, with measurable snowfall occurring from October to April. Generally the construction season for the Marquette region is relatively short with work being performed typically between April and October. Frost penetration can reach to 72 inches of depth within the region. However, the depth of frost in the ground during any year depends highly on the amount of snow cover that exists during the low temperature periods.

Air Quality

The improvements contemplated by this project are expected to have a neutral effect on air quality within the study area. The improvements are confined to street replacements, tank painting, small lift station upgrades and structural, mechanical, and electrical improvements at the two treatment plants. These projects are not expected to have significant adverse effects on air quality and they should be in compliance with the State Implementation Plan (SIP) for Air Quality.

Wet Lands

The US Forest Service maintains large scale wetland maps, but the source of the wetland mapping is unknown. No wetlands have been identified near the water filtration plant and for the most part, all project activities at that facility will be within the existing building structure itself. Therefore wetlands issues should not be a concern at the water plant.

The broad scale of the mapping shows areas occupied by structures and previously disturbed areas as potential wetland areas. Visual reconnaissance of the wastewater treatment facility site indicates wetland areas exist near the Carp River. All proposed improvements at the WTF and the WFP will be upland from the wetlands within previously disturbed areas.

Coastal Areas

The WTF and the WFP are both located approximately 300 feet from Lake Superior. Some of the various street projects are located near the lake shore. Work associated with the recommended improvements is confined on the WTF site and is not anticipated to require permit approval from DEQ's Shoreline Section.

Floodplains

Figure 2-5 provides 2017 FEMA 100 year floodplain mapping for the Marquette service area. The map can be accessed through the following web address and searching for Marquette, MI: <https://msc.fema.gov/portal/search#searchresultsanchor>. No flood prone areas exist at the water filtration plant site. No distribution or collection system improvements are planned in the mapped floodplains.

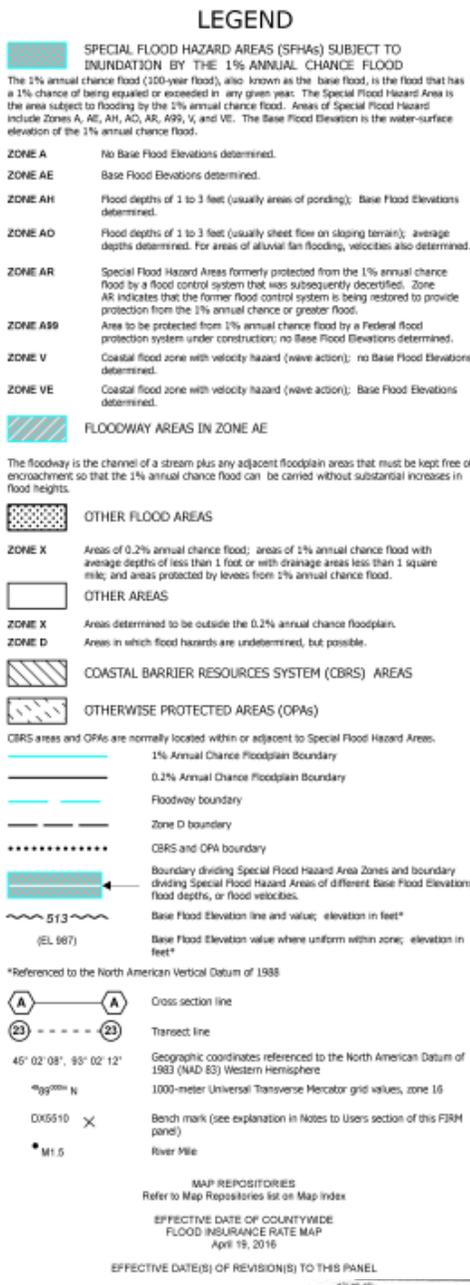


Figure 2-5 Large-Scale FEMA 100-Year Floodplain

The wastewater treatment plant solids handling improvements include structural additions to the WWTP site. The site is adjacent to US 41 Highway and the Carp River. The property map, floodplain map and wetland delineation map were reviewed to identify preferred locations for new facilities.

Figure 2-6 illustrates the FEMA 100-year floodplain mapping for the treatment facility along with the proposed improvements. The proposed truck loading is shown partially in the floodplain. As part of the 2008 construction, a wall was provided that protects the existing secondary clarifiers, aeration, cake

storage and other assets from a 100-year flood. The proposed truck loading area will also be protected by this wall.

The wetland delineation map from 2006 was also reviewed. The wetland is not impacted by construction on the site.

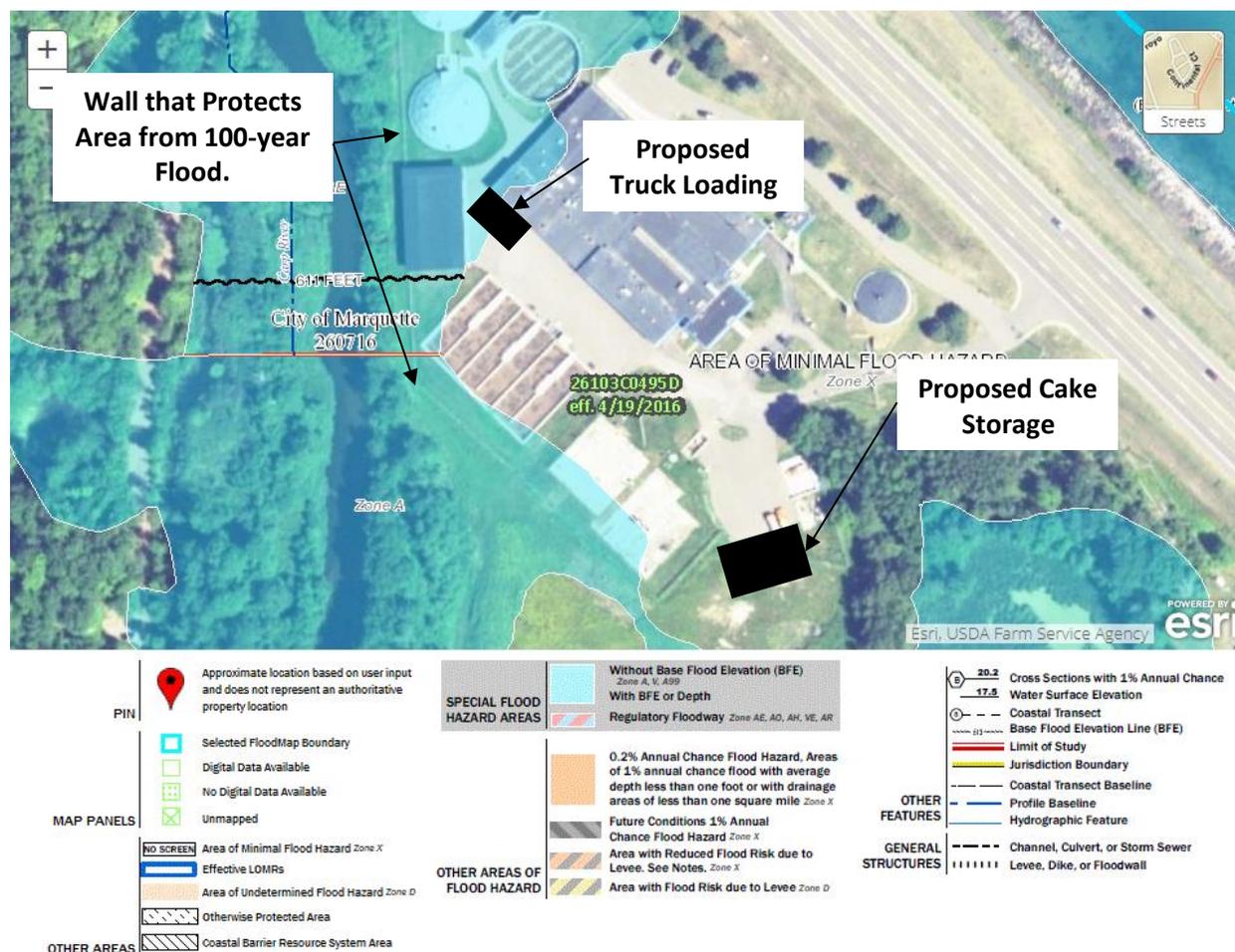


Figure 2-6 Wastewater Treatment Facility - 100-Year Floodplain

Natural or Wild and Scenic Rivers

A review of the surface water features in the project indicates that no natural, wild, or scenic rivers exist within the areas affected by the project. A review of Michigan DNR’s listing of Natural Rivers Program indicates no such river designation within the study area.

Major Surface Waters

Lake Superior is the most significant water body in the study area with it supporting warm water fish populations. Several small streams and creeks pass through the City limits. These include Orianna Brook,

Western Brook, and the Carp River which pass through the southern portion, near the wastewater treatment plant. All of these brooks and rivers run from west to east and discharge into Lake Superior.

Recreational Facilities

Major parks and outdoor recreational facilities in the area include the Tourist Park Campground, and Presque Isle Park. Other community parks in the area include Mattson Lower Harbor Park, a park located in Marquette's Lower Harbor area, Shiras Park, a 31 acre park located near the intersection of Lakeshore Boulevard and East Fair Street. McCarty's Cove, which is located south of Shiras Park, is a swimming beach and recreational area. None of these facilities are expected to be adversely affected by the proposed project improvements.

Topography

The study area is divided into four major drainage basins. The north portion of the City drains northward toward the Dead River basin, from which the Dead River flows east, and discharges into Lake Superior. The south central area is drained by Whetstone Brook which drains the downtown area, flowing from west to east and emptying into Lake Superior. The south portion of the City drains east and south toward the Orianna and Western Brooks, which also flow east through the study area into Lake Superior. The far southern portion of the City drains south to the Carp River with flows east into Lake Superior.

The study area can be characterized as moderately hilly, with elevated areas interspersed between flat stream beds. Significant relief exists across the site, with ground surfaces of approximately elevation 602 at the edge of Lake Superior and ground surface elevations exceeding 800 in the west end of the City. Ground surfaces generally rise steeply as one proceeds westward through the City.

Geology

The Marquette area's bedrock geology is a mixture of sandstones, quartzites, and dolomites from the Middle PreCambrian age. Rock types that can be found as outcropped in the area include Jacobsville Sandstone, Mesnard Quartzite, Kona Dolomite, Mona Schist, Kona Quartzite, Ajibik Quartzite, and Siamo Slate. Surface geology is a mixture of end moraines, consisting of medium size till materials and glacial outwash sand and gravel materials. None of the improvements considered under this project are expected to have any direct or indirect impact on the geologic characteristics or the groundwater or surface water resources in the area.

Soils

At the time of the issuance of this report, the Natural Resources Conservation Service (NRCS) had completed but not yet published the soil survey for Marquette County. Soil borings within the WTF site indicate fine to medium sands overlaying coarse sands and fine gravel. Construction methods will include provisions for soil stabilization and erosion control.

Agricultural Resources

The existing WTF, the WFP, and the various street reconstruction sites are all located in a developed area. The project should have no impact on prime, unique, or highly productive farmlands in the region.

Existing Plan/Animal Communities

A letter of inquiry was issued to the U. S. Fish & Wildlife Service as part of this report to determine if any endangered or protected animal species or environmentally sensitive habitats exist within the vicinities of the various projects proposed under this program.

Unique Features

The City's lake shore area can be considered a unique and valuable asset to the community, which has considerable aesthetic appeal and qualities. This project will have no significant adverse impact on the lake shore. In addition, construction of improvements will result in soil disturbance, but these projects are located far enough away from the shoreline not to cause significant impacts.

2.6 FISCAL SUSTAINABILITY PLAN

The project plan includes improvements to the wastewater treatment facility and Lincoln Avenue booster pumping station. The City developed Asset Management Plans for the wastewater treatment and water treatment system. The Asset Management Plans meet the fiscal sustainability plan requirements and the relative elements are incorporated.

2.6.1 INVENTORY OF CRITICAL ASSETS

Treatment facility assets are managed with a computerized maintenance management system (Lucity). The inventory includes multiple attributes used to locate, identify and manage the individual assets as part of the system. The collections and distribution system assets are managed in GIS and integrated with CMMS. BS&A Software is used to manage the City's finances, including purchasing and inventory.

2.6.2 ASSET ASSESSMENTS

The asset management plan incorporates a fixed asset assessment based on a business risk evaluation. By assessing an asset's criticality and probability of failure, a business risk factor is calculated to identify asset risks.

Asset condition was scored on a scale from 1 to 5. A score of 1 represents a new piece of equipment in startup condition. An asset scored a 5 is past its useful life or in poor or un-working condition. Table 2-4 shows the full rating criteria. Asset condition ratings help predict an asset's likelihood of failure.

Table 2-4 Asset Condition Definition

Ranking	High Score	Definition
Very High	5	Very poor, multiple defects and failure of intended function
High	4	Poor condition, defects requiring immediate review found, life cycle significantly altered
Medium	3	Average condition, some minor life cycle altering defects - 50% of equipment life remaining
Low	2	Good condition, appropriate for life cycle
Very Low	1	Excellent condition, brand new

Probability of Failure

The probability of failure represents the likelihood that an asset will fail based on various attributes such as the asset's condition, life expectancy, performance, and maintenance history. Each of these factors is evaluated to determine condition of the asset. A score between 1 and 5 is then assigned to the asset as described in Table 2-5. The point schedule for the probability of failure is based on the accuracy and level of confidence of the available data.

Table 2-5 Probability of Failure Definition

Ranking	Score	Definition	Value Range
Very High	5	There is direct evidence or substantial indirect evidence to suggest it has initiated and/or is likely to occur.	Event will occur within a year
High	4	The fundamental condition or defect is known to exist, indirect evidence suggests it is plausible, and key evidence is weighted more heavily toward likely than unlikely.	Event will occur at least once every 1-5 years
Medium	3	The fundamental condition or defect is known to exist, indirect evidence suggests it is plausible, and key evidence is weighted more heavily toward unlikely than likely	Event will occur at least once every 5-10 years
Low	2	The possibility cannot be ruled out, but there is no compelling evidence to suggest it has occurred or that a condition or flaw exists that could lead to its development.	Event will occur once every 10-20 years.
Very Low	1	Several events must occur concurrently or in a series to trigger failure. Most, if not all of the events are very unlikely; potential failure is non-credible.	Event will occur less than once in 20 years.

Criteria selected by the City for use in determining the probability of failure for this project include the following:

- **Age** – The age of the asset will be used to determine how long until the asset meets the end of its expected useful life and can be extended through routine maintenance and rehabilitation activities.
- **Performance** – Is the asset functioning as required? Is it functioning reliably?
- **Maintenance History** – As the City records work orders, individual assets will develop a history of maintenance or repairs and this information will be stored and used to identify assets which may require capital improvements to eliminate recurring maintenance issues.

Criticality of an Asset

The criticality of an asset is scored similar to the probability of failure. The asset criticality considers the consequence of failure versus the desired level of service. Table 2-6 summarizes the scoring criteria.

Table 2-6 Asset Criticality Rating System

Rating Score	Definition
5	Serious impact to compliance, health or safety if asset fails to perform – no reasonable contingencies available
4	Serious impact to compliance, health or safety if asset fails to perform – backup contingencies may not be readily available
3	Moderate impact to compliance, health or safety if asset fails to perform – backup contingencies available if asset fails to perform
2	Possible impact to compliance, health or safety if asset fails to perform
1	Very low, if any impact to regulatory compliance, health or safety if asset fails to function

2.6.3 BUSINESS RISK EXPOSURE

The Business Risk Exposure is calculated after assessment of each asset. The calculation is based on Probability of Failure and asset criticality. The equation is provided below.

Probability of Failure x Asset Criticality = Business Risk

The BRE can range from 1 to 25, with a value of 1 indicating the lowest risk to the facility and a value of 25 posing the highest risk. The business risk is used to prioritize maintenance and the replacement of assets as part of the development of the capital improvements plan by focusing on assets with higher BRE values.

2.7 WATER AND ENERGY CONSERVATION EFFORTS

Water and energy conservation efforts will be developed and submitted with the Part III application.

2.8 COMPLIANCE STATUS

The wastewater treatment facility is currently operating under National Pollutant Discharge Elimination System (NPDES) permit number MI0023531. That permit governs the discharge limits of the facility. The facility has had an excellent track record for meeting its NPDES permit requirements. Between 2008 and 2018, the WWTF has had only small number of minor excursions relating to dissolved oxygen and pH. A copy of the NPDES permit is included in **Appendix B**.

2.8.1 ENFORCEMENT ORDERS – WASTEWATER SYSTEM

The Utility is not and has not been under any enforcement or court orders related to the operation and maintenance of its wastewater treatment system.

2.8.2 WATER QUALITY ISSUES

The Utility has experienced minor water quality violations over the past five years. The Utility has concerns about the long term reliability of the miles of aged sanitary sewers under its street system. Many of the sewers within the City were constructed several decades ago and some have been the source of maintenance problems.

An evaluation of the existing collection system has been performed by the City of Marquette Engineering Department. This evaluation concluded that replacement of the sanitary sewers in several sectors of the City should be considered. As part of this review, a prioritization of these sewers was compiled.

2.8.3 WATER TREATMENT AND DISTRIBUTION SYSTEM EVALUATION

The Water Filtration Plant has been operating reliably since its construction in 1997. The facility has sufficient production capacity to meet long term customer demand and no capacity-related upgrades are considered to be needed at this time.

The water distribution system includes several ground storage tanks and one booster station. Those facilities are adequate in capacity and size. The Lincoln Avenue Pump Station is approximately 25 years old. A review of the system is necessary to improve the operation and performance of the station.

An evaluation of the distribution system has been performed by the City of Marquette Engineering Department. This evaluation concluded that replacement of the pipes in several sectors of the City should be considered.

2.9 PROJECT NEEDS

Project needs are summarized in the 2020 through 2023 Project Request forms included in **Appendix C**.

2.9.1 PROJECT NEEDS FOR THE NEXT 20 YEARS

The City completed a detailed 5-year capital plan (2019 – 2023) as part of recent asset management planning and rate analysis. The water and sewer capital plans are summarized in Table 2-7 and Table 2-8 respectively. Many of the projects included in the rate analysis 5-year capital plan are included in this

capital plan. These projects are highlighted in bold. Two projects including the Lincoln Avenue Pump Station Improvements and Wastewater Treatment Plant Solids Handling project were not included as part of the rate analysis planning process.

The planning process developed routine repair and replacement costs anticipated for the water system and the wastewater treatment system over a 20 year period. These estimates are represented in the FY2024 through 2039 column.

Table 2-7 Sewer System Capital Plan

Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024 through 2039
Wright Street Reconstruction				\$134,476		
Presque Isle Avenue Reconstruction	\$864,634					
SIMP and Sewer Lateral Replacements	\$425,000		\$355,000	\$465,000	\$330,000	
Fifth Street Reconstruction (Fisher to Spring)	\$158,074					
Homestead Street Upgrade (Ward to Grove)	\$94,420					
Cured-in-place Pipe Lining				\$400,000		
Lift Stations						\$175,000
Sanitary Sewer System (based on 90 year life)						\$850,000
Altamont Street Reconst. (Blemhuber to McMillan)		\$89,604				
Front Street Reconstruction		\$286,294	\$278,001			
Kaye Avenue Reconstruction (Presque Isle to Third)		\$111,458				
Park Street Reconstruction (Lee to Fourth)		\$232,751				
Marquette Drive Upgrade (Lakeview Dr. to North End)		\$102,716				
Lakeview Drive Upgrade (Marquette Dr. to South End)		\$71,027				
Third Street Reconstruction (Fisher to Baraga)		\$114,736				
SCADA Computer System Replacement		\$36,667				
Hewitt Avenue Reconstruction			\$367,591			
Allouez Road Upgrade			\$228,478			
College Avenue Reconstruction			\$218,349	\$169,254		
Jefferson Street Storm Sewer Upgrade				\$7,000		
Shiras Drive Street Upgrade (U.S. 41 to Radisson)			\$21,385			
Ohio Street Upgrade/Reconstruction			\$51,773		\$85,972	
Newberry Street Upgrade (Division to East End)			\$50,648			
Center Street Reconstruction (Wilkson to Schaffer)			\$79,911			
Lidar, Orthophotography, and Elev. Contours Aerial Map			\$10,000			
Nicolet Boulevard Upgrade				\$62,601		
Meeske Avenue Reconstruction (Washington to Ridge)				\$44,052		
Spruce Street Reconstruction				\$137,954		
Fitch Avenue Reconstruction (Union to Harlow)				\$45,212		
Morgan Street Reconstruction (Washington to Bluff)				\$54,486		
Altamont Street Upgrade (Grandview to Pioneer)				\$25,504		
Kildahl Reconstruction (McClellan to West)				\$85,786		
Gravel Street Upgrades (Washington Street Alley)				\$5,796		
Division Street Reconstruction					\$273,438	
Oak Street Reconstruction (Ridge to Ohio)					\$192,242	
Park Street Reconstruction (Pine to Spruce)					\$199,407	
Cedar Street Reconstruction (Prospect to Crescent)					\$68,061	
Summit Street Reconst. (Longyear to Presque Isle)					\$204,183	
Fern Place Upgrade (Michigan to Ohio)					\$74,031	
Sherman Street Upgrade (Sheridan to Lincoln)					\$160,003	
Total	\$1,542,128	\$1,045,253	\$1,661,136	\$1,637,121	\$1,587,337	\$1,025,000

Table 2-8 Water System Capital Plan

Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024 through 2039
SIMP and Water Lateral Replacements	\$15,000		\$20,000	\$20,000	\$20,000	
WTF Turbidimeter Replacement		\$40,000				
Presque Isle Avenue Reconstruction (Fair to Wright)	\$1,012,099					
Fifth Street Reconstruction (Fisher to Spring)	\$128,369					
Homestead Street Upgrade (Ward to Grove)	\$124,126					
Altamont Street Reconstruction (Blemhuber to McMillan)		\$207,618				
Front Street Reconstruction (Arch to Michigan)		\$91,789				
Front Street Reconstruction (Ohio to Hewitt)		\$119,107				
Front Street Reconstruction (Park to Magnetic)		\$178,115				
Kaye Avenue Reconstruction (Presque Isle to Third)		\$122,386				
Park Street Reconstruction (Lee to Fourth)		\$328,911				
Marquette Drive Upgrade (Lakeview Dr. to North End)		\$296,129				
Lakeview Drive Upgrade (Marquette Dr. to South End)		\$135,499				
Third Street Reconstruction (Fisher to Baraga)		\$134,406				
SCADA Computer System Replacement		\$18,333				
Allouez Road Upgrade (W. Nicolet to LaSalle Road)			\$363,539			
Center Street Reconstruction (Wilkinson to Schaffer)			\$227,353			
College Avenue Reconstruction (Presque Isle to Front)			\$291,507			
Front Street Reconstruction (Magnetic to Fair)			\$377,046			
Hewitt Avenue Reconstruction (Pine to Spruce)			\$225,102			
Hewitt Avenue Reconstruction (Third to Front)				\$182,332		
Newberry Street Upgrade (Division to East End)			\$96,794			
Ohio Street Upgrade (Spruce to Pine)			\$151,943			
Shiras Drive Street Upgrade (U.S. 41 to Radisson)			\$203,718			
Lidar, Orthophotography, and El. Contours Aerial Maps				\$10,000		
College Avenue Reconstruction (Front to Pine)				\$236,492		
Kildahl Avenue Reconstruction (McClellan to West)				\$112,450		
Nicolet Boulevard Upgrade (Raymbault to US 41)				\$248,085		
Spruce Street Reconstruction (Michigan to Hewitt)				\$207,510		
Wright Street Reconstruction (Sugarloaf to Vanevera)				\$293,286		
Spruce Street Reconstruction (Magnetic to College)				\$107,812		
Morgan Street Reconstruction (Washington to Bluff)				\$92,742		
Fitch Avenue Reconstruction (Union to Harlow)				\$56,805		
Meeske Avenue Reconstruction (Washington to Ridge)				\$76,512		
Altamont Street Reconstruction (Grandview to Pioneer)				\$68,397		
Gravel Street Upgrade (Washington Street Alley)				\$2,319		
Microfiltration Plant Study				\$100,000		
Cedar Street Reconstruction (Prospect to Crescent)					\$101,495	
Division Street Reconstruction (Blemhuber to Newberry)					\$145,675	
Division Street Reconstruction (Hampton and Joliet)					\$340,305	
Fern Place Upgrade (Michigan to Ohio)					\$107,465	
Oak Street Reconstruction (Ridge to Ohio)					\$249,557	
Ohio Street Reconstruction (Cedar to Fern)					\$154,032	
Park Street Reconstruction (Pine to Spruce)					\$275,826	
Sherman Street Upgrade (Sheridan to Lincoln)					\$353,440	
Summit Street Reconstruction (Longyear to Presque Isle)					\$260,304	
Annual Replacement Projects						\$1,950,000
Total	\$1,279,594	\$1,672,293	\$2,149,334	\$1,622,410	\$2,008,099	\$1,950,000

3. ANALYSIS OF ALTERNATIVES

3.1 IDENTIFICATION OF ALTERNATIVE SOLUTIONS

The Utility's water and sewer facilities require periodic upgrades and/or replacement over time. This section provides details for each infrastructure component and the strategies investigated for meeting the Utility's goals and objectives. The evaluation includes identifying potential alternatives and analyzing principle alternatives for the following projects (or group of projects):

- Lincoln Avenue Water Pump Station
- Wastewater Treatment Plant Solids Handling Improvements Project
- Street Improvement Maintenance Projects (SIMP) – With Water Main and Sanitary Sewer Replacements
- Street Reconstruction Projects (SIMP) – With Water Main and Sanitary Sewer Replacements
- Cured-In-Place Pipe Lining Projects

The alternative evaluation considers no action, optimization and regionalization as part of each alternative.

3.1.1 LINCOLN AVENUE WATER BOOSTER PUMP STATION (CONSIDERED FOR GREEN PROJECT RESERVE)

The Lincoln Avenue Booster Station pumps water into the Lincoln Tank District which serves the Eastern part of the Marquette service area. The pump station is was originally constructed in 1991 and many of the electrical and mechanical components are more than 25 years in age and are in need of repair or replacement. The controls have recently been upgraded. One of the pumps and associated piping is illustrated in Figure 3-1.

The project includes an engineering evaluation of the system to optimize the operation, reliability and efficiency of the system relative to the other water distribution elements.

3.1.1.1 No Action Alternative

No action does not achieve the City's level of service objectives including maintaining water quality, managing efficiency and achieving a high level of customer service. The No Action alternative is not considered viable.



Figure 3-1 Lincoln Avenue Booster Pump

3.1.1.2 Alternative 1 – Complete an Engineering Analysis of the Pump Station

The existing equipment is well maintained by the City operation and maintenance staff. Executing an engineering analysis will evaluate hydraulic and energy efficiency alternatives and identify the need for repair/replacement.

Repair and replacement improvements considered for the pump station include:

- Replacing or refurbishing (3) horizontal split case pumps and 60 hp motors and variable speed drives
- Replacing or refurbishing isolation valves and pressure control valves
- Replacing the motor control center
- Providing soft start or variable speed drives.

The building structural and architectural elements are in good condition and are not considered for refurbishment as part of the project.

3.1.1.3 Alternative 2 – New Pump Station

This alternative replaces the existing pump station with a new pump station including mechanical, electrical, controls and process systems.

3.1.2 WASTEWATER TREATMENT SOLIDS HANDLING IMPROVEMENTS (CONSIDERED FOR GREEN PROJECT RESERVE)

Removal of solids from the wastewater treatment process is essential for NPDES permit compliance and process efficiency. The Utility evaluated long-term biosolids processing, storage and disposal alternatives to improve the system including:

- Provide system redundancy – a single piece of equipment performs both thickening and dewatering.
- Increase biosolids storage capacity (less than 180 days of storage)
- Support beneficial reuse of solids
- Reduce the cost of biosolids disposal.

3.1.2.1 No Action Alternative

Solids handling improvements are intended to address risks of regulatory non-compliance and alternative disposal costs if the existing equipment were to fail or land application were not available for an extended period of time. No action does not address the risks or cost of non-compliance.

3.1.2.2 Alternative 1 - New Liquid Storage Tank and New Gravity Belt Thickener in Existing Building

This alternative provides a new GBT in the existing Thickener Room, a new precast concrete liquid storage tank adjacent to Liquid Storage Tank No. 2 and a new cake storage addition adjacent to the existing cake storage structure.

3.1.2.3 Alternative 2 - New Cake Storage Pad, New Gravity Belt Thickener in Existing Building and New Cake Loadout Facilities

This alternative provides a new GBT in the existing Thickener Room, new cake storage building adjacent to Liquid Storage Tank No. 2, a new truck loadout building adjacent to the Thickener Room and a screw conveyor system from the existing GBT/BFP to truck loadout.

3.1.2.4 Alternative 3 - New cake storage pad and new dewatering building with two belt filter presses

This alternative provides two new BFPs in a new dewatering building, a conveyor system to transfer cake to a storage pad and a new cake storage building adjacent to Liquid Storage Tank No. 2.

3.1.3 STREET IMPROVEMENT MAINTENANCE PROJECTS (SIMP) –SANITARY SEWER REPLACEMENTS

The SIMP program is used to extend the useful service life of the existing streets. The program is executed annually to keep the streets from deteriorating to a stage where complete replacement is necessary. Without the program more street reconstructions are necessary resulting in additional costs to the Utility. The SIMP program is done in conjunction with the sanitary sewer replacement program. Replacing the lateral sewer pipes (depending on condition and age) at the same time negates future disruption to the public and additional repairs to the street.

If the condition, age and type of the sewer laterals warrants replacement, the lateral is excavating and replaced prior to the repavement.

3.1.3.1 No Action Alternative

The intent of the SIMP program is to reduce cost through engineering analysis and coordinating street pavement improvements with sanitary sewer lateral replacements. Replacement improves the reliability of the collection system aligning with the City's level of service objectives for regulatory compliance and customer service. No action does not achieve these objectives.

3.1.4 STREET RECONSTRUCTIONS – WATER MAIN AND SANITARY SEWER REPLACEMENTS

Utility staff has performed detailed review of the condition of several street and utility service segments within the City. The review includes the condition of the streets and underground utilities, including water and sewer mains. Several street segments contain water and sewer mains are undersized, are in poor condition, or both. The pipes require replacement within the planning period to maintain Utility level of service objectives.

The City's best management practices prioritizes and coordinates street reconstruction with the replacement of the water and sewer utilities depending on their condition. Justification for replacing the water and sewer utilities (in coordination with street reconstruction) includes the following:

Streets:

- Paser ratings of 4 or less are poor and typically constitute reconstruction

- History of pavement management and re-paving

Sewer pipes:

- CCTV National Association of Sewer Service Companies (NASSCO) scoring (structural defect scores 4 or 5)
- Pipe age (90 years or greater are high priority)
- Pipe type (vitrified clay or fiber bituminous are typically the highest risk for failure given the age, also these pipes are difficult to line due to size and condition)
- Coordination with major street reconstructions.

Sewer manholes:

- (NASSCO) manhole assessment scoring (scores 4 or 5)
- Structure age (90 years or greater are high priority)
- Coordination with major street reconstructions.

Water Pipes:

- Fire flows - Minimum 8" diameter main pipe (Code of Ordinances City of Marquette, MI – Section 2-285.
- Pipe age (90 years or greater are high priority)
- History of breaks, failures and repair
- Pipe type (sand cast iron typically has issues with tuberculation creating water quality and capacity issues)
- Coordination with major street reconstructions.

Water Laterals:

- Type of lateral (lead laterals are replaced as part of proposed revisions to lead and copper rule.

For main replacements, three methods were evaluated for replacing the sewers including:

- Pipe bursting
- Open cut direct replacement
- Directional drilling (for water mains).

Pipe bursting is the trenchless process that allows replacing existing pipes with larger pipes, with minimal excavation. Pipe bursting involves pulling a larger new pipe through the existing pipe corridor. Force on a cutter head breaks up the existing sewer into pieces and pushes them into the surrounding soil. This method is not considered feasible in the Marquette area due to the high risk of encountering rock, as well as the additional cost of excavating for reconnecting laterals. For these reasons, pipe bursting was not considered further.

For the various street reconstruction projects, the selection of the water and sewer main replacement was taken on a case-by-case basis. In some years' projects, an alternative means other than open cut excavation was more favorable. This includes cured-in-place pipe lining included in Section 3.1.5.

In most street segments, direct pipe replacement was the primary choice for addressing the customers' water main and sanitary sewer needs. This method involves digging a trench, and laying new pipe. This method has the following advantages:

- Installing larger pipes is possible
- Interrupting sewer and water service is minimized
- Reconnecting service lines is relatively easier (compared to pipe bursting and directional drilling).

The street reconstruction program will inspect, test and replace lead water service lines as part of each project.

3.1.4.1 No Action Alternative

No action affects the ability of the Utility to meet level of service objectives including minimizing sewer overflows, managing collection and water distribution system failures and meeting customer service objectives for water service reliability and fire flow.

3.1.5 CURED-IN-PLACE PIPE LINING PROJECTS

3.1.5.1 Install Cured-in-place Lining

The Utility's asset management planning process uses sewer cleaning, televising and inspections to monitor and manage the condition and performance of the sanitary sewer system. As part of the inspection process the Utility evaluates the pipes using NASSCO standards. The scoring information is used to identify areas of risk and plan and execute repair/replacement. The goal is to manage risks associated with sewer system performance and address locations that require high levels of maintenance mostly due to age and service conditions.

Cured-in-place pipe lining minimizes the disruption to traffic, avoids excavation in the street, avoids excavation in areas such as, parking lots, back yards, wooded areas, and areas of high structural interference. This process increases the service life of sewers by more than 50 years and reduces costs in deeper, larger sewers where open cut is more expensive.

3.1.5.2 No Action Alternative

No action affects the ability of the Utility to meet level of service objectives including regulatory compliance and customer service.

3.2 ANALYSIS OF PRINCIPAL ALTERNATIVES

The potential alternatives for each project (or group of projects) were evaluated and principle alternatives were carried forward for additional review. The additional review included an economic and non-economic evaluation where appropriate. The economic evaluation considered total initial capital cost including construction, engineering, and a contingency. The present worth of annual costs includes major equipment operating costs and the salvage value includes the value of the project remaining after the 20-year design life.

3.2.1 LINCOLN AVENUE WATER BOOSTER STATION PROJECT (GREEN PROJECT RESERVE)

Two viable alternatives were considered as part of this project.

- Alternative 1 – Complete Engineering Analysis and Execute Repair/Replacement of Mechanical and Electrical Systems
- Alternative 2 – Replace Pump Station

3.2.1.1 Alternative 1 - Complete an Engineering Analysis of the Pump Station and Execute Repair/Replacement

The project plan includes an engineering analysis to evaluate hydraulic and energy efficiency alternatives and identify the need for repair/replacement. The analysis will dictate improvements that support water conservation and energy efficiency.

Repair and replacement improvements to the pump station include:

- Replacing or refurbishing (3) horizontal split case pumps and 60 hp motors and variable speed drives
- Replacing or refurbishing isolation valves and pressure control valves
- Replacing the motor control center
- Providing soft start or variable speed drives.

The building structural and architectural elements are in good condition and are not considered for refurbishment as part of the project.

3.2.1.2 Alternative 2 - Complete Replacement of the Facility

Under this alternative, the City would abandon the pump station in place and construct an entirely new facility at another site.

While this alternative may not seem feasible for most facilities, it could be cost-effective for facilities where most of the structural components are old and deteriorated, and for facilities where major treatment processes are insufficiently sized or not able to meet treatment performance issues.

3.2.1.3 Summary and Recommendation

Completing the engineering analysis and repair and/or replacement of pump station components to improve energy efficiency and water conservation (Alternative 1) is the selected alternative. The engineering analysis is planned for 2021 with the implementation in 2022. This alternative aligns with the asset management goals and objectives and also may qualify for Green Project Reserve funds.

The estimated engineering analysis cost is \$40,000. Table 3-1 summarizes the estimated cost, 20-year present worth costs and estimated salvage value for each alternative. A detailed cost review for each alternative are included in **Appendix D**.

Table 3-1 Lincoln Avenue Booster Pump Station Principle Alternatives Summary

ALTERNATIVE NO. AND NAME	Initial Cost	Initial Annual O&M	20-Year PW	Salvage Value
Alternative 1 - Replace and Upgrade Individual System Components	\$336,100	\$23,589	\$798,100	\$0
Alternative 2 - New Pump Station	\$1,800,000	\$23,589	\$2,262,000	\$381,000

3.2.2 WASTEWATER SOLIDS HANDLING IMPROVEMENTS (GREEN PROJECT RESERVE)

The Utility evaluated long-term biosolids processing, storage and disposal concerns. Additional equipment for thickening and/or dewatering was evaluated to reduce disposal costs, beneficially reuse biosolids and manage the risks associated with lack of equipment redundancy and biosolids storage. The alternatives evaluated include:

- Alternative 1 - New liquid storage tank and new gravity belt thickener in existing building
- Alternative 2 - New cake storage pad, new gravity belt thickener in existing building and new cake loadout facilities
- Alternative 3 - New cake storage pad and new dewatering building with two belt filter presses

Table 3-2 summarizes the elements for each alternative.

Table 3-2 Alternatives Summary Table

	Units	Alternative No. 1 New GBT, New Liquid Storage Tank and Cake Storage Addition	Alternative No. 2 New GBT, New Truck Loadout and New Cake Storage Structure	Alternative No. 3 New BFPs, New Dewatering Building and New Cake Storage Structure
Thickening Capacity		(1) New GBT (2) Existing GBT/BFP	(1) New GBT (2) Existing GBT/BFP	(1) Existing GBT/BFP
Dewatering Capacity		(1) Existing GBT/BFP	(1) Existing GBT/BFP	(1) New BFP No. 1 (2) New BFP No. 2 (3) Existing GBT/BFP
Cake Disposal	dtpy	277	372	372
Liquid Disposal	dtpy	367	269	269
Biosolids Storage Capacity	days	211	184	184

The need for ancillary components such as booster pump, final effluent water pumping, polymer systems and recycle pumping were also reviewed and incorporated as necessary in the alternatives.

The key considerations for each alternative are:

- Thickening redundancy – thickening is more critical to plant operations in the event of equipment failure than dewatering
- Increasing disposal of cake biosolids to reduce annual expenses
- Provide at least 180 days of biosolids storage
- Capital and life cycle cost

3.2.2.1 Alternative 1 - New Liquids Storage and New GBT in Existing Building

The first alternative includes a new gravity belt thickener (GBT), new liquid biosolids storage tank and a cake storage addition. The cake storage addition is a new independent structure directly adjacent to the existing cake storage pad. The cake storage addition has concrete walls with a pole shed cover similar to the existing structure. The new liquid storage tank is a below grade, poured concrete tank with pre-cast

concrete cover panels. The top slab and walls are coated. A site plan depicting the potential location of the modifications is provided in Figure 3-2.



Figure 3-2 Site Plan Alternative 1

The new GBT is located in the existing Thickener Room. A Polymer Room adjacent to the Thickener Room is no longer used. The walls for the room are demolished to provide additional space in the Thickener Room. The new GBT includes a progressing cavity pump underneath the discharge chute to transfer thickened waste activated sludge (TAS) to the TAS Wet Well. A metal access platform is provided next to the GBT with a stairwell. A new booster pump rated for 40 gpm at 85 psig is provided. A second polymer skid with liquid polymer drums is provided adjacent to the GBT. See Figure 3-3 for a plan view of the proposed modifications.

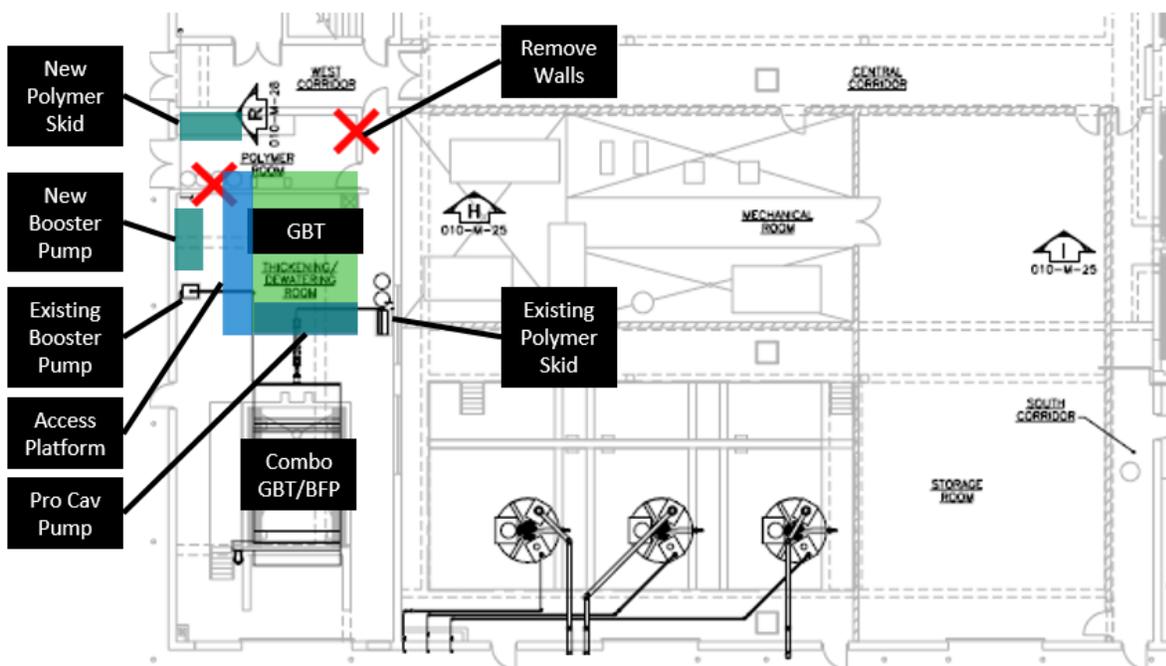


Figure 3-3 Building Plan Alternative 1

The new GBT is sized for the same thickening capacity as the existing combination gravity belt thickener/belt filter press (GBT/BFP). There is sufficient capacity in average and maximum month conditions with the new GBT for thickening and combo GBT/BFP for dewatering; see Table 3-3.

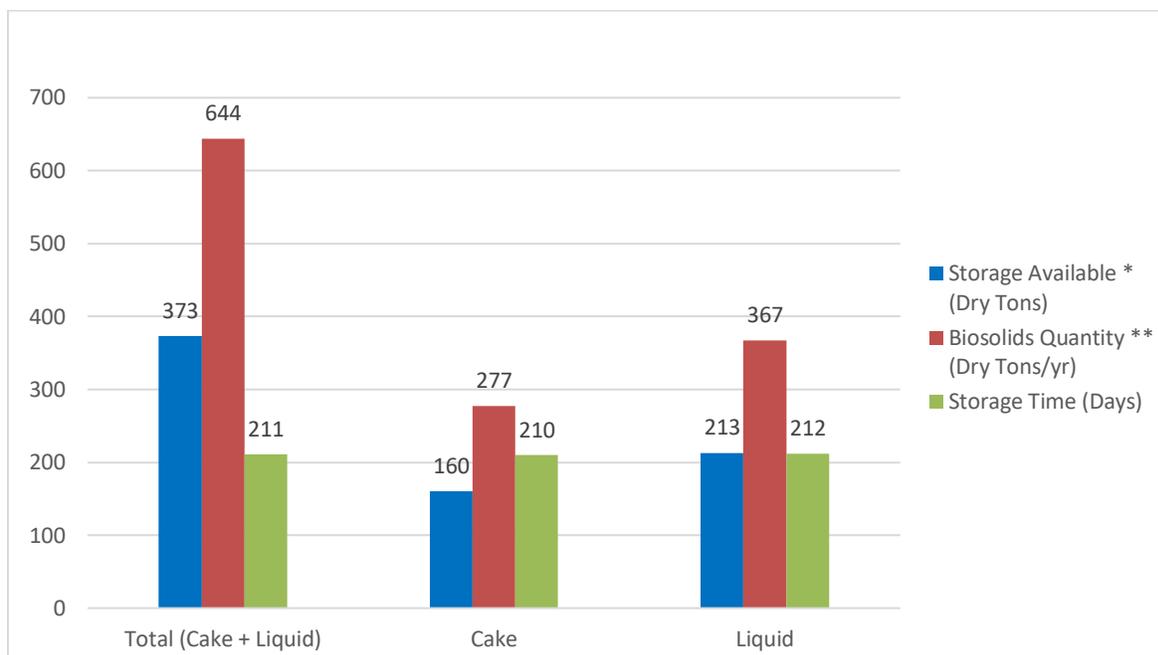
Table 3-3 Thickening and Dewatering Loading Alternative 1

Thickening (New GBT)		Average	Max Month
Operation	Days/week	4	5
Operation	Hours/day	7	7
Flow Capacity*	gpm	440	440
Flow Rate	gpm	185	180
Solids Capacity*	lb/hr	1,100	1,100
Solids Loading	lb/hr	780	760
Dewatering (Existing GBT/BFP)			
Operation	Days/week	1	2
Operation	Hours/day	6	6
Flow Capacity*	gpm	140	140
Flow Rate	gpm	132	127
Solids Capacity*	lb/hr	2,100	2,100
Solids Loading	lb/hr	1,866	1,646

* Per manufacturers design basis recommendations

The new liquid biosolids storage tank is proposed to store 435,000 gallons in order to provide a similar capacity to the existing liquids storage tanks. The approximate dimensions are 80 feet by 78 feet by 9-1/3 feet deep. The cake storage addition will provide approximately 440 cubic yards of storage, increasing the

total cake storage by approximately 50%. The quantity of cake and liquid biosolids to be stored and disposed in Alternative 1 is provided in Figure 3-4. The quantities are used in the present worth analysis for biosolids disposal costs.



* Liquid storage based upon 66 lbs/cu ft & 13.5% TS; Cake storage based upon 62 lbs/cu ft & 4.4% TS
 ** Assumed biosolids dewatered is proportional to cake versus liquid storage available

Figure 3-4 Biosolids Storage Alternative 1

3.2.2.2 Alternative 2 - New Cake Storage and New GBT in Existing Building

The second alternative includes a new cake storage structure, new GBT, cake solids conveyance and a truck loading garage. The truck loading garage is located directly adjacent to the existing Thickener Room. The garage is constructed of concrete masonry unit (CMU) walls with aluminum siding to match the existing building. A new cake storage structure is located on the south end of the site. The structure would be similar to the existing cake storage structure with concrete walls, a pole shed roof and three bays. See Figure 3-5 for a site plan depicting the additions.

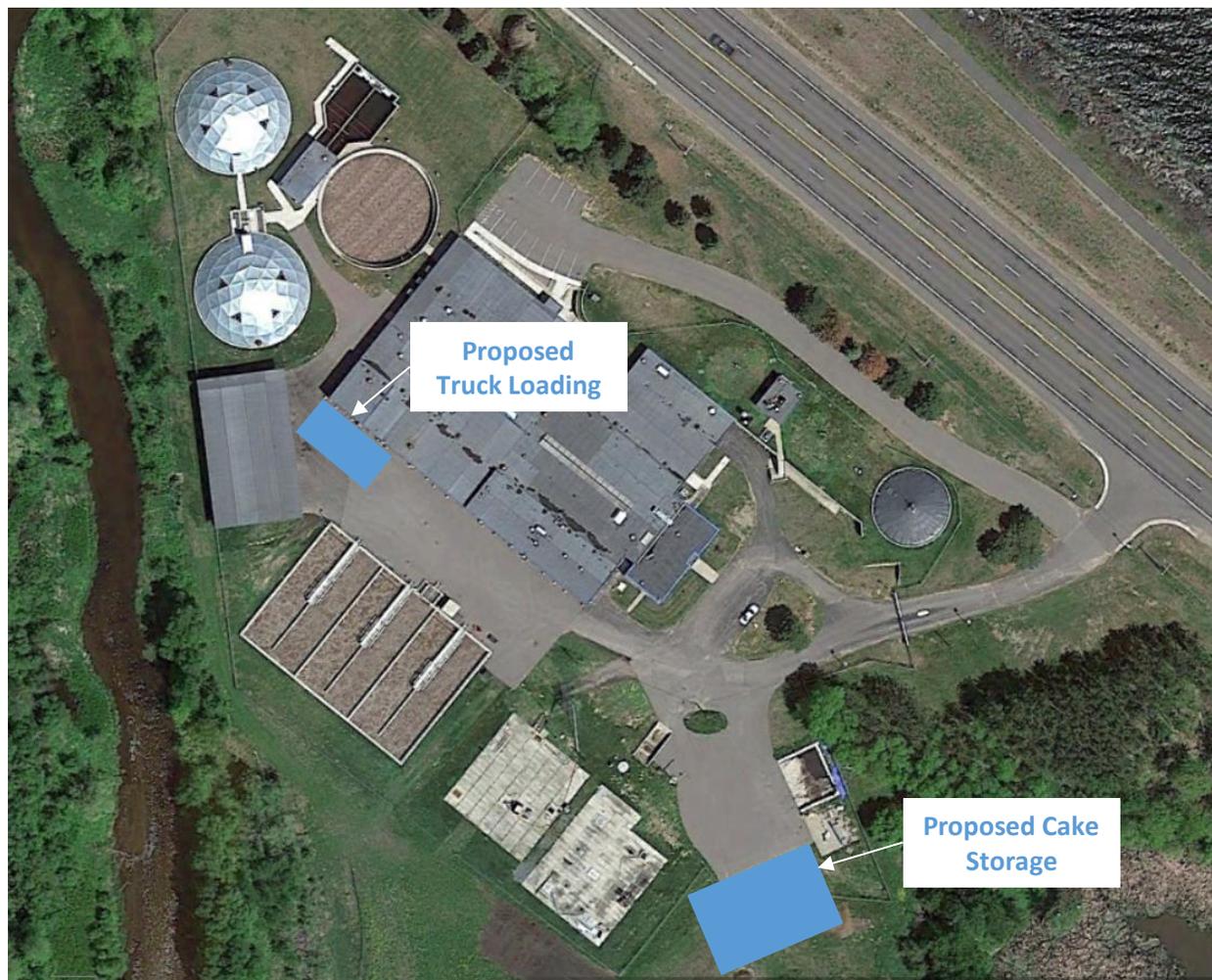


Figure 3-5 Site Plan Alternative 2

The new GBT is located in the existing Thickener Room and the Polymer Room walls are demolished just as in Alternative 1. The Thickener Room also includes addition of a new booster pump, polymer system, progressive cavity pump and access platform as described in Alternative 1. In order to transfer cake solids from the Thickener Room to the new cake storage structure, a conveyor system and truck loadout garage are provided. The City purchases a 20 cubic yards dump truck to be located in the garage. The garage has two manual overhead doors; one for truck access and one for future removal of the combo GBT/BFP or access to the combo GBT/BFP with a front end loader. The chemical delivery piping is relocated to the east/southeast outside of the garage footprint. Two conveyors are added to the discharge of the combo GBT/BFP. One conveyor transfers cake horizontally and one conveyor is inclined to transfer cake to the truck bed. See Figure 3-6 for a plan view of the proposed Thickener Room modifications and Truck Loadout Garage addition.

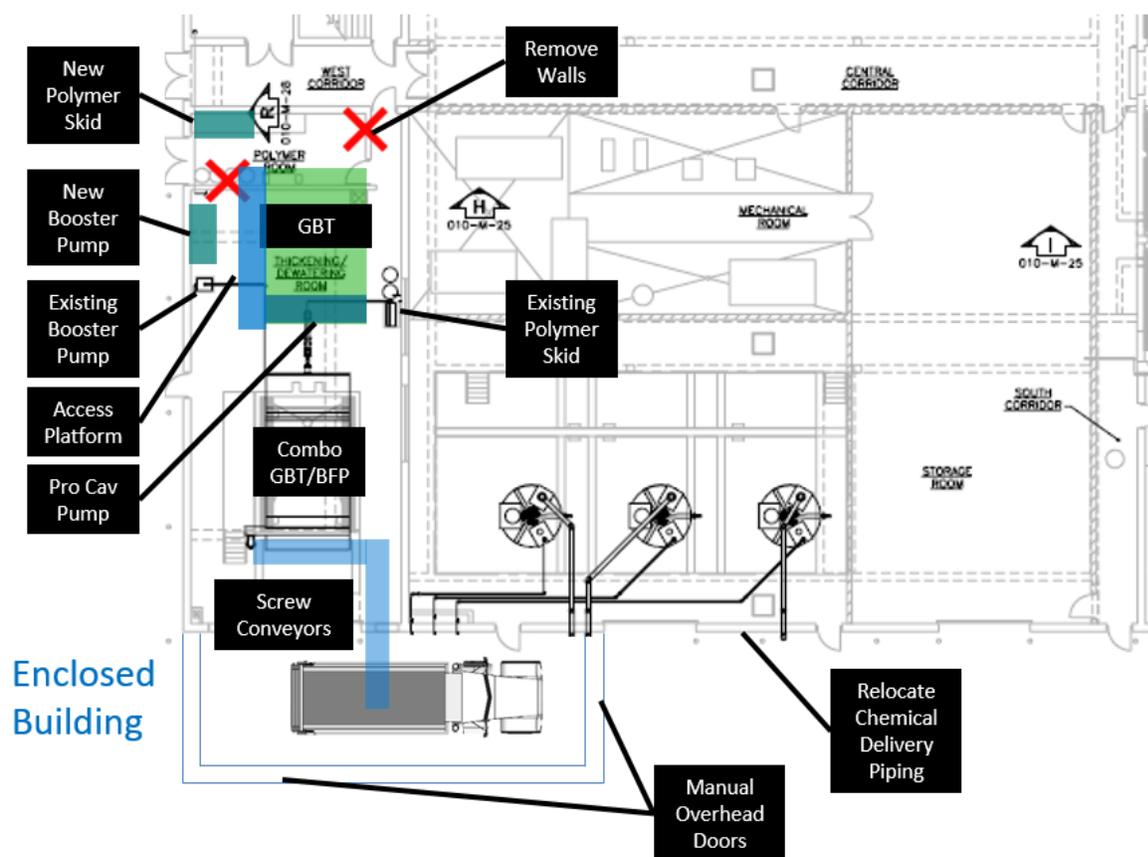


Figure 3-6 Building Plan Alternative 2

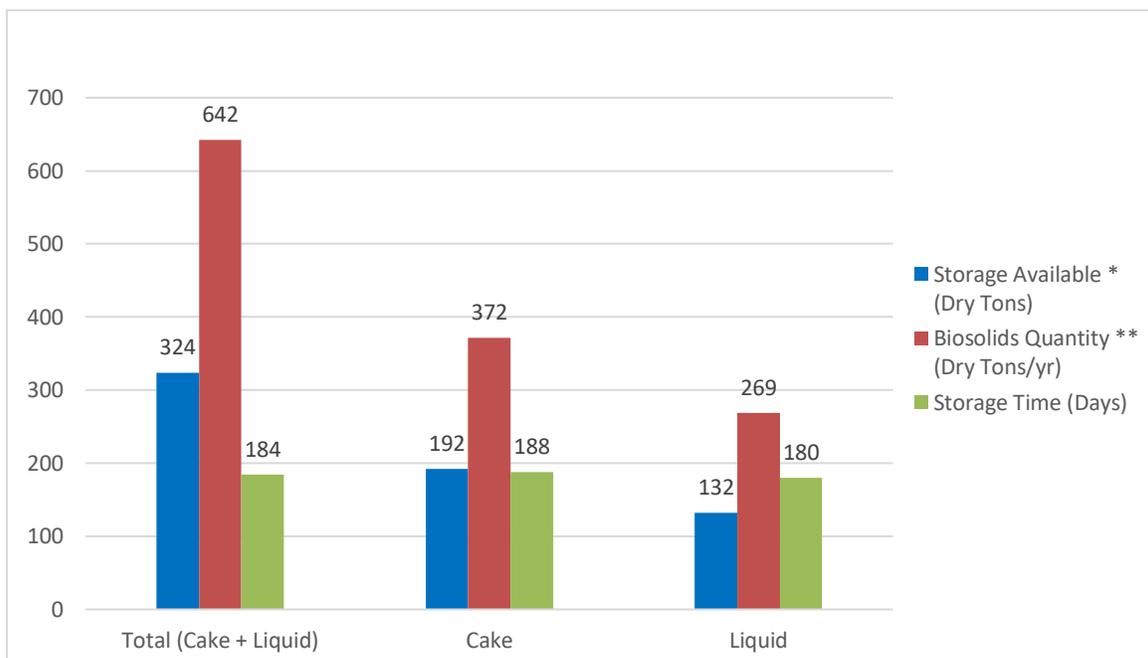
The new GBT is sized for the same thickening capacity as the existing combo GBT/BFP unit. There is sufficient capacity in average and maximum month conditions with the existing and new equipment; see Table 3-4.

Table 3-4 Thickening and Dewatering Loading Alternative 2

Thickening (New GBT)		Average	Max Month
Operation	Days/week	4	5
Operation	Hours/day	7	7
Flow Capacity*	gpm	440	440
Flow Rate	gpm	185	180
Solids Capacity*	lb/hr	1,100	1,100
Solids Loading	lb/hr	780	760
Dewatering (Existing GBT/BFP)			
Operation	Days/week	1	2
Operation	Hours/day	8	8
Flow Capacity*	gpm	140	140
Flow Rate	gpm	133	128
Solids Capacity*	lb/hr	2,100	2,100
Solids Loading	lb/hr	1,880	1,658

* Per manufacturers design basis recommendations

A new cake biosolids storage building is proposed in this alternative. The new storage building is proposed to store 711 cubic yards of material in order to provide a total of 180 days combined storage time. The building is a pole shed installed on concrete walls with approximate overall dimensions of 50 feet by 120 feet. The building is split into three bays. The quantity of cake and liquid biosolids to be stored and disposed in Alternative 2 is provided in Figure 3-7. The quantities are used in the present worth analysis for biosolids disposal costs.



* Liquid storage based upon 66 lbs/cu ft & 13.5% TS; Cake storage based upon 62 lbs/cu ft & 4.4% TS

**Assumed biosolids dewatered is proportional to cake versus liquid storage available

Figure 3-7 Biosolids Storage Alternative 2

3.2.2.3 Alternative 3 - New Cake Storage and New Dewatering Building

The third alternative includes a new dewatering building and cake storage building. The buildings are located on the south end of the site adjacent to each other. Pavement is added to the north side of the building for truck loading access, chemical delivery and equipment removal. The cake structure is similar to the existing cake storage building with concrete walls, a pole shed cover and multiple bays. A CMU wall building is constructed for the dewatering equipment. The roof is flat, constructed of pre-cast concrete with an EPDM roofing system. See Figure 3-8 for a site plan of this alternative.



Figure 3-8 Site Plan Alternative 3

A conceptual layout for the dewatering building and cake storage structure was developed, see Figure 3-9. Two new BFPs are installed in the dewatering building. The building is split into three rooms: dewatering room, electrical room and polymer room. Overhead doors are provided adjacent to the driveway for the polymer room and dewatering room. A booster pump is required in the dewatering room for belt washing. A conveyor, common to both BFPs, transfers dewatered cake to a cake storage pad. A front end loader is used to move cake from the cake storage pad to the cake storage building. Alternative cake handling options that could be provided at additional cost include:

1. Loadout conveyor to truck located within dewatering building.
2. Loadout conveyor to Cake Storage Bay No. 3. Loadout conveyor includes heat tracing to prevent freezing.
3. Inclined conveyor to distributing conveyor. Distributing conveyor has drop point in all three cake storage bays. All conveyor components exterior to the dewatering building include heat tracing to prevent freezing.

The alternative cake handling options would reduce labor time and minimize spilling of cake on the driveway. Freezing on the conveyors is a concern; however, Donohue has experience with a heat traced cake conveyor that has not experienced freezing issues.

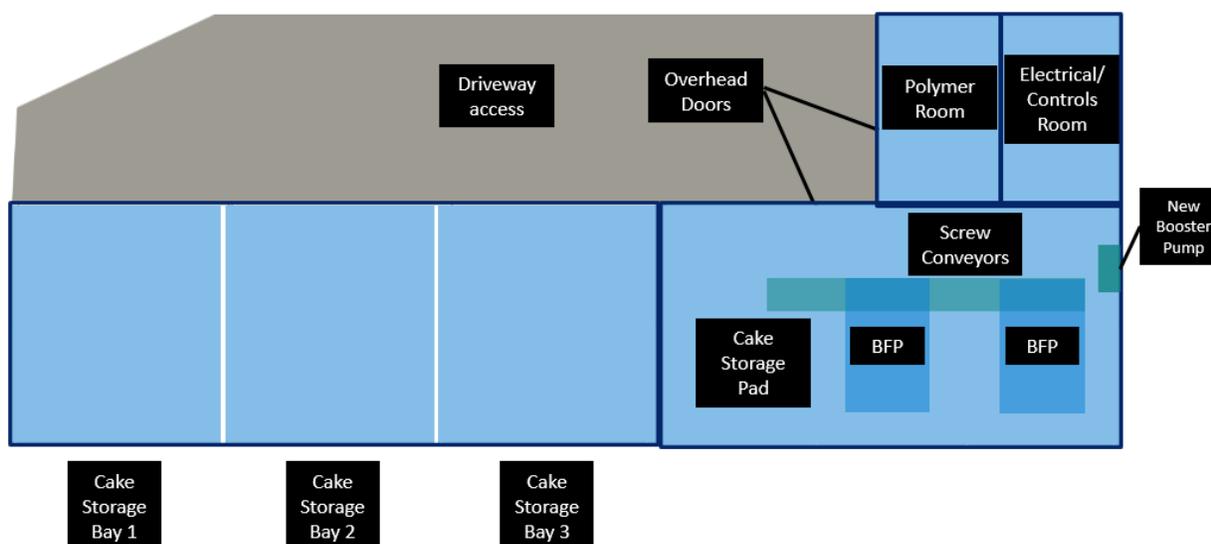


Figure 3-9 Building Plan Alternative 3

The two new BFPs are each sized to match the capacity of the existing combination BFP/GBT. One BFP is intended for normal service with the second BFP provided for redundancy. The existing combination BFP/GBT is utilized for thickening under normal operations. There is no backup GBT in this alternative. See Table 3-5 for the Alternative 3 design basis.

Table 3-5 Thickening and Dewatering Loading Alternative 3

Thickening (Existing GBT/BFP)		Average	Max Month
Operation	Days/week	4	5
Operation	Hours/day	7	7
Flow Capacity*	gpm	440	440
Flow Rate	gpm	185	180
Solids Capacity*	lb/hr	1,100	1,100
Solids Loading	lb/hr	780	760
Dewatering (New BFP)			
Operation	Days/week	1	2
Operation	Hours/day	8	8
Flow Capacity*	gpm	140	140
Flow Rate	gpm	133	128
Solids Capacity*	lb/hr	2,100	2,100
Solids Loading	lb/hr	1,880	1,658

* Per manufacturers design basis recommendations

The new cake storage structure has the same design parameters as with Alternative 2.

3.2.2.4 Summary and Recommendation

The key considerations for each alternative are:

- Thickening redundancy – thickening is more critical to plant operations in the event of equipment failure than dewatering
- Increasing disposal of cake biosolids to reduce annual expenses
- Provide at least 180 days of biosolids storage
- Capital and life cycle cost

Alternative No. 1 provides thickening/dewatering redundancy and significantly more than 180 days of biosolids storage; however, it does not increase cake biosolids disposal.

Alternative No. 2 provides the first three items listed above and are a lower capital cost than Alternative No. 3. Alternative No. 2 also provides a less operationally intensive method of handling cake biosolids.

Alternative No. 3 is most expensive and does not provide thickening redundancy. However, a new GBT could be provided in the existing Thickener Room in lieu of a second BFP in the new building. Alternative No. 3 would then provide thickening redundancy. Alternative No. 3 consolidates biosolids dewatering and storage operations minimizing operational effort to move cake biosolids.

The costs for each alternative are summarized in Table 3-2. A detailed cost review for each alternative are include in **Appendix E**.

Table 3-6 Alternatives Cost Summary Table

ALTERNATIVE NO. AND NAME	Initial Cost	Initial Annual O&M	20-Year PW	Salvage Value
Alternative 1: New Liquids Storage & New GBT in Existing Building	\$2,565,000	\$228,860	\$7,047,000	\$0
Alternative 2: New Cake Storage and New GBT in Existing Building	\$2,211,000	\$230,199	\$6,720,000	\$0
Alternative 3: New Cake Storage and New Dewatering Building	\$4,006,000	\$230,199	\$8,515,000	\$0

Alternative No. 2 is the preferred alternative. The alternative provides thickening redundancy and increases the overall biosolids storage capacity. This reduces the costs for disposal, increases the volume of solids beneficially reused and reduces the risk of NPDES exceedances related to the inability to dispose of solids from the treatment process.

3.2.3 STREET IMPROVEMENT MAINTENANCE PROJECTS (SIMP)

The SIMP program is used to extend the useful service life of existing streets. This program is executed on an annual basis to keep the streets from deteriorating to a stage where they will need to be completely replaced. Without this program more streets are placed in the category for complete reconstruction and will not meet their projected life span. Complete reconstruction costs substantially more than the SIMP program.

This program is done in conjunction with the City's sanitary sewer replacement program. Prior to street repavement the laterals are televised. Repair/replacement of the laterals is made based on the type of material and condition. The City has a number of locations with clay or orangeburg laterals. These laterals

routinely fail causing backups. If the laterals require replacement, they are excavated and addressed prior to re-pavement.

The SIMP locations and estimated costs relating to sanitary sewer lateral replacement area included in Table 3-7, Table 3-8 and Table 3-9.

Table 3-7 2020 SIMP Details

Street Location	Paser Rating	Street Maintained (Linear Feet)	Sanitary Sewer Install Date	Sanitary Laterals (for connection)
W Hewitt (Fourth To Oak)	5	207	1921	5
W Hewitt (Oak To Sixth)	5	832	1956	21
W Baraga (650' W Of Seventh To Seventh)	5	375	1983	9
W Baraga (Seventh To Altamont)	5	489	2007	16
W Baraga (Altamont To Fifth)	5	566	2007,2013	16
Coles (Ridge To Mcclellan)	5	585	2011	4
Union (Wilkinson To Van Evera)	5	283	1978	2
Total		3,337		73
Estimated Cost (Sanitary Sewer Portion)				\$335,000

Table 3-8 2021 SIMP Details

Street Location	Paser Rating	Street Maintained (Linear Feet)	Sanitary Sewer Install Date	Sanitary Laterals (for connection)
Wilkinson (Norwood To Center)	5	661	1941	14
Center (Presque Isle To Fitch)	5	375	1940	7
Center (Fitch To Longyear)	5	370	1940	11
Center (Longyear To Wilkinson)	5	370	1940	12
West (Fair To Mildred)	5	660	1960	7
Woodland (Waldo To S Of Center)	5	415	2011	9
Woodland (S Of Center To Center)	5	401	2011	4
Woodland (Center To S Of Wright)	5	662	2011	9
Woodland (S Of Wright To Wright)	5	653	2011	7
Hillside (Altamont To Bay View)	5	559	1978	13
Bay View (Hillside To Altamont)	5	366	1978	4
Fisher (Seventh To W Dead End)	5	346	2009	4
Lincoln (Mid Block To Jefferson)	5	392	1957,1978	1
Norway (Magnetic To College)	5	405	1951	11
Total		6,635		83
Estimated Cost (Sanitary Sewer Portion)				\$445,000

Table 3-9 2022 SIMP Details

Street Location	Paser Rating	Street Maintained (Linear Feet)	Sanitary Sewer Install Date	Sanitary Laterals (for connection)
Lincoln (Washington To Bluff)	5	244	1941	2
W Michigan (Seventh To Sixth)	5	472	1940	9
W Hampton (Division To Adams)	5	444	1940	1
Blemhuber (Champion To Division)	5	380	1940	7
Blemhuber (Division To Adams)	5	660	1960	22
Craig (Division To Adams)	5	510	2011	9
Craig (Adams To Altamont)	5	730	2011	15
Total		3,440		65
Estimated Cost (Sanitary Sewer Portion)				\$310,000

3.2.4 STREET RECONSTRUCTION PROJECTS

Street reconstruction projects involve removing, preparing the base and re-paving with the goal of streets lasting 50 years. The City coordinates the street reconstruction with improvements to the water and sewer utilities depending on the condition, age and type of pipes. The water and sewer improvements are typically designed to replace pipes that are old and/or in poor condition. The improvements also address the need for new and/or larger pipes to account for capacity and pressure issues, City design requirements, water quality issues and tuberculation issues (particularly in older sand cast iron pipes).

Project details and justifications for the water and sewer improvements associated with each street reconstruction are included in **Appendix C**. Detailed scope of work items and costs associated with each reconstruction project are included in **Appendix F**. These appendices include the reason for replacement and proposed criteria related to eligibility.

In most street segments, direct pipe replacement was the primary choice for addressing the water main and sanitary sewer needs. This method involves digging a trench, and laying new pipe. This method allows for larger pipes to be installed if needed, it has the minimum amount of service interruptions, and will have the easiest reconnection of service lines. This is the low cost alternative when street removal and reconstruction is involved.

The street reconstruction program will inspect, test and replace lead water service lines as part of each project.

The street reconstructions are summarized in Table 3-10, Table 3-11 and Table 3-12.

Table 3-10 2020 Street Reconstructions

Project No.	Project Name	Initial Capital Cost	Street	Storm	Sidewalk	SRF Funding Request		Present Worth OM&R	Salvage Value	Potential Grant
						Wastewater Portion Capital Cost	Water Portion Capital Cost			
2020-1	Front Street Reconstruction (Magnetic to Fair)	\$1,037,720	\$146,316	\$218,349	\$18,008	\$278,001	\$377,046	\$0	\$0	\$0
2020-2	Hewitt Avenue Reconstruction (Pine to Spruce)	\$673,055	\$101,296	\$146,316	\$10,130	\$190,211	\$225,102	\$0	\$0	\$0
2020-3	Allouez Road Upgrade (W. Nicloet to LaSalle Road)	\$1,184,034	\$184,583	\$407,434	\$0	\$228,478	\$363,539	\$0	\$0	\$0
2020-4	College Avenue Reconstruction (Presque Isle to Front)	\$907,161	\$111,425	\$193,588	\$92,292	\$218,349	\$291,507	\$0	\$0	\$0
2020-5	Hewitt Avenue Reconstruction (Third to Front)	\$563,879	\$79,911	\$120,429	\$3,377	\$177,830	\$182,332	\$0	\$0	\$0
2020-7	Marquette Drive Upgrade (Lakeview Dr. to North End)	\$828,286	\$150,796	\$278,645	\$0	\$102,716	\$296,129	\$0	\$0	\$0
2020-8	Lakeview Drive Upgrade (Marquette Dr. to South End)	\$415,237	\$87,418	\$121,293	\$0	\$71,027	\$135,499	\$0	\$0	\$0
2020-9	Union Street Upgrade (Wilkinson to Presque Isle)	\$627,226	\$161,724	\$224,009	\$37,153	\$85,233	\$119,107	\$0	\$0	\$0
Total						\$1,351,845	\$1,990,261	\$0	\$0	\$0

Table 3-11 2021 Street Reconstructions

Project No.	Project Name	Initial Capital Cost	Street	Storm	Sidewalk	SRF Funding Request		Present Worth OM&R	Salvage Value	Potential Grant
						Wastewater Portion Capital Cost	Water Portion Capital Cost			
2021-1	Altamont Street Upgrade (Grandview to Pioneer)	\$358,216	\$125,202	\$114,768	\$24,345	\$25,504	\$68,397	\$0	\$0	\$0
2021-2	College Avenue Reconstruction (Front to Pine)	\$631,805	\$83,468	\$133,317	\$9,274	\$169,254	\$236,492	\$0	\$0	\$0
2021-6	Kildahl Avenue Reconstruction (McClellan to West)	\$377,923	\$81,149	\$98,538	\$0	\$85,786	\$112,450	\$0	\$0	\$0
2021-8	Meeske Avenue Reconstruction (Washington to Ridge)	\$375,604	\$111,290	\$143,750	\$0	\$44,052	\$76,512	\$0	\$0	\$0
2021-9	Morgan Street Reconstruction (Washington to Bluff)	\$260,837	\$33,619	\$74,194	\$5,796	\$54,486	\$92,742	\$0	\$0	\$0
2021-10	Nicolet Boulevard Upgrade (Raymbault to U.S. 41)	\$730,343	\$115,927	\$303,730	\$0	\$62,601	\$248,085	\$0	\$0	\$0
2021-12	Spruce Street Reconstruction (Magnetic to College)	\$242,288	\$64,919	\$57,964	\$11,593	\$0	\$107,812	\$0	\$0	\$0
2021-13	Spruce Street Reconstruction (Michigan to Hewitt)	\$556,452	\$70,716	\$130,998	\$9,274	\$137,954	\$207,510	\$0	\$0	\$0
2021-14	Wright Street Reconstruction (Sugarloaf to Vanevera)	\$805,695	\$143,750	\$234,173	\$0	\$134,476	\$293,296	\$0	\$0	\$0
2021-16	Fitch Avenue Reconstruction (Union to Harlow)	\$264,315	\$85,786	\$56,804	\$19,708	\$45,212	\$56,805	\$0	\$0	\$0
						\$759,325	\$1,500,101	\$0	\$0	\$0

Table 3-12 2022 - 2024 Street Reconstructions

Project No.	Project Name	Initial Capital Cost	Street	Storm	Sidewalk	SRF Funding Request		Present Worth OM&R	Salvage Value	Potential Grant
						Wastewater Portion Capital Cost	Water Portion Capital Cost			
2022-1	Cedar Street Reconstruction (Prospect to Crescent)	\$288,961	\$44,180	\$70,449	\$4,776	\$68,061	\$101,495	\$0	\$0	\$0
2022-2	Division Street Reconstruction (Blemhuber to Newberry)	\$530,160	\$68,061	\$179,108	\$28,657	\$108,659	\$145,675	\$0	\$0	\$0
2022-3	Division Street Reconstruction (Hampton to Joliet)	\$982,705	\$157,615	\$273,438	\$46,568	\$164,779	\$340,305	\$0	\$0	\$0
2022-4	Fern Place Upgrade (Michigan to Ohio)	\$370,156	\$53,732	\$111,047	\$23,881	\$74,031	\$107,465	\$0	\$0	\$0
2022-5	Oak Street Reconstruction (Ridge to Ohio)	\$630,459	\$96,718	\$76,419	\$15,523	\$192,242	\$249,557	\$0	\$0	\$0
2022-6	Ohio Street Reconstruction (Cedar to Fern)	\$404,783	\$63,285	\$75,225	\$26,269	\$85,972	\$154,032	\$0	\$0	\$0
2022-7	Park Street Reconstruction (Pine to Spruce)	\$728,372	\$109,853	\$109,853	\$33,433	\$199,407	\$275,826	\$0	\$0	\$0
2022-8	Sherman Street Upgrade (Sheridan to Lincoln)	\$874,047	\$160,003	\$200,601		\$160,003	\$353,440	\$0	\$0	\$0
2022-10	Summit Street Reconstruction (Longyear to Presque Isle)	\$766,582	\$105,077	\$169,555	\$27,463	\$204,183	\$260,304	\$0	\$0	\$0
						\$1,257,337	\$1,988,099	\$0	\$0	\$0

3.2.5 CURED-IN-PLACE PIPE LINING PROJECTS

The Utility developed a pipeline cleaning and televising program as part of the Asset Management Planning Process funded in part by the Stormwater, Asset Management and Wastewater (SAW) grant funding. The program includes a methodology to score pipes and prioritize pipe replacement using the following criteria:

- National Association of Sewer Service Companies (NASSCO), Pipeline Assessment and Certification Program (PACP) and Manhole Assessment and Certification Program (MACP)
- Likelihood and Consequence of Failure
- Other criteria (Engineering Judgement).

The information is used as part of the asset management process to plan for repair/replacement of pipes that are at risk of failure. Cured-in-place pipe lining is a favorable alternative for many segments of pipe that are in poor condition, difficult to access or don't require reconstructing water, streets and other utilities in the area. The city has budgeted \$400,000 for 2021 to execute the cured-in-place pipe lining work. This project will rehabilitate approx. 10,000 feet of sanitary sewer with pipe sizes ranging from 6" dia. to 24" diameter. The pipeline eligibility for replacement will be based on the NASSCO scoring, age, type of material and history of repair.

Cured-in-place pipe lining will increase the service life of these sewers in excess of 50 years. Cured-in-place pipe lining minimizes the disruption to traffic, avoids excavation in the street, avoids excavation in areas such as, parking lots, back yards, wooded areas, and areas of high structural interference. This process ultimately provides a cost savings to the City of Marquette.

4. SELECTED ALTERNATIVES

4.1.1 DESCRIPTION OF SELECTED ALTERNATIVES

Based on a review of both economic and non-economic factors, it is recommended that the projects included in Table 4-1 are constructed. The table summarizes the proposed projects by year with the estimated allocated costs for sewer and water.

Table 4-1 Project Plan Summary Cost Table by Year

Project No.	Project Name	2020		2021		2022 2024	
		Sewer	Water	Sewer	Water	Sewer	Water
2020-1	Front Street Reconstruction (Magnetic to Fair)	\$278,001	\$377,046				
2020-2	Hewitt Avenue Reconstruction (Pine to Spruce)	\$190,211	\$225,102				
2020-3	Allouez Road Upgrade (W. Nicloet to LaSalle Road)	\$228,478	\$363,539				
2020-4	College Avenue Reconstruction (Presque Isle to Front)	\$218,349	\$291,507				
2020-5	Hewitt Avenue Reconstruction (Third to Front)	\$177,830	\$182,332				
2020-6	SIMP and Sanitary Sewer Lateral Replacements	\$335,000	\$0				
2020-7	Marquette Drive Upgrade (Lakeview Dr. to North End)	\$102,716	\$296,129				
2020-8	Lakeview Drive Upgrade (Marquette Dr. to South End)	\$71,027	\$135,499				
2020-9	Union Street Upgrade (Wilkinson to Presque Isle)	\$85,233	\$119,107				
2021-1	Altamont Street Upgrade (Grandview to Pioneer)			\$25,504	\$68,397		
2021-2	College Avenue Reconstruction (Front to Pine)			\$169,254	\$236,492		
2021-3	Cured-in-place Pipe Lining			\$400,000	\$0		
2021-6	Kildahl Avenue Reconstruction (McClellan to West)			\$85,786	\$112,450		
2021-7	Lincoln Water Pumping Station-Engineering Evaluation			\$0	\$40,000		
2021-8	Meeske Avenue Reconstruction (Washington to Ridge)			\$44,052	\$76,512		
2021-9	Morgan Street Reconstruction (Washington to Bluff)			\$54,486	\$92,742		
2021-10	Nicolet Boulevard Upgrade (Raymbault to U.S. 41)			\$62,601	\$248,085		
2021-11	SIMP and Sanitary Sewer Lateral Replacements			\$445,000	\$0		
2021-12	Spruce Street Reconstruction (Magnetic to College)			\$0	\$107,812		
2021-13	Spruce Street Reconstruction (Michigan to Hewitt)			\$137,954	\$207,510		
2021-14	Wright Street Reconstruction (Sugarloaf to Vanevera)			\$134,476	\$293,296		
2021-15	WWTP- Solids Handling Improvements			\$2,211,000	\$0		
2021-16	Fitch Avenue Reconstruction (Union to Harlow)			\$45,212	\$56,805		
2022-1	Cedar Street Reconstruction (Prospect to Crescent)					\$68,061	\$101,495
2022-2	Division Street Reconstruction (Blemhuber to Newberry)					\$108,659	\$145,675

Project No.	Project Name	2020		2021		2022	2024
		Sewer	Water	Sewer	Water	Sewer	Water
2022-3	Division Street Reconstruction (Hampton to Joliet)					\$164,779	\$340,305
2022-4	Fern Place Upgrade (Michigan to Ohio)					\$74,031	\$107,465
2022-5	Oak Street Reconstruction (Ridge to Ohio)					\$192,242	\$249,557
2022-6	Ohio Street Reconstruction (Cedar to Fern)					\$85,972	\$154,032
2022-7	Park Street Reconstruction (Pine to Spruce)					\$199,407	\$275,826
2022-8	Sherman Street Upgrade (Sheridan to Lincoln)					\$160,003	\$353,440
2022-9	SIMP and Sanitary Sewer Lateral Replacements					\$310,000	\$0
2022-10	Summit Street Reconstruction (Longyear to Presque Isle)					\$204,183	\$260,304
2022-10	Lincoln Water Pumping Station-Upgrade					\$0	\$336,100
Total		\$1,686,485	\$1,990,261	\$3,815,325	\$1,540,101	\$1,567,337	\$2,324,199

The City recognizes that MDEQ approval of this report will be valid for a period of five years. The projects included in the Project Plan align with the City's rate study. The City will re-evaluate this Plan on a year-by-year basis, during the normal annual budgeting process.

4.1.2 PROJECT SCHEDULE

Many of the components within the Year 1 (2020) program are relatively simple projects that do not require lengthy or complex engineering to take them to implementation. The anticipated project schedule is presented in Figure 4-1. The table shows which shows that the Year 1 projects can be bid and initiated prior to 2020.

Item	2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. DEQ Review of Project Plan								
Draft Project Plan		■						
Present Project Plan to City and MDEQ		■						
Public Hearing		★						
Submit Part I SRF Loan Application		■						
Project Plan Approval		■						
2. Design of Year 1 Project Components								
Design (Year 1 street projects only. Others do not need permit)		■	■					
MDEQ Review			■	■				
Develop User Charge System			■					
Submit Part II of SRF Application			■					
3. Bidding/Construction of Year 1 Projects								
Bidding				■				
Construction					■	■		

Figure 4-1 Project Schedule

4.1.3 AUTHORITY TO IMPLEMENT THE SELECTED ALTERNATIVES

The City of Marquette will have complete ownership of all street reconstruction projects and all water treatment plant upgrade costs. For the wastewater plant upgrades the cost share amongst the city and the townships would be based on the terms of the current inter-municipal agreement. Under that agreement, the City of Marquette would be responsible for 84% of those project components’ cost, Marquette Township would be responsible for 9% of those costs, and Chocolay Township would be responsible for 7% of the project cost. The City of Marquette has agreed to operate the wastewater treatment facility and the contract communities are charged operating costs based on usage. The wastewater treatment facility is managed by an Advisory Board made up of representatives of the three contract communities.

4.1.4 USER COSTS

The funding strategy and user costs are summarized in Table 4-2. The plan assumes all water and sewer project components will be eligible for financing from a Michigan DEQ State Revolving Fund low interest loans. The loan amount assumes a 20 year loan at 0.2% discount rate.

Table 4-2 Funding Strategy and User Costs

Year	Impact of Debt Repayment on Customers	Water Fund	Sewer Fund	Total
2020	City's Debt Payment =	\$101,600	\$86,100	\$187,700
	Number of Water & Sewer Customers =	6,141	6,141	6,141
	Average Debt Retirement Cost Per Customer/yr=	\$16.54	\$14.02	\$30.57
	Average Debt Retirement Cost Per Customer/mo=	\$1.38	\$1.17	\$2.55
2021	City's Debt Payment =	\$78,800	\$195,500	\$274,200
	Number of Water & Sewer Customers =	6,141	6,141	6,141
	Average Debt Retirement Cost Per Customer/yr=	\$12.80	\$31.72	\$44.652
	Average Debt Retirement Cost Per Customer/mo=	\$1.07	\$2.64	\$3.71
2022 - 2024	City's Debt Payment =	\$118,700	\$80,000	\$198,700
	Number of Water & Sewer Customers =	6,141	6,141	6,141
	Average Debt Retirement Cost Per Customer/yr=	\$19.33	\$13.03	\$32.36
	Average Debt Retirement Cost Per Customer/mo=	\$1.61	\$1.09	\$2.70

The City completed a Water, Sewer and Stormwater Rate Study for the water and sewer systems as part of the asset management planning process. The rate study included a comprehensive analysis of repair/replacement and capital needs for fiscal year 2019 through fiscal year 2024. The study included the use of 15-year General Obligation bonds and 20-year revolving fund loans to fund the improvements.

The repair/replacement and capital improvements were an important element associated with the proposed rate increases included in the model. The City's intent with the project plan is to secure revolving loan funding to execute many of the projects identified in the rate analysis. The City will manage the annual expenditures to limit future rate increases to the recommended rates include in the rate analysis.

5. EVALUATION OF ENVIRONMENTAL IMPACT

5.1 GENERAL

The Lincoln Avenue Water Pump Station and Wastewater Treatment Plant Solids Handling Project take place inside the area of existing operations and should have little impacts on the environment. In order to mitigate any reasonable environmental concerns, the City requires the construction contractors to implement proper soil erosion control measures and to be diligent in controlling dust along the water main and sewer main routes. These controls will be specified in the contract documents and enforced by the City's on-site construction inspection personnel.

Water and sewer improvement projects that take place as part of street maintenance or reconstruction projects take place in the current right-of-way. These projects include erosion control and dust control measures that will be enforced.

Implementation of the recommended improvements will produce beneficial as well as adverse effects on the environment in the Marquette area. These impacts are discussed in the following paragraphs.

5.2 AGENCY NOTIFICATIONS

The agencies listed below have been notified of this project for the appropriate sign-off.

- Michigan State Historic Preservation Office
- U. S. Fish & Wildlife Services
- Michigan Natural Features Inventory
- Michigan Dept. of Environmental Quality (Water Resources Division) – Land Water Interfaces
- Hannahville Potawatomi Indian Community
- Keweenaw Bay Indian Community
- Lac Vieux Desert Band of Lake Superior Chippewa Indians
- Sault Ste. Marie Tribe of Chippewa Indians

Appendix G provides copies of the transmittal information sent to these agencies and the responses received.

5.2.1 BENEFICIAL AND ADVERSE IMPACT

Implementation of the proposed wastewater treatment plant improvements will result in many beneficial environmental impacts. The wastewater treatment facility effluent will better meet the NPDES permit effluent limitations and reduce the risk for future non-compliance.

Construction activities associated with the proposed improvements in the vicinity of the existing water and wastewater treatment plant sites will result in minimal inconveniences to the public. All work at the water filtration plant will be completed inside the plant except the pumping station updates. Most persons in the vicinity of the plant will not even realize that modifications are being made to the plant. On the wastewater side, the WTF is located on the edge of town and it has wooded land surrounding to the east, south, and west and to the north is Highway 41, which is separated from the facility by a berm

and some trees. Noise pollution will not be a major issue during construction. Also, some minor inconveniences during construction could occur due to trucks entering the highway.

A small amount of erosion and sedimentation may be expected at the street projects and at wastewater facility - during the construction of the treatment plant improvements. There will also be an increase in noise and dust levels in areas of the construction. The contractor will be required to take steps to minimize all the short-term impacts mentioned above. The contractor will also be required to take special precautions to protect life and property during the construction period.

The construction of the proposed facilities will not require condemnation of property or relocation of any residences or businesses.

5.2.2 SHORT-TERM AND LONG-TERM IMPACTS

The construction and operation of the proposed facility upgrades would constitute a short-term use of the resources of the area. The construction should have any impacts on the discharge of the treated effluent to the Carp River.

5.2.3 IRREVERSIBLE OR IRRETRIEVABLE RESOURCES

Construction of the proposed facilities will require utilization of significant amount of pipe, concrete, as well as other building materials. In addition, such resources as gasoline, oil, and electricity will be consumed in both construction and operation of the facility. All of these resources will be irreversible and irretrievable committed.

5.3 ANALYSIS OF IMPACTS

Direct Impacts

Construction activities result in certain short-term impacts which cannot be avoided. The existing vegetation along the street reconstruction routes and at the WTF will be disturbed by excavation, grading, and trenching. The potential of runoff pollution to adjacent water bodies, although controllable, is not entirely avoidable. The Carp River flows into Lake Superior; although the drinking water supply is mainly from Lake Superior, the discharge will have no impact on the drinking water supply due to the size on Lake Superior and the distance between the drinking water intake and the wastewater effluent discharge.

Trucks and other construction equipment contribute to noise, dust, and emissions to the air. Such adverse effects are unavoidable if the improvements are to be made and would be present only during the construction phase of the project. Residents of the area should not experience any major traffic inconveniences. There should not be any major blockage of arterial roads. Delivery of construction equipment and material may result in minor traffic inconveniences for short periods of time.

This project will not affect archaeological, historical, or cultural resources of the community. In addition, no change in wildlife species and population at the treatment facility site are anticipated since no additional land space is being used for the water and wastewater treatment facility upgrades.

Indirect Impacts

The indirect environmental effects of this project include the encouragement of population growth, economic growth, as well as growth of industries in the Marquette area due to improved water and wastewater treatment services.

In considering the environmental effects of the project on the planning area, increased development may result from the construction of these facilities. Development would spread to lands that previously had been undisturbed. This would produce additional non-point source runoff. Additional services as solids waste removal, sewer, water, and street pavement and maintenance will have to be extended into developing areas.

Cumulative Impacts

Since none of these projects are increasing treatment capacity at either the wastewater plant or the water plant, no additional development attraction is expected to occur. Therefore no significant cumulative impacts are expected.

6. MITIGATION

6.1 GENERAL

Several steps can be taken to minimize adverse environmental impacts during construction and operation of the proposed facilities upgrades.

6.2 SHORT TERM CONSTRUCTION RELATED MITIGATION

Erosion and sedimentation during construction will be minimized by requiring the various contractors, to exercise certain controls. Additional remedies will also be taken to protect the Carp River during construction of the Wastewater Treatment Plant Solids Handling Project. Recommendations and regulations from MDEQ and USEPA will be followed to minimize erosion and sedimentation.

6.3 MITIGATION OF LONG-TERM IMPACTS

Where vegetation is removed, there is a potential for long-term soil erosion and sedimentation. The disturbed areas will be seeded to restore a vegetative cover. Any road surfaces or other areas disturbed during construction will also be restored to their original state.

6.4 MITIGATION OF INDIRECT IMPACTS

The implementation and enforcement of orderly zoning should minimize the effects of the development on the environment. As development occurs, an increased demand for City services may be expected.

7. PUBLIC PARTICIPATION

7.1.1 PUBLIC HEARING

The formal public hearing for the projects was held April 8, 2019. A copy of the public hearing transcript, advertisement for the public hearing, presentation and the sign-in sheet for the hearing are all provided in **Appendix H**.

7.1.2 APPROVAL OF PROJECT PLAN

The resolutions by the City of Marquette City Commission, which approved the SRF portion and the DWRP portions of the Project Plan are presented in **Appendix H**.

APPENDICES

Appendix A – Water, Sewer and Stormwater Rate Study

CITY OF
MARQUETTE

Water, Sewer and Stormwater Rate Study

Final Report / October 8, 2018



October 8, 2018

Mr. Michael Angeli
City Manager
City of Marquette
300 West Baraga Avenue
Marquette, MI 49855

Subject: Water, Sewer and Stormwater Rate Study

Dear Mr. Angeli,

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this Water, Sewer and Stormwater Rate Study Report (Report) for the City of Marquette (City).

The major objectives of the study include the following:

- Develop financial plans for each utility which properly fund operation and maintenance (O&M) expenses, capital repair and replacement and provide for prudent levels of operating reserves
- Review current rate structures for the water and sewer enterprises and make recommendations regarding increasing fixed cost recovery

The Report summarizes the key findings and recommendations related to the development of the financial plans for Water, Sewer and Stormwater utilities as well as the development of alternative fixed charges for the water and sewer utilities.

It has been a pleasure working with you, and we thank you and the City staff for the support provided during the course of this study.

Sincerely,

A handwritten signature in black ink that reads 'Tom A. Beckley'.

Tom Beckley
Senior Manager

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1. Executive Summary

1.1. Background

The City of Marquette engaged Raftelis Financial Consultants, Inc. (Raftelis) to develop water, sewer and stormwater financial plans and develop rate structure alternatives to meet the City's pricing objectives.

The impetus for the Study was a Stormwater and Wastewater (SAW) asset management grant provided by the Michigan Department of Environmental Quality (Michigan DEQ). The grants provide funding to assess the current state of stormwater and wastewater infrastructure for utilities throughout Michigan and develop a plan to replace that infrastructure over time. While the plans for sewer and stormwater are nearly complete, it is our understanding that the City will undertake a similar asset management study for the water utility. The requirements of the SAW grant are minimal in that utilities must develop a plan which incorporates funding for repair and replacement of capital assets and balances revenues and expenditures over a reasonable period of time.

The recommendations for this study exceed those minimum requirements with a focus on developing a plan for achieving independent financial sustainability for each fund over the next five years. This includes developing positive cash flow (i.e. the minimum requirement for the SAW grant) as well as building an appropriate level of operating reserves and developing the capacity to cash fund certain capital projects.

1.2. Financial Planning Methodology

The primary objective of financial planning involves comparing forecast utility revenues under existing rates to forecast expenditures and determining what annual adjustments to revenues are necessary to ensure the financial viability of the water, sewer and stormwater utilities. This involves a forecast of utility revenues under existing (i.e. the status quo) and a forecast of expenditures. If there is a gap between the two, rate revenue adjustments are recommended to bring them in balance. In addition to balancing revenues and expenditures the plans were developed around strategic financial management principles regarding liquidity and capital financing strategy.

Liquidity pertains to having a certain level of operating reserves for each utility. Generally, we recommend 90 Days of O&M and Debt Service as a minimum level of operating reserves for utilities. This metric is a measure of the ability of the utility to deal with unanticipated declines in revenue or emergency expenditures without reducing service quality or dramatically increasing rates. O&M and debt service represent the minimum annual cash outflows a utility will incur in a given year. This reserve can be used for working capital (timing differences in revenues and expenditures), temporary revenue shortfalls, or emergency capital repairs.

In addition, the City has expressed interest in establishing some level of cash financing for capital improvement projects. While developing the capacity to cash finance capital projects does put upward pressure on rates in the short-run, it is a sound long-term financial strategy. As with most utilities throughout the United States, the City will continue to incur replacement costs each year. Given the ongoing nature of such programs it is appropriate to fund them with cash, rather than debt financing them.

During the course of the study, the City signed a **performance management contract** with Johnson Controls, Inc. to finance approximately \$28 million in capital projects throughout the City. Among the projects are water and sewer projects at the treatment plants as well as a City-wide meter replacement program. The intent of these projects is to either increase revenues or decrease expenditures, such that the projects pay for themselves over time. Raftelis was not asked to perform an in-depth evaluation of the contract or the assumptions used to determine the savings. That

said, we generally recommend incorporating the additional cost first and evaluating the extent of the savings each year, rather than developing plans assuming the savings will occur. That approach is reflected in the water and sewer financial plans included in this report. The stormwater utility was not impacted by the performance management contract.

1.3. Financial Plans

As stated above the financial plans identify the level of revenues necessary to achieve the City’s financial management objectives. **Figures 1.1 through 1.3** indicate the financial plans for each utility. The solid gray line indicates existing rate revenues and the stacked bars indicate forecast expenditures. As indicated, existing revenues are insufficient to meet forecast expenditures for each utility. Accordingly, the proposed rate revenue increases are recommended to close the gap between revenues and expenditures and maintain the 90 days minimum reserve at the end of FY 2023. The revenue increases are represented by the dashed line and gray boxes.

It is worth noting that across the United States, utility rates have increased 5 to 6 percent every year, on average. Generally, such increases are driven by inflation, declining per customer usage and the need for re-capitalization of water, sewer and stormwater assets. Sewer utilities often see above average increases as many sewer treatment plants which were originally financed through construction grants from the federal government must now be maintained by municipalities using rate revenue. The City has adjusted rates periodically over the past few years but did not adjust rates for the current fiscal year. This is a large driver of the current water and stormwater increase. The sewer utility has been significantly weaker and past rate revenue adjustments have been insufficient to generate positive cash flow for the fund. The absence of an adjustment in FY 2018 only exacerbated what had been ongoing financial weakness in the sewer fund.

Figure 1.1: Water Financial Plan

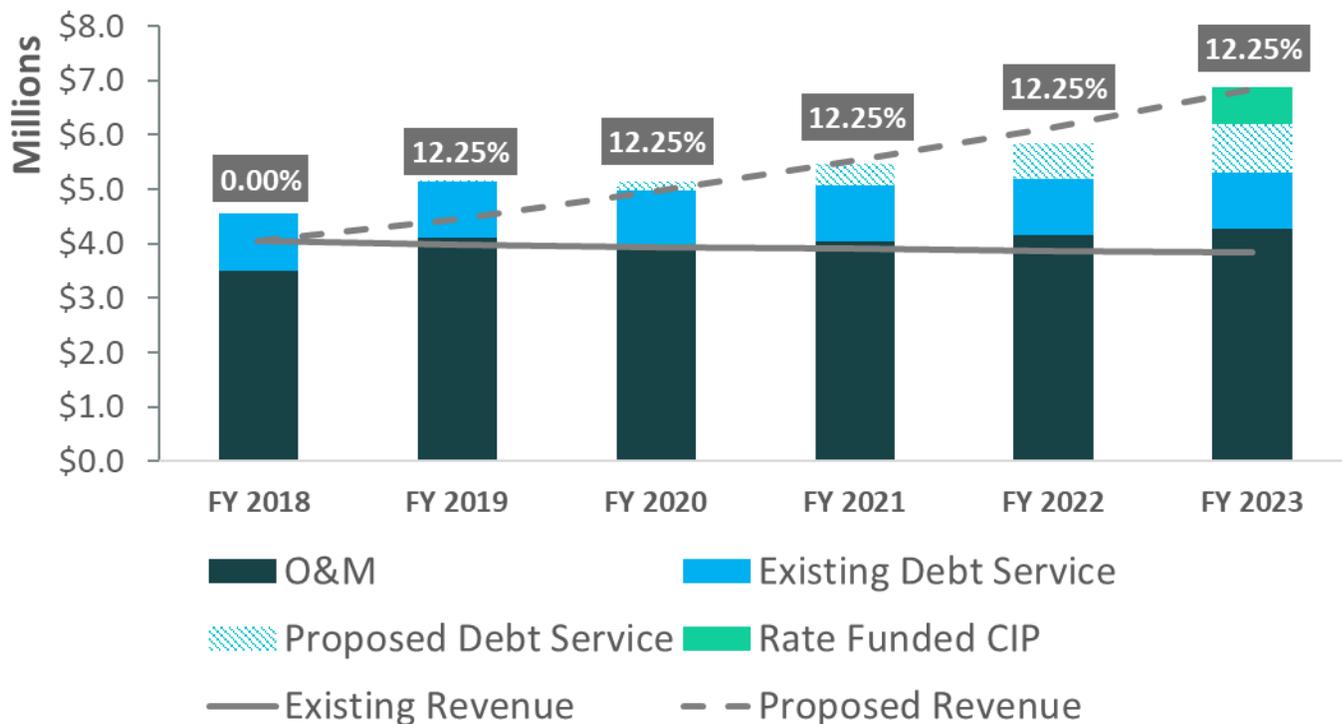


Figure 1.2: Sewer Financial Plan

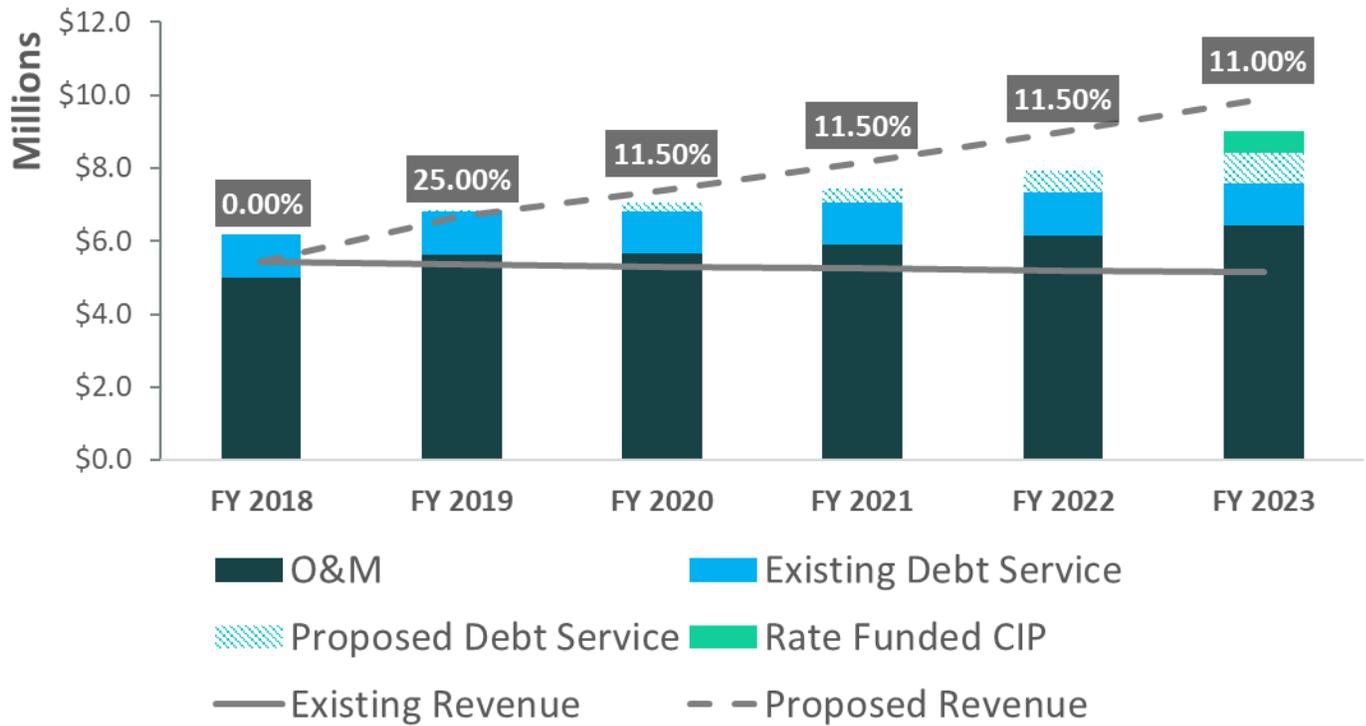
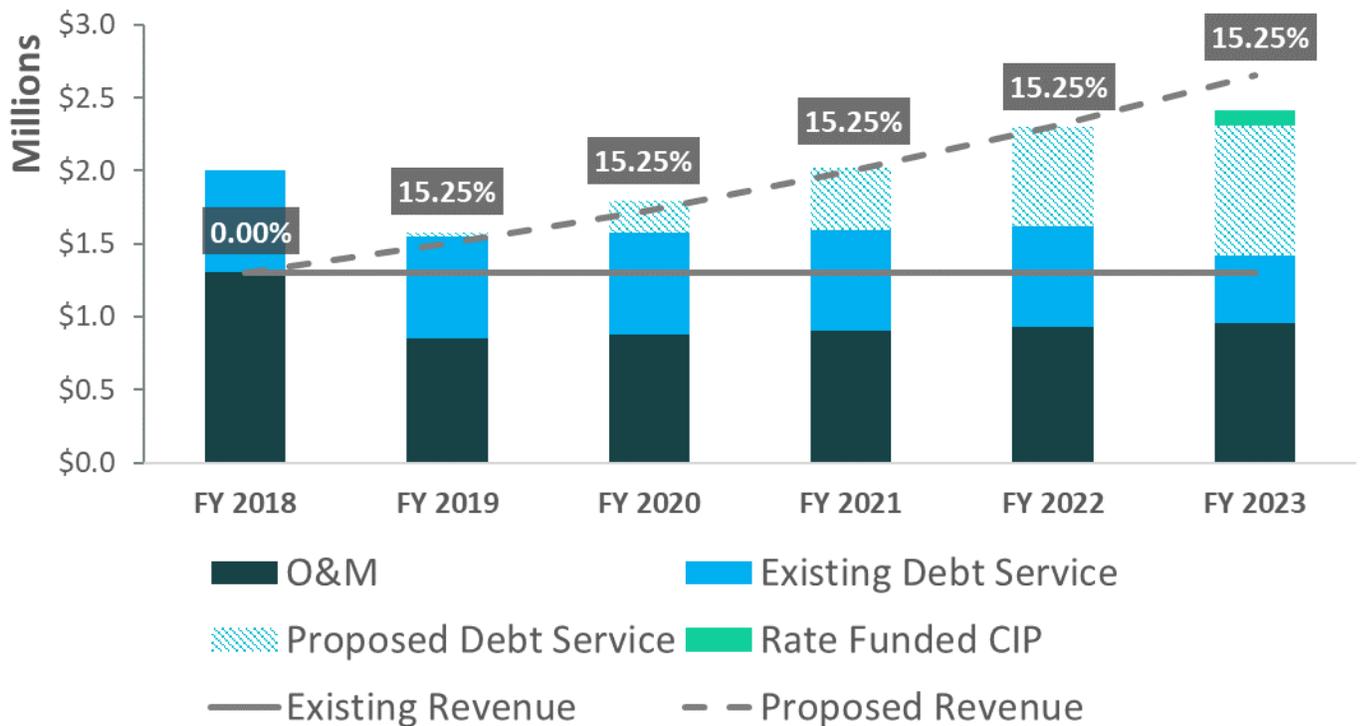


Figure 1.3: Stormwater Financial Plan



Figures 1.4 through 1.6 below indicate the operating reserve balance for each fund. As indicated the water and stormwater funds will use a mix of existing reserves and additional rate revenues to fund forecast expenditures. The sewer fund lacks any existing reserves. Accordingly, the negative amounts represent what would be covered by the City's general fund until the sewer fund is stabilized. As indicated, the current financial position of the sewer fund is relatively weak as compared to water and stormwater. Accordingly, the larger upfront increases for sewer are required for the fund to move toward generating positive cash flow and begin building the minimum 90-day reserve.

Figure 1.4: Water Operating Reserve

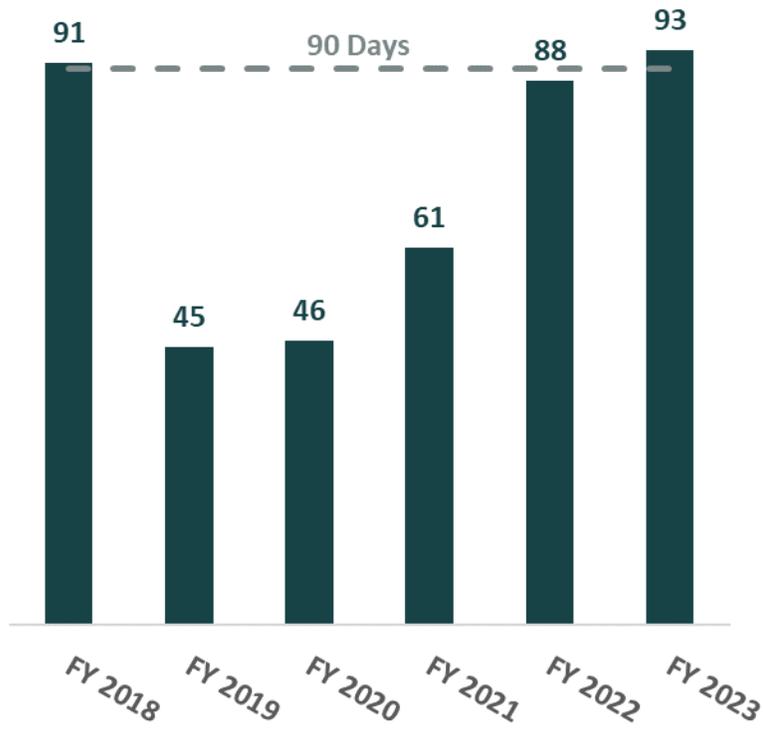


Figure 1.5: Sewer Operating Reserve

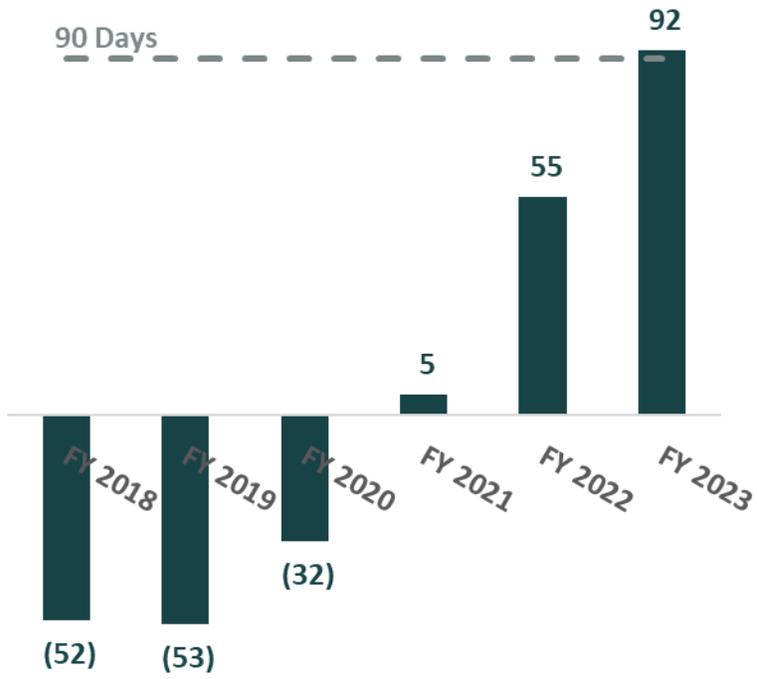
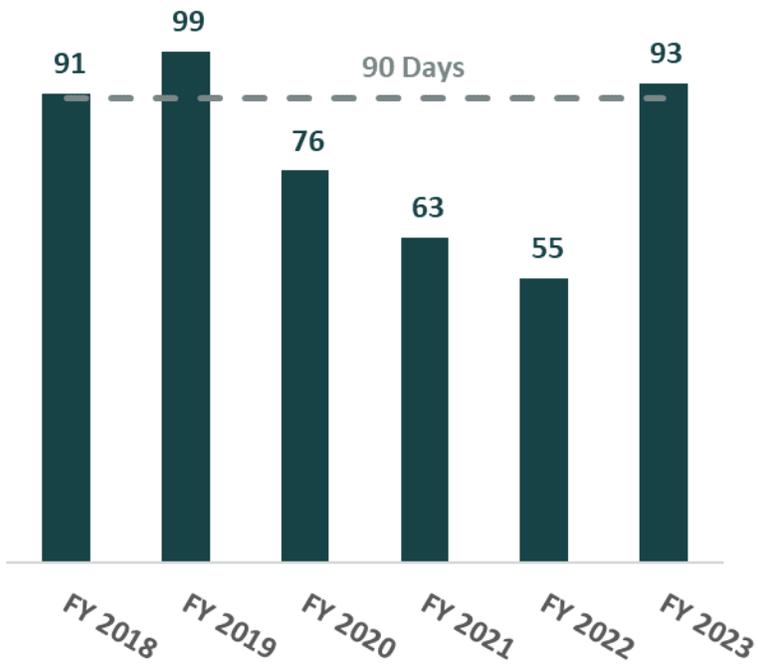


Figure 1.6: Stormwater Operating Reserve



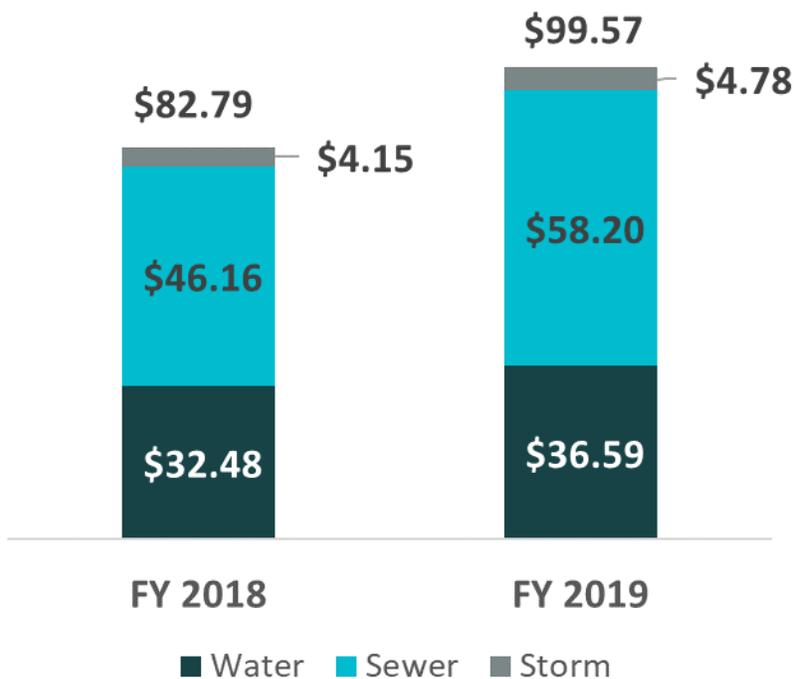
1.4. Bill Impacts

After establishing the overall level of revenue recovery for each utility, Raftelis examined rate structure options to recover the revenue as well and the meet the objectives of the City. The scope of this engagement involved examining the rate structures for water and sewer only. Accordingly, stormwater rates are based on an across the board increase, which applies the overall percentage increase in revenues necessary (15.25%) equally to each stormwater charge.

For water and sewer rates the key driving factor in designing alternative rate structures involved increasing fixed cost recovery for the water and sewer utilities. The majority of water and sewer costs incurred by the City do not vary based on customer usage. This is because the majority of the costs are incurred to make the system available to provide water and sewer service whenever customers need it, regardless of how much water is used or sewage discharged.

Accordingly, it is prudent to increase the proportion of rate revenues which are derived from fixed monthly service charges. This has the added benefit of stabilizing the water and sewer utility revenue stream, as a certain portion of customer bills will remain fixed regardless of any changes in demand. Our recommendation involves increasing the fixed charge at a faster pace than the variable charge. This is reflected in **Figure 1.7** below, which represents the bill impact for the average City customer. As indicated, in FY 2019, the bill would increase by \$16.78 per month or **about \$5.60 per utility, per month.**

Figure 1.7: FY 2019 Bill Impact (4,000 Gallons, 5/8" Meter, 1/5 Acre or Less)



2. Introduction

2.1. Background and Objectives of the Study

The City of Marquette engaged Raftelis Financial Consultants, Inc. (Raftelis) to develop water, sewer and stormwater financial plans and develop rate structure alternatives to meet the City's pricing objectives.

The impetus for the Study was a Stormwater and Wastewater (SAW) asset management grant provided by the Michigan Department of Environmental Quality (Michigan DEQ). The grants provide funding to assess the current state of stormwater and wastewater infrastructure for utilities throughout Michigan and develop a plan to replace that infrastructure over time. One requirement of the grant is that utilities must develop a plan for funding the level of infrastructure replacement identified by the asset management process. While the plans for sewer and stormwater are nearly complete, it is our understanding that the City will undertake a similar asset management study for the water utility. The requirements of the SAW grant are minimal in that utilities must develop a plan which balances revenues and expenditures over a reasonable period of time.

The recommendations for this study exceed those minimum requirements with a focus on developing a plan for achieving independent financial sustainability for each fund over the next five years. This includes developing positive cash flow (i.e. the minimum requirement) as well as building an appropriate level of operating reserves and developing the capacity to cash fund certain capital projects.

2.2. Financial Planning Methodology

The primary objective of financial planning involves comparing forecast utility revenues under existing rates to forecast expenditures and determining what annual adjustments to revenues are necessary to ensure the financial viability of the water, sewer and stormwater utilities. This involves three steps:

First, a forecast of revenue under existing rates forms the baseline against which any revenue adjustments will be made. Second, a forecast of operating and capital expenses establishes the costs which will need to be recovered from utility rates.

Once the revenues under existing rates and expenses have been forecasted, the final step involves a detailed cash flow forecast and an evaluation of what rate revenue adjustments are needed for ongoing financial sustainability. Evaluating financial sustainability involves two key financial performance metrics: days O&M and debt service, and debt service coverage.

Days O&M and Debt Service is a measure of the ability of the utility to deal with unanticipated declines in revenue or emergency expenditures without reducing service quality or dramatically increasing rates. While typical liquidity measures include operating expenses only, we recommend evaluating liquidity with debt service included as this remains an obligation of the utility, regardless of any unforeseen events. While the number of days a utility will seek to maintain will vary by utility, we typically recommend a minimum of 90 days. This can be used for working capital (timing differences in revenues and expenditures), temporary revenue shortfalls, or emergency capital repairs.

Debt Service Coverage Ratios are a measure of how much current revenues exceed current debt service obligations, after operating expenses have been funded. A ratio above 1 indicates that current net revenues (operating revenues less expenses) are sufficient to meet current debt service obligations with room to spare for unforeseen emergencies. A ratio of less than 1 would mean that the utility does not have sufficient current revenues to cover operating expenses

and meet debt service payment obligations. Coverage requirements vary by the type of debt issued, bond covenants and ratings agency criteria, but the financial plans developed for the City are based on maintaining a 1.25 times coverage ratio.

In addition, the City has expressed interest in establishing some level of cash financing for capital improvement projects. The plans designed for each utility recommend revenue adjustments sufficient to facilitate cash funding some capital improvement projects by FY 2023.

During the course of the study, the City signed a **performance management contract** with Johnson Controls, Inc. This contract financed approximately \$28 million in projects throughout the City via a Tax-Exempt Lease Payment (TELP) loan. Among the projects are water and sewer projects at the treatment plants as well as a City-wide meter replacement program. The intent of these projects is to either increase revenues or decrease expenditures, such that the projects pay for themselves over time. Raftelis was not asked to perform an in-depth evaluation of the contract or the assumptions used to develop the savings. That said, we generally recommend incorporating the additional cost first (i.e. the TELP loan) and evaluating the extent of the savings each year, rather than developing plans assuming the savings will occur. That approach is reflected in the water and sewer financial plans included in this report. The stormwater utility was not impacted by the performance management contract.

3. Water Financial Plan

3.1. Forecast of Accounts

Table 3.1 indicates the forecast of water accounts. Historically, the City has seen modest growth (around .5 percent per year) in new water and sewer accounts. Given the relatively slow pace of account growth over the past 5 years, the water financial plan is based on a conservative 0 percent growth assumption.

Table 3.1: Water Account Growth Forecast

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Accounts by Meter Size										
5/8	4,945	4,953	4,948	4,948	4,948	4,948	4,948	4,948	4,948	4,948
3/4	673	696	726	726	726	726	726	726	726	726
1	234	235	240	240	240	240	240	240	240	240
1 1/2	95	95	95	95	95	95	95	95	95	95
2	84	85	85	85	85	85	85	85	85	85
3	14	14	14	14	14	14	14	14	14	14
4	17	17	17	17	17	17	17	17	17	17
6	6	6	6	6	6	6	6	6	6	6
8	7	7	7	7	7	7	7	7	7	7
10	3	3	3	3	3	3	3	3	3	3
Total	6,078	6,111	6,141							
Annual % Δ	0.55%	0.54%	0.49%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
General	5,617	5,650	5,674	5,674	5,674	5,674	5,674	5,674	5,674	5,674
Township	1	1	1	1	1	1	1	1	1	1
Commercial/Industrial	200	198	202	202	202	202	202	202	202	202
Public Authority	41	41	41	41	41	41	41	41	41	41
Tax Exempt	179	179	178	178	178	178	178	178	178	178
City Departments	40	42	45	45	45	45	45	45	45	45
Total	6,078	6,111	6,141							
Annual % Δ	0.55%	0.54%	0.49%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

3.2. Forecast of Usage

Table 3.2 indicates the forecast of water usage. Water usage is forecast by evaluating usage per account, by customer class, and multiplying that by the projected number of customer accounts. Usage per account is based on a baseline which is then adjusted for an overall trend. While water usage per account varies from year to year, the general trend (both in the City and nationwide) is toward declining per customer usage due to increased fixture efficiency, price elasticity (customer response to rate increases) and a general ethos of conservation.

To establish a baseline, Raftelis reviewed the City’s usage to date and compared it to historical usage. Based on this comparison, Raftelis estimated the usage per account and adjusted for the overall downward trend in usage per account. Usage per account is assumed to decline 1 percent per year for all customer classes, excluding Marquette Township, which is anticipated to continue to grow slowly over time. Taken together with the 0 percent growth in accounts, the overall trend in total water usage is assumed to decline 0.8 percent per year. In addition to this general trend, the forecast incorporates anticipated reductions from Marquette DLP General Hospital, whose new facility is estimated to use 25% less water.

Table 3.2: Water Usage Forecast

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Annual Usage (1,000 Gallons)										
General	439,009	295,802	275,039	241,917	239,497	237,103	234,731	232,384	230,060	227,760
Township	103,583	80,375	101,754	72,912	73,641	74,378	75,121	75,873	76,631	76,631
Commercial/Industrial	183,395	137,170	128,910	110,300	109,197	100,461	99,457	98,462	97,478	96,503
Public Authority	15,176	12,694	13,519	12,451	12,327	12,203	12,081	11,961	11,841	11,723
Tax Exempt	199,866	152,897	149,055	149,787	148,289	146,806	145,338	143,885	142,446	141,021
City Departments	13,562	8,841	8,937	5,453	5,398	5,344	5,291	5,238	5,186	5,134
Total	954,592	687,780	677,214	592,820	588,350	576,295	572,020	567,802	563,642	558,772
Annual % Δ	19.0%	-28.0%	-1.5%	-12.5%	-0.8%	-2.0%	-0.7%	-0.7%	-0.7%	-0.9%
Usage Per Account (1,000 Gallons)										
General	78	52	48	43	42	42	41	41	41	40
Township	103,583	80,375	101,754	72,912	73,641	74,378	75,121	75,873	76,631	76,631
Commercial/Industrial	917	693	638	546	541	497	492	487	483	478
Public Authority	370	310	330	304	301	298	295	292	289	286
Tax Exempt	1,117	854	837	842	833	825	817	808	800	792
City Departments	339	211	199	121	120	119	118	116	115	114
System Avg. Per Acct.	140	99	94	85	84	82	81	80	79	79
Annual % Δ	16.8%	-29.0%	-5.7%	-9.7%	-1.0%	-2.5%	-1.0%	-1.0%	-1.0%	-1.0%

3.3. Revenue Under Existing Rates

As discussed in the introduction, the first step in developing the utility financial plans is to evaluate revenues under existing rates. In other words, given customer demand, what can the water utility expect to receive in revenues if rates remain unchanged.

Table 3.3 indicates our projection of revenue under the City’s existing water rate structure. Currently the City charges a fixed monthly charge which increases by meter size and a uniform volume charge for all customers residing within the City. Given that growth in customers is anticipated to remain flat, fixed charge revenues are projected to remain flat throughout the forecast period. Volume charge revenues, by contrast, are anticipated to decline, due to declining per customer usage. Under existing rates, fixed revenues represent approximately 13 percent of overall revenues, with the remaining 87 percent made up of volumetric revenues.

Table 3.3: Water Revenue Under Existing Rates

Revenue Source	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Fixed Charge Revenues						
5/8"	\$ 342,006	\$ 342,006	\$ 342,006	\$ 342,006	\$ 342,006	\$ 342,006
3/4"	50,181	50,181	50,181	50,181	50,181	50,181
1"	30,989	30,989	30,989	30,989	30,989	30,989
1 1/2"	12,266	12,266	12,266	12,266	12,266	12,266
2"	30,355	30,355	30,355	30,355	30,355	30,355
3"	8,696	8,696	8,696	8,696	8,696	8,696
4"	15,659	15,659	15,659	15,659	15,659	15,659
6"	10,927	10,927	10,927	10,927	10,927	10,927
8"	16,948	16,948	16,948	16,948	16,948	16,948
10"	12,123	12,123	12,123	12,123	12,123	12,123
Total Fixed	\$ 530,150					
Fixed % of Total	13%	13%	13%	13%	13%	13%
Volume Charge Revenues						
General	\$ 1,599,843	\$ 1,583,845	\$ 1,568,006	\$ 1,552,326	\$ 1,536,803	\$ 1,521,435
Township	131,818	128,673	129,209	131,259	122,610	122,610
Commercial/Industrial	729,436	671,082	664,371	657,727	651,150	644,638
Public Authority	82,342	81,519	80,704	79,897	79,098	78,307
Tax Exempt	1,081,028	1,070,217	1,059,515	1,048,920	1,038,431	1,028,047
City Departments	36,061	35,701	35,344	34,990	34,640	34,294
Total Variable	\$ 3,660,529	\$ 3,571,037	\$ 3,537,148	\$ 3,505,120	\$ 3,462,732	\$ 3,429,331
Variable % of Total	87%	87%	87%	87%	87%	87%
Total Revenue	\$ 4,190,679	\$ 4,101,186	\$ 4,067,298	\$ 4,035,270	\$ 3,992,882	\$ 3,959,481

3.4. Forecast of Expenses

3.4.1. OPERATING EXPENSES

Operating expenses are those which the utility incurs on a consistent day to day basis and which generally do not involve the construction of a capital asset. The basis for the operating expense forecast was the FY 2018 water utility budget provided by City staff. From this we removed any non-cash expenses (e.g. depreciation) and any expenses captured in the capital improvements program (CIP), which we evaluate separately. The remaining expenses were forecast using escalation rates developed in conjunction with City staff. While most expenses are escalated at 3 percent the exceptions are: personnel (2 percent), and health care and insurance (4 percent). **Table 3.4** indicates the forecast of water utility operating expenses.

Table 3.4: Forecast of Water Utility Operating Expenses

Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Salaries and Benefits	\$ 1,516,485	\$ 1,572,052	\$ 1,630,860	\$ 1,693,168	\$ 1,759,255	\$ 1,829,425
Supplies	37,700	38,831	39,996	41,196	42,432	43,705
Chemicals	35,000	36,050	37,132	38,245	39,393	40,575
Repairs and Maintenance	115,000	118,450	122,004	125,664	129,434	133,317
Contracted Services	75,000	77,250	79,568	81,955	84,413	86,946
Other	330,191	340,097	350,300	360,809	371,633	382,782
Electricity	362,000	372,860	384,046	395,567	407,434	419,657
Natural Gas	14,000	14,420	14,853	15,298	15,757	16,230
Administrative Charges	196,195	202,081	208,143	214,388	220,819	227,444
PILOT	638,350	657,501	677,226	697,542	718,469	740,023
Vehicles/Equipment	189,500	195,185	201,041	207,072	213,284	219,682
Total	\$ 3,509,421	\$ 3,624,776	\$ 3,745,166	\$ 3,870,903	\$ 4,002,322	\$ 4,139,784

3.4.2. CAPITAL EXPENSES

Capital expenses are incurred to make improvements to water system assets. **Table 3.5** indicates the capital improvement program (CIP), as provided by City staff. Many of the projects involve the replacement of City water mains. Specific projects are identified through FY 2022, after which the City anticipates that average repair and replacement costs will be approximately \$1.95 Million per year. The City anticipates completing a water asset management plan which will further refine the long-term level of capital improvement expenditures necessary for a sustainable water system.

The City has historically employed a mix of 15-year General Obligation (G.O.) bonds and 20-year Drinking Water Revolving Fund (DWRP) loans to fund water utility capital improvements. **Table 3.6** indicates the plan developed by Raftelis to finance the capital improvements indicated in the CIP.

As noted above, the majority of the City's capital projects are repair and replacement projects, which will need to occur at some level every year into the future. This is common throughout the industry, with many utilities targeting a percentage of the water distribution system to replace each year. Given their ongoing nature, many utilities seek to cash finance some, or all, of these types of projects. That said, revenues must be sufficient to generate the cash needed. If current revenues are insufficient, large rate revenue adjustments may be needed to fund the projects with cash. Debt financing reduces the impact to customers by spreading the cost out over the term of the loan. That said, the project will ultimately cost more due to the interest cost associated with the debt.

While the City would like to move toward funding capital improvements with cash, current rates do not generate sufficient cash to begin this strategy immediately. Accordingly, the plan assumes the City will continue to issue General Obligation (G.O.) bonds to finance capital improvement projects until FY 2023, when free cash flows are expected to be sufficient to fund some projects with cash.

Table 3.5: Water Capital Improvement Program

Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
SIMP and Sewer Lateral Replacements	15,000	-	20,000	20,000	20,000	-
WTF Turbidimeter Replacement	-	40,000	-	-	-	-
Presque Isle Avenue Reconstruction (Fair to Wright)	1,012,099	-	-	-	-	-
Fifth Street Reconstruction (Fisher to Spring)	128,369	-	-	-	-	-
Homestead Street Upgrade (Ward to Grove)	124,126	-	-	-	-	-
Altamont Street Reconstruction (Blemhuber to McMillan)	-	207,618	-	-	-	-
Front Street Reconstruction (Arch to Michigan)	-	91,789	-	-	-	-
Front Street Reconstruction (Ohio to Hewitt)	-	119,107	-	-	-	-
Front Street Reconstruction (Park to Magnetic)	-	178,115	-	-	-	-
Kaye Avenue Reconstruction (Presque Isle to Third)	-	122,386	-	-	-	-
Park Street Reconstruction (Lee to Fourth)	-	328,911	-	-	-	-
Marquette Drive Upgrade (Lakeview Dr. to North End)	-	296,129	-	-	-	-
Lakeview Drive Upgrade (Marquette Dr. to South End)	-	135,499	-	-	-	-
Third Street Reconstruction (Fisher to Baraga)	-	134,406	-	-	-	-
SCADA Computer System Replacement	-	18,333	-	-	-	-
Allouez Road Upgrade (W. Nicolet to LaSalle Road)	-	-	363,539	-	-	-
Center Street Reconstruction (Wilkinson to Schaffer)	-	-	227,353	-	-	-
College Avenue Reconstruction (Presque Isle to Front)	-	-	291,507	-	-	-
Front Street Reconstruction (Magnetic to Fair)	-	-	377,046	-	-	-
Hewitt Avenue Reconstruction (Pine to Spruce)	-	-	225,102	-	-	-
Hewitt Avenue Reconstruction (Third to Front)	-	-	182,332	-	-	-
Newberry Street Upgrade (Division to East End)	-	-	96,794	-	-	-
Ohio Street Upgrade (Spruce to Pine)	-	-	151,943	-	-	-
Shiras Drive Street Upgrade (U.S. 41 to Radisson)	-	-	203,718	-	-	-
Lidar, Orthophotography, and Elevation Contours Aerial Map	-	-	10,000	-	-	-
College Avenue Reconstruction (Front to Pine)	-	-	-	236,492	-	-
Kildahl Avenue Reconstruction (McClellan to West)	-	-	-	112,450	-	-
Nicolet Boulevard Upgrade (Raymbault to US 41)	-	-	-	248,085	-	-
Spruce Street Reconstruction (Michigan to Hewitt)	-	-	-	207,510	-	-
Wright Street Reconstruction (Sugarloaf to Vanevera)	-	-	-	293,286	-	-
Spruce Street Reconstruction (Magnetic to College)	-	-	-	107,812	-	-
Morgan Street Reconstruction (Washington to Bluff)	-	-	-	92,742	-	-
Fitch Avenue Reconstruction (Union to Harlow)	-	-	-	56,805	-	-
Meeske Avenue Reconstruction (Washington to Ridge)	-	-	-	76,512	-	-
Altamont Street Reconstruction (Grandview to Pioneer)	-	-	-	68,397	-	-
Gravel Street Upgrade (Washington Street Alley)	-	-	-	2,319	-	-
Microfiltration Plant Study	-	-	-	100,000	-	-
Cedar Street Reconstruction (Prospect to Crescent)	-	-	-	-	101,495	-
Division Street Reconstruction (Blemhuber to Newberry)	-	-	-	-	145,675	-
Division Street Reconstruction (Hampton and Joliet)	-	-	-	-	340,305	-
Fern Place Upgrade (Michigan to Ohio)	-	-	-	-	107,465	-
Oak Street Reconstruction (Ridge to Ohio)	-	-	-	-	249,557	-
Ohio Street Reconstruction (Cedar to Fern)	-	-	-	-	154,032	-
Park Street Reconstruction (Pine to Spruce)	-	-	-	-	275,826	-
Sherman Street Upgrade (Sheridan to Lincoln)	-	-	-	-	353,440	-
Summit Street Reconstruction (Longyear to Presque Isle)	-	-	-	-	260,304	-
Annual Replacement Projects	-	-	-	-	-	1,950,000
Total	\$ 1,279,594	\$ 1,672,293	\$ 2,149,334	\$ 1,622,410	\$ 2,008,099	\$ 1,950,000

Table 3.6: Water Capital Improvement Financing Plan

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Beginning Balance	\$ 196,898	\$ 117,304	\$ 145,011	\$ 31,197	\$ 109,982	\$ 15,678
Sources of Financing						
Cash	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 700,000
GO Bonds	1,200,000	1,700,000	2,100,000	1,800,000	2,100,000	1,600,000
Total Sources	\$ 1,200,000	\$ 1,700,000	\$ 2,100,000	\$ 1,800,000	\$ 2,100,000	\$ 2,300,000
Uses of Financing						
Carry-Over Projects	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Projects	1,279,594	1,672,293	2,213,814	1,721,215	2,194,304	2,194,742
Other	-	-	-	-	-	-
Total Uses	\$ 1,279,594	\$ 1,672,293	\$ 2,213,814	\$ 1,721,215	\$ 2,194,304	\$ 2,194,742
Ending Balance	\$ 117,304	\$ 145,011	\$ 31,197	\$ 109,982	\$ 15,678	\$ 120,936

3.5. Cash Flow Forecast

The final step in the financial planning process involves compiling a cash flow forecast which identifies the revenue adjustments necessary to ensure financial sustainability. As indicated by **Table 3.7**, water utility revenues are not sufficient to meet current expenses. Additionally, the water fund is projected to end the current fiscal year well below the target reserve balance of 90 days. The rate revenue adjustments indicated below will bring revenues back in line with expenditures as well as restore the operating reserve to the recommended level of 90 days of O&M and debt service over the next five fiscal years.

Table 3.7: Water Utility Cash Flow Forecast

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Fixed Charge Adjustment	0.00%	12.25%	12.25%	12.25%	12.25%	12.25%
Volume Charge Adjustment	0.00%	12.25%	12.25%	12.25%	12.25%	12.25%
Revenues						
Operating Revenues	\$ 4,058,861	\$ 4,459,146	\$ 4,962,018	\$ 5,521,664	\$ 6,144,504	\$ 6,837,682
Other Revenue	214,248	211,103	211,639	213,689	205,040	205,040
Total Revenue	\$ 4,273,109	\$ 4,670,249	\$ 5,173,656	\$ 5,735,354	\$ 6,349,544	\$ 7,042,722
Revenue Requirements						
O&M Expense	\$ 3,509,421	\$ 3,624,776	\$ 3,745,166	\$ 3,870,903	\$ 4,002,322	\$ 4,139,784
Water Share of TELP Loan	-	478,350	191,676	170,616	154,334	129,678
Debt Service	1,046,885	1,065,674	1,214,667	1,433,189	1,693,197	1,913,895
Rate Funded Capital	-	-	-	-	-	700,000
Total Revenue Requirements	\$ 4,556,306	\$ 5,168,799	\$ 5,151,509	\$ 5,474,708	\$ 5,849,854	\$ 6,883,357
Operating Performance						
Beginning Fund Balance	\$ 1,420,032	\$ 1,136,835	\$ 638,285	\$ 660,432	\$ 921,078	\$ 1,420,769
Net Cash Flow	(283,197)	(498,550)	22,147	260,646	499,691	159,364
Ending Fund Balance	\$ 1,136,835	\$ 638,285	\$ 660,432	\$ 921,078	\$ 1,420,769	\$ 1,580,133
Days O&M + DS	91	45	46	61	88	93
Debt Service Coverage						
Revenue Bonds	N/A	N/A	N/A	N/A	N/A	N/A
Drinking Water Revolving Fund	0.81	0.60	1.33	1.83	2.35	3.00
General Obligation	-1.55	-2.74	1.07	1.51	1.65	1.86
Combined	0.72	0.53	1.01	1.18	1.29	1.44

4. Sewer Financial Plan

4.1. Forecast of Accounts

Table 4.1 indicates the forecast of sewer accounts. Historically, the City has seen modest growth (around .5 percent per year) in new water and sewer accounts. Given the relatively slow pace of account growth over the past 5 years, the sewer financial plan is based on a conservative 0 percent growth assumption.

Table 4.1: Sewer Account Growth Forecast

Accounts	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
General	5,587	5,620	5,644	5,644	5,644	5,644	5,644	5,644	5,644	5,644
Commercial/Industrial	182	180	184	184	184	184	184	184	184	184
Public Authority	38	38	38	38	38	38	38	38	38	38
Tax Exempt	142	142	141	141	141	141	141	141	141	141
City Departments	22	24	27	27	27	27	27	27	27	27
Total	5,971	6,004	6,034							
Annual % Δ	0.54%	0.55%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

4.2. Forecast of Usage

Table 4.2 indicates the forecast of sewer usage. Sewer usage is forecast by evaluating usage per account, by customer class, and multiplying that by the projected number of customer accounts. Usage per account is based on a baseline which is then adjusted for an overall trend. For most City customers, sewer usage is billed based on billed water volumes. Accordingly, billed sewer usage is subject to the same factors which contribute to the declining trend in per customers usage: increased fixture efficiency, price elasticity (customer response to rate increases) and a general ethos of conservation.

Similar to water usage, Raftelis reviewed the City’s usage to date and compared it to historical usage to establish a baseline for billed sewer usage per account. Usage per account is then assumed to decline 1 percent per year for all customer classes. In addition to this general trend, the forecast incorporates anticipated reductions from Marquette DLP General Hospital, whose new facility is estimated to use 25% less water and in turn be billed for lower sewer volumes as well.

Table 4.2: Sewer Usage Forecast

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Annual Usage (1,000 Gallons)										
General	220,757	226,828	247,663	236,416	234,052	231,711	229,394	227,100	224,829	222,581
Commercial/Industrial	134,679	126,199	117,025	105,288	104,236	99,024	98,034	97,053	96,083	95,122
Public Authority	11,511	11,269	12,097	11,274	11,161	11,050	10,939	10,830	10,722	10,614
Tax Exempt	161,982	149,925	144,839	141,714	140,297	138,894	137,505	136,130	134,769	133,421
City Departments	3,288	4,070	3,687	3,988	3,948	3,909	3,870	3,831	3,793	3,755
Total	532,217	518,291	525,311	498,681	493,694	484,587	479,742	474,944	470,195	465,493
Annual % Δ	-13.8%	-2.6%	1.4%	-5.1%	-1.0%	-1.8%	-1.0%	-1.0%	-1.0%	-1.0%
Usage Per Account (1,000 Gallons)										
General	40	40	44	42	41	41	41	40	40	39
Commercial/Industrial	740	701	636	572	566	538	533	527	522	517
Public Authority	303	297	318	297	294	291	288	285	282	279
Tax Exempt	1,141	1,056	1,027	1,005	995	985	975	965	956	946
City Departments	149	170	137	148	146	145	143	142	140	139
System Avg. Per Acct.	89	86	87	83	82	80	80	79	78	77
Annual % Δ	-14.2%	-3.2%	0.9%	-5.1%	-1.0%	-1.8%	-1.0%	-1.0%	-1.0%	-1.0%

4.3. Revenue Under Existing Rates

As discussed in the introduction, the first step in developing the utility financial plans is to evaluate revenues under existing rates. In other words, given customer demand, what can the sewer utility expect to receive in revenues if rates remain unchanged.

Table 4.3 indicates our projection of revenue under the City’s existing sewer rate structure. Currently the City charges a fixed monthly charge and a uniform volume charge for all customers residing within the City. Given that growth in customers is anticipated to remain flat, fixed charge revenues are projected to remain flat throughout the forecast period. Volume charge revenues, by contrast, are anticipated to decline, due to declining per customer usage. Under existing rates, fixed revenues represent approximately 7 percent of overall revenues, with the remaining 87 percent made up of volumetric revenues.

Table 4.3: Sewer Revenue Under Existing Rates

Revenue Source	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Fixed Charge Revenues	\$ 362,160					
Fixed % of Total	7%	7%	7%	7%	7%	7%
Volume Charge Revenues						
General	\$ 2,408,392	\$ 2,384,308	\$ 2,360,465	\$ 2,336,860	\$ 2,313,492	\$ 2,290,357
Township	-	-	-	-	-	-
Commercial/Industrial	1,072,584	1,018,955	1,008,766	998,678	988,691	978,804
Public Authority	114,850	113,702	112,565	111,439	110,325	109,222
Tax Exempt	1,443,656	1,429,219	1,414,927	1,400,778	1,386,770	1,372,902
City Departments	40,627	40,221	39,819	39,421	39,026	38,636
Total Variable	\$ 5,080,110	\$ 4,986,405	\$ 4,936,541	\$ 4,887,176	\$ 4,838,304	\$ 4,789,921
Variable % of Total	93%	93%	93%	93%	93%	93%
Total Revenue	\$ 5,442,270	\$ 5,348,565	\$ 5,298,701	\$ 5,249,336	\$ 5,200,464	\$ 5,152,081

4.4. Forecast of Expenses

4.4.1. OPERATING EXPENSES

Operating expenses are those which the utility incurs on a day to day basis and which generally do not involve the construction of a capital asset. The basis for the operating expense forecast was the FY 2018 sewer utility budget provided by City staff. From this we removed any non-cash expenses (e.g. depreciation) and any expenses captured in the capital improvements program (CIP), which we evaluate separately. The remaining expenses were forecast using escalation rates developed in conjunction with City staff. While most expenses are escalated at 3 percent the exceptions are: personnel (2 percent), health care and insurance (4 percent), and wastewater treatment (6 percent).

Table 4.4 indicates the forecast of sewer utility operating expenses.

Table 4.4: Forecast of Sewer Utility Operating Expenses

Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Salaries and Benefits	\$ 818,040	\$ 845,691	\$ 874,766	\$ 905,368	\$ 937,609	\$ 971,612
Supplies	32,500	33,475	34,479	35,514	36,579	37,676
Repairs and Maintenance	45,000	46,350	47,741	49,173	50,648	52,167
Contracted Services	53,000	54,590	56,228	57,915	59,652	61,442
Wastewater Treatment	2,798,720	2,966,643	3,144,642	3,333,320	3,533,320	3,745,319
Electricity	65,000	66,950	68,959	71,027	73,158	75,353
Natural Gas	6,500	6,695	6,896	7,103	7,316	7,535
Administrative Charges	155,090	159,743	164,535	169,471	174,555	179,792
PILOT	500,130	515,134	530,588	546,506	562,901	579,788
Vehicles/Equipment	296,000	304,880	314,026	323,447	333,151	343,145
Other	236,965	244,053	251,354	258,874	266,619	274,597
Total	\$ 5,006,945	\$ 5,244,204	\$ 5,494,213	\$ 5,757,717	\$ 6,035,507	\$ 6,328,425

4.4.2. CAPITAL EXPENSES

Capital expenses are incurred to make improvements to the sewer system. **Table 4.5** indicates the capital improvement program (CIP), as provided by City staff. Most of the projects involve the repair and replacement of City sewer mains. Specific projects are identified through FY 2022, after which the City anticipates that average repair and replacement costs will be approximately \$1.03 Million per year. The City is near completion of an asset management plan associated with the Stormwater and Wastewater (SAW) grant from the Michigan Department of Environmental Quality. This plan identified an average repair and replacement cost for the City's sewer collection system of \$1.0 Million per year. That said, the City has already identified specific projects through FY 2022 which exceed this long-term average. Accordingly, the specific projects were included through FY 2022, after which the long-term average was used.

The City has historically employed a mix of 15-year General Obligation (G.O.) bonds and 20-year Clean Water Revolving Fund (CWRF) loans to fund sewer utility capital improvements. **Table 4.6** indicates the plan developed by Raftelis to finance the capital improvements indicated in the CIP.

As noted above, the majority of the City's capital projects are repair and replacement projects, which will need to occur at some level every year into the future. This is common throughout the industry, with many utilities targeting a percentage of the water distribution system to replace each year. Given their ongoing nature, many utilities seek to cash finance some, or all, of these types of projects. That said, revenues must be sufficient to generate the cash needed. If current revenues are insufficient, large rate revenue adjustments may be needed to fund the projects. Debt financing reduces the impact to customers by spreading the cost out over the term of the loan. That said, the project will ultimately cost more due to the interest cost associated with the debt.

While the City would like to move toward funding capital improvements with cash, current rates do not generate sufficient cash to begin this strategy immediately. Accordingly, the plan assumes the City will continue to issue General Obligation (G.O.) bonds to finance capital improvement projects until FY 2023, when free cash flows are expected to be sufficient to fund some projects with cash.

Table 4.5: Sewer Capital Improvement Program

Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Wright Street Reconstruction	-	-	-	134,476	-	-
Presque Isle Avenue Reconstruction	864,634	-	-	-	-	-
SIMP and Sewer Lateral Replacements	425,000	-	355,000	465,000	330,000	-
Fifth Street Reconstruction (Fisher to Spring)	158,074	-	-	-	-	-
Homestead Street Upgrade (Ward to Grove)	94,420	-	-	-	-	-
Cured in Place Pipe Lining	-	-	-	400,000	-	-
Lift Stations	-	-	-	-	-	175,000
Sanitary Sewer System (based on 90 year life)	-	-	-	-	-	850,000
Altamont Street Reconstruction (Blemhuber to McMillan)	-	89,604	-	-	-	-
Front Street Reconstruction	-	286,294	278,001	-	-	-
Kaye Avenue Reconstruction (Presque Isle to Third)	-	111,458	-	-	-	-
Park Street Reconstruction (Lee to Fourth)	-	232,751	-	-	-	-
Marquette Drive Upgrade (Lakeview Dr. to North End)	-	102,716	-	-	-	-
Lakeview Drive Upgrade (Marquette Dr. to South End)	-	71,027	-	-	-	-
Third Street Reconstruction (Fisher to Baraga)	-	114,736	-	-	-	-
SCADA Computer System Replacement	-	36,667	-	-	-	-
Hewitt Avenue Reconstruction	-	-	367,591	-	-	-
Allouez Road Upgrade	-	-	228,478	-	-	-
College Avenue Reconstruction	-	-	218,349	169,254	-	-
Jefferson Street Storm Sewer Upgrade	-	-	-	7,000	-	-
Shiras Drive Street Upgrade (U.S. 41 to Radisson)	-	-	21,385	-	-	-
Ohio Street Upgrade/Reconstruction	-	-	51,773	-	85,972	-
Newberry Street Upgrade (Division to East End)	-	-	50,648	-	-	-
Center Street Reconstruction (Wilksn to Schaffer)	-	-	79,911	-	-	-
Lidar, Orthophotography, and Elevation Contours Aerial Map	-	-	10,000	-	-	-
Nicolet Boulevard Upgrade	-	-	-	62,601	-	-
Meeske Avenue Reconstruction (Washington to Ridge)	-	-	-	44,052	-	-
Spruce Street Reconstruction	-	-	-	137,954	-	-
Fitch Avenue Reconstruction (Union to Harlow)	-	-	-	45,212	-	-
Morgan Street Reconstruction (Washington to Bluff)	-	-	-	54,486	-	-
Altamont Street Upgrade (Grandview to Pioneer)	-	-	-	25,504	-	-
Kildahl Reconstruction (McClellan to West)	-	-	-	85,786	-	-
Gravel Street Upgrades (Washington Street Alley)	-	-	-	5,796	-	-
Division Street Reconstruction	-	-	-	-	273,438	-
Oak Street Reconstruction (Ridge to Ohio)	-	-	-	-	192,242	-
Park Street Reconstruction (Pine to Spruce)	-	-	-	-	199,407	-
Cedar Street Reconstruction (Prospect to Crescent)	-	-	-	-	68,061	-
Summit Street Reconstruction (Longyear to Presque Isle)	-	-	-	-	204,183	-
Fern Place Upgrade (Michigan to Ohio)	-	-	-	-	74,031	-
Sherman Street Upgrade (Sheridan to Lincoln)	-	-	-	-	160,003	-
Total	1,542,128	1,045,253	1,661,136	1,637,121	1,587,337	1,025,000

Table 4.6: Sewer Capital Improvement Financing Plan

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Beginning Balance	\$ (72,532)	\$ 85,340	\$ 140,087	\$ 329,117	\$ 292,295	\$ 7,769
Sources of Financing						
Cash	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Revenue Bonds	-	-	-	-	-	-
GO Bonds	1,700,000	1,100,000	1,900,000	1,700,000	1,450,000	600,000
Total Sources	\$ 1,700,000	\$ 1,100,000	\$ 1,900,000	\$ 1,700,000	\$ 1,450,000	\$ 1,200,000
Uses of Financing						
Capital Projects	1,542,128	1,045,253	1,710,970	1,736,822	1,734,526	1,153,647
Other	-	-	-	-	-	-
Total Uses	\$ 1,542,128	\$ 1,045,253	\$ 1,710,970	\$ 1,736,822	\$ 1,734,526	\$ 1,153,647
Ending Balance	\$ 85,340	\$ 140,087	\$ 329,117	\$ 292,295	\$ 7,769	\$ 54,123

4.5. Cash Flow Forecast

The final step in the financial planning process involves compiling a cash flow forecast which identifies the revenue adjustments necessary to ensure financial sustainability. As indicated by **Table 4.7** sewer utility revenues are not sufficient to meet current expenses. Note that the sewer fund began FY 2019 with a negative reserve balance. The negative cash flow anticipated in FY 2019 will increase this deficit further. The rate revenue adjustments indicated below will bring revenues back in line with expenditures as well as restore the operating reserve to the recommended level of 90 days of O&M and debt service over the next five fiscal years.

Table 4.7: Sewer Utility Cash Flow Forecast

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Fixed Charge Adjustment	0.0%	25.0%	11.5%	11.5%	11.5%	11.0%
Volume Charge Adjustment	0.0%	25.0%	11.5%	11.5%	11.5%	11.0%
Revenues						
Operating Revenues	\$ 5,442,270	\$ 6,685,707	\$ 7,385,065	\$ 8,157,632	\$ 9,011,077	\$ 9,909,239
Other Revenue	24,610	24,820	25,036	25,259	25,489	25,725
Total Revenue	\$ 5,466,880	\$ 6,710,527	\$ 7,410,101	\$ 8,182,891	\$ 9,036,566	\$ 9,934,963
Revenue Requirements						
O&M Expense	\$ 5,006,945	\$ 5,244,204	\$ 5,494,213	\$ 5,757,717	\$ 6,035,507	\$ 6,328,425
Sewer Share of TELP Loan	\$ -	\$ 390,869	\$ 156,622	\$ 139,414	\$ 126,110	\$ 105,963
Debt Service	1,160,816	1,194,932	1,393,608	1,545,757	1,780,250	1,977,169
Rate Funded Capital	-	-	-	-	-	600,000
Total Revenue Requirements	\$ 6,167,761	\$ 6,830,005	\$ 7,044,443	\$ 7,442,888	\$ 7,941,867	\$ 9,011,557
Operating Performance						
Beginning Fund Balance	\$ (181,129)	\$ (882,010)	\$ (1,001,489)	\$ (635,831)	\$ 104,173	\$ 1,198,871
Net Cash Flow	(700,881)	(119,478)	365,658	740,004	1,094,698	923,406
Ending Fund Balance	\$ (882,010)	\$ (1,001,489)	\$ (635,831)	\$ 104,173	\$ 1,198,871	\$ 2,122,277
Days O&M + DS	(52)	(53)	(32)	5	55	92
Debt Service Coverage						
Revenue Bonds	N/A	N/A	N/A	N/A	N/A	N/A
Clean Water Revolving Fund	0.53	1.25	2.06	2.67	3.35	4.10
General Obligation	-1.35	0.64	1.67	2.06	2.18	2.35
Combined	0.39	0.90	1.26	1.47	1.61	1.77

5. Stormwater Financial Plan

5.1. Forecast of Accounts

Table 5.1 indicates the forecast of stormwater accounts. Historically, the City has seen modest growth (around .5 percent per year) in new accounts. Given the relatively slow pace of account growth over the past 5 years, the stormwater financial plan is based on a conservative 0 percent growth assumption.

Table 5.1: Stormwater Account Growth Forecast

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Residential						
1/5 acre of less	3,080	3,080	3,080	3,080	3,080	3,080
1/5 to 1 acre	2,111	2,111	2,111	2,111	2,111	2,111
1 - 2 acres	112	112	112	112	112	112
2 - 6 acres	22	22	22	22	22	22
Total	5,325	5,325	5,325	5,325	5,325	5,325
Annual % Δ		0.0%	0.0%	0.0%	0.0%	0.0%
Non-Residential						
General	612	612	612	612	612	612
Total	5,937	5,937	5,937	5,937	5,937	5,937
Annual % Δ		0.0%	0.0%	0.0%	0.0%	0.0%

5.2. Revenue Under Existing Rates

As discussed in the introduction, the first step in developing the utility financial plans is to evaluate revenues under existing rates. In other words what level of revenue can the utility expect to receive if stormwater rates remain unchanged.

Table 5.2 indicates our projection of revenue under the City’s existing stormwater rate structure. Currently the City employs a tiered structure based on property size for residential and a charge per unit of equivalent hydraulic area (EHA) for non-residential. The utility also bills City properties for stormwater. Given the flat forecast for customer accounts, revenues under existing rates are anticipated to remain flat throughout the forecast period.

Table 5.2: Stormwater Revenue Under Existing Rates

Revenue Source	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Residential						
1/5 acre or less	\$ 153,384	\$ 153,384	\$ 153,384	\$ 153,384	\$ 153,384	\$ 153,384
1/5 to 1 acre	178,591	178,591	178,591	178,591	178,591	178,591
1 - 2 acres	15,053	15,053	15,053	15,053	15,053	15,053
2 - 6 acres	5,636	5,636	5,636	5,636	5,636	5,636
Total Residential	\$ 352,664					
Non-Residential						
General	\$ 601,915	\$ 601,915	\$ 601,915	\$ 601,915	\$ 601,915	\$ 601,915
City Departments	350,000	350,000	350,000	350,000	350,000	350,000
Total Non-Residential	\$ 951,915					
Total Revenue	\$ 1,304,579					

5.3. Forecast of Expenses

5.3.1. OPERATING EXPENSES

Operating expenses are those which the utility incurs on a consistent day to day basis and which generally do not involve the construction of a capital asset. The basis for the operating expense forecast was the FY 2018 stormwater utility budget provided by City staff. From this we removed any non-cash expenses (e.g. depreciation) and any expenses captured in the capital improvements program (CIP), which we evaluate separately. The remaining expenses were forecast using escalation rates developed in conjunction with City staff. While most expenses are escalated at 3 percent the exceptions are: personnel (2 percent), and health care and insurance (4 percent). **Table 5.3** indicates the forecast of stormwater utility operating expenses.

Table 5.3: Forecast of Stormwater Utility Operating Expenses

Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Salaries and Benefits	\$ 259,960	\$ 266,095	\$ 272,420	\$ 278,944	\$ 285,678	\$ 292,631
Repairs and Maintenance	10,000	10,300	10,609	10,927	11,255	11,593
Contracted Services	588,415	115,300	118,759	122,322	125,991	129,771
Other	281,820	290,275	298,983	307,952	317,191	326,707
Administrative Charges	51,705	53,256	54,854	56,499	58,194	59,940
Vehicles/Equipment	116,000	119,480	123,064	126,756	130,559	134,476
Total	\$ 1,307,900	\$ 854,706	\$ 878,689	\$ 903,402	\$ 928,869	\$ 955,117

5.3.2. CAPITAL EXPENSES

Capital expenses are incurred to make improvements to the stormwater system. **Table 5.4** indicates the capital improvement program (CIP), as provided by City staff. Most of the projects involve the repair and replacement of City stormwater mains. Specific projects are identified through FY 2022, after which the City anticipates that average repair and replacement costs will be approximately \$0.6 Million per year. The City is near completion of an asset management plan associated with the Stormwater and Wastewater (SAW) grant from the Michigan Department of Environmental Quality. This plan identified an average repair and replacement cost for the City's stormwater collection system of \$0.6 Million per year. That said, the City has already identified specific projects through FY 2022 which exceed this long-term average. Accordingly, the specific projects were included through FY 2022, after which the long-term average was used.

The City has historically employed a mix of 15-year General Obligation (G.O.) bonds and 20-year Clean Water Revolving Fund (CWRP) loans to fund stormwater utility capital improvements. **Table 5.5** indicates the plan developed by Raftelis to finance the capital improvements indicated in the CIP.

As noted above, the majority of the City's capital projects are repair and replacement projects, which will need to occur at some level every year into the future. This is common throughout the industry, with many utilities targeting a percentage of the water distribution system to replace each year. Given their ongoing nature, many utilities seek to cash finance some, or all, of these types of projects. That said, revenues must be sufficient to generate the cash needed. If current revenues are insufficient, large rate revenue adjustments may be needed to fund the projects. Debt financing reduces the impact to customers by spreading the cost out over the term of the loan. That said, the project will ultimately cost more due to the interest cost associated with the debt.

While the City would like to move toward funding capital improvements with cash, current rates do not generate sufficient cash to begin this strategy immediately. Accordingly, the plan assumes the City will continue to issue General Obligation (G.O.) bonds to finance capital improvement projects until FY 2023, when free cash flows are expected to be sufficient to fund some projects with cash.

Table 5.4: Stormwater Capital Improvement Program

Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Storm Sewer (based on 90 year life)	-	-	-	-	-	500,000
Curb Replacement	-	100,000	100,000	100,000	100,000	100,000
Presque Isle Avenue Reconstruction (Fair to Wright)	929,467	-	-	-	-	-
SIMP and Sanitary Sewer Lateral Replacements	50,000	-	80,000	80,000	90,000	-
Fifth Street Reconstruction (Fisher to Spring)	235,520	-	-	-	-	-
Homestead Street Upgrade (Ward to Grove)	194,145	-	-	-	-	-
Altamont Street Reconstruction (Blemhuber to McMillan)	-	160,631	-	-	-	-
Front Street Reconstruction	-	265,533	218,349	-	-	-
Kaye Avenue Reconstruction (Presque Isle to Third)	-	88,511	-	-	-	-
Park Street Reconstruction (Lee to Fourth)	-	268,811	-	-	-	-
Marquette Drive Upgrade (Lakeview Dr. to North End)	-	278,645	-	-	-	-
Lakeview Drive Upgrade (Marquette Dr. to South End)	-	121,293	-	-	-	-
Third Street Reconstruction (Fisher to Baraga)	-	155,167	-	-	-	-
Hewitt Avenue Reconstruction	-	-	266,745	-	-	-
Allouez Road Upgrade	-	-	407,434	-	-	-
College Avenue Reconstruction	-	-	193,588	133,317	-	-
Jefferson Street Storm Sewer Upgrade	-	-	-	93,000	-	-
Shiras Drive Street Upgrade (U.S. 41 to Radisson)	-	-	185,709	-	-	-
Ohio Street Upgrade/Reconstruction	-	-	149,693	-	75,225	-
Newberry Street Upgrade (Division to East End)	-	-	37,142	-	-	-
Center Street Reconstruction (Wilkson to Schaffer)	-	-	172,203	-	-	-
Lidar, Orthophotography, and Elevation Contours Aerial Map	-	-	10,000	-	-	-
Wright Street Reconstruction	-	-	-	234,173	-	-
Nicolet Boulevard Upgrade	-	-	-	303,730	-	-
Meeske Avenue Reconstruction (Washington to Ridge)	-	-	-	143,750	-	-
Spruce Street Reconstruction	-	-	-	188,962	-	-
Fitch Avenue Reconstruction (Union to Harlow)	-	-	-	56,804	-	-
Morgan Street Reconstruction (Washington to Bluff)	-	-	-	74,194	-	-
Altamont Street Upgrade (Grandview to Pioneer)	-	-	-	114,768	-	-
Kildahl Reconstruction (McClellan to West)	-	-	-	98,538	-	-
Gravel Street Upgrades (Washington Street Alley)	-	-	-	222,581	-	-
Division Street Reconstruction	-	-	-	-	452,546	-
Oak Street Reconstruction (Ridge to Ohio)	-	-	-	-	76,419	-
Park Street Reconstruction (Pine to Spruce)	-	-	-	-	109,853	-
Cedar Street Reconstruction (Prospect to Crescent)	-	-	-	-	70,449	-
Summit Street Reconstruction (Longyear to Presque Isle)	-	-	-	-	169,555	-
Fern Place Upgrade (Michigan to Ohio)	-	-	-	-	111,047	-
Sherman Street Upgrade (Sheridan to Lincoln)	-	-	-	-	200,601	-
Total	1,409,132	1,438,591	1,820,863	1,843,817	1,455,695	600,000

Table 5.5: Stormwater Capital Improvement Financing Plan

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Beginning Balance	\$ -	\$ 90,868	\$ 252,277	\$ 476,788	\$ 320,683	\$ 30,005
Sources of Financing						
Cash	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000
GO Bonds	1,500,000	1,600,000	2,100,000	1,800,000	1,300,000	600,000
Total Sources	\$ 1,500,000	\$ 1,600,000	\$ 2,100,000	\$ 1,800,000	\$ 1,300,000	\$ 700,000
Uses of Financing						
Capital Projects	1,409,132	1,438,591	1,875,489	1,956,105	1,590,677	675,305
Other	-	-	-	-	-	-
Total Uses	\$ 1,409,132	\$ 1,438,591	\$ 1,875,489	\$ 1,956,105	\$ 1,590,677	\$ 675,305
Ending Balance	\$ 90,868	\$ 252,277	\$ 476,788	\$ 320,683	\$ 30,005	\$ 54,700

5.4. Cash Flow Forecast

The final step in the financial planning process involves compiling a cash flow forecast which identifies the revenue adjustments necessary to ensure financial sustainability. As indicated by **Table 5.6** stormwater utility revenues are not sufficient to meet current expenses. The rate revenue adjustments indicated below will bring revenues back in line with expenditures as well as restore the operating reserve to the recommended level of 90 days of O&M and debt service over the next five fiscal years.

Table 5.6: Stormwater Utility Cash Flow Forecast

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Stormwater Revenue Adjustment	0.00%	15.25%	15.25%	15.25%	15.25%	15.25%
Revenues						
Operating Revenues	\$ 1,304,579	\$ 1,503,527	\$ 1,732,815	\$ 1,997,069	\$ 2,301,622	\$ 2,652,619
Other Revenue	476,215	2,800	2,800	2,800	2,800	2,800
Total Revenue	\$ 1,780,794	\$ 1,506,327	\$ 1,735,615	\$ 1,999,869	\$ 2,304,422	\$ 2,655,419
Revenue Requirements						
O&M Expense	\$ 1,307,900	\$ 854,706	\$ 878,689	\$ 903,402	\$ 928,869	\$ 955,117
Debt Service	697,801	723,053	912,263	1,119,624	1,375,952	1,358,422
Rate Funded Capital	-	-	-	-	-	100,000
Total Revenue Requirements	\$ 2,005,701	\$ 1,577,759	\$ 1,790,952	\$ 2,023,026	\$ 2,304,821	\$ 2,413,539
Operating Performance						
Beginning Fund Balance	\$ 726,786	\$ 501,879	\$ 430,447	\$ 375,109	\$ 351,952	\$ 351,553
Net Cash Flow	(224,907)	(71,432)	(55,337)	(23,157)	(399)	241,880
Ending Fund Balance	\$ 501,879	\$ 430,447	\$ 375,109	\$ 351,952	\$ 351,553	\$ 593,434
Days O&M + DS	91	99	76	63	55	93
Debt Service Coverage						
Revenue Bonds	N/A	N/A	N/A	N/A	N/A	N/A
Clean Water Revolving Fund	0.67	0.94	1.23	1.58	1.98	3.69
General Obligation	N/A	-1.35	0.74	0.94	0.99	1.38
Combined	0.67	0.90	0.93	0.97	0.99	1.25

6. Rates and Customer Impacts

6.1. Rate Recommendations

Once the overall level of revenue recovery was determined for each utility Raftelis examined rate structure options to recover the revenue as well as meet the objectives of the City. The scope of this engagement involved examining the rate structures for water and sewer only. Accordingly, stormwater rates are based on an across the board increase, which applies the overall percentage increase in revenues necessary (15.25%) equally to each stormwater charge.

For water and sewer rates the key driving factor in designing alternative rate structures involved increasing fixed cost recovery for the water and sewer utilities. The majority of water and sewer costs incurred by the City do not vary based on customer usage. This is because the majority of the costs are incurred to make the system available to provide water and sewer service whenever customers need it. If usage declines 10 percent for example, the water and sewer capital costs to maintain reliable systems do not decline, because these systems must stand ready to provide service at whatever level of usage occurs. In other words, the vast majority of the costs are incurred to make the infrastructure available, regardless of usage.

Accordingly, many utilities seek to increase the proportion of rate revenues which are derived from fixed monthly service charges. This has the added benefit of stabilizing the water and sewer utility revenue stream, as a certain

portion of customer bills will remain fixed regardless of any changes in demand. In discussions with City staff, one issue that was raised involved years where water and sewer rates were increased, but revenues remained flat as compared to the prior year because usage had declined sufficiently to offset the increase. Our recommendation involves increasing the fixed charge at a faster pace than the variable charge. This is reflected in **Tables 6.1 and 6.2** below.

For an overall *water* rate revenue increase of 12.25 percent, we are proposing an increase of 24.5 percent to the fixed charge and only 10.1 percent the variable charge. The impact of the increase to the fixed charge for water is **\$1.41 per bill**.

For an overall *sewer* rate revenue increase of 25 percent, we are proposing a 50 percent increase to the fixed charge and only a 23.2 percent increase to the commodity charge. The impact of the increase to the fixed charge for sewer is **\$2.50 per bill**.

Table 6.1: Recommended Water Rates

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Fixed Charge (per Month)						
<i>5/8</i>	\$ 5.76	\$ 7.17	\$ 8.93	\$ 11.12	\$ 13.84	\$ 17.23
<i>3/4</i>	5.76	7.17	8.93	11.12	13.84	17.23
<i>1</i>	10.76	13.40	16.68	20.76	25.85	32.19
<i>1 1/2</i>	10.76	13.40	16.68	20.76	25.85	32.19
<i>2</i>	29.76	37.05	46.13	57.43	71.50	89.02
<i>3</i>	51.76	64.44	80.23	99.89	124.36	154.82
<i>4</i>	76.76	95.57	118.98	148.13	184.42	229.61
<i>6</i>	151.76	188.94	235.23	292.86	364.62	453.95
<i>8</i>	201.76	251.19	312.73	389.35	484.74	603.51
<i>10</i>	336.76	419.27	521.99	649.87	809.09	1,007.32
% Δ	0.0%	24.5%	24.5%	24.5%	24.5%	24.5%
Water Charge Per 1,000 Gallons						
<i>General</i>	\$ 6.68	\$ 7.35	\$ 8.10	\$ 8.88	\$ 9.72	\$ 10.58
<i>Commercial/Industrial</i>	6.68	7.35	8.10	8.88	9.72	10.58
<i>Public Authority</i>	6.68	7.35	8.10	8.88	9.72	10.58
<i>Tax Exempt</i>	7.29	8.09	8.90	9.77	10.69	11.64
<i>City Departments</i>	6.68	7.35	8.10	8.88	9.72	10.58
% Δ	0.0%	10.1%	10.1%	9.8%	9.4%	8.9%

Table 6.2: Recommended Sewer Rates

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Fixed Charge (per Month) \$	5.00	7.50	9.23	11.35	13.96	17.03
% Δ	0.0%	50.0%	23.0%	23.0%	23.0%	22.0%
Sewer Charge Per 1,000 Gallons						
<i>General</i> \$	10.29	12.68	14.00	15.45	17.01	18.64
<i>Commercial/Industrial</i>	10.29	12.68	14.00	15.45	17.01	18.64
<i>Public Authority</i>	10.29	12.68	14.00	15.45	17.01	18.64
<i>Tax Exempt</i>	10.29	12.68	14.00	15.45	17.01	18.64
<i>City Departments</i>	10.29	12.68	14.00	15.45	17.01	18.64
% Δ	0.0%	23.2%	10.5%	10.3%	10.2%	9.5%

Table 6.3: Recommended Stormwater Rates

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Residential (per Month)						
<i>1/5 acre or less</i> \$	4.15	4.78	5.51	6.35	7.32	8.44
<i>1/5 to 1 acre</i>	7.05	8.13	9.36	10.79	12.44	14.33
<i>1 - 2 acres</i>	11.20	12.91	14.88	17.15	19.76	22.77
<i>2 - 6 acres</i>	21.35	24.61	28.36	32.68	37.67	43.41
% Δ	0.0%	15.3%	15.3%	15.3%	15.3%	15.3%
Non-Residential (Per EHA/Mo) \$						
	82.00	94.51	108.92	125.53	144.67	166.73
% Δ	0.0%	15.3%	15.3%	15.3%	15.3%	15.3%

6.2. Bill Impacts

Figures 6.1 and 6.2 indicate the impact on the average City water, sewer and stormwater customer. Figure 6.1 indicates the combined water, sewer and stormwater bill for the average customer, both currently and over the next 5 fiscal years. In FY 2019, the bill would rise from \$82.79 currently, to \$99.57, an increase of \$16.78 per month for the average customer. Figure 6.2 indicates the combined bills at various levels of customer volumes in FY 2019.

The impacts, based on volume are as follows:

- Low usage customer increase of \$7 per month, an average of **\$2.33 per utility**.
- The average customer would see an increase of \$16.78 per month, **an average of \$5.60 per utility**.
- A higher usage customer would see an increase of \$35 per month, **an average of \$11.67 per utility**.

Figure 6.1: Combined Bill Impacts (4,000 Gallons, 5/8" Meter, 1/5 acre or less)

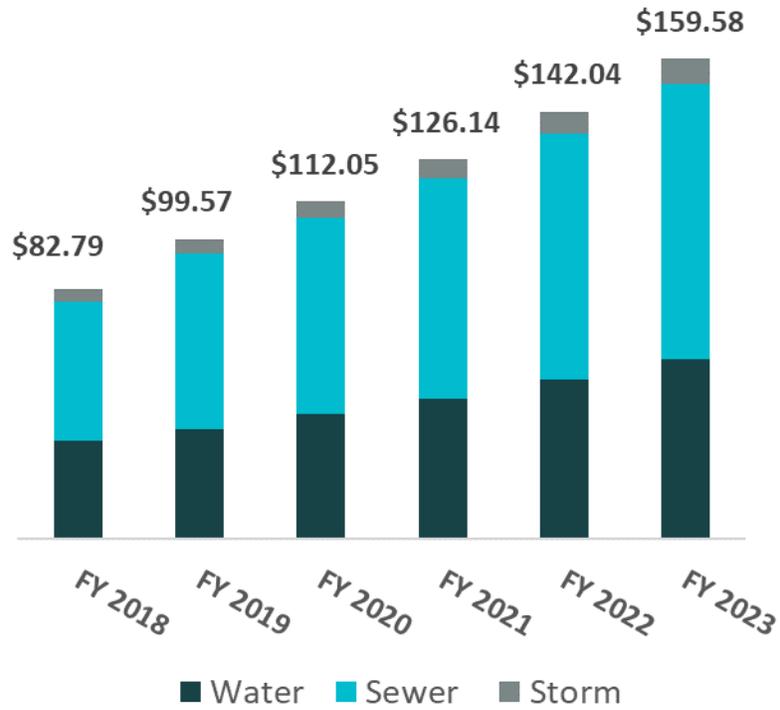
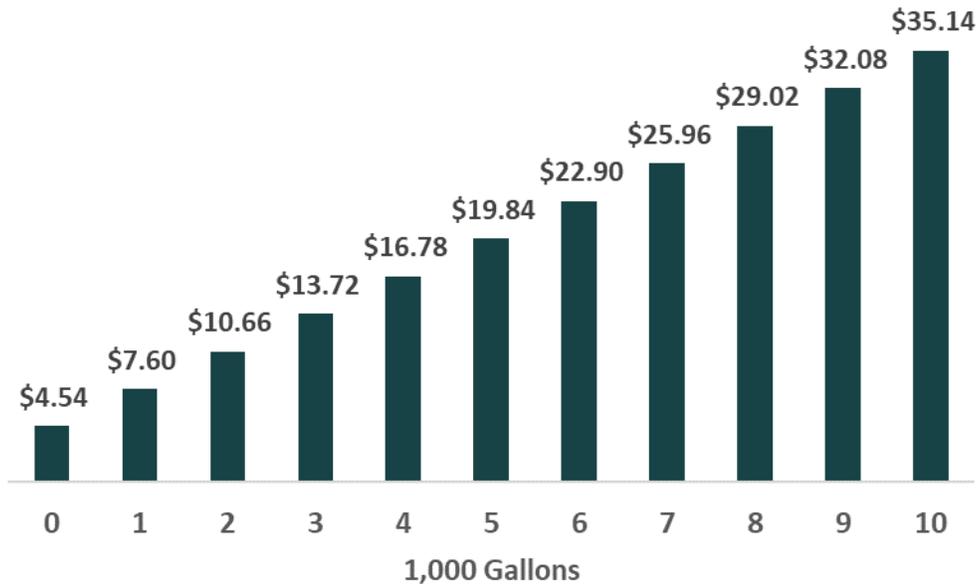


Figure 6.2: Combined Bill Impacts (5/8" Meter, 1/5 acre or less)



APPENDICES

Appendix B – NPDES Permit

PERMIT NO. MI0023531

**STATE OF MICHIGAN**
DEPARTMENT OF ENVIRONMENTAL QUALITY

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Water Pollution Control Act, 33 U.S.C., Section 1251 *et seq.*, as amended; Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2011-1,

City of Marquette
300 West Baraga Avenue
Marquette, MI 49855

is authorized to discharge from the **Marquette Area Wastewater Treatment Facility** located at

1930 US 41 South
Marquette, MI 49855

designated as **Marquette WWTP**

to the receiving water named the Carp River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on March 15, 2017, as amended through April 14, 2017.

This permit takes effect on March 1, 2019. The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date, this permit shall supersede National Pollutant Discharge Elimination System (NPDES) Permit No. MI0023531 (expiring October 1, 2017).

This permit and the authorization to discharge shall expire at midnight on **October 1, 2022**. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application that contains such information, forms, and fees as are required by the Michigan Department of Environmental Quality (Department) by **April 4, 2022**.

Issued DRAFT

Christine Alexander, Manager
Permits Section
Water Resources Division

PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by January 15 for notices mailed by December 1. The fee is due no later than 45 days after receiving the notice for notices mailed after December 1.

Annual Permit Fee Classification: Municipal Major, Less than 10 MGD (Individual Permit)

In accordance with Section 324.3118 of the NREPA, the permittee shall make payment of an annual storm water fee to the Department for each January 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. The fee shall be postmarked by March 15 for notices mailed by February 1. The fee is due no later than 45 days after receiving the notice for notices mailed after February 1.

In accordance with Section 324.3132 of the NREPA, the permittee shall make payment of an annual biosolids land application fee to the Department if the permittee land applies biosolids. In response to the Department's annual notice, the permittee shall submit the fee, which shall be postmarked no later than January 31 of each year.

CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Upper Peninsula District Office of the Water Resources Division. The Upper Peninsula District Office is located at 1504 West Washington Street, Marquette, MI 49855, Telephone: 906-228-4853, Fax: 906-228-4940.

CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environmental Quality, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

PART I

Section A. Limitations and Monitoring Requirements

1. Final Effluent Limitations, Monitoring Point 001A

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Carp River at Latitude 46.51828, Longitude -87.38477. Such discharge shall be limited and monitored by the permittee as specified below.

Parameter	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration				Monitoring Frequency	Sample Type
	Monthly	7-Day	Daily	Units	Monthly	7-Day	Daily	Units		
Flow	(report)		(report)	MGD	---		---	---	Daily	Report Total Daily Flow
Carbonaceous Biochemical Oxygen Demand (CBOD ₅)	800	1300	(report)	lbs/day	25	40	(report)	mg/l	5x Weekly	24-Hr Composite
Total Suspended Solids (TSS)	960	1400	(report)	lbs/day	30	45	(report)	mg/l	5x Weekly	24-Hr Composite
Ammonia Nitrogen (as N)										
June – August	270	---	(report)	lbs/day	8.4	---	(report)	mg/l	5x Weekly	24-Hr Composite
September – October	430	---	(report)	lbs/day	13	---	(report)	mg/l	5x Weekly	24-Hr Composite
November – May	(report)	---	(report)	lbs/day	(report)	---	(report)	mg/l	5x Weekly	24-Hr Composite
Total Phosphorus (as P)	32	---	(report)	lbs/day	1.0	---	(report)	mg/l	5x Weekly	24-Hr Composite
Fecal Coliform Bacteria	---	---	---	---	200	400	(report)	cts/100 ml	5x Weekly	Grab
Total Residual Chlorine	---	---	---	---	---	---	38	ug/l	5x Weekly	Grab
Whole Effluent Toxicity										
Acute Toxicity	---	---	---	---	---	---	1.0	TU _A	Quarterly	24-Hr Composite
							Individual Chronic Value			
Chronic Toxicity	---	---	---	---	1.7	---	(report)	TU _C	Quarterly	24-Hr Composite
Total Copper	---	---	---	---	---	---	(report)	ug/l	Quarterly	24-Hr Composite
Total Silver	0.07	---	(report)	lbs/day	2.1	---	(report)	ug/l	Monthly	24-Hr Composite
Available Cyanide	0.29	---	1.4	lbs/day	8.9	---	(report)	ug/l	Monthly	Grab
Total Mercury										
Corrected	(report)	---	(report)	lbs/day	(report)	---	(report)	ng/l	Quarterly	Calculation
Uncorrected	---		---	---	---		(report)	ng/l	Quarterly	Grab
Field Duplicate	---		---	---	---		(report)	ng/l	Quarterly	Grab
Field Blank	---		---	---	---		(report)	ng/l	Quarterly	Preparation
Laboratory Method Blank	---		---	---	---		(report)	ng/l	Quarterly	Preparation
Total Mercury	0.0001	---	---	lbs/day	3.0	---	---	ng/l	Quarterly	Calculation
					Minimum % Monthly		Minimum % Daily			
CBOD ₅ Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation
TSS Minimum % Removal	---	---	---	---	85	---	(report)	%	Monthly	Calculation

PART I

Section A. Limitations and Monitoring Requirements

<u>Parameter</u>					<u>Minimum Daily</u>		<u>Maximum Daily</u>	<u>Units</u>	<u>Monitoring Frequency</u>	<u>Sample Type</u>
pH	---	---	---	---	6.0	---	9.0	S.U.	5x Weekly	Grab
Dissolved Oxygen										
June – August	---	---	---	---	4.5	---	---	mg/l	5x Weekly	Grab
September – May	---	---	---	---	4.0	---	---	mg/l	5x Weekly	Grab

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: 3.85 MGD.

- a. **Narrative Standard**
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Sampling Locations**
Samples for Carbonaceous Biochemical Oxygen Demand (CBOD₅), Total Suspended Solids (TSS), Ammonia Nitrogen (as N), Total Phosphorus (as N), Acute Toxicity, Chronic Toxicity, Total Copper, and Total Silver shall be taken prior to disinfection. Samples for Fecal Coliform Bacteria, Total Residual Chlorine, Available Cyanide, Total Mercury, pH, and Dissolved Oxygen shall be taken after disinfection. The Department may approve alternate sampling locations that are demonstrated by the permittee to be representative of the effluent.
- c. **Quarterly Monitoring**
Quarterly samples shall be taken during the months of January, April, July, and October. If the facility does not discharge during these months, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "*G" on the Discharge Monitoring Report (DMR). (For purposes of reporting on the Daily tab of the DMR, the permittee shall enter "G" on the first day of the month only).
- d. **Total Residual Chlorine (TRC)**
Compliance with the TRC limit shall be determined on the basis of one or more grab samples. If more than one (1) sample per day is taken, the additional samples shall be collected in near equal intervals over at least eight (8) hours. The samples shall be analyzed immediately upon collection and the average reported as the daily concentration. Samples shall be analyzed in accordance with Part II.B.2. of this permit.
- e. **Percent Removal Requirements**
These requirements shall be calculated based on the monthly (30-day) effluent CBOD₅ and TSS concentrations and the monthly influent concentrations for approximately the same period.
- f. **Monitoring Frequency Reduction for Available Cyanide and Total Silver**
After the submittal of 12 months of data, the permittee may request, in writing, Department approval for a reduction in monitoring frequency for available cyanide and/or total silver. This request shall contain an explanation as to why the reduced monitoring is appropriate. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.1. of this permit. The monitoring frequency for available cyanide and/or total silver shall not be reduced to less than annually. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittee.

PART I**Section A. Limitations and Monitoring Requirements**

- g. **Final Effluent Limitation for Total Mercury**
The final limit for total mercury is the Discharge Specific Level Currently Achievable (LCA) based on a multiple discharger variance from the WQBEL of 1.3 ng/l, pursuant to Rule 1103(9) of the Water Quality Standards. Compliance with the LCA shall be determined as a 12-month rolling average, the calculation of which may be done using blank-corrected sample results. The 12-month rolling average shall be determined by adding the present monthly average result to the preceding 11 monthly average results then dividing the sum by 12. For facilities with quarterly monitoring requirements for total mercury, quarterly monitoring shall be equivalent to three (3) months of monitoring in calculating the 12-month rolling average. Facilities that monitor more frequently than monthly for total mercury must determine the monthly average result, which is the sum of the results of all data obtained in a given month divided by the total number of samples taken, in order to calculate the 12-month rolling average. If the 12-month rolling average for any quarter is less than or equal to the LCA, the permittee will be considered to be in compliance for total mercury for that quarter, provided the permittee is also in full compliance with the Pollutant Minimization Program for Total Mercury, set forth in Part I.A.4. of this permit.
- h. **Total Mercury Testing and Additional Reporting Requirements**
The analytical protocol for total mercury shall be in accordance with EPA Method 1631, Revision E, "Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry." The quantification level for total mercury shall be 0.5 ng/l, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination.

The use of clean technique sampling procedures is required unless the permittee can demonstrate to the Department that an alternate sampling procedure is representative of the discharge. Guidance for clean technique sampling is contained in EPA Method 1669, Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels (Sampling Guidance), EPA-821-R96-001, July 1996. Information and data documenting the permittee's sampling and analytical protocols and data acceptability shall be submitted to the Department upon request.

In order to demonstrate compliance with EPA Method 1631E and EPA Method 1669, the permittee shall report, on the daily sheet, the analytical results of all field blanks and field duplicates collected in conjunction with each sampling event, as well as laboratory method blanks when used for blank correction. The permittee shall collect at least one (1) field blank and at least one (1) field duplicate per sampling event. If more than ten (10) samples are collected during a sampling event, the permittee shall collect at least one (1) additional field blank AND field duplicate for every ten (10) samples collected. Only field blanks or laboratory method blanks may be used to calculate a concentration lower than the actual sample analytical results (i.e., a blank correction). Only one (1) blank (field OR laboratory method) may be used for blank correction of a given sample result, and only if the blank meets the quality control acceptance criteria. If blank correction is not performed on a given sample analytical result, the permittee shall report under "Total Mercury – Corrected" the same value reported under "Total Mercury – Uncorrected." The field duplicate is for quality control purposes only; its analytical result shall not be averaged with the sample result.

PART I

Section A. Limitations and Monitoring Requirements

i. Whole Effluent Toxicity Final Requirements

Test species shall include fathead minnow **and** *Ceriodaphnia dubia*. Testing and reporting procedures shall follow procedures contained in EPA-821-R-02-013, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (Fourth Edition). When the effluent ammonia nitrogen (as N) concentration is greater than 3 mg/l, the pH of the toxicity test shall be maintained at a pH of 8 Standard Units. The acute toxic unit (TU_A) value and chronic toxic unit (TU_C) value for **each species tested** shall be reported on the DMR. If multiple chronic toxicity tests for the same species are performed during the month, the maximum TU_A value and monthly average TU_C value for the species shall be reported. For **each species not tested**, the permittee shall enter **"*W"** on the DMR. (For purposes of reporting on the Daily tab of the DMR, the permittee shall enter "*W" on the first day of the month only). Completed toxicity test reports for each test conducted shall be retained by the permittee in accordance with the requirements of Part II.B.5. of this permit and shall be available for review by the Department upon request. After 24 months of toxicity testing and upon approval from the Department, the monitoring frequency may be reduced to no less than annually if the test data indicate that the toxicity requirements of R 323.1219 of the Michigan Administrative Code are consistently being met. After one (1) year of toxicity testing and upon approval from the Department, the chronic toxicity tests may be performed using the more sensitive species identified in the chronic toxicity results collected to date. If a more sensitive species cannot be identified, the chronic toxicity tests shall be performed with both species. Toxicity test data acceptability is contingent upon validation of the test method by the testing laboratory. Such validation shall be submitted to the Department upon request.

1) When monitoring shows persistent exceedance of the 1.7 TU_C limit or the 1.0 TU_A limit for effluent toxicity, the Department will determine whether the permittee must implement the toxicity control program requirements specified in 2), below.

2) Upon written notification by the Department, the following conditions apply. Within 90 days of the notification, the permittee shall implement a Toxicity Reduction Evaluation (TRE). The objective of the TRE shall be to reduce the toxicity of the final effluent from Monitoring Point 001A to <1.7 TU_C and <1.0 TU_A. The following documents are available as guidance to reduce toxicity to acceptable levels: Phase I, EPA/600/6-91/005F (chronic), EPA/600/6-91/003 (acute); Phase II, EPA/600/R-92/080 (acute and chronic); Phase III, EPA/600/R-92/081 (acute and chronic); and Publicly Owned Treatment Works (POTWs), EPA/833B-99/002. Annual reports shall be submitted to the Department within 30 days of the completion of the last test of each annual cycle.

PART I

Section A. Limitations and Monitoring Requirements

2. Quantification Levels and Analytical Methods for Selected Parameters

Quantification levels (QLs) are specified for selected parameters in the table below. These QLs shall be considered the maximum acceptable unless a higher QL is appropriate because of sample matrix interference. Justification for higher QLs shall be submitted to the Department within 30 days of such determination. Where necessary to help ensure that the QLs specified can be achieved, analytical methods may also be specified in the table below. The sampling procedures, preservation and handling, and analytical protocol for all monitoring conducted in compliance with this permit, including monitoring conducted to meet the requirements of the application for permit reissuance, shall be in accordance with the methods specified in the table below, or in accordance with Part II.B.2. of this permit if no method is specified in the table below, unless an alternate method is approved by the Department. With the exception of total mercury, all units are in ug/l. The table is continued on the following page:

Parameter	QL	Units	Analytical Method
1,2-Diphenylhydrazine (as Azobenzene)	3.0	ug/l	
2,4,6-Trichlorophenol	5.0	ug/l	
2,4-Dinitrophenol	19	ug/l	
3,3'-Dichlorobenzidine	1.5	ug/l	EPA Method 605
4,4'-DDD	0.05	ug/l	EPA Method 608
4,4'-DDE	0.01	ug/l	EPA Method 608
4,4'-DDT	0.01	ug/l	EPA Method 608
Acrylonitrile	1.0	ug/l	
Aldrin	0.01	ug/l	EPA Method 608
Alpha-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Antimony, Total	1	ug/l	
Arsenic, Total	1	ug/l	
Barium, Total	5	ug/l	
Benzidine	0.1	ug/l	EPA Method 605
Beryllium, Total	1	ug/l	
Beta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Bis (2-Chloroethyl) Ether	1.0	ug/l	
Boron, Total	20	ug/l	
Cadmium, Total	0.2	ug/l	
Chlordane	0.01	ug/l	EPA Method 608
Chromium, Hexavalent	5	ug/l	
Chromium, Total	10	ug/l	
Copper, Total	1	ug/l	
Cyanide, Available	2	ug/l	EPA Method OIA 1677
Cyanide, Total	5	ug/l	
Delta-Hexachlorocyclohexane	0.01	ug/l	EPA Method 608
Dieldrin	0.01	ug/l	EPA Method 608
Di-N-Butyl Phthalate	9.0	ug/l	
Endosulfan I	0.01	ug/l	EPA Method 608
Endosulfan II	0.01	ug/l	EPA Method 608
Endosulfan Sulfate	0.01	ug/l	EPA Method 608
Endrin	0.01	ug/l	EPA Method 608
Endrin Aldehyde	0.01	ug/l	EPA Method 608
Fluoranthene	1.0	ug/l	
Heptachlor	0.01	ug/l	EPA Method 608
Heptachlor Epoxide	0.01	ug/l	EPA Method 608

PART I**Section A. Limitations and Monitoring Requirements**

Parameter	QL	Units	Analytical Method
Hexachlorobenzene	0.01	ug/l	EPA Method 612
Hexachlorobutadiene	0.01	ug/l	EPA Method 612
Hexachlorocyclopentadiene	0.01	ug/l	EPA Method 612
Hexachloroethane	5.0	ug/l	
Lead, Total	1	ug/l	
Lindane	0.01	ug/l	EPA Method 608
Lithium, Total	10	ug/l	
Mercury, Total	0.5	ng/l	EPA Method 1631E
Nickel, Total	5	ug/l	
PCB-1016	0.1	ug/l	EPA Method 608
PCB-1221	0.1	ug/l	EPA Method 608
PCB-1232	0.1	ug/l	EPA Method 608
PCB-1242	0.1	ug/l	EPA Method 608
PCB-1248	0.1	ug/l	EPA Method 608
PCB-1254	0.1	ug/l	EPA Method 608
PCB-1260	0.1	ug/l	EPA Method 608
Pentachlorophenol	1.8	ug/l	
Phenanthrene	1.0	ug/l	
Selenium, Total	1.0	ug/l	
Silver, Total	0.5	ug/l	
Strontium, Total	1000	ug/l	
Sulfides, Dissolved	20	ug/l	
Thallium, Total	1	ug/l	
Toxaphene	0.1	ug/l	EPA Method 608
Vinyl Chloride	0.25	ug/l	
Zinc, Total	10	ug/l	

3. Additional Monitoring Requirements.

As a condition of this permit, the permittee shall monitor the discharge from monitoring point 001A for the constituents listed below. This monitoring is an application requirement of 40 CFR 122.21(j), effective December 2, 1999. Testing shall be conducted in August 2019, May 2020, March 2021, and October 2021. Grab samples shall be collected for total phenols, and the Volatile Organic Compounds identified below. For all other parameters, 24-hour composite samples shall be collected.

The results of such additional monitoring shall be submitted with the application for reissuance (see the cover page of this permit for the application due date). The permittee shall notify the Department within 14 days of completing the monitoring for each month specified above in accordance with Part II.C.5. Additional reporting requirements are specified in Part II.C.11. The permittee shall report to the Department any whole effluent toxicity test results greater than 1.0 TU_A or 1.0 TU_C within five (5) days of becoming aware of the result. If, upon review of the analysis, it is determined that additional requirements are needed to protect the receiving waters in accordance with applicable water quality standards, the permit may then be modified by the Department in accordance with applicable laws and rules.

PART I**Section A. Limitations and Monitoring Requirements**Hardness

calcium carbonate

Metals (Total Recoverable), and Total Phenols

antimony	arsenic	barium	beryllium
boron	cadmium	chromium	lead
nickel	selenium	thallium	zinc
total phenolic compounds			

Volatile Organic Compounds

acrolein	acrylonitrile	benzene	bromoform
carbon tetrachloride	chlorobenzene	chlorodibromomethane	chloroethane
2-chloroethylvinyl ether	chloroform	dichlorobromomethane	1,1-dichloroethane
1,2-dichloroethane	trans-1,2-dichloroethylene	1,1-dichloroethylene	1,2-dichloropropane
1,3-dichloropropylene	ethylbenzene	methyl bromide	methyl chloride
methylene chloride	1,1,2,2-tetrachloroethane	tetrachloroethylene	toluene
1,1,1-trichloroethane	1,1,2-trichloroethane	trichloroethylene	vinyl chloride

Acid-Extractable Compounds

4-chloro-3-methylphenol	2-chlorophenol	2,4-dichlorophenol	2,4-dimethylphenol
4,6-dinitro-o-cresol	2,4-dinitrophenol	2-nitrophenol	4-nitrophenol
Pentachlorophenol	phenol	2,4,6-trichlorophenol	

Base/Neutral Compounds

acenaphthene	acenaphthylene	anthracene	benzidine
benzo(a)anthracene	benzo(a)pyrene	3,4-benzofluoranthene	benzo(ghi)perylene
benzo(k)fluoranthene	bis(2-chloroethoxy)methane	bis(2-chloroethyl)ether	bis(2-chloroisopropyl)ether
bis(2-ethylhexyl)phthalate	4-bromophenyl phenyl ether	butyl benzyl phthalate	2-chloronaphthalene
4-chlorophenyl phenyl ether	chrysene	di-n-butyl phthalate	di-n-octyl phthalate
dibenzo(a,h)anthracene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene
3,3'-dichlorobenzidine	diethyl phthalate	dimethyl phthalate	2,4-dinitrotoluene
2,6-dinitrotoluene	1,2-diphenylhydrazine	fluoranthene	fluorene
Hexachlorobenzene	hexachlorobutadiene	hexachlorocyclo-pentadiene	hexachloroethane
indeno(1,2,3-cd)pyrene	isophorone	naphthalene	nitrobenzene
n-nitrosodi-n-propylamine	n-nitrosodimethylamine	n-nitrosodiphenylamine	phenanthrene
pyrene	1,2,4-trichlorobenzene		

4. Pollutant Minimization Program for Total Mercury

The goal of the Pollutant Minimization Program is to maintain the effluent concentration of total mercury at or below 1.3 ng/l. The permittee shall continue to implement the Pollutant Minimization Program approved on June 1, 2003, and modifications thereto, to proceed toward the goal. The Pollutant Minimization Program includes the following:

- an annual review and semi-annual monitoring of potential sources of mercury entering the wastewater collection system;
- a program for quarterly monitoring of influent and periodic monitoring of sludge for mercury; and
- implementation of reasonable cost-effective control measures when sources of mercury are discovered. Factors to be considered include significance of sources, economic considerations, and technical and treatability considerations.

On or before March 31 of each year, the permittee shall submit a status report for the previous calendar year to the Department that includes 1) the monitoring results for the previous year, 2) an updated list of potential mercury sources, and 3) a summary of all actions taken to reduce or eliminate identified sources of mercury.

PART I**Section A. Limitations and Monitoring Requirements**

Any information generated as a result of the Pollutant Minimization Program set forth in this permit may be used to support a request to modify the approved program or to demonstrate that the Pollutant Minimization Program requirement has been completed satisfactorily.

A request for modification of the approved program and supporting documentation shall be submitted in writing to the Department for review and approval. The Department may approve modifications to the approved program (approval of a program modification does not require a permit modification), including a reduction in the frequency of the requirements under items a. and b.

This permit may be modified in accordance with applicable laws and rules to include additional mercury conditions and/or limitations as necessary.

5. Untreated or Partially Treated Sewage Discharge Reporting and Testing Requirements

In accordance with Section 324.3112a of the NREPA, if untreated sewage, including sanitary sewer overflows (SSO) and combined sewer overflows (CSO), or partially treated sewage is directly or indirectly discharged from a sewer system onto land or into the waters of the state, the entity responsible for the sewer system shall immediately, but not more than 24 hours after the discharge begins, notify, by telephone, the Department, local health departments, a daily newspaper of general circulation in the county in which the permittee is located, and a daily newspaper of general circulation in the county or counties in which the municipalities whose waters may be affected by the discharge are located that the discharge is occurring.

The permittee shall also annually contact municipalities, including the superintendent of a public drinking water supply with potentially affected intakes, whose waters may be affected by the permittee's discharge of combined sewage, and if those municipalities wish to be notified in the same manner as specified above, the permittee shall provide such notification. Such notification shall also include a daily newspaper in the county of the affected municipality.

At the conclusion of the discharge, written notification shall be submitted in accordance with and on the "Report of Discharge Form" available via the internet at: <http://www.deq.state.mi.us/csosso/>, or, alternatively for combined sewer overflow discharges, in accordance with notification procedures approved by the Department.

In addition, in accordance with Section 324.3112a of the NREPA, each time a discharge of untreated sewage or partially treated sewage occurs, the permittee shall test the affected waters for *Escherichia coli* to assess the risk to the public health as a result of the discharge and shall provide the test results to the affected local county health departments and to the Department. The testing shall be done at locations specified by each affected local county health department but shall not exceed 10 tests for each separate discharge event. The affected local county health department may waive this testing requirement, if it determines that such testing is not needed to assess the risk to the public health as a result of the discharge event. The results of this testing shall be submitted with the written notification required above, or, if the results are not yet available, submit them as soon as they become available. This testing is not required, if the testing has been waived by the local health department, or if the discharge(s) did not affect surface waters.

Permittees accepting sanitary or municipal sewage from other sewage collection systems are encouraged to notify the owners of those systems of the above reporting and testing requirements.

PART I**Section A. Limitations and Monitoring Requirements****6. Facility Contact**

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
 - for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
 - for a partnership, a general partner,
 - for a sole proprietorship, the proprietor, or
 - for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.
- b. A person is a duly authorized representative only if:
 - the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
 - the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section releases the permittee from properly submitting reports and forms as required by law.

7. Monthly Operating Reports

Part 41 of Act 451 of 1994 as amended, specifically Section 324.4106 and associated R 299.2953, requires that the permittee file with the Department, on forms prescribed by the Department, operating reports showing the effectiveness of the treatment facility operation and the quantity and quality of liquid wastes discharged into waters of the state.

Within 30 days of the effective date of this permit, the permittee shall submit to the Department a revised treatment facility monitoring program to address monitoring requirement changes reflected in this permit, or submit justification explaining why monitoring requirement changes reflected in this permit do not necessitate revisions to the treatment facility monitoring program. The permittee shall implement the revised treatment facility monitoring program upon approval from the Department. Applicable forms and guidance are available on the Department's web site at http://www.michigan.gov/deq/0,1607,7-135-3313_44117---,00.html. The permittee may use alternate forms if they are consistent with the approved treatment facility monitoring program. Unless the Department provides written notification to the permittee that monthly submittal of operating reports is required, operating reports that result from implementation of the approved treatment facility monitoring program shall be maintained on site for a minimum of three (3) years and shall be made available to the Department for review upon request.

PART I

Section A. Limitations and Monitoring Requirements

8. Asset Management

The permittee shall at all times properly operate and maintain all facilities (i.e., the sewer system and treatment works as defined in Part 41 of the NREPA), and control systems installed or used by the permittee to operate the sewer system and treatment works and achieve and maintain compliance with the conditions of this permit (also see Part II.D.3 of this permit). The requirements of an Asset Management Program function to achieve the goals of effective performance, adequate funding, and adequate operator staffing and training. Asset management is a planning process for ensuring that optimum value is gained for each asset and that financial resources are available to rehabilitate and replace those assets when necessary. Asset management is centered on a framework of five (5) core elements: the current state of the assets; the required sustainable level of service; the assets critical to sustained performance; the minimum life-cycle costs; and the best long-term funding strategy.

a. Asset Management Program Requirements

The permittee shall continue to implement the Asset Management Plan approved on January 7, 2019, and approved modifications thereto. The Asset Management Plan contains a schedule for the development and implementation of an Asset Management Program that meets the requirements outlined below in 1) – 4):

1) *Maintenance Staff.* The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. The level of staffing needed shall be determined by taking into account the work involved in operating the sewer system and treatment works, planning for and conducting maintenance, and complying with this permit.

2) *Collection System Map.* The permittee shall complete a map of the sewer collection system it owns and operates. The map shall be of sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by the Department. **Note: Items below referencing combined sewer systems are not applicable to separate sewer systems.** Such map(s) shall include but not be limited to the following:

- a) all sanitary sewer lines and related manholes;
- b) all combined sewer lines, related manholes, catch basins and CSO regulators;
- c) all known or suspected connections between the sanitary sewer or combined sewer and storm drain systems;
- d) all outfalls, including the treatment plant outfall(s), combined sewer treatment facility outfalls, untreated CSOs, and any known SSOs;
- e) all pump stations and force mains;
- f) the wastewater treatment facility(ies), including all treatment processes;
- g) all surface waters (labeled);
- h) other major appurtenances such as inverted siphons and air release valves;
- i) a numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- j) the scale and a north arrow;
- k) the pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow; and

PART I**Section A. Limitations and Monitoring Requirements**

- l) the manhole interior material, rim elevation (optional), and invert elevations.
- 3) *Inventory and assessment of fixed assets.* The permittee shall complete an inventory and assessment of operations-related fixed assets. Fixed assets are assets that are normally stationary (e.g., pumps, blowers, and buildings). The inventory and assessment shall be based on current conditions and shall be kept up-to-date and available for review by the Department.
 - a) The fixed asset inventory shall include the following:
 - (1) a brief description of the fixed asset, its design capacity (e.g., pump: 120 gallons per minute), its level of redundancy, and its tag number if applicable;
 - (2) the location of the fixed asset;
 - (3) the year the fixed asset was installed;
 - (4) the present condition of the fixed asset (e.g., excellent, good, fair, poor); and
 - (5) the current fixed asset (replacement) cost in dollars for year specified in accordance with approved schedules;
 - b) The fixed asset assessment shall include a "Business Risk Evaluation" that combines the probability of failure of the fixed asset and the criticality of the fixed asset, as follows:
 - (1) Rate the probability of failure of the fixed asset on a scale of 1-5 (low to high) using criteria such as maintenance history, failure history, and remaining percentage of useful life (or years remaining);
 - (2) Rate the criticality of the fixed asset on a scale of 1-5 (low to high) based on the consequence of failure versus the desired level of service for the facility; and
 - (3) Compute the Business Risk Factor of the fixed asset by multiplying the failure rating from (1) by the criticality rating from (2).
- 4) *Operation, Maintenance & Replacement (OM&R) Budget and Rate Sufficiency for the Sewer System and Treatment Works.* The permittee shall complete an assessment of its user rates and replacement fund, including the following:
 - a) beginning and end dates of fiscal year;
 - b) name of the department, committee, board, or other organization that sets rates for the operation of the sewer system and treatment works;
 - c) amount in the permittee's replacement fund in dollars for year specified in accordance with approved schedules;
 - d) replacement fund strategy of all assets with a useful life of 20 years or less;
 - e) expenditures for maintenance, corrective action and capital improvement taken during the fiscal year;
 - f) OM&R budget for the fiscal year; and

PART I**Section A. Limitations and Monitoring Requirements**

g) rate calculation demonstrating sufficient revenues to cover OM&R expenses. If the rate calculation shows there are insufficient revenues to cover OM&R expenses, the permittee shall document, within three (3) fiscal years after submittal of the Asset Management Plan, that there is at least one rate adjustment that reduces the revenue gap by at least 10 percent. The permittee may prepare and submit an alternate plan, subject to Department approval, for addressing the revenue gap. The ultimate goal of the Asset Management Program is to ensure sufficient revenues to cover OM&R expenses.

b. Annual Reporting

Following Department approval of the permittee's Asset Management Plan, the permittee shall develop a written report that summarizes asset management activities completed during the previous year and planned for the upcoming year. The written report shall be submitted to the Department on or before August 1 of each year. The written report shall include:

- 1) a description of the staffing levels maintained during the year;
- 2) a description of inspections and maintenance activities conducted and corrective actions taken during the previous year;
- 3) expenditures for collection system maintenance activities, treatment works maintenance activities, corrective actions, and capital improvement during the previous year;
- 4) a summary of assets/areas identified for inspection/action (including capital improvement) in the upcoming year based on the five (5) core elements and the Business Risk Factors;
- 5) a maintenance budget and capital improvement budget for the upcoming year that take into account implementation of an effective Asset Management Program that meets the five (5) core elements;
- 6) an updated asset inventory based on the original submission; and
- 7) an updated OM&R budget with an updated rate schedule that includes the amount of insufficient revenues, if any.

PART I**Section A. Limitations and Monitoring Requirements****9. Discharge Monitoring Report – Quality Assurance Study Program**

The permittee shall participate in the Discharge Monitoring Report – Quality Assurance (DMR-QA) Study Program. The purpose of the DMR-QA Study Program is to annually evaluate the proficiency of all in-house and/or contract laboratory(ies) that perform, on behalf of the facility authorized to discharge under this permit, the analytical testing required under this permit. In accordance with Section 308 of the Clean Water Act (33 U.S.C. § 1318); and R 323.2138 and R 323.2154 of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, participation in the DMR-QA Study Program is required for all major facilities, and for minor facilities selected for participation by the Department.

Annually and in accordance with DMR-QA Study Program requirements and submittal due dates, the permittee shall submit to the Michigan DMR-QA Study Program state coordinator all documentation required by the DMR-QA Study. DMR-QA Study Program participation is required only for the analytes required under this permit and only when those analytes are also identified in the DMR-QA Study.

If the permitted facility's status as a major facility should change, participation in the DMR-QA Study Program may be reevaluated. Questions concerning participation in the DMR-QA Study Program should be directed to the Michigan DMR-QA Study Program state coordinator.

All forms and instructions required for participation in the DMR-QA Study Program, including submittal due dates and state coordinator contact information, can be found at <http://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program>.

PART I**Section B. Storm Water Pollution Prevention****1. Final Effluent Limitations and Monitoring Requirements**

The permittee is authorized to discharge storm water associated with industrial activity, as defined under 40 CFR 122.26(b)(14)(i-ix), to the surface waters of the state. Such discharge shall be limited and monitored by the permittee as specified below.

- a. **Narrative Standard**
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Visual Assessment of Storm Water Discharges**
To ensure that storm water discharges from the facility do not violate the narrative standard in the receiving waters, storm water discharges shall be visually assessed in accordance with this permit.
- c. **Implementation of Storm Water Pollution Prevention Plan**
The permittee shall implement an acceptable Storm Water Pollution Prevention Plan (SWPPP) as required by this permit.
- d. **Certified Operator**
The permittee shall have an Industrial Storm Water Certified Operator who has supervision over the facility's storm water treatment and control measures included in the SWPPP.

PART I**Section B. Storm Water Pollution Prevention**

The Storm Water Pollution Prevention Plan (SWPPP) is a written procedure to reduce the exposure of storm water to significant materials and to reduce the amount of significant materials in the storm water discharge. An acceptable SWPPP shall identify potential sources of contamination and describe the controls necessary to reduce their impacts in accordance with Part I.B.2. through Part I.B.8. of this permit.

2. Source Identification

To identify potential sources of significant materials that can pollute storm water and subsequently be discharged from the facility, the SWPPP shall, at a minimum, include the following:

- a. A site map identifying:
 - 1) buildings and other permanent structures;
 - 2) storage or disposal areas for significant materials;
 - 3) secondary containment structures and descriptions of the significant materials contained within the primary containment structures;
 - 4) storm water discharge points (which include outfalls and points of discharge), numbered or otherwise labeled for reference;
 - 5) location of storm water and non-storm water inlets (numbered or otherwise labeled for reference) contributing to each discharge point;
 - 6) location of NPDES-permitted discharges other than storm water;
 - 7) outlines of the drainage areas contributing to each discharge point;
 - 8) structural controls or storm water treatment facilities;
 - 9) areas of vegetation (with brief descriptions such as lawn, old field, marsh, wooded, etc.);
 - 10) areas of exposed and/or erodible soils and gravel lots;
 - 11) impervious surfaces (e.g., roofs, asphalt, concrete, etc.);
 - 12) name and location of receiving water(s); and
 - 13) areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the NREPA.
- b. A list of all significant materials that could pollute storm water. For each material listed, the SWPPP shall include each of the following descriptions:
 - 1) the ways in which each type of significant material has been, or has reasonable potential to become, exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, and vessels; contact with storage piles, contaminated materials, or soils; waste handling and disposal; deposits from dust or overspray; etc.);

PART I**Section B. Storm Water Pollution Prevention**

- 2) identification of the discharge point(s) and the inlet(s) contributing the significant material to each discharge point through which the significant material may be discharged if released; and
 - 3) an evaluation of the reasonable potential for contribution of significant materials to storm water from at least the following areas or activities:
 - a) loading, unloading, and other significant material-handling operations;
 - b) outdoor storage, including secondary containment structures;
 - c) outdoor manufacturing or processing activities;
 - d) significant dust- or particulate-generating processes;
 - e) discharge from vents, stacks, and air emission controls;
 - f) on-site waste disposal practices;
 - g) maintenance and cleaning of vehicles, machines, and equipment;
 - h) areas of exposed and/or erodible soils;
 - i) Sites of Environmental Contamination listed under Part 201 (Environmental Response) of the NREPA;
 - j) areas of significant material residues;
 - k) areas where animals (wild or domestic) congregate and deposit wastes; and
 - l) other areas where storm water may come into contact with significant materials.
- c. A listing of significant spills and significant leaks of polluting materials that occurred in areas that are exposed to precipitation or that discharge to a point source at the facility. The listing shall include spills that occurred over the three (3) years prior to the effective date of a permit authorizing discharge. The listing shall include the date, volume, and exact location of the release, and the action taken to clean up the material and/or prevent exposure to storm water or contamination of surface waters of the state. Any release that occurs after the SWPPP has been developed shall be controlled in accordance with the SWPPP and is cause for the SWPPP to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss.
 - d. A determination as to whether its facility discharges storm water to a water body for which an EPA-approved Total Maximum Daily Load (TMDL) has been established. If so, the permittee shall assess whether the TMDL requirements for the facility's discharge are being met through the existing SWPPP controls or whether additional control measures are necessary. The permittee's assessment of whether the TMDL requirements are being met shall focus on the effectiveness, adequacy, and implementation of the permittee's SWPPP controls.
 - e. A summary of existing storm water discharge sampling data (if available), describing pollutants in storm water discharges at the facility. This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

PART I**Section B. Storm Water Pollution Prevention****3. Nonstructural Controls**

To prevent significant materials from contacting storm water at the source, the SWPPP shall, at a minimum, include each of the following nonstructural controls:

- a. Written procedures and a schedule for routine preventive maintenance. Preventive maintenance procedures shall describe routine inspections and maintenance of storm water management and control devices (e.g., cleaning of oil/water separators and catch basins, routine housekeeping activities, etc.), as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to the storm sewer system or the surface waters of the state. The routine inspection shall include areas of the facility in which significant materials have the reasonable potential to contaminate storm water. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below.
- b. Written procedures and a schedule for good housekeeping to maintain a clean, orderly facility. Good housekeeping procedures shall include routine inspections that focus on the areas of the facility that have a reasonable potential to contaminate storm water entering the property. The routine housekeeping inspections may be combined with the routine inspections for the preventive maintenance program. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below.
- c. Written procedures and a schedule for **quarterly** comprehensive site inspections, to be conducted by the Industrial Storm Water Certified Operator. At a minimum, one inspection shall be performed within each of the following quarters: January-March, April-June, July-September, and October-December. The comprehensive site inspections shall include, but not be limited to, inspection of structural controls in use at the facility, and the areas and equipment identified in the routine preventive maintenance and good housekeeping procedures. These inspections shall also include a review of the routine preventive maintenance reports, good housekeeping inspection reports, and any other paperwork associated with the SWPPP. The permittee may request Department approval of an alternate schedule for comprehensive site inspections. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below, and the following shall be included on the comprehensive inspection form/report:
 - 1) Date of the inspection.
 - 2) Name(s), title(s), and certification number(s) of the personnel conducting the inspection.
 - 3) Precipitation information (i.e., a description of recent rainfall/snowmelt events).
 - 4) All observations relating to the implementation of control measures. Items to include if applicable:
 - a) updates on corrective actions implemented due to previously identified pollutant and/or discharge issues;
 - b) any evidence of, or the potential for, pollutants to discharge to the drainage system or receiving waters and the condition of and around the discharge point including flow dissipation measures needing maintenance or repairs;
 - c) any control measures needing maintenance or repairs; and
 - d) any additional control measures needed to comply with permit requirements.

PART I**Section B. Storm Water Pollution Prevention**

- 5) Any required revisions to the SWPPP resulting from the inspection.
- 6) A written certification stating the facility is in compliance with this permit and the SWPPP, or, if there are instances of noncompliance, they are identified.
- 7) Written procedures and a schedule for **quarterly** visual assessments of storm water discharges. At a minimum, one visual assessment shall be conducted within each of the following quarters: January-March, April-June, July-September, and October-December. These assessments shall be conducted as part of the comprehensive site inspection within one month of control measure observations made in accordance with 4), above. If the Department has approved an alternate schedule for the comprehensive site inspection, the visual assessment may likewise be conducted in accordance with the same approved alternate schedule.

The following are the requirements of the visual assessment. The permittee shall develop and clearly document, in writing, procedures for meeting these requirements:

- a) Within six (6) months of the effective date of this permit, the permittee shall develop written procedures for conducting the visual assessment and incorporate these procedures into the SWPPP. If Qualified Personnel rather than an Industrial Storm Water Certified Operator will collect storm water samples, these procedures shall include a written description of the training given to these personnel to qualify them to collect the samples, as well as documentation verifying that these personnel have received this training. The first visual assessment shall be conducted in conjunction with the next occurring comprehensive inspection. If changes resulting in altered drainage patterns occur at the facility, the permittee shall modify the procedures for conducting the visual assessment in accordance with the requirements of Keeping SWPPPs Current, below, and these modifications shall be incorporated into the SWPPP prior to conducting the next visual assessment.
- b) A visual assessment shall be conducted of a representative storm water **sample** collected **from each storm water discharge point**. Storm water samples shall be visually assessed for conditions that could cause a violation of water quality standards as defined in Water Quality Standards, below. The visual assessment shall be made of the storm water sample in a clean, clear glass or plastic container. Only an Industrial Storm Water Certified Operator shall conduct this visual assessment. Visual assessment of the storm water sample shall be conducted within 48 hours of sample collection.

Representative storm water samples shall be collected:

- (1) from each storm water discharge point identified as set forth under Source Identification, above. These samples may be collected by one or more of the following: an Industrial Storm Water Certified Operator; and/or an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the sample ("Qualified Personnel"); and/or an automated sampling device; and
- (2) within the first 30 minutes of the start of a discharge from a storm event and on discharges that occur at least 72 hours (3 days) from the previous discharge. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample shall be collected as soon thereafter as practicable, but not exceeding 60 minutes. In the case of snowmelt, samples shall be collected during a period with measurable discharge from the site.

PART I**Section B. Storm Water Pollution Prevention**

- c) A visual assessment shall be conducted of the storm water **discharge at each storm water discharge point**. (If an automated sampling device is used to collect the storm water sample, this requirement is waived). Either an Industrial Storm Water Certified Operator and/or Qualified Personnel may conduct this visual assessment. This visual assessment may be conducted directly – by someone physically present at the storm water discharge at each storm water discharge point; or it may be conducted indirectly – through the use of a visual recording taken of the storm water discharge at each storm water discharge point. Direct visual assessment shall be conducted at the same time that the storm water sample is collected. Indirect visual assessment shall be conducted using a visual recording taken of the storm water discharge at the same time that the storm water sample was collected.
- d) Visual assessments shall be documented. This documentation shall be retained in accordance with Record Keeping, below, and shall include the following:
- (1) sampling location(s) at the storm water discharge point(s) identified on the site map (see Source Identification, above);
 - (2) storm event information (i.e., length of event expressed in hours, approximate size of event expressed in inches of precipitation, duration of time since previous event that caused a discharge, and date and time the discharge began);
 - (3) date and time of the visual assessment of each storm water **discharge** at each storm water discharge point;
 - (4) name(s) and title(s) of the Industrial Storm Water Certified Operator or Qualified Personnel who conducted the visual assessment of the storm water **discharge** at each storm water discharge point. If an automated sampling device was used to collect the storm water sample associated with this discharge point, this documentation requirement is waived;
 - (5) observations made during visual assessment of the storm water **discharge** at each storm water discharge point. If an automated sampling device was used to collect the storm water sample associated with this discharge point, this documentation requirement is waived;
 - (6) if applicable, any visual recordings used to conduct the visual assessment of the storm water **discharge** at each storm water discharge point;
 - (7) date and time of sample collection for each storm water **sample**;
 - (8) name(s) and title(s) of the Industrial Storm Water Certified Operator or Qualified Personnel who collected the storm water **sample**. If an automated sampling device was used to collect the storm water sample, the permittee shall document that, instead;
 - (9) date and time of the visual assessment of each storm water **sample**;
 - (10) name(s), title(s), and operator number(s) of the Industrial Storm Water Certified Operator(s) who conducted the visual assessment of each storm water **sample**;
 - (11) observations made during visual assessment of each storm water **sample**;
 - (12) full-color photographic evidence of the storm water **sample** against a white background;
 - (13) nature of the discharge (i.e., rainfall or snowmelt);

PART I**Section B. Storm Water Pollution Prevention**

- (14) probable sources of any observed storm water contamination; and
 - (15) if applicable, an explanation for why it was not possible to collect samples within the first 30 minutes of discharge.
- e) When adverse weather conditions prevent a visual assessment during the quarter, a substitute visual assessment shall be conducted during the next qualifying storm event. Documentation of the rationale for no visual assessment during a quarter shall be included with the SWPPP records as described in Record Keeping, below. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, electrical storms, or situations that otherwise make sampling impractical such as drought or extended frozen conditions.
 - f) If the facility has two (2) or more discharge points that are believed to discharge substantially identical storm water effluents, the facility may conduct visual assessments of the discharge at just one (1) of the discharge points and report that the results also apply to the other substantially identical discharge point(s). The determination of substantially identical discharge points is to be based on the significant material evaluation conducted as set forth under Source Identification, above, and shall be clearly documented in the SWPPP. Visual assessments shall be conducted on a rotating basis of each substantially identical discharge point throughout the period of coverage under this permit.
- d. A description of material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the SWPPP and made available to the appropriate personnel. The procedures shall identify measures to prevent spilled materials or material residues from contaminating storm water entering the property. The SWPPP shall include language describing what a reportable spill or release is and the appropriate reporting requirements in accordance with Part II.C.6. and Part II.C.7. The SWPPP may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); a Hazardous Waste Contingency Plan prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the NREPA; or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112.
 - e. Identification of areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion. Gravel lots shall be included. The SWPPP shall also identify measures used to control soil erosion and sedimentation.
 - f. A description of the employee training program that will be implemented on an annual basis to inform appropriate personnel at all levels of their responsibility as it relates to the components and goals of the SWPPP. The SWPPP shall identify periodic dates for the employee training program. Records of the employee training program shall be retained in accordance with Record Keeping, below.
 - g. Identification of actions to limit the discharge of significant materials in order to comply with TMDL requirements, if applicable.
 - h. Identification of significant materials expected to be present in storm water discharges following implementation of nonstructural preventive measures and source controls.

PART I**Section B. Storm Water Pollution Prevention****4. Structural Controls**

Where implementation of the measures required by Nonstructural Controls, above, does not control storm water discharges in accordance with Water Quality Standards, below, the SWPPP shall provide a description of the location, function, design criteria, and installation/construction schedule of structural controls for prevention and treatment. Structural controls may be necessary:

- a. to prevent uncontaminated storm water from contacting, or being contacted by, significant materials; or
- b. if preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water. Structural controls shall be used to treat, divert, isolate, recycle, reuse, or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with water quality standards as identified in Water Quality Standards, below.

5. Keeping SWPPPs Current

- a. The permittee and/or the Industrial Storm Water Certified Operator shall review the SWPPP annually after it is developed and maintain a written report of the review in accordance with Record Keeping, below. Based on the review, the permittee or the Industrial Storm Water Certified Operator shall amend the SWPPP as needed to ensure continued compliance with the terms and conditions of this permit. The written report shall be submitted to the Department on or before January 10th of each year.
- b. The SWPPP developed under the conditions of a previous permit shall be amended as necessary to ensure compliance with this permit.
- c. The SWPPP shall be updated or amended whenever changes at the facility have the potential to increase the exposure of significant materials to storm water, significant spills occur at the facility, or when the SWPPP is determined by the permittee or the Department to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Updates based on increased activity or spills at the facility shall include a description of how the permittee intends to control any new sources of significant materials, or respond to and prevent spills in accordance with the requirements of this permit (see Source Identification; Nonstructural Controls; and Structural Controls, above).
- d. The Department may notify the permittee at any time that the SWPPP does not meet minimum requirements of this permit. Such notification shall identify why the SWPPP does not meet minimum requirements of this permit. The permittee shall make the required changes to the SWPPP within 30 days after such notification from the Department or authorized representative and shall submit to the Department a written certification that the requested changes have been made.
- e. Amendments to the SWPPP shall be signed and retained on-site with the SWPPP pursuant to Signature and SWPPP Review, below.

PART I**Section B. Storm Water Pollution Prevention****6. Industrial Storm Water Certified Operator Update**

If the Industrial Storm Water Certified Operator is changed or an Industrial Storm Water Certified Operator is added, the permittee shall provide the name and certification number of the new Industrial Storm Water Certified Operator to the Department. If a facility has multiple Industrial Storm Water Certified Operators, the names and certification numbers of all shall be included in the SWPPP.

7. Signature and SWPPP Review

- a. The SWPPP shall be reviewed and signed by the Industrial Storm Water Certified Operator(s) and by either the permittee or an authorized representative in accordance with 40 CFR 122.22. The SWPPP and associated records shall be retained on-site at the facility that generates the storm water discharge.
- b. The permittee shall make the SWPPP, reports, log books, storm water discharge sampling data (if collected), and items required by Record Keeping, below, available upon request to the Department. The Department makes the non-confidential business portions of the SWPPP available to the public.

8. Record Keeping

The permittee shall maintain records of all SWPPP-related inspection and maintenance activities. Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water. All such records shall be retained for three (3) years. The following records are required by this permit (see Nonstructural Controls; and Keeping SWPPPs Current, above):

- a. routine preventive maintenance inspection reports;
- b. routine good housekeeping inspection reports;
- c. comprehensive site inspection reports;
- d. documentation of visual assessments;
- e. employee training records; and
- f. written summaries of the annual SWPPP review.

PART I**Section B. Storm Water Pollution Prevention****9. Water Quality Standards**

At the time of discharge, there shall be no violation of water quality standards in the receiving waters as a result of the storm water discharge. This requirement includes, but is not limited to, the following conditions:

- a. In accordance with R 323.1050 of the Part 4 Rules promulgated pursuant to Part 31 of the NREPA, the receiving waters shall not have any of the following unnatural physical properties as a result of this discharge in quantities which are, or may become, injurious to any designated use: turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits.
- b. Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department, followed by a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.
- c. Any pollutant for which a level of control is specified to meet a TMDL established by the Department shall be controlled at the facility so that its discharge is reduced by/to the amount specified in the TMDL.

PART I**Section B. Storm Water Pollution Prevention****10. Prohibition of Non-Storm Water Discharges**

Discharges of material other than storm water shall be in compliance with an NPDES permit issued for the discharge. Storm water shall be defined to include all of the following non-storm water discharges, provided pollution prevention controls for the non-storm water component are identified in the SWPPP:

- a. discharges from fire hydrant flushing;
- b. potable water sources, including water line flushing;
- c. water from fire system testing and fire-fighting training without burned materials or chemical fire suppressants;
- d. irrigation drainage;
- e. lawn watering;
- f. routine building wash-down that does not use detergents or other compounds;
- g. pavement wash waters where contamination by toxic or hazardous materials has not occurred (unless all contamination by toxic or hazardous materials has been removed) and where detergents are not used;
- h. uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
- i. springs;
- j. uncontaminated groundwater;
- k. foundation or footing drains where flows are not contaminated with process materials such as solvents; and
- l. discharges from fire-fighting activities. Discharges from fire-fighting activities are exempted from the requirement to be identified in the SWPPP.

11. Tracer Dye Discharges

This permit does not authorize the discharge of tracer dyes without approval from the Department. Requests to discharge tracer dyes shall be submitted to the Department in accordance with Rule 1097 (R 323.1097 of the Michigan Administrative Code).

PART I**Section C. Industrial Waste Pretreatment Program****1. Industrial Waste Pretreatment Program**

It is understood that the permittee does not receive the discharge of any type or quantity of substance which may cause interference with the operation of the treatment works; and, therefore, the permittee is not required to immediately develop an industrial pretreatment program in accordance with Section 307 of the Federal Water Pollution Control Act. The permittee is required to comply with Section 307 of the Federal Water Pollution Control Act upon accepting any such discharge for treatment. The permittee is required to notify the Department within thirty (30) days if any user discharges or proposes to discharge such wastes to the permittee for treatment.

Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system:

- a. pollutants which cause pass-through or interference;
- b. pollutants which create a fire hazard or explosion hazard in the sewerage system, including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;
- c. pollutants which will cause corrosive structural damage to the sewerage system; but in no case, discharges with pH less than 5.0, unless the works is specifically designed to accommodate such discharges;
- d. solid or viscous pollutants in amounts which will cause obstruction to the flow in the sewerage system resulting in interference;
- e. any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the treatment plant;
- f. heat in amounts which will inhibit biological activity in the treatment plant resulting in interference; but in no case, heat in such quantities that the temperature at the treatment plant exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless the Department, upon request of the permittee, approves alternate temperature limits;
- g. pollutants which result in the presence of toxic gases, vapors or fumes within the sewerage system in a quantity that may cause acute worker health and safety problems; and
- h. any trucked or hauled pollutants, except at discharge points designated by the permittee.

If information is gained by the Department that the permittee receives or is about to receive industrial wastes, then this permit may be modified in accordance with applicable laws and rules to incorporate the requirements of Section 307 of the Federal Water Pollution Control Act.

PART I**Section D. Residuals Management Program****1. Residuals Management Program for Land Application of Biosolids**

The permittee is authorized to land-apply bulk biosolids or prepare bulk biosolids for land application in accordance with the permittee's approved Residuals Management Program (RMP) approved on July 18, 2000, and approved modifications thereto, in accordance with the requirements established in R 323.2401 through R 323.2418 of the Michigan Administrative Code (Part 24 Rules). The approved RMP, and any approved modifications thereto, are enforceable requirements of this permit. Incineration, landfilling and other residual disposal activities shall be conducted in accordance with Part II.D.7. of this permit. The Part 24 Rules can be obtained via the internet (<http://www.michigan.gov/deq/> and on the left side of the screen click on Water, Biosolids & Industrial Pretreatment, Biosolids then click on Biosolids Laws and Rules Information which is under the Laws & Rules banner in the center of the screen).

- a. **Annual Report**

On or before October 30 of each year, the permittee shall submit an annual report to the Department for the previous fiscal year of October 1 through September 30. The report shall be submitted electronically via the Department's MiWaters system at <https://miwaters.deq.state.mi.us>. At a minimum, the report shall contain:

 - 1) a certification that current residuals management practices are in accordance with the approved RMP, or a proposal for modification to the approved RMP; and
 - 2) a completed Biosolids Annual Report Form, available at <https://miwaters.deq.state.mi.us>.
- b. **Modifications to the Approved RMP**

Prior to implementation of modifications to the RMP, the permittee shall submit proposed modifications to the Department for approval. The approved modification shall become effective upon the date of approval. Upon written notification, the Department may impose additional requirements and/or limitations to the approved RMP as necessary to protect public health and the environment from any adverse effect of a pollutant in the biosolids.
- c. **Record Keeping**

Records required by the Part 24 Rules shall be kept for a minimum of five years. However, the records documenting cumulative loading for sites subject to cumulative pollutant loading rates shall be kept as long as the site receives biosolids.
- d. **Contact Information**

RMP-related submittals shall be made to the Department.

PART II

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

Section A. Definitions

Acute toxic unit (TU_A) means 100/LC₅₀ where the LC₅₀ is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

Annual monitoring frequency refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Authorized public agency means a state, local, or county agency that is designated pursuant to the provisions of section 9110 of Part 91 of the NREPA to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

Best management practices (BMPs) means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

Bioaccumulative chemical of concern (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

Biosolids are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

Bulk biosolids means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

Certificate of Coverage (COC) is a document, issued by the Department, which authorizes a discharge under a general permit.

Chronic toxic unit (TU_C) means 100/MATC or 100/IC₂₅, where the maximum acceptable toxicant concentration (MATC) and IC₂₅ are expressed as a percent effluent in the test medium.

Class B biosolids refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Combined sewer system is a sewer system in which storm water runoff is combined with sanitary wastes.

PART II

Section A. Definitions

Daily concentration is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any *individual* sample taken during the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs and the minimum value of any *individual* sample taken during the month in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. For dissolved oxygen, report the minimum concentration of any *individual* sample in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Daily loading is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

Daily monitoring frequency refers to a 24-hour day. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Department means the Michigan Department of Environmental Quality.

Detection level means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

Discharge means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

EC₅₀ means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

Fecal coliform bacteria monthly

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

PART II**Section A. Definitions****Fecal coliform bacteria 7-day**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

Flow-proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

General permit means a National Pollutant Discharge Elimination System permit issued authorizing a category of similar discharges.

Geometric mean is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

Grab sample is a single sample taken at neither a set time nor flow.

IC₂₅ means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

Illicit connection means a physical connection to a municipal separate storm sewer system that primarily conveys non-storm water discharges other than uncontaminated groundwater into the storm sewer; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

Illicit discharge means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

Individual permit means a site-specific NPDES permit.

Inlet means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

PART II**Section A. Definitions**

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

Land application means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

LC₅₀ means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

Maximum acceptable toxicant concentration (MATC) means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

Maximum extent practicable means implementation of best management practices by a public body to comply with an approved storm water management program as required by a national permit for a municipal separate storm sewer system, in a manner that is environmentally beneficial, technically feasible, and within the public body's legal authority.

MGD means million gallons per day.

Monthly concentration is the sum of the daily concentrations determined during a reporting period divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Monthly loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMR.

Monthly monitoring frequency refers to a calendar month. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Municipal separate storm sewer means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a publicly-owned treatment works as defined in the Code of Federal Regulations at 40 CFR 122.2.

PART II

Section A. Definitions

Municipal separate storm sewer system (MS4) means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the Federal Act that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

No observed adverse effect level (NOAEL) means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

Noncontact cooling water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

Outfall is the location at which a point source discharge enters the surface waters of the state.

Part 91 agency means an agency that is designated by a county board of commissioners pursuant to the provisions of section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation activities under Part 615, Part 631, or Part 632 pursuant to the provisions of section 9115 of Part 91 of the NREPA.

Part 91 permit means a soil erosion and sedimentation control permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

Partially treated sewage is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's National Pollutant Discharge Elimination System permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

Point of discharge is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

Point source discharge means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

Polluting material means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

POTW is a publicly owned treatment work.

PART II

Section A. Definitions

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

Public (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

Public body means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

Qualified Personnel means an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the storm water sample.

Qualifying storm event means a storm event causing greater than 0.1 inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1 inch of rainfall. Upon request, the Department may approve an alternate definition meeting the condition of a qualifying storm event.

Quantification level means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

Quarterly monitoring frequency refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Regional Administrator is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

Regulated area means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely-populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

Secondary containment structure means a unit, other than the primary container, in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

Separate storm sewer system means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

Significant industrial user is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

PART II**Section A. Definitions**

Significant materials Significant Materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111 of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills and significant leaks means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

Special-use area means secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and/or areas with other activities that may contribute pollutants to the storm water for which the Department determines monitoring is needed.

Stoichiometric means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

Storm water means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

Storm water discharge point is the location where the point source discharge of storm water is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including *outfalls* which discharge directly to surface waters of the state, and *points of discharge* which discharge directly into separate storm sewer systems.

SWPPP means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

Tier I value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

Tier II value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

Total maximum daily loads (TMDLs) are required by the Federal Act for waterbodies that do not meet water quality standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet water quality standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

Toxicity reduction evaluation (TRE) means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Water Quality Standards means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.

Weekly monitoring frequency refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

WWSL is a wastewater stabilization lagoon.

WWSL discharge event is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14 day period.

PART II**Section A. Definitions**

3-portion composite sample is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

7-day concentration

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

7-day loading

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

24-hour composite sample is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period. A time-proportioned composite sample may be used upon approval of the Department if the permittee demonstrates it is representative of the discharge.

PART II**Section B. Monitoring Procedures****1. Representative Samples**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations.** Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Manager of the Permits Section, Water Resources Division, Michigan Department of Environmental Quality, P.O. Box 30458, Lansing, Michigan, 48909-7958. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

PART II**Section C. Reporting Requirements****1. Start-up Notification**

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge.

2. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring," the permittee shall submit self-monitoring data via the Department's MiWaters system.

The permittee shall utilize the information provided on the MiWaters website, located at <https://miwaters.deq.state.mi.us>, to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20th day of the month following each month of the authorized discharge period(s). The permittee may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10th (April 1st for animal feeding operation facilities) of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

Retained self-monitoring may be denied to a permittee by notification in writing from the Department. In such cases, the permittee shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittee. Reissuance or modification of this permit or reissuance or modification of an individual permittee's authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

PART II**Section C. Reporting Requirements****5. Compliance Dates Notification**

Within 14 days of every compliance date specified in this permit, the permittee shall submit a *written* notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

- a. **24-Hour Reporting**
Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.
- b. **Other Reporting**
The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if the notice is provided after regular working hours, call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from **out-of-state** dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventive measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

PART II**Section C. Reporting Requirements****8. Upset Noncompliance Notification**

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24 hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated and maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation); and
- c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

9. Bypass Prohibition and Notification

- a. Bypass Prohibition
Bypass is prohibited, and the Department may take an enforcement action, unless:
 - 1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - 2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
 - 3) the permittee submitted notices as required under 9.b. or 9.c. below.
- b. Notice of Anticipated Bypass
If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a. above.
- c. Notice of Unanticipated Bypass
The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the second page of this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

PART II**Section C. Reporting Requirements**

- d. **Written Report of Bypass**
A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.
- e. **Bypass Not Exceeding Limitations**
The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.11. of this permit.
- f. **Definitions**
- 1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
 - 2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

11. Notification of Changes in Discharge

The permittee shall notify the Department, in writing, as soon as possible but no later than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

PART II**Section C. Reporting Requirements****12. Changes in Facility Operations**

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.10.; and 4) the action or activity will not require notification pursuant to Part II.C.11. Following such notice, the permit or, if applicable, the facility's COC may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; record keeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.

PART II**Section C. Reporting Requirements****15. Signatory Requirements**

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the Federal Act and the NREPA.

The Federal Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than \$2,500.00 or more than \$25,000.00 for each violation. The court may impose an additional fine of not more than \$25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than \$25,000.00 per day and not more than \$50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittee shall submit electronically all such reports or notifications as required by this permit, on forms provided by the Department.

PART II**Section D. Management Responsibilities****1. Duty to Comply**

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit, more frequently than, or at a level in excess of, that authorized, shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the Federal Act and constitutes grounds for enforcement action; for permit or Certificate of Coverage (COC) termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

PART II**Section D. Management Responsibilities****6. Containment Facilities**

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the NREPA.

7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

- a. to enter upon the permittee's premises where an effluent source is located or any place in which records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (R 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit, shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Act and Sections 3112, 3115, 4106 and 4110 of the NREPA.

10. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

PART II**Section E. Activities Not Authorized by This Permit****1. Discharge to the Groundwaters**

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

5. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Federal Act.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environmental Quality permits, or approvals from other units of government as may be required by law.

APPENDICES

Appendix C – Project Need/Request Forms

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D. # 2020-1

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High					
	Department: Community Development	Total Project Cost	Project Cost Details				
	Project Title: Front Street Reconstruction (Magnetic Street to Fair Ave.)		Street	Sanitary	Water	Storm	Sidewalk
	Project Location: Front Street (Magnetic Street to Fair Avenue)		\$1,037,720	\$146,316	\$278,001	\$377,046	\$218,349

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating (poor), and was overlaid in 1988. The street, sidewalk and stormwater systems will be replaced using City funds. The City plans to improve the water and sewer utilities that are in poor condition as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Front Street are dependent on a 4 inch 1901, 1912, and 1922 sand cast iron pipe. The pipe limits fire flow, is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 8 inch 1916 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Pipe and manhole CCTV scores will be confirmed.

Picture Title: Front Street From Magnetic St. to Fair Ave.



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2020	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Outside Funding Sources: DWRP/SRF Funding (Water and Sanitary Sewer Portion Amount: \$655,047.	Explain: The water pipes are approximately 100 years old and limit capacity in the area. The sanitary pipe is clay and more than 100 years old. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D. # 2020-2

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High					
	Department: Community Development	Total Project Cost	Project Cost Details				
	Project Title: Hewitt Avenue Reconstruction (Pine to Spruce Street)		Street	Sanitary	Water	Storm	Sidewalk
	Project Location: Hewitt Avenue (Pine to Spruce Street)		\$673,035	\$101,296	\$190,211	\$225,102	\$146,316

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

This project will continue the reconstruction that was finished east of Spruce Street in 2014. The street currently has a 4 Paser rating (poor). The street sidewalk and stormwater systems will be replaced using City funds. As part of the reconstruction, the City intends to improve the water and sewer utilities that are in poor condition and approximately 100 years old.

Water Pipe Replacement Criteria - The piping servicing the properties along this section of Hewitt Avenue are dependent on a 6 inch 1887 sand cast iron pipe. This project will upsize the existing pipe to 8 inch D.I. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 8 inch 1916 clay pipe and will be replaced with 8 inch PVC piping. The pipe was cleaned and televised as part of a recent project. The existing sanitary sewer is an 8 inch 1891 clay pipe that is in poor condition. The pipe will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced.

Picture Title: Hewitt Avenue From Pine Street to Spruce Street



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2020	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are more than 100 years old and limit capacity in the area. The sanitary pipe is approximately 100 years old, clay. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$415,313	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50, Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D. # 2020-3

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Allouez Road Upgrade (W. Nicolet Blvd. to LaSalle Road)		Street	Sanitary	Water	Storm
	Project Location: Allouez Road (W. Nicolet Blvd. to LaSalle Road)	\$1,184,034	\$184,583	\$228,478	\$363,539	\$407,434

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 3 Paser rating (poor), and no curb. The street and sidewalk systems will be replaced using City funds. The City plans to improve the water and sewer utilities that are in poor condition and require replacement as part of the reconstruction process.

Water Pipe Replacement Criteria - The piping servicing the residents along this section of Allouez Road is dependent on 6 inch 1966 sand cast piping. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity/water quality issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated during construction.

Sanitary Sewer Pipe Replacement Criteria - Part of the existing sanitary sewer was slip lined in 2013 and the remainder is a candidate for a future slip lining project. The project considers extending service to a home currently being serviced by a back yard sewer main. Sanitary sewer manholes and laterals will be replaced as needed. This area is known to have orangeburg (bituminous fiber) laterals. These aging pipes have a history of failing within the City.

Picture Title: Allouez Road - W. Nicolet Blvd. to LaSalle Rd.



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2020	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipe's are sand cast piping, undersized and have a history of tuberculation that limits capacity in the area. . The street has a Paser score of 3. The laterals are bituminous fiber and have a history of failure. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$592,017	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D. # 2020-4

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: College Ave. Reconstruction (Presque Isle to Front Street)		Street	Sanitary	Water	Storm
	Project Location: College Avenue (Presque Isle Ave. to Front Street)	\$907,161	\$111,425	\$218,349	\$291,507	\$193,588

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating (poor), and was overlaid in 1988. The street sidewalk and stormwater systems will be replaced using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of College Avenue are dependent on a 4 inch 1915 sand cast iron pipe between P.I. and Third Street. Currently no water main exists between Third and Front Street and residents are serviced by an undersized common water service line. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. . The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria – Portions of the existing sanitary sewer are 8 and 12 inch, 1908 clay pipe and will be replaced with PVC piping. The NAASCO quick rating scores for these segments were 4132 and 4331 respectively. All sanitary sewer manholes and laterals will be replaced.

Picture Title: College Ave. From Presque Isle to Front Street



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2020	Estimate New Effect on Operating Cost, Revenues, Staffing, etc?	\$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are approximately 100 years old and limit capacity in the area. The sanitary pipe is more than 100 years old, clay. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, sewer collection system and street in the area.	
Outside Funding Sources: SRF Amount: \$509,856		
Does Asset Have a Salvage Value? No Amount: \$		
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100		

2020 -2022 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D. # 2020-5

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	SRF Eligible Request Sum	Project Cost Details			
	Project Title: Hewitt Avenue Reconstruction (Third to Front Street)		Street	Sanitary	Water	Storm
	Project Location: Hewitt Avenue (Third to Front Street)	\$563,879	\$79,911	\$177,830	\$182,332	\$120,429

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating and is in poor condition. The street sidewalk and stormwater systems will be replaced using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Hewitt Avenue are dependent on a 6 inch 1887 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is a 12 inch 1903 clay pipe that ends part way up the block and will be replaced/extended with 8 inch PVC piping. Currently most homes on the north side of the street are serviced by long laterals that exit to the north of their homes, cross private properties, and connect into Prospect Street. Sanitary sewer laterals will be stubbed up to the property lines for those residents that connect into Prospect Street.

Picture Title: Hewitt Avenue From Third Street to Front Street



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2020	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are more than 100 years old and limit capacity in the area. The sanitary pipe is more than 100 years old, clay. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$360,162	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

2020-6

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: SIMP 2020 With Sanitary Sewer Lateral Replacements		Street	Sanitary	Water	Storm
	Project Location: Various	\$1,145,000	\$730,000	\$335,000	\$----	\$80,000

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input checked="" type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street improvement maintenance (SIMP) program is used to extend the useful service life of existing streets. This program is done on a yearly basis to keep the streets from deteriorating to a stage where reconstruction is required.</p> <p>The SIMP program is done in conjunction with the City's sanitary sewer replacement program. Replacement of the sewer laterals at this time negates future disruption to the public, additional repairs to the street, and ultimately saves the City money. Sewer lateral replacement includes televising to identify the condition of the laterals and excavation and replacement of the laterals if they are in poor condition or if they are fiber bituminous which are prone to failure. The replacement is from the main to the Owner's property line.</p> <p>The water service laterals will be evaluated during construction. If the service line contains lead they will be replaced per the proposed revisions to the lead and copper rule.</p>	
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2020	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$N/A
Name of Account Funding: Street, Water, Sanitary, Storm	<i>Explain:</i> The SIMP program evaluates and coordinates with sewer lateral replacement depending on the condition/type of the pipe.
Outside Funding Sources: SRF Amount: \$335,000	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 12, Laterals 80 -100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D. # 2020-7

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Marquette Drive Street Upgrade Project (Lakeview Dr. to North End)		Street	Sanitary	Water	Storm
	Project Location: Marquette Drive (Lakeview Drive to North End)	\$828,286	\$150,796	\$102,716	\$296,129	\$278,645

SYSTEM CATEGORY: PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street currently has a 2 Paser rating (very poor). The street does not have curbing or proper stormwater control. The street, sidewalk and stormwater systems will be replaced using City funds. The City plans to improve the water and sewer laterals that are in poor condition old as part of the reconstruction process.</p> <p>Water Pipe Replacement Criteria - The piping servicing the residents along this section of Marquette Drive is dependent on 6 inch 1958 sand cast piping. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. . The water service laterals will be evaluated for lead during construction.</p> <p>Sanitary Sewer Pipe Replacement Criteria - T The existing sanitary sewer was slip lined in 2011 and will not require replacement. Sanitary sewer manholes and laterals will be replaced as needed. This is area is known to have orangeburg laterals (fiber bituminous) that are prone to failure.</p>	<p>Picture Title: Marquette Drive - Lakeview Drive to North End</p> 
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2019	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm	<p><i>Explain:</i> The water pipes are older and limit capacity in the area. The sanitary pipe has been slip-lined and is in good condition. The laterals are known to be fiber bituminous and are planned for replacement. The street has a Paser score of 2. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.</p>
Outside Funding Sources: SRF Amount: \$398,845	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Useful Life of Asset (Years): 0 Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D. # 2020-8

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	SRF Eligible Request Sum	Project Cost Details			
	Project Title: Lakeview Drive Street Upgrade Project (Marquette Dr. to South End)		Street	Sanitary	Water	Storm
	Project Location: Lakeview Drive (Marquette Drive to South End)	\$415,237	\$87,418	\$71,027	\$135,499	\$121,293

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

This section is similar to Project 2020-7 (Marquette Drive Street Upgrade). The street currently has a 2 Paser rating (very poor). The street does not have curbing or proper stormwater control. The street, sidewalk and stormwater systems will be replaced using City funds. The City plans to improve the water and sewer laterals that are in poor condition old as part of the reconstruction process.

Water Pipe Replacement Criteria - The piping servicing the residents along this section of Marquette Drive is dependent on 6 inch 1958 sand cast piping. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer was slip lined in 2011 and will not require replacement. Sanitary sewer manholes and laterals will be replaced as needed. This is area is known to have orangeburg laterals (fiber bituminous) that are prone to failure.

Picture Title: Lakeview Drive - Marquette Drive to South End



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2019	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm	<i>Explain:</i> The water pipes are older and limit capacity in the area. The sanitary pipe has been slip-lined and is in good condition. The laterals are known to be fiber bituminous and are planned for replacement. The street has a Paser score of 2. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$206,526	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2020 PROJECT REQUEST FORM

I.D.# 2020-9

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Union Street Upgrade Project (Wilkinson to Presque Isle)		Street	Sanitary	Water	Storm
	Project Location: Union Street (Wilkinson Ave to Presque Isle Ave.)	\$u627,226	\$161,724	\$85,233	\$119,107	\$224,009

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street is currently rated a 3 under The City's Paser rating system. The project anticipates poor soils under this street which will require undercutting of the street in those areas. . The street sidewalk and stormwater systems will be replaced using City funds.</p> <p>Water Pipe Replacement Criteria - The water piping servicing the residents along this section of Union Street are dependent on a 8 inch 1969 cast iron and a 8 inch 1980 ductile iron and will not need replacement at this time. Other elements of the water system including valves and fire hydrants will be improved. The water service laterals will be evaluated for lead during construction.</p> <p>Sanitary Sewer Pipe Replacement Criteria - The piping servicing the sanitary sewer is 15 inch 1951 RCP and would be a candidate for slip lining at a future date. Manhole structures and laterals will be replaced as needed</p>	<p>Picture Title: Union Street – Wilkinson Ave. to Presque Isle Ave.</p> 
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2019	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	<i>Explain:</i> The street has a Paser score of 3. The replacement of the water and sewer components are coordinated with the street replacement.
Outside Funding Sources: SRF Amount: \$204,340	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020-2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-1

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Altamont Street Upgrade Project		Street	Sanitary	Water	Storm
	Project Location: Altamont Street (Grandview Dr. to Pioneer Rd.)	\$358,216	\$125,202	\$25,504	\$68,397	\$114,768

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street currently has a 2 Paser rating (very poor). The street and sidewalk will be replaced using City funds. The City plans to improve the water and sewer utilities that are in poor condition as part of the reconstruction process.</p> <p>Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Altamont Street are dependent on a 16 inch 1973 ductile iron pipe. This pipe will not require replacement. Any valves or hydrants found to be in poor condition or not functional will be replaced. The water service laterals will be evaluated for lead during construction.</p> <p>Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is a 8 inch 1978 truss pipe and will not be replaced at this time. This piping would be a good candidate for a future slip lining project. All sanitary sewer manholes and laterals will be replaced.</p>	<p>Picture Title: Altamont Street (Grandview Dr. to Pioneer Rd.)</p> 
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm	Explain: The street has a Paser score of 2. The replacement of some water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$93,901	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-2

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Costs	Project Cost Details			
	Project Title: College Ave. Reconstruction (Front Street to Pine Street)		Street	Sanitary	Water	Storm
	Project Location: College Avenue (Front Street to Pine Street)	\$631,805	\$83,468	\$169,254	\$236,492	\$133,317

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating (poor). The street and sidewalk will be replaced and storm sewer extended using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 90 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of College Street are dependent on a 6 inch 1926 sand cast iron pipe between Front and High Street. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. Currently no water main exists between High and Pine Street. . This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water main will be looped to Pine Street for continuity. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is a 6 inch 1926 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced.

Picture Title: College Ave. From Front Street to Pine Street



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc?	\$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	The water pipes are approximately 190 years old and limit capacity in the area. The sanitary pipe is more than 90 years old, clay. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.	
Outside Funding Sources: SRF Amount: \$405,746		
Does Asset Have a Salvage Value? No Amount: \$		
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100		

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-6

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Kildahl Avenue Reconstruction (McClellan to West Avenue)		Street	Sanitary	Water	Storm
	Project Location: Kildahl Avenue (McClellan Avenue to West Avenue)	\$377,923	\$81,149	\$85,786	\$112,450	\$98,538

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 3 Paser rating (very poor). The street, curbing and sidewalk will be replaced and the stormwater system extended using City funds. The City plans to make improvements the water and sewer utilities that are in poor condition as part of the reconstruction process.

Water Pipe Replacement Criteria - The water main is 6 inch 1965 cast iron piping and will not need replacement at this time. The main does not require replacement but any valves or hydrants that are found in poor condition or not functional will be replaced. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The piping servicing the sanitary sewer is 8 inch 1966 reinforced concrete pipe and will not require replacement. It may be a candidate for a future slip lining project. The sanitary sewer will be extended to provide service to the midblock residents that currently have long laterals. All laterals and manhole structures will be replaced as required.

Picture Title: Kildahl Avenue – McClellan Avenue to West Avenue



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm	Explain: The street has a Paser score of 3. The replacement of some water and sewer utilities are coordinated with the street replacement.
Outside Funding Sources: SRF Amount: \$198,236	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-7

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Lincoln Avenue Water Booster Pump Improvements		Street	Sanitary	Water	Storm
	Contact: Lincoln Street Water Booster Pump Station	\$400,000	----	----	\$376,000	----

SYSTEM CATEGORY:

<input type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System
<input type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds
<input type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment
<input type="checkbox"/> Transportation Safety	<input type="checkbox"/> Public Safety

PURPOSE OF PROJECT:

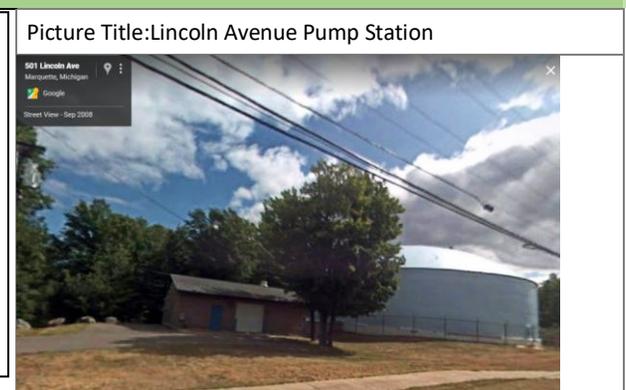
<input type="checkbox"/> Regulatory or Ordinance Requirement List _____	<input type="checkbox"/> Expanded Service
<input type="checkbox"/> Conforms to Adopted Plan List _____	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input type="checkbox"/> Scheduled Replacement
<input type="checkbox"/> New Asset	<input checked="" type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Health and Safety Issue	
<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The City will coordinate an engineering evaluation. The existing equipment is well maintained by the City operation and maintenance staff. Certain components, due to their age, need replacing. The City has previously completed upgrades to the control system. Repair and replacement improvements to the booster station includes:

- Replacing or refurbishing (3) horizontal split case pumps and 60 hp motors and variable speed drives
- Replacing or refurbishing isolation valves and pressure control valves
- Replacing the motor control center
- Installing an on-site generator.

The building structural and architectural elements are in good condition. The facility was built in 1991 and since buildings and structures usually have a 50 year life span or better, the facility should be in relatively good condition



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$
Name of Account(s) Funding:	Explain:
Outside Funding Sources: SRF Amount: \$400,000	
Does Asset Have a Salvage Value? Yes Amount: \$	
Estimate Asset Useful Life Extension (Years): 20	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-8

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Costs	Project Cost Details			
	Project Title: Meeske Avenue Reconstruction Project		Street	Sanitary	Water	Storm
	Project Location: Meeske Avenue (Washington Street to Ridge Street)	\$375,604	\$111,290	\$44,052	\$76,512	\$143,750

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street currently has a 3 Paser rating (very poor). The street, curbing and sidewalk will be replaced and the stormwater system extended using City funds. The City plans to make improvements the water and sewer utilities that are in poor condition as part of the reconstruction process.</p> <p>Water Pipe Replacement Criteria - The water main is 8 inch 1965 cast iron piping and will not need replacement at this time. The main does not require replacement but any valves or hydrants that are found in poor condition or not functional will be replaced. The water service laterals will be evaluated for lead during construction.</p> <p>Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 8 inch reinforced concrete pipe that was slip lined in 2007 and will not be replaced at this time. Any manholes or laterals that are in poor condition will be replaced.</p>	<p>Picture Title: Meeske Avenue (Washington St. to Ridge St.)</p> 
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm	Explain: The street has a Paser score of 3. The replacement/improvement of some water and sewer utilities are coordinated with the street replacement.
Outside Funding Sources: SRF Amount: \$120,564	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-9

DEPARTMENT CONTACT INFORMATION

	Date: 3/3/2016	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Morgan Street Reconstruction Project		Street	Sanitary	Water	Storm
	Project Location: Morgan Street (Washington Street to Bluff Street)	\$260,837	\$33,619	\$54,486	\$92,742	\$74,194

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating (poor). The street, sidewalk and stormwater systems will be replaced using City funds. The City plans to provide a water main and replace the sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - Currently no water main exists along Morgan Street. To provide continuity and reliability to the water system an 8 inch D.I. piping will be installed to remove a dead end, loop piping and improve pressure and water quality.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 8 inch 1908 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced.

Picture Title: Morgan Street (Washington St. to Bluff St.)



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The project provides a water main. The sanitary pipe is more than 100 years old, clay pipe. The street has a Paser score of 4. The addition of the water and sewer utility improvements are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$147,228	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-10

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High					
	Department: Community Development	Total Project Cost	Project Cost Details				
	Project Title: Nicolet Blvd. Upgrade (Raymbault Dr. to U.S. 41)		Street	Sanitary	Water	Storm	Sidewalk
	Project Location: Nicolet Blvd. (Raymbault Drive to U.S. 41)		\$730,343	\$115,927	\$62,601	\$248,085	\$303,730

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 2 Paser rating (very poor). The street, curbing and sidewalk will be replaced and improvements to the stormwater system will be made using City funds.

Water Pipe Replacement Criteria - The water piping servicing the the residents along this section of Nicolet Boulevard is dependent on 6 inch 1957 and 1958 sand cast piping. . The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - Part of the existing sanitary sewer was slip lined in 2013 and the remainder would be a candidate for a future slip lining project. Sanitary sewer manholes and laterals will be replaced as needed.



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm	Explain: The water pipes limit capacity in the area. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$310,686	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020-2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D.# 2021-11

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: SIMP 2021 With Sanitary Sewer Lateral Replacements		Street	Sanitary	Water	Storm
	Location: Varies	\$1,305,000	\$760,000	\$445,000	\$----	\$80,000

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input checked="" type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street improvement maintenance (SIMP) program is used to extend the useful service life of existing streets. This program is done on a yearly basis to keep the streets from deteriorating to a stage where reconstruction is required.</p> <p>The SIMP program is done in conjunction with the City's sanitary sewer replacement program. Replacement of the sewer laterals at this time negates future disruption to the public, additional repairs to the street, and ultimately saves the City money. Sewer lateral replacement includes televising to identify the condition of the laterals and excavation and replacement of the laterals if they are in poor condition or if they are fiber bituminous which are prone to failure. The replacement is from the main to the Owner's property line.</p> <p>The water service laterals will be evaluated for lead during construction. If the service line contains lead they will be replaced per the proposed revisions to the lead and copper rule.</p>	<p>No Figures.</p>
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$N/A
Name of Account Funding: Street, Water, Sanitary, Storm	<i>Explain: Effect is difficult to quantify as it relates to operation costs. There will be a savings as it relates to maintenance versus reconstruction of the street structure. In general, findings indicate that for every dollar spent on preventive maintenance, \$4 to \$10 was saved on rehabilitation. Reconstruction costs 4 times as much as pavement maintenance.</i> <i>Postponement will ultimately increase funding for the following year due to labor, equipment, and material cost increases</i>
Outside Funding Sources: SRF Amount: \$445,000	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 12, Laterals 80 -100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-13

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Spruce Street Reconstruction (Michigan to Hewitt Avenue)		Street	Sanitary	Water	Storm
	Project Location: Spruce Street (Michigan Street to Hewitt Avenue)	\$556,452	\$70,716	\$137,954	\$207,510	\$130,998

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input checked="" type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating (poor). The street, sidewalk and stormwater systems will be replaced using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Spruce Street are dependent on a 6 inch 1887 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 6 inch 1891 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced.

Picture Title: Spruce Street From Michigan Street to Hewitt Avenue



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc?	\$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are more than 100 years old and limit capacity in the area. The sanitary pipes are more than 100 years old, clay. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.	
Outside Funding Sources: Yes Amount: \$354,464		
Does Asset Have a Salvage Value? No Amount: \$		
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100		

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-14

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Wright Street Reconstruction (Sugarloaf to Vanevera Ave.)		Street	Sanitary	Water	Storm
	Project Location: Wright Street (Sugarloaf to Vanevera Avenue)	\$805,695	\$143,750	\$134,476	\$293,296	\$234,173

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating (poor). The street, curbing and sidewalk will be replaced or improved and stormwater will be improved using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Front Street are dependent on a 46 inch 1912 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsized the existing pipe to a 12 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The increase in pipe size also coordinates with the City's master plan for improvements in the area. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer has parallel lines. The existing 15-inch line was previously lined. The existing 12-inch line may be lined as part of a future project.

Picture Title: Wright Street From Sugarloaf to Vanevera Avenue



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are more than 100 years old and limit capacity in the area. The replacement pipe is sized to accommodate future increased water use in the area as part of City master planning. The replacement of the water utility is coordinated with the street replacement. Improvements I address the age, capacity and reliability of the water system and street in the area.
Outside Funding Sources: Yes Amount: \$427,772	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2021 PROJECT REQUEST FORM

I.D. # 2021-16

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Fitch Street (Union to Harlow)		Street	Sanitary	Water	Storm
	Project Location: Fitch Street (Union to Harlow)	\$264,315	\$85,786	\$45,212	\$56,805	\$56,804

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input checked="" type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street currently has a 2 Paser rating (very poor), and was overlaid in 1988. The street, curbing and sidewalk and will be replaced and any stormwater improvements will be made using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.</p> <p>Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Fitch Avenue are dependent on a 6 inch 1980 ductile iron pipe. This pipe will not require replacement. The water service laterals will be evaluated for lead during construction.</p> <p>Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is a 8 inch 1946 clay pipe and will not be replaced at this time. This piping would be a good candidate for a future slip lining project. All sanitary sewer manholes and laterals will be replaced.</p>	<p>Picture Title: Fitch Street (Union to Harlow)</p>
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2021	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The street has a Paser score of 2. The replacement of the water and sewer improvements are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: Yes Amount: \$102,017	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D. # 2022-1

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Cedar Street Reconstruction (Prospect to Crescent Street)		Street	Sanitary	Water	Storm
	Project Location: Cedar Street (Prospect Street to Crescent Street)	\$288,961	\$44,180	\$68,061	\$101,495	\$70,449

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

This is a continuation of the 2013 reconstruction project from Ohio to Prospect. The street currently has a 3 Paser rating (poor). The street, curb and sidewalk will be replaced and storm sewer elements will be upgraded using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Front Street are dependent on a 4 inch 1913 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsue the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is a 6 inch 1922 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced.

Picture Title: Cedar Street From Prospect Street to Crescent Street



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022	Estimate New Effect on Operating Cost, Revenues, Staffing, etc?	\$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are more than 100 years old and limit capacity in the area. The sanitary pipe is nearly 100 years old, clay. The street has a Paser score of 3. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.	
Outside Funding Sources: SRF Amount: \$169,556		
Does Asset Have a Salvage Value? No Amount: \$		
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100		

2020 -2022 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D. # 2022-2

DEPARTMENT CONTACT INFORMATION

	Date: 2/3/2016	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Division St. Reconstruction (Blemhuber Ave.to Newberry St.)		Street	Sanitary	Water	Storm
	Project Location: Division Street (Blemhuber Ave. to Newberry Street)	\$530,160	\$68,061	\$108,659	\$145,675	\$179,108

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

This is a continuation of the 2000 reconstruction project from Genesee to Blemhuber. The street currently has a 2 Paser rating (very poor). The street, curbs and sidewalk will be replaced and stormwater improvements will be made using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process. The water and sanitary mains with required structures will be extended north of Newberry to replace long laterals and to provide adequate service to those residents.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Division Street are dependent on a 4 inch 1951 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 8 inch 1908 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. The pipe was cleaned and televised as part of a recent project and had a NASSCO overall quick rating of 5100 and a structural pipe index rating of 5.

Picture Title: Division St. From Blemhuber Avenue to Newberry Street



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022	Estimate New Effect on Operating Cost, Revenues, Staffing, etc?	\$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes have limit capacity in the area. The sanitary pipe is clay and more than 100 years old. The street has a Paser score of 2. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.	
Outside Funding Sources: SRF Amount: \$254,334		
Does Asset Have a Salvage Value? No Amount: \$		
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100		

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D. # 2022-4

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Fern Place Upgrade (Michigan Street to Ohio Street)		Street	Sanitary	Water	Storm
	Project Location: Fern Place (Michigan Street to Ohio Street)	\$370,156	\$53,732	\$74,031	\$107,465	\$111,047

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 4 Paser rating (poor). The street, curbing and sidewalk will be replaced using City funds. The City plans to improve the water and sewer utilities that are in poor condition and more than 100 years old as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Fern Place are dependent on a 4 inch 1910 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The piping servicing the sanitary sewer was slip lined in 2006 and will not replacement. Manhole structures and laterals that require replacement will be done at this time.

Picture Title: Fern Place – Michigan Street to Ohio Street



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are approximately 100 years old and limit capacity in the area. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: Yes Amount: \$181,496	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D. # 2022-5

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/209	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Oak Street Reconstruction (Ridge Street to Ohio Street)		Street	Sanitary	Water	Storm
	Project Location: Oak Street (Ridge Street to Ohio Street)	\$630,459	\$96,718	\$192,242	\$249,557	\$76,419

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street currently has a 4 Paser rating (poor), and was overlaid in 1988. The street, curbing and sidewalk will be replaced and stormwater improvements made if necessary using City funds. The City plans to improve the water and sewer utilities that are in poor condition as part of the reconstruction process.</p> <p>Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Oak Street are dependent on a 4 inch 1887 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsze the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.</p> <p>Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 8 inch, 1903 and 1905 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. The pipe was cleaned and televised as part of a recent project. The segment between manhole 635B and 636 had a NASSCO overall quick rating of 4521.</p>	<p>Picture Title: Oak Street From Ridge Street to Ohio Street</p> 
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are approximately 100 years old and limit capacity in the area. The sanitary pipe is clay and more than 100 years old. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$441,799	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D. # 2022-7

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Park Street Reconstruction (Pine Street to spruce Street)		Street	Sanitary	Water	Storm
	Project Location: Park Street (Pine Street to Spruce Street)	\$728,372	\$109,853	\$199,407	\$275,826	\$109,853

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

This is a continuation of the 2007 reconstruction project from Fourth to Pine. The street currently has a 3 Paser rating (very poor). The street, curb and sidewalk will be replaced and stormwater improvements made using City funds. The City plans to improve the water and sewer utilities that are in poor condition as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Park Street are dependent on a 4 inch 1931 and 6-inch 1961 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is a 10 inch 1931 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. The cross country sewer that crosses the Pine Street intersection will be intercepted into the Park Street sanitary sewer.



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022	Estimate New Effect on Operating Cost, Revenues, Staffing, etc?	\$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are old and limit capacity in the area. The sanitary pipe is clay and almost 90 years old. The street has a Paser score of 3. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.	
Outside Funding Sources: SRF Amount: \$475,233		
Does Asset Have a Salvage Value? No Amount: \$		
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100		

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D. # 2022-8

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Sherman Street Upgrade (Sheridan Avenue to Lincoln)		Street	Sanitary	Water	Storm
	Project Location: Sherman Street (Sheridan Avenue to Lincoln Avenue)	\$874,047	\$160,003	\$160,003	\$353,440	\$200,601

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

The street currently has a 2 Paser rating (very poor). The street, curb and sidewalk will be replaced and improvements made to the stormwater system using City funds. The City plans to improve the water and sewer utilities that are in poor condition as part of the reconstruction process.

Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Sherman Street are dependent on a 6 inch 1960 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. All water services will be replaced. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.

Sanitary Sewer Pipe Replacement Criteria - The piping servicing the sanitary sewer was slip lined in 2011 and will not require replacement. Manhole structures and laterals that require replacement will be done at this time.

Picture Title: Sherman Street – Sheridan Avenue to Lincoln Avenue



PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm	Explain: The water pipes have limited capacity in the area. The sanitary pipe has previously been lined. The street has a Paser score of 2. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$513,443	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D.# 2022-9

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: SIMP 2022 With Sanitary Sewer Lateral Replacements		Street	Sanitary	Water	Storm
	Contact: Keith Whittington – City Engineer	\$1,210,000	\$790,000	\$310,000	\$---	\$90,000

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input checked="" type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street improvement maintenance (SIMP) program is used to extend the useful service life of existing streets. This program is done on a yearly basis to keep the streets from deteriorating to a stage where reconstruction is required.</p> <p>The SIMP program is done in conjunction with the City’s sanitary sewer replacement program. Replacement of the sewer laterals at this time negates future disruption to the public, additional repairs to the street, and ultimately saves the City money. Sewer lateral replacement includes televising to identify the condition of the laterals and excavation and replacement of the laterals if they are in poor condition or if they are fiber bituminous which are prone to failure. The replacement is from the main to the Owner’s property line.</p> <p>The water service laterals will be evaluated during construction. If the service line contains lead they will be replaced per the proposed revisions to the lead and copper rule.</p>	
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022 - 2024	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$N/A
Name of Account Funding: Street, Water, Sanitary, Storm	<i>Explain: Effect is difficult to quantify as it relates to operation costs. There will be a savings as it relates to maintenance versus reconstruction of the street structure. In general, findings indicate that for every dollar spent on preventive maintenance, \$4 to \$10 was saved on rehabilitation. Reconstruction costs 4 times as much as pavement maintenance.</i> <i>Postponement will ultimately increase funding for the following year due to labor, equipment, and material cost increases</i>
Outside Funding Sources: SRF Amount: \$310,000	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 12, Laterals 80 -100	

2020 -2024 CAPITAL IMPROVEMENT PROGRAM – 2022 PROJECT REQUEST FORM

I.D. # 2022-10

DEPARTMENT CONTACT INFORMATION

	Date: 3/1/2019	Department Priority: Low, Medium, High High				
	Department: Community Development	Total Project Cost	Project Cost Details			
	Project Title: Summit Street Reconstruction (Longyear to Presque Isle Ave.)		Street	Sanitary	Water	Storm
	Project Location: Summit Street (Longyear Avenue to Presque Isle Avenue)	\$766,582	\$105,077	\$204,183	\$260,304	\$169,555

SYSTEM CATEGORY:

PURPOSE OF PROJECT:

<input checked="" type="checkbox"/> Street System	<input checked="" type="checkbox"/> Sidewalk/Pathway System	<input checked="" type="checkbox"/> Regulatory or Ordinance Requirement List: <u>GASB34, ACT 399 and 451, City Code Sec. 48</u>	<input type="checkbox"/> Expanded Service
<input checked="" type="checkbox"/> Sanitary Sewer System	<input type="checkbox"/> Public Buildings	<input checked="" type="checkbox"/> Conforms to Adopted Plan List: <u>Master Plan, Strategic Plan</u>	<input type="checkbox"/> New Operation
<input checked="" type="checkbox"/> Water System	<input type="checkbox"/> Public Parks/Grounds	<input checked="" type="checkbox"/> Upgrade/Replace Existing Asset	<input checked="" type="checkbox"/> Scheduled Replacement
<input checked="" type="checkbox"/> Storm Sewer/Drainage System	<input type="checkbox"/> Marinas	<input type="checkbox"/> New Asset	<input type="checkbox"/> Extend Asset Useful Service Life
<input type="checkbox"/> Bridge System	<input type="checkbox"/> Motor Pool/Fleet/Major Equipment	<input checked="" type="checkbox"/> Health and Safety Issue	
<input checked="" type="checkbox"/> Transportation Safety	<input checked="" type="checkbox"/> Public Safety	<input type="checkbox"/> Economic Development	

PROJECT DESCRIPTION

<p>The street currently has a 4 Paser rating (poor), and was overlaid in 1988. The street, curb and sidewalk will be replaced and the stormwater system upgraded using City funds. The City plans to improve the water and sewer utilities that are in poor condition as part of the reconstruction process.</p> <p>Water Pipe Replacement Criteria - The water piping servicing the properties along this section of Front Street are dependent on a 4 inch 1925 sand cast iron pipe. The pipe is in poor condition and has internal corrosion (tuberculation) that impacts water quality and decreases flow and capacity. This project will upsize the existing pipe to an 8 inch D.I. piping to address capacity issues, increase residential/business flows, and replace the aged/failing pipe. The water service laterals will be evaluated for lead during construction.</p> <p>Sanitary Sewer Pipe Replacement Criteria - The existing sanitary sewer is an 8 inch 1940 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. The pipe was cleaned and televised as part of a recent project and had a NASSCO overall quick rating of 4131.</p>	<p>Picture Title: Summit Street From Longyear Ave. to Presque Isle Ave.</p> 
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PROJECT PLANNING AND FINANCING

Proposed Fiscal Year Planned: 2022	Estimate New Effect on Operating Cost, Revenues, Staffing, etc? \$ N/A
Name of Account Funding: Street, Water, Sanitary, Storm, Sidewalk	Explain: The water pipes are approximately 100 years old and limit capacity in the area. The sanitary pipe is clay and in poor condition. The street has a Paser score of 4. The replacement of the water and sewer utilities are coordinated with the street replacement. Improvements will address the age, capacity and reliability of the water system, collection system and street in the area.
Outside Funding Sources: SRF Amount: \$464,487	
Does Asset Have a Salvage Value? No Amount: \$	
Estimate Asset Useful Life Extension (Years): Pavement Structure 50 , Utilities 80-100	

APPENDICES

Appendix D – Lincoln Avenue Pump Station Cost Worksheets

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Lincoln Street Booster Pump Improvements
Alternative 1 - Replace and Upgrade Individual System Components**

COST OPINION - ENGINEERING ANALYSIS AND CAPITAL CONSTRUCTION

Description

Complete an engineering analysis to evaluate hydraulic and energy efficiency alternatives. Repair and replacement improvements to the booster station includes:

- Replacing or refurbishing (3) horizontal split case pumps and 60 hp motors and variable speed drives
- Replacing or refurbishing isolation valves and pressure control valves
- Providing soft start or variable speed drives

<u>ITEM</u>	<u>Units</u>	<u>Quantity</u>	<u>Installed Unit Cost</u>	<u>Initial Cost</u>
A. Architectural/Structural				
Earthwork	See page 2 for Detailed Cost Breakdown			\$0
Concrete	See page 2 for Detailed Cost Breakdown			\$0
Metals	See page 2 for Detailed Cost Breakdown			\$0
Buildings	See page 2 for Detailed Cost Breakdown			\$0
Demolition	See page 2 for Detailed Cost Breakdown			\$0
Land Acquisition & legal				\$0
 B. Process Equipment/Piping/Electrical/Controls				
60 Hp Split Case Centifugal Pump	Each	3	\$20,000	\$60,000
Provide VFDS (60 hp)	Each	3	\$15,000	\$45,000
Replace isolation valves (8")	Each	3	\$4,000	\$12,000
Replace isolation valves (12")	Each	3	\$6,000	\$18,000
Replace pressure control valves (12")	Each	3	\$10,000	\$30,000
I&C SCADA Reprogramming	LS	1	\$10,000	\$10,000
Electrical	LS	1	\$25,000	\$25,000
Mechanical and Painting	LS	1	\$34,000	\$34,000
Construction Cost w/o contingency =				<u>\$234,000</u>
Contractor Overhead, Profit, Bonds, Insurance & Mobilization =				\$28,100
Contingency (6%) =				\$14,000
Engineering (study and design) =				<u>\$60,000</u>
TOTAL PROJECT COST =				\$336,100

CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

Lincoln Street Booster Pump Improvements
Alternative 1 - Replace and Upgrade Individual System Components

ARCHITECTURAL/STRUCTURAL WORKSHEET

ITEM	Units	Quantity	Unit Cost (\$)	Initial Cost (\$)
Earthwork: Dewatering	lump sum	0	3,600	0
Earthwork: Excavation	cu yds	0	17	0
Earthwork: Underdrain System	sq yds	0	0	
<hr/>				0
Earthwork				
Concrete: Misc	cu yds	0	256	0
Concrete: Pump bases	cu yds	0	256	0
Concrete: Walls	cu yds	0	574	0
Concrete: Floor Slabs	cu yds	0	223	0
Concrete: Structural Slabs	cu yds	0	648	0
<hr/>				0
Concrete				
Metals: Aluminum Grating	sq ft	0	36	0
Metals: Aluminum Handrail	ft	0	43	0
Metals: Aluminum Stairway	risers	0	619	0
Metals: Baffles and Weirs	sq ft	0	0	0
Metals: Hatches	each	0	1,152	0
<hr/>				0
Metals				
Building:	sq ft	0	120	0
Building:	sq ft	0	6.50	0
Building:	sq ft	0	0	0
Building:	sq ft	0	0	0
Building:	sq ft	0	0	0
Building:	sq ft	0	0	0
<hr/>				0
Buildings				
Demolition:	lump sum	0	1,800	0
Demolition:	cu ft	0	0	0
Demolition:	cu ft	0	0	0
Demolition:	lump sum	0	0	0
<hr/>				0
Demolition				

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Lincoln Street Booster Pump Improvements
Alternative 1 - Replace and Upgrade Individual System Components**

ANNUAL OM&R COST ESTIMATE

A. O&M Costs

Number of Pumps Operating	1.0	during normal conditions
Brake Horsepower of Each Operating Pump	60	
Total Bhp	60	
Motor Efficiency	92%	
Wire Horsepower	65	
Wire Kilowatts	49	
Operating Hours Per Day	18	
Operating Days Per Week	7	
Operating Weeks Per Year	52	
Operating Hours Per Year	6,552	
Maintenance Hours Per Year	0	

O&M ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Electricity	Kw-hrs	318,769	0.074	23,589
Maintenance	hours	0	35	0
Total Annual O&M Cost =				\$ 23,589

Present Worth Parameters Used

Interest Rate Per Year	0.200%
Number of Years	20
Present Worth Factor	19.586

Present Worth of Total Annual O&M Cost above (Item "A") = \$ 462,000

B. Replacement Costs

ITEM	Replacement Year	Units	Replacement Cost in Replacement Yr	Present Worth of Replacement Cost
	20	each		\$ -

Present Worth of Replacement Costs (Item "B") = 0

Equivalent Annual OM&R set-aside required for these replacement items = \$ -

Present Worth of Total OM&R Costs (Items "A" + "B") = \$462,000

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Lincoln Street Booster Pump Improvements
Alternative 1 - Replace and Upgrade Individual System Components**

SALVAGE VALUE CALCULATION

ITEM	Total Initial Cost	Total Useful Life	Remaining Life after 20 yr	Straightline Salvage Value
A. Architectural/Structural				
Earthwork	\$0	50	30	\$0
Concrete	\$0	50	0	\$0
Metals	\$0	50	30	\$0
Buildings	\$0	50	0	\$0
Demolition	\$0	50	0	\$0
 B. Process Equipment/Piping/Electrical/Controls				
ID				
60 Hp Split Case Centifugal Pump	\$60,000	20	0	\$0
VFD (60 hp)	\$45,000	20	0	\$0
Isolation valves (8")	\$12,000	20	0	\$0
Isolation valves (12")	\$18,000	20	0	\$0
Pressure control valve	\$30,000	20	0	\$0
		20	0	\$0
		20	0	\$0
		20	0	\$0
		20	0	\$0
		20	0	\$0
		20	0	\$0
		20	0	\$0
		20	0	\$0
	\$25,000	20	0	\$0
Salvage Value (amount transferred to Table 14) =				\$0

CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

Lincoln Street Booster Pump Improvements
Alternative 2 - New Pump Station

COST OPINION - ENGINEERING ANALYSIS AND CAPITAL CONSTRUCTION

Description

This alternative includes replacing the pump station with a new pump station. Pump station includes new mechanical, electrical, controls and proces sytems. Facility is constructed with CMU walls.

ITEM	Units	Quantity	Installed Unit Cost	Initial Cost
A. Architectural/Structural				
Earthwork			See page 2 for Detailed Cost Breakdown	\$36,800
Concrete			See page 2 for Detailed Cost Breakdown	\$274,600
Metals			See page 2 for Detailed Cost Breakdown	\$0
Buildings			See page 2 for Detailed Cost Breakdown	\$324,000
Demolition			See page 2 for Detailed Cost Breakdown	\$1,200
Land Acquisition & legal				\$0
B. Process Equipment/Piping/Electrical/Controls				
ID				
Process mechanical systems	LS	1	\$400,000	\$500,000
Electrical systems	LS	1	\$150,000	\$190,000
Instrumentation and Control	LS	1	\$150,000	\$150,000
Construction Cost w/o contingency =				\$1,476,600
Contingency (6%) =				\$88,600
Engineering =				\$234,800
TOTAL PROJECT COST =				\$1,800,000

CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

Lincoln Street Booster Pump Improvements
Alternative 2 - New Pump Station

ARCHITECTURAL/STRUCTURAL WORKSHEET

ITEM	Units	Quantity	Unit Cost (\$)	Initial Cost (\$)
Earthwork: Dewatering	lump sum	1	10,900	10,900
Earthwork: Excavation	cu yds	1,000	17	17,280
Earthwork: Sitework	LS	0	30,000	0
Earthwork: Backfill	cu yds	500	17	8,640
Earthwork				36,820
Concrete: Footings	cu yds	50	223	11,160
Concrete: Pump bases	cu yds	3	223	670
Concrete: Walls	cu yds	300	504	151,200
Concrete: Floor Slabs	cu yds	500	223	111,600
Concrete: Structural Slabs	cu yds	0	648	0
Concrete				274,630
Metals: Aluminum Grating	sq ft	0	36	0
Metals: Aluminum Handrail	ft	0	43	0
Metals: Aluminum Stairway	risers	0	619	0
Metals: Baffles and Weirs	sq ft	0	0	0
Metals: Hatches	each	0	1,152	0
Metals				0
Building: Brick and Block	sq ft	3,000	108	324,000
Building:	sq ft	0	0	
Building:	sq ft	0	0	
Building:	sq ft	0	0	
Building:	sq ft	0	0	
Building:	sq ft	0	0	
Buildings				324,000
Demolition: Remove existing units and tubing	lump sum	1	1,000	1,000
Demolition:	cu ft	0	0	
Demolition:	cu ft	0	0	
Demolition:	lump sum	0	0	
Demolition				1,000

CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

Lincoln Street Booster Pump Improvements
Alternative 2 - New Pump Station

ANNUAL OM&R COST ESTIMATE

A. O&M Costs

Number of Pumps Operating	1.0	during normal conditions
Brake Horsepower of Each Operating Pump	60	
Total Bhp	60	
Motor Efficiency	92%	
Wire Horsepower	65	
Wire Kilowatts	49	
Operating Hours Per Day	18	
Operating Days Per Week	7	
Operating Weeks Per Year	52	
Operating Hours Per Year	6,552	
	0	
Maintenance Hours Per Year	0	<i>assume this option has the least incremental operational cost.</i>

O&M ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Electricity	Kw-hrs	318,769	0.074	23,589
Maintenance	hours	0	35	0
Total Annual O&M Cost =				\$ 23,589

Present Worth Parameters Used

Interest Rate Per Year	0.2%
Number of Years	20
Present Worth Factor	19.586

Present Worth of Total Annual O&M Cost above (Item "A") = \$ 462,000

B. Replacement Costs

ITEM	Replacement Year	Units	Replacement Cost in Replacement Yr	Present Worth of Replacement Cost
<i>assume that this option has the least incremental operational cost.</i>		each		\$ -
		each		\$ -

Present Worth of Replacement Costs (Item "B") = 0

Equivalent Annual OM&R set-aside required for these replacement items = \$ -

Present Worth of Total OM&R Costs (Items "A" + "B") = \$462,000

CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

**Lincoln Street Booster Pump Improvements
Alternative 2 - New Pump Station**

SALVAGE VALUE CALCULATION

ITEM	Total Initial Cost	Total Useful Life	Remaining Life after 20 yr	Straightline Salvage Value
A. Architectural/Structural				
Earthwork	\$36,800	50	30	\$22,080
Concrete	\$274,600	50	30	\$164,760
Metals	\$0	50	30	\$0
Buildings	\$324,000	50	30	\$194,400
Demolition	\$1,200	20	0	\$0
B. Process Equipment/Piping/Electrical/Controls				
ID				
Process mechanical systems	\$500,000	20	0	\$0
	\$190,000	20	0	\$0
Instrumentation and Control	\$150,000	20	0	\$0
	\$0			
0	\$0	30	10	\$0
0	\$0	30	10	\$0
0	\$0	50	30	\$0
0	\$0	30	10	\$0
0	\$0	30	10	\$0
				\$381,000
Salvage Value =				

APPENDICES

Appendix E – Wastewater Treatment Plant Solids Handling Cost Worksheets

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Wastewater Treatment Solids Handling Improvements
Alternative 1: New Liquids Storage & New GBT in Existing Building**

COST OPINION - ENGINEERING ANALYSIS AND CAPITAL CONSTRUCTION

Description

This alternative includes a new GBT in the existing Thickener Room, new liquid storage tank adjacent to liquid storage tank no. 2 and a new cake storage addition adjacent to the existing storage structure. It is assumed that a progressive cavity pump is required to transfer TAS from the GBT to the TAS wet well. The liquid storage tank is a precast concrete tank with hatches in the cover. The new cake storage structure is similar to the existing cake storage structure. The cost estimate does not include modifications to the FEW system, filtrate pumping system or improvements to the existing liquid storage tanks.

ITEM	Units	Quantity	Unit Cost (\$)	Initial Cost (\$)
Architectural/Structural				
Earthwork	See Worksheet for Detailed Cost Breakdown			149,657
Concrete	See Worksheet for Detailed Cost Breakdown			765,000
Metals	See Worksheet for Detailed Cost Breakdown			17,330
Buildings	See Worksheet for Detailed Cost Breakdown			145,000
Demolition	See Worksheet for Detailed Cost Breakdown			5,000
New GBT	LS	1	290,000	290,000
Polymer System	EA	1	15,000	15,000
Progressive Cavity Pump	EA	1	14,300	14,300
Piping and Valves (WAS, TAS, Filtrate, W3, Polymer	LS	1	75,000	75,000
Booster Pump	LS	1	11,000	11,000
Liquid Storage Tank Piping	LS	1	65,000	65,000
Electrical	LS	1	80,000	80,000
Instrumentation and Control	LS	1	50,000	50,000
Subtotal				1,683,000
Contingency			6%	101,000
Subtotal				1,784,000
Contractor Overhead & Profit			25%	446,000
Total Construction Cost				2,230,000
Engineering			15%	335,000
Total Initial Cost				2,565,000

CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

Wastewater Treatment Solids Handling Improvements
Alternative 1: New Liquids Storage & New GBT in Existing Building

ARCHITECTURAL/STRUCTURAL WORKSHEET

ITEM	Units	Quantity	Unit Cost (\$)	Initial Cost (\$)
Liquid Storage				
Earthwork: Dewatering	lump sum	1	25,000	25,000
Earthwork: Excavation	cu yds	4,000	11	44,000
Earthwork: Structural Fill	cu yds	750	23	17,250
Earthwork: Earth Fill	cu yds	1,500	4	6,000
Earthwork: Haul	cu yds	2,500	5	12,500
Earthwork: Site Restoration	sq yds	373	9	3,357
Earthwork: Fencing and Fending Removal	ft	350	33	11,550
Cake Storage				
Earthwork: Dewatering, excavation, fill, restoration	lump sum	1	30,000	30,000
Earthwork				149,657
Concrete: Precast Concrete Liquid Storage Tank	lump sum	1	600,000	600,000
Concrete: Liquid Storage Tank Coatings	lump sum	1	65,000	65,000
Concrete: Cake storage concrete	lump sum	1	100,000	100,000
Concrete:				
Concrete				765,000
GBT Access				
Metals: Aluminum Bar Grating	sq ft	200	31	6,200
Metals: Aluminum Handrail	ft	30	86	2,580
Metals: Aluminum Stairway	risers	10	455	4,550
Metals: Structural steel	lbs	1,000	4	4,000
Metals:				
Metals				17,330
Building: Cake storage pre-engineered metal canopy	LS	1	145,000	145,000
Building:				
Buildings				145,000
Demolition: Polymer Room Walls	LS	1	5,000	5,000
Demolition:				
Demolition:				
Demolition:				
Demolition				5,000

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Wastewater Treatment Solids Handling Improvements
Alternative 1: New Liquids Storage & New GBT in Existing Building**

INITIAL ANNUAL O&M COST ESTIMATE

A. Biosolids Disposal

ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Liquid Biosolids Disposal	\$/dry ton	367	450	165,150
Cake Biosolids Disposal	\$/dry ton	277	230	63,710

B. O&M Costs

Number of Pumps Operating	0.0	during normal conditions		
Brake Horsepower of Each Operating Pump	60			
Total Bhp	0			
Motor Efficiency	92%			
Wire Horsepower	0			
Wire Kilowatts	0			
Operating Hours Per Day	18			
Operating Days Per Week	7			
Operating Weeks Per Year	52			
Operating Hours Per Year	6,552			

Maintenance Hours Per Year

0

O&M ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Electricity	Kw-hrs	0	0.074	0
Maintenance	hours	0	35	0

Total Annual O&M Cost = \$ 228,860

Present Worth Parameters Used

Interest Rate Per Year	0.200%
Number of Years	20
Present Worth Factor	19.586

Present Worth of Total Annual O&M Cost above (Item "A") = \$ 4,482,000

B. Replacement Costs

ITEM	Replacement Year	Units	Replacement Cost in Replacement Yr	Present Worth of Replacement Cost
	20	each		\$ -

Present Worth of Replacement Costs (Item "B") = 0

Equivalent Annual OM&R set-aside required for these replacement items = \$ -

Present Worth of Total OM&R Costs (Items "A" + "B") = \$4,482,000

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Wastewater Treatment Solids Handling Improvements
Alternative 2: New Cake Storage and New GBT in Existing Building**

INITIAL COST ESTIMATE

General Description

This alternative includes a new GBT in the existing Thickener Room, new cake storage building adjacent to liquid storage tank no. 2 and a new truck loadout building adjacent to the Thickener Room. It is assumed that a progressive cavity pump is required to transfer TAS from the GBT to the TAS wet well. The truck loadout garage is a pre-engineered metal building with two overhead doors and two mandooors. The new cake storage structure is similar to the existing cake storage structure. The cost estimate does not include modifications to the FEW system, filtrate pumping system or improvements to the existing liquid storage tanks.

ITEM	Units	Quantity	(\$)	(\$)
Architectural/Structural				
Earthwork	See Worksheet for Detailed Cost Breakdown			140,000
Concrete	See Worksheet for Detailed Cost Breakdown			210,000
Metals	See Worksheet for Detailed Cost Breakdown			17,330
Buildings	See Worksheet for Detailed Cost Breakdown			277,000
Demolition	See Worksheet for Detailed Cost Breakdown			7,000
Dump Truck	LS	1	150,000	150,000
New GBT	LS	1	260,000	280,000
Polymer System	EA	1	10,000	15,000
Progressive Cavity Pump	EA	1	14,300	14,300
Piping and Valves (WAS, TAS, Filtrate, W3, Polymer)	LS	1	30,000	50,000
Conveyors	LS	1	75,000	100,000
Relocate chemical feed piping	LS	1	10,000	10,000
Booster Pump	LS	1	9,000	9,000
Electrical	LS	1	80,000	120,000
Instrumentation and Control	LS	1	30,000	50,000
Subtotal				1,450,000
Contingency			6%	87,000
Subtotal				1,537,000
Contractor Overhead & Profit			25%	385,000
Total Construction Cost				1,922,000
Engineering			15%	289,000
Total Initial Cost				2,211,000

CITY OF MARQUETTE, MICHIGAN

WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

**Wastewater Treatment Solids Handling Improvements
Alternative 2: New Cake Storage and New GBT in Existing Building**

ARCHITECTURAL/STRUCTURAL WORKSHEET

ITEM	Units	Quantity	Unit Cost (\$)	Initial Cost (\$)
Earthwork: Truck Loading Garage	lump sum	1	40,000	40,000
Earthwork: Cake Storage Building	lump sum	1	100,000	100,000
Earthwork:				
Earthwork				140,000
Concrete: Truck Loading Garage	lump sum	1	60,000	60,000
Concrete: Cake Storage Building	lump sum	1	150,000	150,000
Concrete:				
Concrete				210,000
GBT Access				
Metals: Aluminum Bar Grating	sq ft	200	31	6,200
Metals: Aluminum Handrail	ft	30	86	2,580
Metals: Aluminum Stairway	risers	10	455	4,550
Metals: Structural steel	lbs	1,000	4	4,000
Metals:				
Metals				17,330
Building: Truck Loading Pre-Engineered Metal Bldg	lump sum	1	65,000	65,000
Building: Cake storage pre-engineered metal canopy	LS	1	190,000	190,000
Building: Truck Loadout Overhead doors	each	2	9,000	18,000
Building: Truck Loadout Mandoors	each	2	2,000	4,000
Building:				
Buildings				277,000
Demolition: Polymer Room Walls	LS	1	5,000	5,000
Demolition: Thickener Room Wall Opening	LS	1	2,000	2,000
Demolition:				
Demolition				7,000

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Wastewater Treatment Solids Handling Improvements
Alternative 2: New Cake Storage and New GBT in Existing Building**

INITIAL ANNUAL O&M COST ESTIMATE

A. Biosolids Disposal

ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Liquid Biosolids Disposal	\$/dry ton	269	450	121,050
Cake Biosolids Disposal	\$/dry ton	372	230	85,560

B. O&M Costs

Number of Pumps Operating	1.0	during normal conditions		
Brake Horsepower of Each Operating Pump	60			
Total Bhp	60			
Motor Efficiency	92%			
Wire Horsepower	65			
Wire Kilowatts	49			
Operating Hours Per Day	18			
Operating Days Per Week	7			
Operating Weeks Per Year	52			
Operating Hours Per Year	6,552			

Maintenance Hours Per Year

0

O&M ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Electricity	Kw-hrs	318,769	0.074	23,589
Maintenance	hours	0	35	0

Total Annual O&M Cost = \$ 230,199

Present Worth Parameters Used

Interest Rate Per Year	0.200%
Number of Years	20
Present Worth Factor	19.586

Present Worth of Total Annual O&M Cost above (Item "A") = \$ 4,509,000

B. Replacement Costs

ITEM	Replacement Year	Units	Replacement Cost in Replacement Yr	Present Worth of Replacement Cost
	20	each		\$ -

Present Worth of Replacement Costs (Item "B") = 0

Equivalent Annual OM&R set-aside required for these replacement items = \$ -

Present Worth of Total OM&R Costs (Items "A" + "B") = \$4,509,000

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Wastewater Treatment Solids Handling Improvements
Alternative 3: New Cake Storage and New Dewatering Building**

INITIAL COST ESTIMATE

General Description

This alternative includes two new BFPs in a new Dewatering Building and a new cake storage building adjacent to liquid storage tank no. 2. The Dewatering Building is a CMU block building with metal siding and a flat precast roof with an EPDM roofing system. The new cake storage structure is similar to the existing cake storage structure. There is a conveyor that transfers cake from the Dewatering Building to Cake Storage. The cost estimate does not include modifications to the FEW system, decant pumping system or improvements to the existing liquid storage tanks.

<u>ITEM</u>	<u>Units</u>	<u>Quantity</u>	<u>Unit Cost (\$)</u>	<u>Initial Cost (\$)</u>
Architectural/Structural				
Earthwork				65,000
Concrete				600,000
Metals				34,660
Buildings				219,000
Demolition				0
Belt Filter Presses	EA	2	400,000	800,000
Polymer Systems	EA	2	15,000	30,000
Conveyors	LS	1	120,000	120,000
Booster Pumps	LS	1	15,000	15,000
Electrical	LS	1	450,000	450,000
Instrumentation and Control	LS	1	84,000	84,000
HVAC	LS	1	150,000	150,000
Plumbing	LS	1	60,000	60,000
Subtotal				2,628,000
Contingency			6%	158,000
Subtotal				2,786,000
Contractor Overhead & Profit			25%	697,000
Total Construction Cost				3,483,000
Engineering			15%	523,000
Total Initial Cost				4,006,000

CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN

Wastewater Treatment Solids Handling Improvements
Alternative 3: New Cake Storage and New Dewatering Building

ARCHITECTURAL/STRUCTURAL WORKSHEET

ITEM	Units	Quantity	Unit Cost (\$)	Initial Cost (\$)
Earthwork: Cake Storage Building	lump sum	1	50,000	50,000
Earthwork: Pavement	sq yds	300	50	15,000
Earthwork:				
Earthwork				65,000
Concrete: Cake Storage Building	lump sum	1	120,000	120,000
Concrete: Dewatering Building	lump sum	1	480,000	480,000
Concrete:				
Concrete				600,000
Metals: Aluminum Bar Grating	sq ft	400	31	12,400
Metals: Aluminum Handrail	ft	60	86	5,160
Metals: Aluminum Stairway	risers	20	455	9,100
Metals: Structural steel	lbs	2,000	4	8,000
Metals:				
Metals				34,660
Building: Cake storage pre-engineered metal canopy	LS	1	195,000	195,000
Building: Overhead doors	each	2	9,000	18,000
Building: Manddoors	each	3	2,000	6,000
Building:				
Building:				
Buildings				219,000
Demolition:				
Demolition:				
Demolition:				
Demolition				0

**CITY OF MARQUETTE, MICHIGAN
WATER & SEWER IMPROVEMENTS SRF III - PROJECT PLAN**

**Wastewater Treatment Solids Handling Improvements
Alternative 3: New Cake Storage and New Dewatering Building**

INITIAL ANNUAL O&M COST ESTIMATE

A. Biosolids Disposal

ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Liquid Biosolids Disposal	\$/dry ton	269	450	121,050
Cake Biosolids Disposal	\$/dry ton	372	230	85,560

B. O&M Costs

Number of Pumps Operating	1.0	during normal conditions		
Brake Horsepower of Each Operating Pump	60			
Total Bhp	60			
Motor Efficiency	92%			
Wire Horsepower	65			
Wire Kilowatts	49			
Operating Hours Per Day	18			
Operating Days Per Week	7			
Operating Weeks Per Year	52			
Operating Hours Per Year	6,552			

Maintenance Hours Per Year

0

O&M ITEM	Units	Annual Quantity	Unit Cost (\$)	Annual Cost (\$)
Electricity	Kw-hrs	318,769	0.074	23,589
Maintenance	hours	0	35	0

Total Annual O&M Cost = \$ 230,199

Present Worth Parameters Used

Interest Rate Per Year	0.200%
Number of Years	20
Present Worth Factor	19.586

Present Worth of Total Annual O&M Cost above (Item "A") = \$ 4,509,000

B. Replacement Costs

ITEM	Replacement Year	Units	Replacement Cost in Replacement Yr	Present Worth of Replacement Cost
	20	each		\$ -

Present Worth of Replacement Costs (Item "B") = 0

Equivalent Annual OM&R set-aside required for these replacement items = \$ -

Present Worth of Total OM&R Costs (Items "A" + "B") = \$4,509,000

APPENDICES

Appendix F – Street Reconstruction Cost Worksheets

Project:	Front Street Reconstruction Project	By:	KMW	4/29/2019	SRF	DRWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	4700.00	SYD	\$5.80	\$5,452.00
BITUMINOUS PAVING, 3"	790.00	TON	\$88.00	\$13,904.00
EMBANKMENT	500.00	CYD	\$7.75	\$3,875.00
EARTH EXCAVATION	3425.00	CYD	\$6.75	\$23,118.75
MODIFIED SUBBASE, CIP	1710.00	CYD	\$21.50	\$7,353.00
DRIVEWAY, CONC., 6"	800.00	SYD	\$50.00	\$40,000.00
RESTORATION	500.00	SYD	\$9.25	\$4,625.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$108,077.75
PROJECT CLEAN-UP	1.00	LS	\$1,080.78	\$1,080.78
MOBILIZATION	1.00	LS	\$5,403.89	\$5,403.89
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$10,807.78	\$121,436.16

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	1300.00	LFT	\$40.00	\$52,000.00
4" DIA. MANHOLE, COMPLETE WITH COVER	12.00	EA	\$2,200.00	\$26,400.00
SANITARY LATERALS, COMPLETE	30.00	EA	\$1,700.00	\$51,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
BL&P CHARGES FOR HOLDING POLES	3.00	EA	\$2,000.00	\$6,000.00
CURB AND GUTTER	300.00	LFT	\$22.00	\$6,600.00
SIDEWALK REPLACEMENT	1500.00	SFT	\$8.25	\$12,375.00
BITUMINOUS PAVING, 3"	790.00	TON	\$88.00	\$20,856.00
AGGREGATE BASE, 4"	4700.00	SYD	\$5.80	\$8,178.00
MODIFIED SUBBASE, CIP	1710.00	CYD	\$21.50	\$11,029.50
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$206,213.50
PROJECT CLEAN-UP	1.00	LS	\$2,062.14	\$2,062.14
MOBILIZATION	1.00	LS	\$10,310.68	\$10,310.68
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$20,621.35	\$231,701.49

The existing sanitary sewer is an 8 inch 1916 clay pipe and will be replaced with 8 inch PVC piping. Confirm NASSCO sewer and manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	400.00	SFT	\$5.25	\$2,100.00
6" CONCRETE SIDEWALK	400.00	SFT	\$6.00	\$2,400.00
ADA SIDEWALK RAMP	500.00	SFT	\$13.25	\$6,625.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
CONSTRUCTION SUBTOTAL				\$13,900.00
PROJECT CLEAN-UP	1.00	LS	\$139.00	\$139.00
MOBILIZATION	1.00	LS	\$695.00	\$695.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,390.00	\$15,618.04

4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	1400.00	LFT	\$48.00	\$67,200.00
VALVES	16.00	EA	\$1,850.00	\$29,600.00
FITTINGS	30.00	EA	\$475.00	\$14,250.00
FIRE HYDRANTS	4.00	EA	\$4,300.00	\$17,200.00
CONNECTIONS	8.00	EA	\$1,800.00	\$14,400.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	200.00	FT	\$6.00	\$1,200.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	790.00	TON	\$88.00	\$20,856.00
AGGREGATE BASE, 4"	4700.00	SYD	\$5.80	\$8,178.00
MODIFIED SUBBASE, CIP	1710.00	CYD	\$21.50	\$11,029.50
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$196,938.50
PROJECT CLEAN-UP	1.00	LS	\$1,969.39	\$1,969.39
MOBILIZATION	1.00	LS	\$9,846.93	\$9,846.93
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$19,693.85	\$221,280.10

Existing watermain is 4 inch 1901, 1912, and 1922 sand cast iron pipe. Increasing pipe size necessary to address age, for fire flow, comply with design standards, sustain pressure and water quality. History of tuberculation.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	30.00	EA	\$1,600.00	\$48,000.00
TEMPORARY WATER SERVICE	1400.00	LFT	\$4.75	\$6,650.00
TEMPORARY WATER SERVICE CONNECTIONS	30.00	EA	\$165.00	\$4,950.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
SIDEWALK REPLACEMENT	1500.00	SFT	\$8.25	\$12,375.00
CURB AND GUTTER	300.00	LFT	\$22.00	\$6,600.00
CONSTRUCTION SUBTOTAL				\$81,350.00
PROJECT CLEAN-UP	1.00	LS	\$813.50	\$813.50
MOBILIZATION	1.00	LS	\$4,067.50	\$4,067.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$8,135.00	\$91,404.86

Confirm if lead in laterals as part of construction process.

BUDGET ESTIMATE FOR FISCAL YEAR:		2020	Eligibility Notes			
Project:	Front Street Reconstruction Project	2020-1	By: KMW	4/29/2019	SRF	DRWRF
6. STORM SEWER CONSTRUCTION						
EMPLOYEE ESTIMATE			EA	\$0.00	\$0.00	
12" RCP STORM SEWER	400.00		LFT	\$40.00	\$16,000.00	
15" RCP STORM SEWER	0.00		LFT	\$46.00	\$0.00	
18" RCP STORM SEWER	0.00		LFT	\$70.00	\$0.00	
4' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00		EA	\$3,000.00	\$24,000.00	
2' DIA. DRAINAGE STRUCTURES, COMPLETE	16.00		EA	\$2,075.00	\$33,200.00	
TAP EXISTING DRAINAGE STRUCTURE	7.00		EA	\$400.00	\$2,800.00	
CURB AND GUTTER	2200.00		LFT	\$22.00	\$48,400.00	
MISC.	1.00		LS	\$5,000.00	\$5,000.00	
BITUMINOUS PAVING, 3"	790.00		TON	\$88.00	\$13,904.00	
AGGREGATE BASE, 4"	4700.00		SYD	\$5.80	\$5,452.00	
MODIFIED SUBBASE, CIP	1710.00		CYD	\$21.50	\$7,353.00	
RESTORATION	300.00		SYD	\$9.25	\$2,775.00	
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00	
CONSTRUCTION SUBTOTAL					\$160,884.00	
PROJECT CLEAN-UP	1.00	LS		\$1,608.84	\$1,608.84	
MOBILIZATION	1.00	LS		\$8,044.20	\$8,044.20	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		\$16,088.40	\$180,769.26	
7. OTHER ITEMS						
BITUMINOUS PAVING, 3" (BIKE PATH)			TON	\$88.00	\$0.00	
AGGREGATE BASE, 6"			SYD	\$9.00	\$0.00	
EARTH EXCAVATION			CYD	\$6.75	\$0.00	
EMBANKMENT			CYD	\$7.75	\$0.00	
COLORED STAMPED CONCRETE			SYD	\$90.00	\$0.00	
CONSTRUCTION SUBTOTAL					\$0.00	
PROJECT CLEAN-UP	1.00	LS		\$0.00	\$0.00	
MOBILIZATION	1.00	LS		\$0.00	\$0.00	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		\$0.00	\$0.00	
8. PROJECT CONSTRUCTION TOTAL					\$862,209.91	
9. LAND ACQUISITION						
GENERAL FUND LAND ACQUISITION	0	AC		\$17,500	\$0.00	
STREET FUND LAND ACQUISITION	0	AC		\$17,500	\$0.00	
STORM WATER FUND LAND ACQUISITION	0	AC		\$17,500	\$0.00	
WATER SYSTEM LAND ACQUISITION	0	AC		\$17,500	\$0.00	
SEWER SYSTEM LAND ACQUISITION	0	AC		\$17,500	\$0.00	
TOTAL LAND ACQUISITION:					\$0.00	
10. PROJECT TOTAL					\$1,037,720	

Project:	Hewitt Avenue Reconstruction Project	2020-2	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	3200.00 SYD	\$5.80	\$3,712.00
BITUMINOUS PAVING, 3"	540.00 TON	\$88.00	\$9,504.00
EMBANKMENT	300.00 CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	2335.00 CYD	\$6.75	\$15,761.25
MODIFIED SUBBASE, CIP	1168.00 CYD	\$21.50	\$5,022.40
DRIVEWAY, CONC., 6"	500.00 SYD	\$50.00	\$25,000.00
RESTORATION	400.00 SYD	\$9.25	\$3,700.00
SHOULDER, 7 INCH	0.00 SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00 SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00 CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00 LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00 LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL			\$74,774.65
PROJECT CLEAN-UP	1.00 LS	\$747.75	\$747.75
MOBILIZATION	1.00 LS	\$3,738.73	\$3,738.73
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$7,477.47	\$84,016.80

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
SANITARY SEWER	900.00 LFT	\$40.00	\$36,000.00
4" DIA. MANHOLE, COMPLETE WITH COVER	4.00 EA	\$2,200.00	\$8,800.00
SANITARY LATERALS, COMPLETE	22.00 EA	\$1,700.00	\$37,400.00
MISC.	1.00 LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00 CYD	\$100.00	\$0.00
DEWATERING	0.00 FT	\$17.00	\$0.00
PUMP & BYPASS	0.00 LS	\$5,000.00	\$0.00
RESTORATION	400.00 SYD	\$9.25	\$3,700.00
BL&P CHARGES FOR HOLDING POLES	2.00 EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	220.00 LFT	\$22.00	\$4,840.00
SIDEWALK REPLACEMENT	1200.00 SFT	\$8.25	\$9,900.00
BITUMINOUS PAVING, 3"	540.00 TON	\$88.00	\$14,256.00
AGGREGATE BASE, 4"	3200.00 SYD	\$5.80	\$5,568.00
MODIFIED SUBBASE, CIP	1168.00 CYD	\$21.50	\$7,533.60
TRAFFIC CONTROL	1.00 LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL			\$140,997.60
PROJECT CLEAN-UP	1.00 LS	\$1,409.98	\$1,409.98
MOBILIZATION	1.00 LS	\$7,049.88	\$7,049.88
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$14,099.76	\$158,424.90

The existing sanitary sewer is an 8 inch 1891 clay pipe and will be replaced with 8 inch PVC piping. Confirm NASSCO sewer and manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	300.00 SFT	\$5.25	\$1,575.00
6" CONCRETE SIDEWALK	300.00 SFT	\$6.00	\$1,800.00
ADA SIDEWALK RAMP	200.00 SFT	\$13.25	\$2,650.00
RESTORATION	200.00 SYD	\$9.25	\$1,850.00
CONSTRUCTION SUBTOTAL			\$7,875.00
PROJECT CLEAN-UP	1.00 LS	\$78.75	\$78.75
MOBILIZATION	1.00 LS	\$393.75	\$393.75
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$787.50	\$8,848.35

BUDGET ESTIMATE FOR FISCAL YEAR:		2020	Eligibility Notes				
Project:	Hewitt Avenue Reconstruction Project	2020-2	By: KMW	4/29/2019	SRF	DRWRF	
4. WATERMAIN CONSTRUCTION							
EMPLOYEE ESTIMATE			LS	\$0.00	\$0.00	Existing watermain is 6 inch 1887 sand cast iron pipe. Increasing pipe size aligns with City Ordinance necessary for fire flow and to address age of system. History of tuberculation.	
WATER MAIN	700.00		LFT	\$48.00	\$33,600.00		
VALVES	3.00		EA	\$1,850.00	\$5,550.00		
FITTINGS	12.00		EA	\$475.00	\$5,700.00		
FIRE HYDRANTS	1.00		EA	\$4,300.00	\$4,300.00		
CONNECTIONS	2.00		EA	\$1,800.00	\$3,600.00		
CHECK VALVE	0.00		LS	\$25,000.00	\$0.00		
MISC	1.00		LS	\$5,000.00	\$5,000.00		
WATER MAIN REMOVE	0.00		FT	\$6.00	\$0.00		
ROCK EXCAVATION	0.00		CYD	\$100.00	\$0.00		
BL&P CHARGES FOR HOLDING POLES	2.00		EA	\$2,000.00	\$4,000.00		
CURB AND GUTTER	20.00		LFT	\$22.00	\$440.00		
BITUMINOUS PAVING, 3"	540.00		TON	\$88.00	\$14,256.00		
AGGREGATE BASE, 4"	3200.00		SYD	\$5.80	\$5,568.00		
MODIFIED SUBBASE, CIP	1168.00		CYD	\$21.50	\$7,533.60		
RESTORATION	50.00		SYD	\$9.25	\$462.50		
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL					\$92,010.10		
PROJECT CLEAN-UP	1.00		LS	\$920.10	\$920.10		
MOBILIZATION	1.00		LS	\$4,600.51	\$4,600.51		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$9,201.01	\$103,382.55		
5. WATER LATERAL CONSTRUCTION							
NEW WATER SERVICES	22.00		EA	\$1,600.00	\$35,200.00		Confirm if lead in laterals as part of construction process.
TEMPORARY WATER SERVICE	800.00		LFT	\$4.75	\$3,800.00		
TEMPORARY WATER SERVICE CONNECTIONS	22.00		EA	\$165.00	\$3,630.00		
RESTORATION	400.00		SYD	\$9.25	\$3,700.00		
SIDEWALK REPLACEMENT	220.00		SFT	\$8.25	\$1,815.00		
CURB AND GUTTER	1200.00		LFT	\$22.00	\$26,400.00		
CONSTRUCTION SUBTOTAL					\$74,545.00		
PROJECT CLEAN-UP	1.00		LS	\$745.45	\$745.45		
MOBILIZATION	1.00		LS	\$3,727.25	\$3,727.25		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$7,454.50	\$83,758.76		
6. STORM SEWER CONSTRUCTION							
EMPLOYEE ESTIMATE			EA	\$0.00	\$0.00		
12" RCP STORM SEWER	600.00		LFT	\$40.00	\$24,000.00		
15" RCP STORM SEWER	0.00		LFT	\$46.00	\$0.00		
18" RCP STORM SEWER	0.00		LFT	\$70.00	\$0.00		
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00		EA	\$3,000.00	\$12,000.00		
2' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00		EA	\$2,075.00	\$16,600.00		
TAP EXISTING DRAINAGE STRUCTURE	1.00		EA	\$400.00	\$400.00		
CURB AND GUTTER	1300.00		LFT	\$22.00	\$28,600.00		
MISC.	1.00		LS	\$5,000.00	\$5,000.00		
BITUMINOUS PAVING, 3"	540.00		TON	\$88.00	\$9,504.00		
AGGREGATE BASE, 4"	3200.00		SYD	\$5.80	\$3,712.00		
MODIFIED SUBBASE, CIP	1168.00		CYD	\$21.50	\$5,022.40		
RESTORATION	100.00		SYD	\$9.25	\$925.00		
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL					\$107,763.40		
PROJECT CLEAN-UP	1.00		LS	\$1,077.63	\$1,077.63		
MOBILIZATION	1.00		LS	\$5,388.17	\$5,388.17		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$10,776.34	\$121,082.96		
7. OTHER ITEMS							
BITUMINOUS PAVING, 3" (BIKE PATH)			TON	\$88.00	\$0.00		
AGGREGATE BASE, 6"			SYD	\$9.00	\$0.00		
EARTH EXCAVATION			CYD	\$6.75	\$0.00		
EMBANKMENT			CYD	\$7.75	\$0.00		
COLORED STAMPED CONCRETE			SYD	\$90.00	\$0.00		
CONSTRUCTION SUBTOTAL					\$0.00		
PROJECT CLEAN-UP	1.00		LS	\$0.00	\$0.00		
MOBILIZATION	1.00		LS	\$0.00	\$0.00		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$0.00	\$0.00		
8. PROJECT CONSTRUCTION TOTAL				\$559,514.32			
9. LAND ACQUISITION							
GENERAL FUND LAND ACQUISITION	0		AC	\$17,500	\$0.00		
STREET FUND LAND ACQUISITION	0		AC	\$17,500	\$0.00		
STORM WATER FUND LAND ACQUISITION	0		AC	\$17,500	\$0.00		
WATER SYSTEM LAND ACQUISITION	0		AC	\$17,500	\$0.00		
SEWER SYSTEM LAND ACQUISITION	0		AC	\$17,500	\$0.00		
TOTAL LAND ACQUISITION:					\$0.00		
10. PROJECT TOTAL				\$673,035			

Parameters used in this estimate:	
Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE					
AGGREGATE BASE, 4"	5600.00	SYD	\$5.80	\$6,496.00	
BITUMINOUS PAVING, 3"	940.00	TON	\$88.00	\$16,544.00	
EMBANKMENT	2200.00	CYD	\$7.75	\$17,050.00	
EARTH EXCAVATION	6500.00	CYD	\$6.75	\$43,875.00	
MODIFIED SUBBASE, CIP	2150.00	CYD	\$21.50	\$9,245.00	
DRIVEWAY, CONC., 6"	600.00	SYD	\$50.00	\$30,000.00	
RESTORATION	400.00	SYD	\$9.25	\$3,700.00	
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00	
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00	
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00	
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00	
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00	
CONSTRUCTION SUBTOTAL				\$136,660.00	
PROJECT CLEAN-UP	1.00	LS	\$1,366.60	\$1,366.60	
MOBILIZATION	1.00	LS	\$6,833.00	\$6,833.00	
TOTAL, 5.9% CONTINGENCIES ADDED	1.00	LS	\$13,666.00	\$153,406.32	

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE					
SANITARY SEWER	600.00	LFT	\$40.00	\$24,000.00	
4' DIA. MANHOLE, COMPLETE WITH COVER	8.00	EA	\$2,200.00	\$17,600.00	Part of the existing sanitary sewer was slip lined in 2013 and the remainder would be a candidate for a future slip lining project. The sanitary sewer main may be extended to service a home currently being serviced by a back yard sewer main. Sanitary sewer manholes and laterals will be replaced as needed. Confirm NASSCO manhole ratings.
SANITARY LATERALS, COMPLETE	19.00	EA	\$1,700.00	\$32,300.00	
MISC.	1.00	LS	\$5,000.00	\$5,000.00	
ROCK EXCAVATION	300.00	CYD	\$100.00	\$30,000.00	
DEWATERING	0.00	FT	\$17.00	\$0.00	
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00	
RESTORATION	400.00	SYD	\$9.25	\$3,700.00	
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00	
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00	
BITUMINOUS PAVING, 3"	940.00	TON	\$88.00	\$24,816.00	
AGGREGATE BASE, 4"	5600.00	SYD	\$5.80	\$9,744.00	
MODIFIED SUBBASE, CIP	2150.00	CYD	\$21.50	\$13,867.50	
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00	
CONSTRUCTION SUBTOTAL				\$169,027.50	
PROJECT CLEAN-UP	1.00	LS	\$1,690.28	\$1,690.28	
MOBILIZATION	1.00	LS	\$8,451.38	\$8,451.38	
TOTAL, 5.9% CONTINGENCIES ADDED	1.00	LS	\$16,902.75	\$189,740.13	

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00	SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00	SFT	\$13.25	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 5.9% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

BUDGET ESTIMATE FOR FISCAL YEAR:		2020	Eligibility Notes			
Project:	Allouez Road Reconstruction Project	2020-3	By: KMW	4/29/2019	SRF	DRWRF
4. WATERMAIN CONSTRUCTION						
EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00		
WATER MAIN	1800.00	LFT	\$48.00	\$86,400.00		The piping size is dependent on 6 inch 1966 sand cast pipe. The existing water main is not adequate to provide fire protection. This project will upsize the existing pipe to 8 inch D.I. piping which will improve fire flows, align with design standards, increase residential flows, and replace aged pipe. Increasing pipe size necessary for fire flow. History of tuberculation.
VALVES	16.00	EA	\$1,850.00	\$29,600.00		
FITTINGS	30.00	EA	\$475.00	\$14,250.00		
FIRE HYDRANTS	4.00	EA	\$4,300.00	\$17,200.00		
CONNECTIONS	3.00	EA	\$1,800.00	\$5,400.00		
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00		
MISC	1.00	LS	\$5,000.00	\$5,000.00		
WATER MAIN REMOVE	1000.00	FT	\$6.00	\$6,000.00		
ROCK EXCAVATION	50.00	CYD	\$100.00	\$5,000.00		
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00		
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00		
BITUMINOUS PAVING, 3"	940.00	TON	\$88.00	\$24,816.00		
AGGREGATE BASE, 4"	5600.00	SYD	\$5.80	\$9,744.00		
MODIFIED SUBBASE, CIP	2150.00	CYD	\$21.50	\$13,867.50		
RESTORATION	100.00	SYD	\$9.25	\$925.00		
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL				\$224,202.50		
PROJECT CLEAN-UP	1.00	LS	\$2,242.03	\$2,242.03		
MOBILIZATION	1.00	LS	\$11,210.13	\$11,210.13		
TOTAL, 5.9% CONTINGENCIES ADDED	1.00	LS	\$22,420.25	\$251,676.27		
5. WATER LATERAL CONSTRUCTION						
NEW WATER SERVICES	19.00	EA	\$1,600.00	\$30,400.00		Confirm if lead in laterals as part of construction process.
TEMPORARY WATER SERVICE	2000.00	LFT	\$4.75	\$9,500.00		
TEMPORARY WATER SERVICE CONNECTIONS	19.00	EA	\$165.00	\$3,135.00		
RESTORATION	200.00	SYD	\$9.25	\$1,850.00		
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00		
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00		
CONSTRUCTION SUBTOTAL				\$44,885.00		
PROJECT CLEAN-UP	1.00	LS	\$448.85	\$448.85		
MOBILIZATION	1.00	LS	\$2,244.25	\$2,244.25		
TOTAL, 5.9% CONTINGENCIES ADDED	1.00	LS	\$4,488.50	\$50,385.21		
6. STORM SEWER CONSTRUCTION						
EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00		
12" RCP STORM SEWER	2400.00	LFT	\$40.00	\$96,000.00		
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00		
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00		
4' DIA. DRAINAGE STRUCTURES, COMPLETE	10.00	EA	\$3,000.00	\$30,000.00		
2' DIA. DRAINAGE STRUCTURES, COMPLETE	20.00	EA	\$2,075.00	\$41,500.00		
TAP EXISTING DRAINAGE STRUCTURE	1.00	EA	\$400.00	\$400.00		
CURB AND GUTTER	3600.00	LFT	\$22.00	\$79,200.00		
MISC	1.00	LS	\$5,000.00	\$5,000.00		
BITUMINOUS PAVING, 3"	940.00	TON	\$88.00	\$24,749.00		
AGGREGATE BASE, 4"	5600.00	SYD	\$5.80	\$9,796.00		
MODIFIED SUBBASE, CIP	2150.00	CYD	\$21.50	\$9,245.00		
RESTORATION	300.00	SYD	\$9.25	\$2,775.00		
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL				\$300,665.00		
PROJECT CLEAN-UP	1.00	LS	\$3,006.65	\$3,006.65		
MOBILIZATION	1.00	LS	\$15,033.25	\$15,033.25		
TOTAL, 5.9% CONTINGENCIES ADDED	1.00	LS	\$30,066.50	\$337,508.49		
7. OTHER ITEMS						
BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00		
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00		
EARTH EXCAVATION		CYD	\$6.75	\$0.00		
EMBANKMENT		CYD	\$7.75	\$0.00		
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00		
CONSTRUCTION SUBTOTAL				\$0.00		
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00		
MOBILIZATION	1.00	LS	\$0.00	\$0.00		
TOTAL, 5.9% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00		
8. PROJECT CONSTRUCTION TOTAL				\$982,716.42		
9. LAND ACQUISITION						
GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00		
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00		
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00		
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00		
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00		
TOTAL LAND ACQUISITION:				\$0.00		
10. PROJECT TOTAL				\$1,184,034		

Project:	College Avenue Reconstruction Project	2020-4	By: KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	4000.00 SYD	\$5.80	\$4,640.00
BITUMINOUS PAVING, 3"	670.00 TON	\$88.00	\$11,792.00
EMBANKMENT	300.00 CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	3000.00 CYD	\$6.75	\$20,250.00
MODIFIED SUBBASE, CIP	1500.00 CYD	\$21.50	\$6,450.00
DRIVEWAY, CONC., 6"	500.00 SYD	\$50.00	\$25,000.00
RESTORATION	200.00 SYD	\$9.25	\$1,850.00
SHOULDER, 7 INCH	0.00 SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00 SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00 CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00 LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00 LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL			\$82,057.00
PROJECT CLEAN-UP	1.00 LS	\$820.57	\$820.57
MOBILIZATION	1.00 LS	\$4,102.85	\$4,102.85
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$8,205.70	\$92,199.25

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
SANITARY SEWER	1200.00 LFT	\$45.00	\$54,000.00
4" DIA. MANHOLE, COMPLETE WITH COVER	6.00 EA	\$2,200.00	\$13,200.00
SANITARY LATERALS, COMPLETE	16.00 EA	\$1,700.00	\$27,200.00
MISC.	1.00 LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00 CYD	\$100.00	\$0.00
DEWATERING	0.00 FT	\$17.00	\$0.00
PUMP & BYPASS	1.00 LS	\$5,000.00	\$5,000.00
RESTORATION	200.00 SYD	\$9.25	\$1,850.00
BL&P CHARGES FOR HOLDING POLES	2.00 EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	200.00 LFT	\$22.00	\$4,400.00
SIDEWALK REPLACEMENT	1000.00 SFT	\$8.25	\$8,250.00
BITUMINOUS PAVING, 3"	670.00 TON	\$88.00	\$17,688.00
AGGREGATE BASE, 4"	4000.00 SYD	\$5.80	\$6,960.00
MODIFIED SUBBASE, CIP	1500.00 CYD	\$21.50	\$9,675.00
TRAFFIC CONTROL	1.00 LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL			\$161,223.00
PROJECT CLEAN-UP	1.00 LS	\$1,612.23	\$1,612.23
MOBILIZATION	1.00 LS	\$8,061.15	\$8,061.15
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$16,122.30	\$181,150.16

The existing sanitary sewer is an 8 and 12 inch 1908 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Pipe segments have structural quick ratings 4123 and 4331. Confirm all NASSCO pipe segments and manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	8000.00 SFT	\$5.25	\$42,000.00
6" CONCRETE SIDEWALK	2400.00 SFT	\$6.00	\$14,400.00
ADA SIDEWALK RAMP	500.00 SFT	\$13.25	\$6,625.00
RESTORATION	500.00 SYD	\$9.25	\$4,625.00
CONSTRUCTION SUBTOTAL			\$67,650.00
PROJECT CLEAN-UP	1.00 LS	\$676.50	\$676.50
MOBILIZATION	1.00 LS	\$3,382.50	\$3,382.50
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$6,765.00	\$76,011.54

BUDGET ESTIMATE FOR FISCAL YEAR:		2020	Eligibility Notes			
Project:	College Avenue Reconstruction Project	2020-4	By: KMW	4/29/2019	SRF	DRWRF
4. WATERMAIN CONSTRUCTION						
EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00		
WATER MAIN	1200.00	LFT	\$48.00	\$57,600.00		The fire flows and the piping servicing the properties along this section of College Avenue are dependent on a 4 inch 1915 sand cast iron pipe between P.I. and Third Street. Currently no water main exists between Third and Front Street and residents are serviced by a undersized common water service line. This project will upsize the existing pipe to an 8 inch D.I. piping to improve fire flows, . History of tuberculation.
VALVES	10.00	EA	\$1,850.00	\$18,500.00		
FITTINGS	24.00	EA	\$475.00	\$11,400.00		
FIRE HYDRANTS	4.00	EA	\$4,300.00	\$17,200.00		
CONNECTIONS	8.00	EA	\$1,800.00	\$14,400.00		
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00		
MISC	1.00	LS	\$5,000.00	\$5,000.00		
WATER MAIN REMOVE	300.00	FT	\$6.00	\$1,800.00		
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00		
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00		
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00		
BITUMINOUS PAVING, 3"	670.00	TON	\$88.00	\$17,688.00		
AGGREGATE BASE, 4"	4000.00	SYD	\$5.80	\$6,960.00		
MODIFIED SUBBASE, CIP	1500.00	CYD	\$21.50	\$9,675.00		
RESTORATION	100.00	SYD	\$9.25	\$925.00		
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL				\$168,248.00		
PROJECT CLEAN-UP	1.00	LS	\$1,682.48	\$1,682.48		
MOBILIZATION	1.00	LS	\$8,412.40	\$8,412.40		
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$16,824.80	\$189,043.45		
5. WATER LATERAL CONSTRUCTION						
NEW WATER SERVICES	16.00	EA	\$1,600.00	\$25,600.00		Confirm if lead in laterals as part of construction process.
TEMPORARY WATER SERVICE	1000.00	LFT	\$4.75	\$4,750.00		
TEMPORARY WATER SERVICE CONNECTIONS	16.00	EA	\$165.00	\$2,640.00		
RESTORATION	200.00	SYD	\$9.25	\$1,850.00		
SIDEWALK REPLACEMENT	1000.00	SFT	\$8.25	\$8,250.00		
CURB AND GUTTER	200.00	LFT	\$22.00	\$4,400.00		
CONSTRUCTION SUBTOTAL				\$47,490.00		
PROJECT CLEAN-UP	1.00	LS	\$474.90	\$474.90		
MOBILIZATION	1.00	LS	\$2,374.50	\$2,374.50		
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,749.00	\$53,359.76		
6. STORM SEWER CONSTRUCTION						
EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00		
12" RCP STORM SEWER	500.00	LFT	\$40.00	\$20,000.00		
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00		
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00		
4' DIA. DRAINAGE STRUCTURES, COMPLETE	6.00	EA	\$3,000.00	\$18,000.00		
2' DIA. DRAINAGE STRUCTURES, COMPLETE	14.00	EA	\$2,075.00	\$29,050.00		
TAP EXISTING DRAINAGE STRUCTURE	3.00	EA	\$400.00	\$1,200.00		
CURB AND GUTTER	1950.00	LFT	\$22.00	\$42,900.00		
MISC.	1.00	LS	\$5,000.00	\$5,000.00		
BITUMINOUS PAVING, 3"	670.00	TON	\$88.00	\$11,792.00		
AGGREGATE BASE, 4"	4000.00	SYD	\$5.80	\$4,640.00		
MODIFIED SUBBASE, CIP	1500.00	CYD	\$21.50	\$6,450.00		
RESTORATION	200.00	SYD	\$9.25	\$1,850.00		
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL				\$142,882.00		
PROJECT CLEAN-UP	1.00	LS	\$1,428.82	\$1,428.82		
MOBILIZATION	1.00	LS	\$7,144.10	\$7,144.10		
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$14,288.20	\$160,542.22		
7. OTHER ITEMS						
BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00		
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00		
EARTH EXCAVATION		CYD	\$6.75	\$0.00		
EMBANKMENT		CYD	\$7.75	\$0.00		
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00		
CONSTRUCTION SUBTOTAL				\$0.00		
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00		
MOBILIZATION	1.00	LS	\$0.00	\$0.00		
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00		
8. PROJECT CONSTRUCTION TOTAL				\$752,306.38		
9. LAND ACQUISITION						
GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00		
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00		
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00		
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00		
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00		
TOTAL LAND ACQUISITION:				\$0.00		
10. PROJECT TOTAL				\$907,161		

Project:	Hewitt Avenue Reconstruction Project	2020-5	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	2900.00 SYD	\$5.80	\$3,364.00
BITUMINOUS PAVING, 3"	490.00 TON	\$88.00	\$8,624.00
EMBANKMENT	400.00 CYD	\$7.75	\$3,100.00
EARTH EXCAVATION	2100.00 CYD	\$6.75	\$14,175.00
MODIFIED SUBBASE, CIP	1050.00 CYD	\$21.50	\$4,515.00
DRIVEWAY, CONC., 6"	300.00 SYD	\$50.00	\$15,000.00
RESTORATION	100.00 SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00 SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00 SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00 CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00 LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00 LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL			\$59,453.00
PROJECT CLEAN-UP	1.00 LS	\$594.53	\$594.53
MOBILIZATION	1.00 LS	\$2,972.65	\$2,972.65
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$5,945.30	\$66,801.39

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
SANITARY SEWER	600.00 LFT	\$40.00	\$24,000.00
4" DIA. MANHOLE, COMPLETE WITH COVER	3.00 EA	\$2,200.00	\$6,600.00
SANITARY LATERALS, COMPLETE	9.00 EA	\$1,700.00	\$15,300.00
MISC.	1.00 LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	400.00 CYD	\$100.00	\$40,000.00
DEWATERING	0.00 FT	\$17.00	\$0.00
PUMP & BYPASS	0.00 LS	\$5,000.00	\$0.00
RESTORATION	100.00 SYD	\$9.25	\$925.00
BL&P CHARGES FOR HOLDING POLES	2.00 EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	100.00 LFT	\$22.00	\$2,200.00
SIDEWALK REPLACEMENT	500.00 SFT	\$8.25	\$4,125.00
BITUMINOUS PAVING, 3"	490.00 TON	\$88.00	\$12,936.00
AGGREGATE BASE, 4"	2900.00 SYD	\$5.80	\$5,046.00
MODIFIED SUBBASE, CIP	1050.00 CYD	\$21.50	\$6,772.50
TRAFFIC CONTROL	1.00 LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL			\$130,904.50
PROJECT CLEAN-UP	1.00 LS	\$1,309.05	\$1,309.05
MOBILIZATION	1.00 LS	\$6,545.23	\$6,545.23
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$13,090.45	\$147,084.30

The existing sanitary sewer is a 12 inch 1903 clay pipe that ends part way up the block and will be replaced/extended with 8 inch PVC piping. Currently most homes on the north side of the street are serviced by long laterals that exit to the north of their homes, cross private properties, and connect into Prospect Street. Sanitary sewer laterals will be stubbed up to the property lines for those residents that connect into Prospect Street. Confirm NASSCO sewer and manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	100.00 SFT	\$5.25	\$525.00
6" CONCRETE SIDEWALK	100.00 SFT	\$6.00	\$600.00
ADA SIDEWALK RAMP	100.00 SFT	\$13.25	\$1,325.00
RESTORATION	50.00 SYD	\$9.25	\$462.50
CONSTRUCTION SUBTOTAL			\$2,912.50
PROJECT CLEAN-UP	1.00 LS	\$29.13	\$29.13
MOBILIZATION	1.00 LS	\$145.63	\$145.63
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$291.25	\$3,272.49

BUDGET ESTIMATE FOR FISCAL YEAR:		2020		Eligibility Notes	
Project:	Hewitt Avenue Reconstruction Project	2020-5	By: KMW	4/29/2019	SRF DRWRP
4. WATERMAIN CONSTRUCTION					
EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00	The fire flows and the piping servicing the properties along this section of Hewitt Avenue are dependent on a 6 inch 1887 sand cast iron pipe. This project will upsize the existing pipe to 8 inch D.I. piping to improve fire flows, align with design stanards, increase residential/business flows, and replace aged/failing pipe. .
WATER MAIN	700.00	LFT	\$48.00	\$33,600.00	
VALVES	3.00	EA	\$1,850.00	\$5,550.00	
FITTINGS	10.00	EA	\$475.00	\$4,750.00	
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00	
CONNECTIONS	2.00	EA	\$1,800.00	\$3,600.00	
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00	
MISC	1.00	LS	\$5,000.00	\$5,000.00	
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00	
ROCK EXCAVATION	200.00	CYD	\$100.00	\$20,000.00	
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00	
BITUMINOUS PAVING, 3"	490.00	TON	\$88.00	\$12,936.00	
AGGREGATE BASE, 4"	2900.00	SYD	\$5.80	\$5,046.00	
MODIFIED SUBBASE, CIP	1050.00	CYD	\$21.50	\$6,772.50	
RESTORATION	100.00	SYD	\$9.25	\$925.00	
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00	
CONSTRUCTION SUBTOTAL				\$109,579.50	
PROJECT CLEAN-UP	1.00	LS	\$1,095.80	\$1,095.80	
MOBILIZATION	1.00	LS	\$5,478.98	\$5,478.98	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$10,957.95	\$123,123.53	
5. WATER LATERAL CONSTRUCTION					
NEW WATER SERVICES	9.00	EA	\$1,600.00	\$14,400.00	Confirm if lead in laterals as part of construction process.
TEMPORARY WATER SERVICE	400.00	LFT	\$4.75	\$1,900.00	
TEMPORARY WATER SERVICE CONNECTIONS	9.00	EA	\$165.00	\$1,485.00	
RESTORATION	100.00	SYD	\$9.25	\$925.00	
SIDEWALK REPLACEMENT	500.00	SFT	\$8.25	\$4,125.00	
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00	
CONSTRUCTION SUBTOTAL				\$25,035.00	
PROJECT CLEAN-UP	1.00	LS	\$250.35	\$250.35	
MOBILIZATION	1.00	LS	\$1,251.75	\$1,251.75	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$2,503.50	\$28,129.33	
6. STORM SEWER CONSTRUCTION					
EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00	
12" RCP STORM SEWER	400.00	LFT	\$40.00	\$16,000.00	
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00	
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00	
4' DIA. DRAINAGE STRUCTURES, COMPLETE	3.00	EA	\$3,000.00	\$9,000.00	
2' DIA. DRAINAGE STRUCTURES, COMPLETE	6.00	EA	\$2,075.00	\$12,450.00	
TAP EXISTING DRAINAGE STRUCTURE	3.00	EA	\$400.00	\$1,200.00	
CURB AND GUTTER	1200.00	LFT	\$22.00	\$26,400.00	
MISC.	1.00	LS	\$5,000.00	\$5,000.00	
BITUMINOUS PAVING, 3"	490.00	TON	\$88.00	\$8,624.00	
AGGREGATE BASE, 4"	2900.00	SYD	\$5.80	\$3,364.00	
MODIFIED SUBBASE, CIP	1050.00	CYD	\$21.50	\$4,515.00	
RESTORATION	100.00	SYD	\$9.25	\$925.00	
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00	
CONSTRUCTION SUBTOTAL				\$89,478.00	
PROJECT CLEAN-UP	1.00	LS	\$894.78	\$894.78	
MOBILIZATION	1.00	LS	\$4,473.90	\$4,473.90	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$8,947.80	\$100,537.48	
7. OTHER ITEMS					
BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00	
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00	
EARTH EXCAVATION		CYD	\$6.75	\$0.00	
EMBANKMENT		CYD	\$7.75	\$0.00	
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00	
CONSTRUCTION SUBTOTAL				\$0.00	
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00	
MOBILIZATION	1.00	LS	\$0.00	\$0.00	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00	
8. PROJECT CONSTRUCTION TOTAL				\$468,948.51	
9. LAND ACQUISITION					
GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00	
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00	
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00	
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00	
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00	
TOTAL LAND ACQUISITION:				\$0.00	
10. PROJECT TOTAL				\$563,879	

Project:	Marquette Drive Reconstruction Project	By:	KMW	4/29/2019	SRF	DRWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	4550.00	SYD	\$5.80	\$7,917.00
BITUMINOUS PAVING, 3"	760.00	TON	\$88.00	\$20,064.00
EMBANKMENT	500.00	CYD	\$7.75	\$3,875.00
EARTH EXCAVATION	3450.00	CYD	\$6.75	\$23,287.50
MODIFIED SUBBASE, CIP	1725.00	CYD	\$21.50	\$11,126.25
DRIVEWAY, CONC., 6"	700.00	SYD	\$50.00	\$35,000.00
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$114,719.75
PROJECT CLEAN-UP	1.00	LS	\$1,147.20	\$1,147.20
MOBILIZATION	1.00	LS	\$5,735.99	\$5,735.99
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$11,471.98	\$128,899.11

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	100.00	LFT	\$40.00	\$4,000.00
4" DIA. MANHOLE, COMPLETE WITH COVER	3.00	EA	\$2,200.00	\$6,600.00
SANITARY LATERALS, COMPLETE	15.00	EA	\$1,700.00	\$25,500.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
BITUMINOUS PAVING, 3"	760.00	TON	\$88.00	\$13,376.00
AGGREGATE BASE, 4"	4550.00	SYD	\$5.80	\$5,278.00
MODIFIED SUBBASE, CIP	1725.00	CYD	\$21.50	\$7,417.50
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$77,946.50
PROJECT CLEAN-UP	1.00	LS	\$779.47	\$779.47
MOBILIZATION	1.00	LS	\$3,897.33	\$3,897.33
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,794.65	\$87,580.69

The existing sanitary sewer was slip lined in 2011 and will not require replacement. Sanitary sewer manholes and laterals will be replaced as needed. This is area is known to have orangeburg laterals. Confirm NASSCO manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00	SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00	SFT	\$13.25	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	1450.00	LFT	\$48.00	\$69,600.00
VALVES	12.00	EA	\$1,850.00	\$22,200.00
FITTINGS	0.00	EA	\$475.00	\$0.00
FIRE HYDRANTS	3.00	EA	\$4,300.00	\$12,900.00
CONNECTIONS	3.00	EA	\$1,800.00	\$5,400.00
CHECK VALVE	1.00	LS	\$25,000.00	\$25,000.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	500.00	FT	\$6.00	\$3,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
BITUMINOUS PAVING, 3"	760.00	TON	\$88.00	\$20,064.00
AGGREGATE BASE, 4"	4550.00	SYD	\$5.80	\$7,917.00
MODIFIED SUBBASE, CIP	1725.00	CYD	\$21.50	\$11,126.25
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$189,132.25
PROJECT CLEAN-UP	1.00	LS	\$1,891.32	\$1,891.32
MOBILIZATION	1.00	LS	\$9,456.61	\$9,456.61
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$18,913.23	\$212,509.00

The piping servicing the residents along this section of Marquette Drive is dependent on 6 inch 1958 sand cast piping. The existing water main is not adequate to provide fire protection. This project will upsize the existing pipe to 8 inch D.I. piping which will improve fire flows, align with design standards, increase residential flows, and replace aged pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	15.00	EA	\$1,600.00	\$24,000.00
TEMPORARY WATER SERVICE	1600.00	LFT	\$4.75	\$7,600.00
TEMPORARY WATER SERVICE CONNECTIONS	15.00	EA	\$165.00	\$2,475.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
CONSTRUCTION SUBTOTAL				\$36,850.00
PROJECT CLEAN-UP	1.00	LS	\$368.50	\$368.50
MOBILIZATION	1.00	LS	\$1,842.50	\$1,842.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,685.00	\$41,404.66

Confirm if lead in laterals as part of construction process.

BUDGET ESTIMATE FOR FISCAL YEAR:		2019	Eligibility Notes			
Project:	Marquette Drive Reconstruction Project	2020-7	By: KMW	4/29/2019	SRF	DRWRF
6. STORM SEWER CONSTRUCTION						
EMPLOYEE ESTIMATE			EA	\$0.00		\$0.00
12" RCP STORM SEWER	1000.00		LFT	\$40.00		\$40,000.00
15" RCP STORM SEWER	0.00		LFT	\$46.00		\$0.00
18" RCP STORM SEWER	0.00		LFT	\$70.00		\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	6.00		EA	\$3,000.00		\$18,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	12.00		EA	\$2,075.00		\$24,900.00
TAP EXISTING DRAINAGE STRUCTURE	1.00		EA	\$400.00		\$400.00
CURB AND GUTTER	3100.00		LFT	\$22.00		\$68,200.00
MISC.	1.00		LS	\$5,000.00		\$5,000.00
BITUMINOUS PAVING, 3"	760.00		TON	\$88.00		\$13,376.00
AGGREGATE BASE, 4"	4550.00		SYD	\$5.80		\$5,278.00
MODIFIED SUBBASE, CIP	1725.00		CYD	\$21.50		\$7,417.50
RESTORATION	3000.00		SYD	\$9.25		\$27,750.00
TRAFFIC CONTROL	1.00		LS	\$2,000.00		\$2,000.00
CONSTRUCTION SUBTOTAL						\$212,321.50
PROJECT CLEAN-UP	1.00	LS		\$2,123.22		\$2,123.22
MOBILIZATION	1.00	LS		\$10,616.08		\$10,616.08
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		\$21,232.15		\$238,564.44
7. OTHER ITEMS						
BITUMINOUS PAVING, 3" (BIKE PATH)			TON	\$88.00		\$0.00
AGGREGATE BASE, 6"			SYD	\$9.00		\$0.00
EARTH EXCAVATION			CYD	\$6.75		\$0.00
EMBANKMENT			CYD	\$7.75		\$0.00
COLORED STAMPED CONCRETE			SYD	\$90.00		\$0.00
CONSTRUCTION SUBTOTAL						\$0.00
PROJECT CLEAN-UP	1.00	LS		\$0.00		\$0.00
MOBILIZATION	1.00	LS		\$0.00		\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		\$0.00		\$0.00
8. PROJECT CONSTRUCTION TOTAL						
						\$708,957.89
9. LAND ACQUISITION						
GENERAL FUND LAND ACQUISITION	0	AC		\$17,500		\$0.00
STREET FUND LAND ACQUISITION	0	AC		\$17,500		\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC		\$17,500		\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC		\$17,500		\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC		\$17,500		\$0.00
TOTAL LAND ACQUISITION:						\$0.00
10. PROJECT TOTAL						
						\$828,286

Project:	Lakeview Drive Reconstruction Project	By:	KMW	4/29/2019	SRF	DRWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	2000.00 SYD	\$5.80	\$3,480.00
BITUMINOUS PAVING, 3"	335.00 TON	\$88.00	\$8,844.00
EMBANKMENT	300.00 CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	1500.00 CYD	\$6.75	\$10,125.00
MODIFIED SUBBASE, CIP	750.00 CYD	\$21.50	\$4,837.50
DRIVEWAY, CONC., 6"	500.00 SYD	\$50.00	\$25,000.00
RESTORATION	200.00 SYD	\$9.25	\$1,850.00
SHOULDER, 7 INCH	0.00 SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00 SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00 CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00 LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00 LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL			\$66,211.50
PROJECT CLEAN-UP	1.00 LS	\$662.12	\$662.12
MOBILIZATION	1.00 LS	\$3,310.58	\$3,310.58
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$6,621.15	\$74,395.24

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00	The existing sanitary sewer was slip lined in 2011 and will not require replacement. Sanitary sewer manholes and laterals will be replaced as needed. This is area is known to have orangeburg laterals. Confirm NASSCO sewer and manhole ratings.
SANITARY SEWER	100.00 LFT	\$40.00	\$4,000.00	
4" DIA. MANHOLE, COMPLETE WITH COVER	2.00 EA	\$2,200.00	\$4,400.00	
SANITARY LATERALS, COMPLETE	11.00 EA	\$1,700.00	\$18,700.00	
MISC.	1.00 LS	\$5,000.00	\$5,000.00	
ROCK EXCAVATION	0.00 CYD	\$100.00	\$0.00	
DEWATERING	0.00 FT	\$17.00	\$0.00	
PUMP & BYPASS	0.00 LS	\$5,000.00	\$0.00	
RESTORATION	300.00 SYD	\$9.25	\$2,775.00	
BL&P CHARGES FOR HOLDING POLES	2.00 EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	0.00 LFT	\$22.00	\$0.00	
SIDEWALK REPLACEMENT	0.00 SFT	\$8.25	\$0.00	
BITUMINOUS PAVING, 3"	335.00 TON	\$88.00	\$5,896.00	
AGGREGATE BASE, 4"	2000.00 SYD	\$5.80	\$2,320.00	
MODIFIED SUBBASE, CIP	750.00 CYD	\$21.50	\$3,225.00	
TRAFFIC CONTROL	1.00 LS	\$4,000.00	\$4,000.00	
CONSTRUCTION SUBTOTAL			\$54,316.00	
PROJECT CLEAN-UP	1.00 LS	\$543.16	\$543.16	
MOBILIZATION	1.00 LS	\$2,715.80	\$2,715.80	
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$5,431.60	\$61,029.46	

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00 SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00 SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00 SFT	\$13.25	\$0.00
RESTORATION	0.00 SYD	\$9.25	\$0.00
CONSTRUCTION SUBTOTAL			\$0.00
PROJECT CLEAN-UP	1.00 LS	\$0.00	\$0.00
MOBILIZATION	1.00 LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$0.00	\$0.00

4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00	The piping servicing the residents along this section of Lakeview Drive is dependent on 6 inch 1958 sand cast piping. The existing water main is not adequate to provide fire protection. This project will upsize the existing pipe to 8 inch D.I. piping which will improve fire flows, align with design stanards, increase residential flows, and replace sand cast iron pipe. Increasing pipe size necessary for fire flow.
WATER MAIN	625.00 LFT	\$48.00	\$30,000.00	
VALVES	3.00 EA	\$1,850.00	\$5,550.00	
FITTINGS	10.00 EA	\$475.00	\$4,750.00	
FIRE HYDRANTS	1.00 EA	\$4,300.00	\$4,300.00	
CONNECTIONS	1.00 EA	\$1,800.00	\$1,800.00	
CHECK VALVE	0.00 LS	\$25,000.00	\$0.00	
MISC	1.00 LS	\$5,000.00	\$5,000.00	
WATER MAIN REMOVE	500.00 FT	\$6.00	\$3,000.00	
ROCK EXCAVATION	0.00 CYD	\$100.00	\$0.00	
BL&P CHARGES FOR HOLDING POLES	2.00 EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	0.00 LFT	\$22.00	\$0.00	
BITUMINOUS PAVING, 3"	335.00 TON	\$88.00	\$8,844.00	
AGGREGATE BASE, 4"	2000.00 SYD	\$5.80	\$3,480.00	
MODIFIED SUBBASE, CIP	750.00 CYD	\$21.50	\$4,837.50	
RESTORATION	0.00 SYD	\$9.25	\$0.00	
TRAFFIC CONTROL	1.00 LS	\$2,000.00	\$2,000.00	
CONSTRUCTION SUBTOTAL			\$77,561.50	
PROJECT CLEAN-UP	1.00 LS	\$775.62	\$775.62	
MOBILIZATION	1.00 LS	\$3,878.08	\$3,878.08	
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$7,756.15	\$87,148.10	

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	11.00 EA	\$1,600.00	\$17,600.00	Confirm if lead in laterals as part of construction process.
TEMPORARY WATER SERVICE	700.00 LFT	\$4.75	\$3,325.00	
TEMPORARY WATER SERVICE CONNECTIONS	11.00 EA	\$165.00	\$1,815.00	
RESTORATION	300.00 SYD	\$9.25	\$2,775.00	
SIDEWALK REPLACEMENT	0.00 SFT	\$8.25	\$0.00	
CURB AND GUTTER	0.00 LFT	\$22.00	\$0.00	
CONSTRUCTION SUBTOTAL			\$25,515.00	
PROJECT CLEAN-UP	1.00 LS	\$255.15	\$255.15	
MOBILIZATION	1.00 LS	\$1,275.75	\$1,275.75	
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$2,551.50	\$28,668.65	

BUDGET ESTIMATE FOR FISCAL YEAR:		2020	Eligibility Notes			
Project:	Lakeview Drive Reconstruction Project	2020-8	By: KMW	4/29/2019	SRF	DRWRF
6. STORM SEWER CONSTRUCTION						
EMPLOYEE ESTIMATE			EA	\$0.00	\$0.00	
12" RCP STORM SEWER	400.00		LFT	\$40.00	\$16,000.00	
15" RCP STORM SEWER	0.00		LFT	\$46.00	\$0.00	
18" RCP STORM SEWER	0.00		LFT	\$70.00	\$0.00	
4' DIA. DRAINAGE STRUCTURES, COMPLETE	2.00		EA	\$3,000.00	\$6,000.00	
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00		EA	\$2,075.00	\$8,300.00	
TAP EXISTING DRAINAGE STRUCTURE	1.00		EA	\$400.00	\$400.00	
CURB AND GUTTER	1350.00		LFT	\$22.00	\$29,700.00	
MISC.	1.00		LS	\$5,000.00	\$5,000.00	
BITUMINOUS PAVING, 3"	335.00		TON	\$88.00	\$5,896.00	
AGGREGATE BASE, 4"	2000.00		SYD	\$5.80	\$2,320.00	
MODIFIED SUBBASE, CIP	750.00		CYD	\$21.50	\$3,225.00	
RESTORATION	1500.00		SYD	\$9.25	\$13,875.00	
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00	
CONSTRUCTION SUBTOTAL					\$92,716.00	
PROJECT CLEAN-UP	1.00	LS		\$927.16	\$927.16	
MOBILIZATION	1.00	LS		\$4,635.80	\$4,635.80	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		\$9,271.60	\$104,175.70	
7. OTHER ITEMS						
BITUMINOUS PAVING, 3" (BIKE PATH)			TON	\$88.00	\$0.00	
AGGREGATE BASE, 6"			SYD	\$9.00	\$0.00	
EARTH EXCAVATION			CYD	\$6.75	\$0.00	
EMBANKMENT			CYD	\$7.75	\$0.00	
COLORED STAMPED CONCRETE			SYD	\$90.00	\$0.00	
CONSTRUCTION SUBTOTAL					\$0.00	
PROJECT CLEAN-UP	1.00	LS		\$0.00	\$0.00	
MOBILIZATION	1.00	LS		\$0.00	\$0.00	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		\$0.00	\$0.00	
8. PROJECT CONSTRUCTION TOTAL					\$355,417.15	
9. LAND ACQUISITION						
GENERAL FUND LAND ACQUISITION	0	AC		\$17,500	\$0.00	
STREET FUND LAND ACQUISITION	0	AC		\$17,500	\$0.00	
STORM WATER FUND LAND ACQUISITION	0	AC		\$17,500	\$0.00	
WATER SYSTEM LAND ACQUISITION	0	AC		\$17,500	\$0.00	
SEWER SYSTEM LAND ACQUISITION	0	AC		\$17,500	\$0.00	
TOTAL LAND ACQUISITION:					\$0.00	
10. PROJECT TOTAL					\$415,237	

Project:	Union Street Reconstruction Project	2020-9	By:	KMW	4/29/2019	SRF	DRWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6%
Contingencies Rate:	6%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	5500.00 SYD	\$5.80	\$11,165.00
BITUMINOUS PAVING, 3"	920.00 TON	\$88.00	\$28,336.00
EMBANKMENT	1200.00 CYD	\$7.75	\$9,300.00
EARTH EXCAVATION	5000.00 CYD	\$6.75	\$33,750.00
MODIFIED SUBBASE, CIP	1975.00 CYD	\$21.50	\$14,861.88
DRIVEWAY, CONC., 6"	300.00 SYD	\$50.00	\$15,000.00
RESTORATION	100.00 SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00 SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00 SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00 CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00 LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00 LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL			\$123,087.88
PROJECT CLEAN-UP	1.00 LS	\$1,230.88	\$1,230.88
MOBILIZATION	1.00 LS	\$6,154.39	\$6,154.39
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$12,308.79	\$138,301.54

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE	LS	\$0.00	\$0.00
SANITARY SEWER	100.00 LFT	\$40.00	\$4,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	1.00 EA	\$2,200.00	\$2,200.00
SANITARY LATERALS, COMPLETE	4.00 EA	\$1,700.00	\$6,800.00
MISC.	1.00 LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00 CYD	\$100.00	\$0.00
DEWATERING	500.00 FT	\$17.00	\$8,500.00
PUMP & BYPASS	1.00 LS	\$5,000.00	\$5,000.00
RESTORATION	100.00 SYD	\$9.25	\$925.00
BL&P CHARGES FOR HOLDING POLES	1.00 EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	50.00 LFT	\$22.00	\$1,100.00
SIDEWALK REPLACEMENT	200.00 SFT	\$8.25	\$1,650.00
BITUMINOUS PAVING, 3"	920.00 TON	\$88.00	\$12,144.00
AGGREGATE BASE, 4"	5500.00 SYD	\$5.80	\$4,785.00
MODIFIED SUBBASE, CIP	1975.00 CYD	\$21.50	\$6,369.38
TRAFFIC CONTROL	1.00 LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL			\$64,473.38
PROJECT CLEAN-UP	1.00 LS	\$644.73	\$644.73
MOBILIZATION	1.00 LS	\$3,223.67	\$3,223.67
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$6,447.34	\$72,442.28

The piping servicing the sanitary sewer is 15 inch 1951 RCP and would be a candidate for slip lining at a future date. Manhole structures and laterals will be replaced as needed. Confirm NASSCO manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	3700.00 SFT	\$5.25	\$19,425.00
6" CONCRETE SIDEWALK	0.00 SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	100.00 SFT	\$13.25	\$1,325.00
RESTORATION	800.00 SYD	\$9.25	\$7,400.00
CONSTRUCTION SUBTOTAL			\$28,150.00
PROJECT CLEAN-UP	1.00 LS	\$281.50	\$281.50
MOBILIZATION	1.00 LS	\$1,407.50	\$1,407.50
TOTAL, 6% CONTINGENCIES ADDED	1.00 LS	\$2,815.00	\$31,629.34

BUDGET ESTIMATE FOR FISCAL YEAR:		2020	Eligibility Notes				
Project:	Union Street Reconstruction Project	2020-9	By: KMW	4/29/2019	SRF	DRWRF	
4. WATERMAIN CONSTRUCTION							
EMPLOYEE ESTIMATE			LS	\$0.00	\$0.00	The fire flows and the piping servicing the residents along this section of Union Street are dependent on a 8 inch 1969 cast iron and a 8 inch 1980 ductile iron and will not need replacement at this time.	
WATER MAIN	0.00		LFT	\$48.00	\$0.00		
VALVES	11.00		EA	\$1,850.00	\$20,350.00		
FITTINGS	10.00		EA	\$475.00	\$4,750.00		
FIRE HYDRANTS	1.00		EA	\$4,300.00	\$4,300.00		
CONNECTIONS	9.00		EA	\$1,800.00	\$16,200.00		
CHECK VALVE	0.00		LS	\$25,000.00	\$0.00		
MISC	1.00		LS	\$5,000.00	\$5,000.00		
WATER MAIN REMOVE	0.00		FT	\$6.00	\$0.00		
ROCK EXCAVATION	0.00		CYD	\$100.00	\$0.00		
BL&P CHARGES FOR HOLDING POLES	1.00		EA	\$2,000.00	\$2,000.00		
CURB AND GUTTER	50.00		LFT	\$22.00	\$1,100.00		
BITUMINOUS PAVING, 3"	920.00		TON	\$88.00	\$12,144.00		
AGGREGATE BASE, 4"	5500.00		SYD	\$5.80	\$4,785.00		
MODIFIED SUBBASE, CIP	1975.00		CYD	\$21.50	\$6,369.38		
RESTORATION	50.00		SYD	\$9.25	\$462.50		
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL					\$79,460.88		
PROJECT CLEAN-UP	1.00		LS	\$794.61	\$794.61		
MOBILIZATION	1.00		LS	\$3,973.04	\$3,973.04		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$7,946.09	\$89,282.24		
5. WATER LATERAL CONSTRUCTION							
NEW WATER SERVICES	4.00		EA	\$1,600.00	\$6,400.00		Confirm if lead in laterals as part of construction process.
TEMPORARY WATER SERVICE	0.00		LFT	\$4.75	\$0.00		
TEMPORARY WATER SERVICE CONNECTIONS	4.00		EA	\$165.00	\$660.00		
RESTORATION	100.00		SYD	\$9.25	\$925.00		
SIDEWALK REPLACEMENT	200.00		SFT	\$8.25	\$1,650.00		
CURB AND GUTTER	50.00		LFT	\$22.00	\$1,100.00		
CONSTRUCTION SUBTOTAL					\$10,735.00		
PROJECT CLEAN-UP	1.00		LS	\$107.35	\$107.35		
MOBILIZATION	1.00		LS	\$536.75	\$536.75		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$1,073.50	\$12,061.85		
6. STORM SEWER CONSTRUCTION							
EMPLOYEE ESTIMATE			EA	\$0.00	\$0.00		
12" RCP STORM SEWER	125.00		LFT	\$40.00	\$5,000.00		
15" RCP STORM SEWER	0.00		LFT	\$46.00	\$0.00		
36" RCP STORM SEWER	375.00		LFT	\$120.00	\$45,000.00		
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00		EA	\$3,000.00	\$12,000.00		
2' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00		EA	\$2,075.00	\$16,600.00		
TAP EXISTING DRAINAGE STRUCTURE	2.00		EA	\$400.00	\$800.00		
CURB AND GUTTER	1300.00		LFT	\$22.00	\$28,600.00		
MISC.	1.00		LS	\$5,000.00	\$5,000.00		
BITUMINOUS PAVING, 3"	920.00		TON	\$88.00	\$28,336.00		
AGGREGATE BASE, 4"	5500.00		SYD	\$5.80	\$11,165.00		
MODIFIED SUBBASE, CIP	1975.00		CYD	\$21.50	\$14,861.88		
RESTORATION	100.00		SYD	\$9.25	\$925.00		
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00		
CONSTRUCTION SUBTOTAL					\$170,287.88		
PROJECT CLEAN-UP	1.00		LS	\$1,702.88	\$1,702.88		
MOBILIZATION	1.00		LS	\$8,514.39	\$8,514.39		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$17,028.79	\$191,335.46		
7. OTHER ITEMS							
BITUMINOUS PAVING, 3" (BIKE PATH)			TON	\$88.00	\$0.00		
AGGREGATE BASE, 6"			SYD	\$9.00	\$0.00		
EARTH EXCAVATION			CYD	\$6.75	\$0.00		
EMBANKMENT			CYD	\$7.75	\$0.00		
COLORED STAMPED CONCRETE			SYD	\$90.00	\$0.00		
CONSTRUCTION SUBTOTAL					\$0.00		
PROJECT CLEAN-UP	1.00		LS	\$0.00	\$0.00		
MOBILIZATION	1.00		LS	\$0.00	\$0.00		
TOTAL, 6% CONTINGENCIES ADDED	1.00		LS	\$0.00	\$0.00		
8. PROJECT CONSTRUCTION TOTAL				\$535,052.70			
9. LAND ACQUISITION							
GENERAL FUND LAND ACQUISITION	0		AC	\$17,500	\$0.00		
STREET FUND LAND ACQUISITION	0		AC	\$17,500	\$0.00		
STORM WATER FUND LAND ACQUISITION	0		AC	\$17,500	\$0.00		
WATER SYSTEM LAND ACQUISITION	0		AC	\$17,500	\$0.00		
SEWER SYSTEM LAND ACQUISITION	0		AC	\$17,500	\$0.00		
TOTAL LAND ACQUISITION:					\$0.00		
10. PROJECT TOTAL				\$627,226			

Project:	Altamont Street Upgrade Project	2021-1	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	3200.00	SYD	\$5.80	\$12,992.00
BITUMINOUS PAVING, 3"	535.00	TON	\$88.00	\$32,956.00
EMBANKMENT	200.00	CYD	\$7.75	\$1,550.00
EARTH EXCAVATION	2300.00	CYD	\$6.75	\$15,525.00
MODIFIED SUBBASE, CIP	1150.00	CYD	\$21.50	\$17,307.50
DRIVEWAY, CONC., 6"	0.00	SYD	\$50.00	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$90,080.50
PROJECT CLEAN-UP	1.00	LS	\$900.81	\$900.81
MOBILIZATION	1.00	LS	\$4,504.03	\$4,504.03
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$9,008.05	\$101,214.45

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	100.00	LFT	\$40.00	\$4,000.00
4" DIA. MANHOLE, COMPLETE WITH COVER	2.00	EA	\$2,200.00	\$4,400.00
SANITARY LATERALS, COMPLETE	0.00	EA	\$1,700.00	\$0.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
BL&P CHARGES FOR HOLDING POLES	0.00	EA	\$2,000.00	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
BITUMINOUS PAVING, 3"	535.00	TON	\$88.00	\$2,354.00
AGGREGATE BASE, 4"	3200.00	SYD	\$5.80	\$928.00
MODIFIED SUBBASE, CIP	1150.00	CYD	\$21.50	\$1,236.25
TRAFFIC CONTROL	1.00	LS	\$1,000.00	\$1,000.00
CONSTRUCTION SUBTOTAL				\$18,918.25
PROJECT CLEAN-UP	1.00	LS	\$189.18	\$189.18
MOBILIZATION	1.00	LS	\$945.91	\$945.91
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,891.83	\$21,256.55

The existing sanitary sewer is a 8 inch 1978 truss pipe and will not be replaced at this time. This piping would be a good candidate for a future slip lining project. All sanitary sewer manholes and laterals will be replaced. Confirm NASSCO manhole ratings as part of process..

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	2000.00	SFT	\$5.25	\$10,500.00
6" CONCRETE SIDEWALK	600.00	SFT	\$6.00	\$3,600.00
ADA SIDEWALK RAMP	100.00	SFT	\$13.25	\$1,325.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
CONSTRUCTION SUBTOTAL				\$18,200.00
PROJECT CLEAN-UP	1.00	LS	\$182.00	\$182.00
MOBILIZATION	1.00	LS	\$910.00	\$910.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,820.00	\$20,449.52

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	Altamont Street Upgrade Project	2021-1	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	0.00	LFT	\$48.00	\$0.00
VALVES	7.00	EA	\$1,850.00	\$12,950.00
FITTINGS	10.00	EA	\$475.00	\$4,750.00
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00
CONNECTIONS	9.00	EA	\$1,800.00	\$16,200.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	0.00	EA	\$2,000.00	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
BITUMINOUS PAVING, 3"	535.00	TON	\$88.00	\$2,354.00
AGGREGATE BASE, 4"	3200.00	SYD	\$5.80	\$928.00
MODIFIED SUBBASE, CIP	1150.00	CYD	\$21.50	\$1,236.25
RESTORATION	50.00	SYD	\$9.25	\$462.50
TRAFFIC CONTROL	1.00	LS	\$1,000.00	\$1,000.00
CONSTRUCTION SUBTOTAL				\$49,180.75
PROJECT CLEAN-UP	1.00	LS	\$491.81	\$491.81
MOBILIZATION	1.00	LS	\$2,459.04	\$2,459.04
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,918.08	\$55,259.49

The fire flows and the piping servicing the properties along this section of Altamont Street are dependent on a 16 inch 1973 ductile iron pipe. This pipe will not require replacement.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	0.00	EA	\$1,600.00	\$0.00
TEMPORARY WATER SERVICE	0.00	LFT	\$4.75	\$0.00
TEMPORARY WATER SERVICE CONNECTIONS	0.00	EA	\$165.00	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

Confirm if lead in laterals as part of construction process and replace as necessary.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	0.00	LFT	\$40.00	\$0.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$3,000.00	\$12,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00	EA	\$2,075.00	\$16,600.00
TAP EXISTING DRAINAGE STRUCTURE	0.00	EA	\$400.00	\$0.00
CURB AND GUTTER	1300.00	LFT	\$22.00	\$28,600.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	535.00	TON	\$88.00	\$9,416.00
AGGREGATE BASE, 4"	3200.00	SYD	\$5.80	\$3,712.00
MODIFIED SUBBASE, CIP	1150.00	CYD	\$21.50	\$4,945.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$1,000.00	\$1,000.00
CONSTRUCTION SUBTOTAL				\$82,198.00
PROJECT CLEAN-UP	1.00	LS	\$821.98	\$821.98
MOBILIZATION	1.00	LS	\$4,109.90	\$4,109.90
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$8,219.80	\$92,357.67

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$290,537.68

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

\$358,216

358216

Project:	College Avenue Reconstruction Project	2021-2	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	2400.00	SYD	\$5.80	\$2,784.00
BITUMINOUS PAVING, 3"	400.00	TON	\$88.00	\$7,040.00
EMBANKMENT	300.00	CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	1800.00	CYD	\$6.75	\$12,150.00
MODIFIED SUBBASE, CIP	900.00	CYD	\$21.50	\$3,870.00
DRIVEWAY, CONC., 6"	400.00	SYD	\$50.00	\$20,000.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$59,769.00
PROJECT CLEAN-UP	1.00	LS	\$597.69	\$597.69
MOBILIZATION	1.00	LS	\$2,988.45	\$2,988.45
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,976.90	\$67,156.45

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	950.00	LFT	\$40.00	\$38,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	6.00	EA	\$2,200.00	\$13,200.00
SANITARY LATERALS, COMPLETE	15.00	EA	\$1,700.00	\$25,500.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	150.00	LFT	\$22.00	\$3,300.00
SIDEWALK REPLACEMENT	800.00	SFT	\$8.25	\$6,600.00
BITUMINOUS PAVING, 3"	400.00	TON	\$88.00	\$10,560.00
AGGREGATE BASE, 4"	2400.00	SYD	\$5.80	\$4,176.00
MODIFIED SUBBASE, CIP	900.00	CYD	\$21.50	\$5,805.00
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$121,991.00
PROJECT CLEAN-UP	1.00	LS	\$1,219.91	\$1,219.91
MOBILIZATION	1.00	LS	\$6,099.55	\$6,099.55
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$12,199.10	\$137,069.09

The existing sanitary sewer is a 6 inch 1926 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Pipe segment between MH 778 and 778A has index rating of 5100. Confirm NASSCO pipe and manhole ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	200.00	SFT	\$5.25	\$1,050.00
6" CONCRETE SIDEWALK	200.00	SFT	\$6.00	\$1,200.00
ADA SIDEWALK RAMP	200.00	SFT	\$13.25	\$2,650.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
CONSTRUCTION SUBTOTAL				\$6,750.00
PROJECT CLEAN-UP	1.00	LS	\$67.50	\$67.50
MOBILIZATION	1.00	LS	\$337.50	\$337.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$675.00	\$7,584.30

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	College Avenue Reconstruction Project	2021-2	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	950.00	LFT	\$48.00	\$45,600.00
VALVES	10.00	EA	\$1,850.00	\$18,500.00
FITTINGS	20.00	EA	\$475.00	\$9,500.00
FIRE HYDRANTS	2.00	EA	\$4,300.00	\$8,600.00
CONNECTIONS	6.00	EA	\$1,800.00	\$10,800.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	400.00	TON	\$88.00	\$10,560.00
AGGREGATE BASE, 4"	2400.00	SYD	\$5.80	\$4,176.00
MODIFIED SUBBASE, CIP	900.00	CYD	\$21.50	\$5,805.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$126,566.00
PROJECT CLEAN-UP	1.00	LS	\$1,265.66	\$1,265.66
MOBILIZATION	1.00	LS	\$6,328.30	\$6,328.30
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$12,656.60	\$142,209.56

The fire flows and the piping servicing the properties along this section of College Street are dependent on a 6 inch 1926 sand cast iron pipe between Front and High Street. Currently no water main exists between High and Pine Street. This project will upsize the existing pipe to an 8 inch D.I. piping to improve fire flows, align with design standards, increase residential/business flows, and replace aged/failing pipe. The water main will be looped to Pine Street to improve water quality.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	15.00	EA	\$1,600.00	\$24,000.00
TEMPORARY WATER SERVICE	1000.00	LFT	\$4.75	\$4,750.00
TEMPORARY WATER SERVICE CONNECTIONS	15.00	EA	\$165.00	\$2,475.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SIDEWALK REPLACEMENT	800.00	SFT	\$8.25	\$6,600.00
CURB AND GUTTER	150.00	LFT	\$22.00	\$3,300.00
CONSTRUCTION SUBTOTAL				\$42,975.00
PROJECT CLEAN-UP	1.00	LS	\$429.75	\$429.75
MOBILIZATION	1.00	LS	\$2,148.75	\$2,148.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,297.50	\$48,286.71

Confirm if lead in laterals as part of construction process and replace as necessary.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	400.00	LFT	\$40.00	\$16,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$3,000.00	\$12,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00	EA	\$2,075.00	\$16,600.00
TAP EXISTING DRAINAGE STRUCTURE	3.00	EA	\$400.00	\$1,200.00
CURB AND GUTTER	1300.00	LFT	\$22.00	\$28,600.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	400.00	TON	\$88.00	\$7,040.00
AGGREGATE BASE, 4"	2400.00	SYD	\$5.80	\$2,784.00
MODIFIED SUBBASE, CIP	900.00	CYD	\$21.50	\$3,870.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$96,019.00
PROJECT CLEAN-UP	1.00	LS	\$960.19	\$960.19
MOBILIZATION	1.00	LS	\$4,800.95	\$4,800.95
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$9,601.90	\$107,886.95

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$510,193.05

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Kildahl Avenue Reconstruction Project	2021-6	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	2100.00	SYD	\$5.80	\$4,872.00
BITUMINOUS PAVING, 3"	350.00	TON	\$88.00	\$12,320.00
EMBANKMENT	400.00	CYD	\$7.75	\$3,100.00
EARTH EXCAVATION	1540.00	CYD	\$6.75	\$10,395.00
MODIFIED SUBBASE, CIP	770.00	CYD	\$21.50	\$6,622.00
DRIVEWAY, CONC., 6"	200.00	SYD	\$50.00	\$10,000.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$57,984.00</u>
PROJECT CLEAN-UP	1.00	LS	\$579.84	\$579.84
MOBILIZATION	1.00	LS	\$2,899.20	\$2,899.20
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,798.40	\$65,150.82

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	100.00	LFT	\$40.00	\$4,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	3.00	EA	\$2,200.00	\$6,600.00
SANITARY LATERALS, COMPLETE	7.00	EA	\$1,700.00	\$11,900.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	100.00	CYD	\$100.00	\$10,000.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
BITUMINOUS PAVING, 3"	350.00	TON	\$88.00	\$6,160.00
AGGREGATE BASE, 4"	2100.00	SYD	\$5.80	\$2,436.00
MODIFIED SUBBASE, CIP	770.00	CYD	\$21.50	\$3,311.00
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$61,457.00</u>
PROJECT CLEAN-UP	1.00	LS	\$614.57	\$614.57
MOBILIZATION	1.00	LS	\$3,072.85	\$3,072.85
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,145.70	\$69,053.09

The piping servicing the sanitary sewer is 8 inch 1966 reinforced concrete pipe and will not require replacement. It may be a candidate for a future slip lining project. The sanitary sewer will be extended to provide service to the midblock residents that currently have long laterals. All laterals and manhole structures will be replaced as required. Confirm NASSCO manhole ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00	SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00	SFT	\$13.25	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$0.00</u>
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

Project:	Kildahl Avenue Reconstruction Project	2021-6	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	0.00	LFT	\$48.00	\$0.00
VALVES	8.00	EA	\$1,850.00	\$14,800.00
FITTINGS	10.00	EA	\$475.00	\$4,750.00
FIRE HYDRANTS	2.00	EA	\$4,300.00	\$8,600.00
CONNECTIONS	4.00	EA	\$1,800.00	\$7,200.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	20.00	CYD	\$100.00	\$2,000.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	350.00	TON	\$88.00	\$6,160.00
AGGREGATE BASE, 4"	2100.00	SYD	\$5.80	\$2,436.00
MODIFIED SUBBASE, CIP	770.00	CYD	\$21.50	\$3,311.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$62,282.00
PROJECT CLEAN-UP	1.00	LS	\$622.82	\$622.82
MOBILIZATION	1.00	LS	\$3,114.10	\$3,114.10
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,228.20	\$69,980.06

The water main is 6 inch 1965 cast iron piping and will not need replacement at this time. Valves and hydrants will be replaced.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	7.00	EA	\$1,600.00	\$11,200.00
TEMPORARY WATER SERVICE	0.00	LFT	\$4.75	\$0.00
TEMPORARY WATER SERVICE CONNECTIONS	7.00	EA	\$165.00	\$1,155.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SIDEWALK REPLACEMENT	300.00	SFT	\$8.25	\$2,475.00
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00
CONSTRUCTION SUBTOTAL				\$18,880.00
PROJECT CLEAN-UP	1.00	LS	\$188.80	\$188.80
MOBILIZATION	1.00	LS	\$944.00	\$944.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,888.00	\$21,213.57

Confirm if lead in laterals as part of construction process and replace as necessary.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	300.00	LFT	\$40.00	\$12,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	2.00	EA	\$3,000.00	\$6,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$2,075.00	\$8,300.00
TAP EXISTING DRAINAGE STRUCTURE	1.00	EA	\$400.00	\$400.00
CURB AND GUTTER	1100.00	LFT	\$22.00	\$24,200.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	350.00	TON	\$88.00	\$6,160.00
AGGREGATE BASE, 4"	2100.00	SYD	\$5.80	\$2,436.00
MODIFIED SUBBASE, CIP	770.00	CYD	\$21.50	\$3,311.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$70,732.00
PROJECT CLEAN-UP	1.00	LS	\$707.32	\$707.32
MOBILIZATION	1.00	LS	\$3,536.60	\$3,536.60
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,073.20	\$79,474.48

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$304,872.01

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Meeske Avenue Reconstruction Project	2021-8	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	2200.00	SYD	\$5.80	\$10,208.00
BITUMINOUS PAVING, 3"	360.00	TON	\$88.00	\$25,344.00
EMBANKMENT	200.00	CYD	\$7.75	\$1,550.00
EARTH EXCAVATION	1600.00	CYD	\$6.75	\$10,800.00
MODIFIED SUBBASE, CIP	800.00	CYD	\$21.50	\$13,760.00
DRIVEWAY, CONC., 6"	140.00	SYD	\$50.00	\$7,000.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$79,337.00
PROJECT CLEAN-UP	1.00	LS	\$793.37	\$793.37
MOBILIZATION	1.00	LS	\$3,966.85	\$3,966.85
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,933.70	\$89,143.05

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00	The existing sanitary sewer is a 8 inch reinforced concrete pipe that was slip lined in 2007 and will not be replaced at this time. Sanitary sewer manholes and laterals will be replaced. Confirm NASSCO manhole ratings as part of process.
SANITARY SEWER	100.00	LFT	\$40.00	\$4,000.00	
4' DIA. MANHOLE, COMPLETE WITH COVER	3.00	EA	\$2,200.00	\$6,600.00	
SANITARY LATERALS, COMPLETE	3.00	EA	\$1,700.00	\$5,100.00	
MISC.	1.00	LS	\$5,000.00	\$5,000.00	
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00	
DEWATERING	200.00	FT	\$17.00	\$3,400.00	
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00	
RESTORATION	50.00	SYD	\$9.25	\$462.50	
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00	
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00	
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00	
BITUMINOUS PAVING, 3"	360.00	TON	\$88.00	\$1,584.00	
AGGREGATE BASE, 4"	2200.00	SYD	\$5.80	\$638.00	
MODIFIED SUBBASE, CIP	800.00	CYD	\$21.50	\$860.00	
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00	
CONSTRUCTION SUBTOTAL				\$31,644.50	
PROJECT CLEAN-UP	1.00	LS	\$316.45	\$316.45	
MOBILIZATION	1.00	LS	\$1,582.23	\$1,582.23	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,164.45	\$35,555.76	

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00	SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00	SFT	\$13.25	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

Project:	Meeske Avenue Reconstruction Project	2021-8	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	100.00	LFT	\$48.00	\$4,800.00
VALVES	9.00	EA	\$1,850.00	\$16,650.00
FITTINGS	12.00	EA	\$475.00	\$5,700.00
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00
CONNECTIONS	4.00	EA	\$1,800.00	\$7,200.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	0.00	EA	\$2,000.00	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
BITUMINOUS PAVING, 3"	360.00	TON	\$88.00	\$1,584.00
AGGREGATE BASE, 4"	2200.00	SYD	\$5.80	\$638.00
MODIFIED SUBBASE, CIP	800.00	CYD	\$21.50	\$860.00
RESTORATION	50.00	SYD	\$9.25	\$462.50
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$49,194.50
PROJECT CLEAN-UP	1.00	LS	\$491.95	\$491.95
MOBILIZATION	1.00	LS	\$2,459.73	\$2,459.73
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,919.45	\$55,274.94

The fire flows and the piping servicing the properties along this section of Meeske Avenue are dependent on a 8 inch 1965 cast iron pipe. This pipe will not require replacement.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	3.00	EA	\$1,600.00	\$4,800.00
TEMPORARY WATER SERVICE	0.00	LFT	\$4.75	\$0.00
TEMPORARY WATER SERVICE CONNECTIONS	0.00	EA	\$165.00	\$0.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
CONSTRUCTION SUBTOTAL				\$5,725.00
PROJECT CLEAN-UP	1.00	LS	\$57.25	\$57.25
MOBILIZATION	1.00	LS	\$286.25	\$286.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$572.50	\$6,432.61

Confirm if lead in laterals as part of construction process and replace as necessary.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	700.00	LFT	\$40.00	\$28,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$3,000.00	\$12,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00	EA	\$2,075.00	\$16,600.00
TAP EXISTING DRAINAGE STRUCTURE	0.00	EA	\$400.00	\$0.00
CURB AND GUTTER	1500.00	LFT	\$22.00	\$33,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	360.00	TON	\$88.00	\$3,168.00
AGGREGATE BASE, 4"	2200.00	SYD	\$5.80	\$1,276.00
MODIFIED SUBBASE, CIP	800.00	CYD	\$21.50	\$1,720.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$103,689.00
PROJECT CLEAN-UP	1.00	LS	\$1,036.89	\$1,036.89
MOBILIZATION	1.00	LS	\$5,184.45	\$5,184.45
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$10,368.90	\$116,504.96

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$302,911.32

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Morgan Street Reconstruction Project	2021-9	By:	KMW	4/29/2019	SRF	DRWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	850.00	SYD	\$5.80	\$986.00
BITUMINOUS PAVING, 3"	150.00	TON	\$88.00	\$2,640.00
EMBANKMENT	100.00	CYD	\$7.75	\$775.00
EARTH EXCAVATION	550.00	CYD	\$6.75	\$3,712.50
MODIFIED SUBBASE, CIP	225.00	CYD	\$21.50	\$967.50
DRIVEWAY, CONC., 6"	100.00	SYD	\$50.00	\$5,000.00
RESTORATION	50.00	SYD	\$9.25	\$462.50
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$24,293.50</u>
PROJECT CLEAN-UP	1.00	LS	\$242.94	\$242.94
MOBILIZATION	1.00	LS	\$1,214.68	\$1,214.68
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$2,429.35	\$27,296.18

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	300.00	LFT	\$40.00	\$12,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	1.00	EA	\$2,200.00	\$2,200.00
SANITARY LATERALS, COMPLETE	2.00	EA	\$1,700.00	\$3,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
SIDEWALK REPLACEMENT	300.00	SFT	\$8.25	\$2,475.00
BITUMINOUS PAVING, 3"	150.00	TON	\$88.00	\$3,960.00
AGGREGATE BASE, 4"	850.00	SYD	\$5.80	\$1,479.00
MODIFIED SUBBASE, CIP	225.00	CYD	\$21.50	\$1,451.25
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$39,065.25</u>
PROJECT CLEAN-UP	1.00	LS	\$390.65	\$390.65
MOBILIZATION	1.00	LS	\$1,953.26	\$1,953.26
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,906.53	\$43,893.71

The existing sanitary sewer is a 8 inch 1908 clay pipe. This main will be replaced with 8 inch PVC piping. Sanitary sewer manholes and laterals will be replaced. Confirm NASSCO manhole ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	300.00	SFT	\$5.25	\$1,575.00
6" CONCRETE SIDEWALK	100.00	SFT	\$6.00	\$600.00
ADA SIDEWALK RAMP	100.00	SFT	\$13.25	\$1,325.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$4,425.00</u>
PROJECT CLEAN-UP	1.00	LS	\$44.25	\$44.25
MOBILIZATION	1.00	LS	\$221.25	\$221.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$442.50	\$4,971.93

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	Morgan Street Reconstruction Project	2021-9	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	400.00	LFT	\$48.00	\$19,200.00
VALVES	7.00	EA	\$1,850.00	\$12,950.00
FITTINGS	12.00	EA	\$475.00	\$5,700.00
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00
CONNECTIONS	2.00	EA	\$1,800.00	\$3,600.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	150.00	TON	\$88.00	\$3,960.00
AGGREGATE BASE, 4"	850.00	SYD	\$5.80	\$1,479.00
MODIFIED SUBBASE, CIP	225.00	CYD	\$21.50	\$1,451.25
RESTORATION	50.00	SYD	\$9.25	\$462.50
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$63,202.75
PROJECT CLEAN-UP	1.00	LS	\$632.03	\$632.03
MOBILIZATION	1.00	LS	\$3,160.14	\$3,160.14
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,320.28	\$71,014.61

Currently no water main exists along Morgan Street. To provide continuity and reliability to the water system an 8 inch D.I. piping will be installed to provide a loop. This will address pressure and water quality issues at the location.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	1.00	EA	\$1,600.00	\$1,600.00
TEMPORARY WATER SERVICE	0.00	LFT	\$4.75	\$0.00
TEMPORARY WATER SERVICE CONNECTIONS	1.00	EA	\$165.00	\$165.00
RESTORATION	50.00	SYD	\$9.25	\$462.50
SIDEWALK REPLACEMENT	100.00	SFT	\$8.25	\$825.00
CURB AND GUTTER	20.00	LFT	\$22.00	\$440.00
CONSTRUCTION SUBTOTAL				\$3,492.50
PROJECT CLEAN-UP	1.00	LS	\$34.93	\$34.93
MOBILIZATION	1.00	LS	\$174.63	\$174.63
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$349.25	\$3,924.17

Confirm if lead in laterals as part of construction process and replace as necessary.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	400.00	LFT	\$40.00	\$16,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	1.00	EA	\$3,000.00	\$3,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$2,075.00	\$8,300.00
TAP EXISTING DRAINAGE STRUCTURE	2.00	EA	\$400.00	\$800.00
CURB AND GUTTER	500.00	LFT	\$22.00	\$11,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	150.00	TON	\$88.00	\$2,640.00
AGGREGATE BASE, 4"	850.00	SYD	\$5.80	\$986.00
MODIFIED SUBBASE, CIP	225.00	CYD	\$21.50	\$967.50
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$53,468.50
PROJECT CLEAN-UP	1.00	LS	\$534.69	\$534.69
MOBILIZATION	1.00	LS	\$2,673.43	\$2,673.43
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,346.85	\$60,077.21

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$211,177.81

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Nicolet Boulevard Reconstruction Project	2021-10	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	3800.00	SYD	\$5.80	\$6,612.00
BITUMINOUS PAVING, 3"	635.00	TON	\$88.00	\$16,764.00
EMBANKMENT	1000.00	CYD	\$7.75	\$7,750.00
EARTH EXCAVATION	3800.00	CYD	\$6.75	\$25,650.00
MODIFIED SUBBASE, CIP	1420.00	CYD	\$21.50	\$9,159.00
DRIVEWAY, CONC., 6"	100.00	SYD	\$50.00	\$5,000.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$83,460.00</u>
PROJECT CLEAN-UP	1.00	LS	\$834.60	\$834.60
MOBILIZATION	1.00	LS	\$4,173.00	\$4,173.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$8,346.00	\$93,775.66

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	100.00	LFT	\$40.00	\$4,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	5.00	EA	\$2,200.00	\$11,000.00
SANITARY LATERALS, COMPLETE	4.00	EA	\$1,700.00	\$6,800.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
BITUMINOUS PAVING, 3"	635.00	TON	\$88.00	\$5,588.00
AGGREGATE BASE, 4"	3800.00	SYD	\$5.80	\$2,204.00
MODIFIED SUBBASE, CIP	1420.00	CYD	\$21.50	\$3,053.00
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$44,570.00</u>
PROJECT CLEAN-UP	1.00	LS	\$445.70	\$445.70
MOBILIZATION	1.00	LS	\$2,228.50	\$2,228.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,457.00	\$50,078.85

Part of the existing sanitary sewer was slip lined in 2013 and the remainder would be a candidate for a future slip lining project. Sanitary sewer manholes and laterals will be replaced as needed. Confirm NASSCO manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00	SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00	SFT	\$13.25	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$0.00</u>
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	Nicolet Boulevard Reconstruction Project	2021-10	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	1000.00	LFT	\$48.00	\$48,000.00
VALVES	12.00	EA	\$1,850.00	\$22,200.00
FITTINGS	20.00	EA	\$475.00	\$9,500.00
FIRE HYDRANTS	3.00	EA	\$4,300.00	\$12,900.00
CONNECTIONS	5.00	EA	\$1,800.00	\$9,000.00
CHECK VALVE	1.00	LS	\$25,000.00	\$25,000.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
BITUMINOUS PAVING, 3"	635.00	TON	\$88.00	\$16,764.00
AGGREGATE BASE, 4"	3800.00	SYD	\$5.80	\$6,612.00
MODIFIED SUBBASE, CIP	1420.00	CYD	\$21.50	\$9,159.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$170,135.00
PROJECT CLEAN-UP	1.00	LS	\$1,701.35	\$1,701.35
MOBILIZATION	1.00	LS	\$8,506.75	\$8,506.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$17,013.50	\$191,163.69

The piping servicing the residents along this section of Nicolet Boulevard is dependent on 6 inch 1957 and 1958 sand cast piping. The existing water main is not adequate to provide fire protection. This project will upsize the existing pipe to 8 inch D.I. piping which will improve fire flows, align with City standards, increase residential flows, and replace aged pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	4.00	EA	\$1,600.00	\$6,400.00
TEMPORARY WATER SERVICE	200.00	LFT	\$4.75	\$950.00
TEMPORARY WATER SERVICE CONNECTIONS	4.00	EA	\$165.00	\$660.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
CONSTRUCTION SUBTOTAL				\$8,935.00
PROJECT CLEAN-UP	1.00	LS	\$89.35	\$89.35
MOBILIZATION	1.00	LS	\$446.75	\$446.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$893.50	\$10,039.37

Confirm if lead in laterals as part of construction process and replace as necessary.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	600.00	LFT	\$40.00	\$24,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
30" RCP STORM SEWER	400.00	LFT	\$110.00	\$44,000.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	6.00	EA	\$3,000.00	\$18,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	14.00	EA	\$2,075.00	\$29,050.00
TAP EXISTING DRAINAGE STRUCTURE	3.00	EA	\$400.00	\$1,200.00
CURB AND GUTTER	2400.00	LFT	\$22.00	\$52,800.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	635.00	TON	\$88.00	\$16,764.00
AGGREGATE BASE, 4"	3800.00	SYD	\$5.80	\$6,612.00
MODIFIED SUBBASE, CIP	1420.00	CYD	\$21.50	\$9,159.00
RESTORATION	1000.00	SYD	\$9.25	\$9,250.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$217,835.00
PROJECT CLEAN-UP	1.00	LS	\$2,178.35	\$2,178.35
MOBILIZATION	1.00	LS	\$10,891.75	\$10,891.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$21,783.50	\$244,759.41

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$589,816.97

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project: Spruce Street Reconstruction Project	2021-12	By: KMW	4/29/2019	SRF	DRWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	1620.00	SYD	\$5.80	\$4,698.00
BITUMINOUS PAVING, 3"	270.00	TON	\$88.00	\$11,880.00
EMBANKMENT	100.00	CYD	\$7.75	\$775.00
EARTH EXCAVATION	1185.00	CYD	\$6.75	\$7,998.75
MODIFIED SUBBASE, CIP	592.00	CYD	\$21.50	\$6,364.00
DRIVEWAY, CONC., 6"	80.00	SYD	\$50.00	\$4,000.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$46,390.75
PROJECT CLEAN-UP	1.00	LS	\$463.91	\$463.91
MOBILIZATION	1.00	LS	\$2,319.54	\$2,319.54
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,639.08	\$52,124.65

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	0.00	LFT	\$40.00	\$0.00
4' DIA. MANHOLE, COMPLETE WITH COVER	0.00	EA	\$2,200.00	\$0.00
SANITARY LATERALS, COMPLETE	0.00	EA	\$1,700.00	\$0.00
MISC.	0.00	LS	\$5,000.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
BL&P CHARGES FOR HOLDING POLES	0.00	EA	\$2,000.00	\$0.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
BITUMINOUS PAVING, 3"	0.00	TON	\$88.00	\$0.00
AGGREGATE BASE, 4"	0.00	SYD	\$5.80	\$0.00
MODIFIED SUBBASE, CIP	0.00	CYD	\$21.50	\$0.00
TRAFFIC CONTROL	0.00	LS	\$4,000.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

No sanitary sewer piping exists on this corridor.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	900.00	SFT	\$5.25	\$4,725.00
6" CONCRETE SIDEWALK	200.00	SFT	\$6.00	\$1,200.00
ADA SIDEWALK RAMP	120.00	SFT	\$13.25	\$1,590.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
CONSTRUCTION SUBTOTAL				\$8,440.00
PROJECT CLEAN-UP	1.00	LS	\$84.40	\$84.40
MOBILIZATION	1.00	LS	\$422.00	\$422.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$844.00	\$9,483.18

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	Spruce Street Reconstruction Project	2021-12	By:	KMW	4/29/2019	SRF	DRWRP
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	500.00	LFT	\$48.00	\$24,000.00
VALVES	7.00	EA	\$1,850.00	\$12,950.00
FITTINGS	10.00	EA	\$475.00	\$4,750.00
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00
CONNECTIONS	2.00	EA	\$1,800.00	\$3,600.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	20.00	LFT	\$22.00	\$440.00
BITUMINOUS PAVING, 3"	270.00	TON	\$88.00	\$7,128.00
AGGREGATE BASE, 4"	1620.00	SYD	\$5.80	\$2,818.80
MODIFIED SUBBASE, CIP	592.00	CYD	\$21.50	\$3,818.40
RESTORATION	50.00	SYD	\$9.25	\$462.50
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$73,267.70
PROJECT CLEAN-UP	1.00	LS	\$732.68	\$732.68
MOBILIZATION	1.00	LS	\$3,663.39	\$3,663.39
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,326.77	\$82,323.59

The fire flows and the piping servicing the properties along this section of Spruce Street are dependent on a 6 inch 1948 sand cast iron pipe. This project will upsize the existing pipe to an 8 inch D.I. piping to improve fire flows, align with City standards, increase residential, and replace aged/failing pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	1.00	EA	\$1,600.00	\$1,600.00
TEMPORARY WATER SERVICE	100.00	LFT	\$4.75	\$475.00
TEMPORARY WATER SERVICE CONNECTIONS	1.00	EA	\$165.00	\$165.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	100.00	SFT	\$8.25	\$825.00
CURB AND GUTTER	20.00	LFT	\$22.00	\$440.00
CONSTRUCTION SUBTOTAL				\$4,430.00
PROJECT CLEAN-UP	1.00	LS	\$44.30	\$44.30
MOBILIZATION	1.00	LS	\$221.50	\$221.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$443.00	\$4,977.55

Confirm if lead in laterals as part of construction process as necessary.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	0.00	LFT	\$40.00	\$0.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	0.00	EA	\$3,000.00	\$0.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	0.00	EA	\$2,075.00	\$0.00
TAP EXISTING DRAINAGE STRUCTURE	0.00	EA	\$400.00	\$0.00
CURB AND GUTTER	1000.00	LFT	\$22.00	\$22,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	270.00	TON	\$88.00	\$4,752.00
AGGREGATE BASE, 4"	1620.00	SYD	\$5.80	\$1,879.20
MODIFIED SUBBASE, CIP	592.00	CYD	\$21.50	\$2,545.60
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$41,876.80
PROJECT CLEAN-UP	1.00	LS	\$418.77	\$418.77
MOBILIZATION	1.00	LS	\$2,093.84	\$2,093.84
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,187.68	\$47,052.77

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$195,961.74

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Spruce Street Reconstruction Project	2021-13	By:	KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	2000.00	SYD	\$5.80	\$2,320.00
BITUMINOUS PAVING, 3"	335.00	TON	\$88.00	\$5,896.00
EMBANKMENT	300.00	CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	1500.00	CYD	\$6.75	\$10,125.00
MODIFIED SUBBASE, CIP	750.00	CYD	\$21.50	\$3,225.00
DRIVEWAY, CONC., 6"	300.00	SYD	\$50.00	\$15,000.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$50,491.00
PROJECT CLEAN-UP	1.00	LS	\$504.91	\$504.91
MOBILIZATION	1.00	LS	\$2,524.55	\$2,524.55
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,049.10	\$56,731.69

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	600.00	LFT	\$40.00	\$24,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	2.00	EA	\$2,200.00	\$4,400.00
SANITARY LATERALS, COMPLETE	16.00	EA	\$1,700.00	\$27,200.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	20.00	CYD	\$100.00	\$2,000.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	160.00	LFT	\$22.00	\$3,520.00
SIDEWALK REPLACEMENT	800.00	SFT	\$8.25	\$6,600.00
BITUMINOUS PAVING, 3"	335.00	TON	\$88.00	\$8,844.00
AGGREGATE BASE, 4"	2000.00	SYD	\$5.80	\$3,480.00
MODIFIED SUBBASE, CIP	750.00	CYD	\$21.50	\$4,837.50
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$99,731.50
PROJECT CLEAN-UP	1.00	LS	\$997.32	\$997.32
MOBILIZATION	1.00	LS	\$4,986.58	\$4,986.58
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$9,973.15	\$112,058.31

The existing sanitary sewer is a 6 inch 1891 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. 595 D 596A has a structural rating of 5244. Confirm NASSCO pipe and manhole ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	200.00	SFT	\$5.25	\$1,050.00
6" CONCRETE SIDEWALK	200.00	SFT	\$6.00	\$1,200.00
ADA SIDEWALK RAMP	300.00	SFT	\$13.25	\$3,975.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
CONSTRUCTION SUBTOTAL				\$7,150.00
PROJECT CLEAN-UP	1.00	LS	\$71.50	\$71.50
MOBILIZATION	1.00	LS	\$357.50	\$357.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$715.00	\$8,033.74

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	Spruce Street Reconstruction Project	2021-13	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	750.00	LFT	\$48.00	\$36,000.00
VALVES	8.00	EA	\$1,850.00	\$14,800.00
FITTINGS	12.00	EA	\$475.00	\$5,700.00
FIRE HYDRANTS	2.00	EA	\$4,300.00	\$8,600.00
CONNECTIONS	4.00	EA	\$1,800.00	\$7,200.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	200.00	FT	\$6.00	\$1,200.00
ROCK EXCAVATION	10.00	CYD	\$100.00	\$1,000.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	335.00	TON	\$88.00	\$8,844.00
AGGREGATE BASE, 4"	2000.00	SYD	\$5.80	\$3,480.00
MODIFIED SUBBASE, CIP	750.00	CYD	\$21.50	\$4,837.50
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$104,686.50
PROJECT CLEAN-UP	1.00	LS	\$1,046.87	\$1,046.87
MOBILIZATION	1.00	LS	\$5,234.33	\$5,234.33
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$10,468.65	\$117,625.75

The fire flows and the piping servicing the properties along this section of Spruce Street are dependent on a 6 inch 1887 sand cast iron pipe. This project will upsized the existing pipe to an 8 inch D.I. piping to improve fire flows, align with City standards, increase residential, and replace aged/failing pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	16.00	EA	\$1,600.00	\$25,600.00
TEMPORARY WATER SERVICE	900.00	LFT	\$4.75	\$4,275.00
TEMPORARY WATER SERVICE CONNECTIONS	16.00	EA	\$165.00	\$2,640.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SIDEWALK REPLACEMENT	800.00	SFT	\$8.25	\$6,600.00
CURB AND GUTTER	160.00	LFT	\$22.00	\$3,520.00
CONSTRUCTION SUBTOTAL				\$44,485.00
PROJECT CLEAN-UP	1.00	LS	\$444.85	\$444.85
MOBILIZATION	1.00	LS	\$2,224.25	\$2,224.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,448.50	\$49,983.35

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	100.00	LFT	\$40.00	\$4,000.00
15" RCP STORM SEWER	600.00	LFT	\$46.00	\$27,600.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	2.00	EA	\$3,000.00	\$6,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$2,075.00	\$8,300.00
TAP EXISTING DRAINAGE STRUCTURE	4.00	EA	\$400.00	\$1,600.00
CURB AND GUTTER	1200.00	LFT	\$22.00	\$26,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	335.00	TON	\$88.00	\$5,896.00
AGGREGATE BASE, 4"	2000.00	SYD	\$5.80	\$2,320.00
MODIFIED SUBBASE, CIP	759.00	CYD	\$21.50	\$3,263.70
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$94,229.70
PROJECT CLEAN-UP	1.00	LS	\$942.30	\$942.30
MOBILIZATION	1.00	LS	\$4,711.49	\$4,711.49
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$9,422.97	\$105,876.49

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$450,309.33

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project: Wright Street Reconstruction Project	2021-14	By: KMW	4/29/2019	SRF	DRWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System: M	(Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	5400.00	SYD	\$5.80	\$9,396.00
BITUMINOUS PAVING, 5"	1510.00	TON	\$88.00	\$39,864.00
EMBANKMENT	500.00	CYD	\$7.75	\$3,875.00
EARTH EXCAVATION	4000.00	CYD	\$6.75	\$27,000.00
MODIFIED SUBBASE, CIP	2000.00	CYD	\$21.50	\$12,900.00
DRIVEWAY, CONC., 6"	0.00	SYD	\$50.00	\$0.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	200.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$103,710.00
PROJECT CLEAN-UP	1.00	LS	\$1,037.10	\$1,037.10
MOBILIZATION	1.00	LS	\$5,185.50	\$5,185.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$10,371.00	\$116,528.56

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	200.00	LFT	\$40.00	\$8,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	8.00	EA	\$2,200.00	\$17,600.00
SANITARY LATERALS, COMPLETE	6.00	EA	\$1,700.00	\$10,200.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	200.00	FT	\$17.00	\$3,400.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
BITUMINOUS PAVING, 5"	1510.00	TON	\$88.00	\$26,576.00
AGGREGATE BASE, 4"	5400.00	SYD	\$5.80	\$6,264.00
MODIFIED SUBBASE, CIP	2000.00	CYD	\$21.50	\$8,600.00
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$96,765.00
PROJECT CLEAN-UP	1.00	LS	\$967.65	\$967.65
MOBILIZATION	1.00	LS	\$4,838.25	\$4,838.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$9,676.50	\$108,725.15

This section of Wright Street has parallel sanitary sewer lines. The 15 inch was slip lined in 2012 and will not require replacement. The 12 inch 1950 clay pipe would be a good candidate for a future slip lining project. The sanitary sewer manholes and laterals will be replaced. Confirm NASSCO manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00	SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00	SFT	\$13.25	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	Wright Street Reconstruction Project	2021-14	By:	KMW	4/29/2019	SRF	DRWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	1100.00	LFT	\$65.00	\$71,500.00
VALVES	7.00	EA	\$1,850.00	\$12,950.00
FITTINGS	20.00	EA	\$475.00	\$9,500.00
FIRE HYDRANTS	2.00	EA	\$4,300.00	\$8,600.00
CONNECTIONS	4.00	EA	\$1,800.00	\$7,200.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	400.00	FT	\$6.00	\$2,400.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
BITUMINOUS PAVING, 5"	1510.00	TON	\$88.00	\$39,864.00
AGGREGATE BASE, 4"	5400.00	SYD	\$5.80	\$9,396.00
MODIFIED SUBBASE, CIP	2000.00	CYD	\$21.50	\$12,900.00
RESTORATION	1000.00	SYD	\$9.25	\$9,250.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$194,560.00
PROJECT CLEAN-UP	1.00	LS	\$1,945.60	\$1,945.60
MOBILIZATION	1.00	LS	\$9,728.00	\$9,728.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$19,456.00	\$218,607.62

The fire flows and the piping servicing the properties along this section of Wright Street are dependent on a 6 inch 1912 sand cast iron pipe. This project will upsize the existing pipe to 12 inch D.I. piping per the City's master water plan. This upgrade will improve fire flows, increase residential/business flows, and replace aged pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	6.00	EA	\$1,600.00	\$9,600.00
TEMPORARY WATER SERVICE	500.00	LFT	\$4.75	\$2,375.00
TEMPORARY WATER SERVICE CONNECTIONS	6.00	EA	\$165.00	\$990.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00
CONSTRUCTION SUBTOTAL				\$16,090.00
PROJECT CLEAN-UP	1.00	LS	\$160.90	\$160.90
MOBILIZATION	1.00	LS	\$804.50	\$804.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,609.00	\$18,078.72

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	1100.00	LFT	\$40.00	\$44,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$3,000.00	\$12,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00	EA	\$2,075.00	\$16,600.00
TAP EXISTING DRAINAGE STRUCTURE	1.00	EA	\$400.00	\$400.00
CURB AND GUTTER	2000.00	LFT	\$22.00	\$44,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 5"	1510.00	TON	\$88.00	\$26,576.00
AGGREGATE BASE, 4"	5400.00	SYD	\$5.80	\$6,264.00
MODIFIED SUBBASE, CIP	2000.00	CYD	\$21.50	\$8,600.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$168,215.00
PROJECT CLEAN-UP	1.00	LS	\$1,682.15	\$1,682.15
MOBILIZATION	1.00	LS	\$8,410.75	\$8,410.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$16,821.50	\$189,006.37

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$650,946.42

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Fitch Avenue Reconstruction Project	2021-16	By:	KMW	4/29/2019	SRF	DRWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	1250.00	SYD	\$5.80	\$5,075.00
BITUMINOUS PAVING, 3"	210.00	TON	\$88.00	\$12,936.00
EMBANKMENT	900.00	CYD	\$7.75	\$6,975.00
EARTH EXCAVATION	1800.00	CYD	\$6.75	\$12,150.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$6,772.50
DRIVEWAY, CONC., 6"	150.00	SYD	\$50.00	\$7,500.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$62,083.50
PROJECT CLEAN-UP	1.00	LS	\$620.84	\$620.84
MOBILIZATION	1.00	LS	\$3,104.18	\$3,104.18
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,208.35	\$69,757.02

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	50.00	LFT	\$40.00	\$2,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	1.00	EA	\$2,200.00	\$2,200.00
SANITARY LATERALS, COMPLETE	5.00	EA	\$1,700.00	\$8,500.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	400.00	FT	\$17.00	\$6,800.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
BL&P CHARGES FOR HOLDING POLES	0.00	EA	\$2,000.00	\$0.00
CURB AND GUTTER	1.00	LFT	\$22.00	\$22.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
BITUMINOUS PAVING, 3"	210.00	TON	\$88.00	\$1,848.00
AGGREGATE BASE, 4"	1250.00	SYD	\$5.80	\$725.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$967.50
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$32,987.50
PROJECT CLEAN-UP	1.00	LS	\$329.88	\$329.88
MOBILIZATION	1.00	LS	\$1,649.38	\$1,649.38
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,298.75	\$37,064.76

The existing sanitary sewer is a 8 inch 1946 clay pipe and will not be replaced at this time. All sanitary sewer manholes and laterals will be replaced. Confirm NASSCO manhole ratings.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	2200.00	SFT	\$5.25	\$11,550.00
6" CONCRETE SIDEWALK	300.00	SFT	\$6.00	\$1,800.00
ADA SIDEWALK RAMP	50.00	SFT	\$13.25	\$662.50
RESTORATION	50.00	SYD	\$9.25	\$462.50
CONSTRUCTION SUBTOTAL				\$14,475.00
PROJECT CLEAN-UP	1.00	LS	\$144.75	\$144.75
MOBILIZATION	1.00	LS	\$723.75	\$723.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,447.50	\$16,264.11

BUDGET ESTIMATE FOR FISCAL YEAR: 2021

Eligibility Notes

Project:	Fitch Avenue Reconstruction Project	2021-16	By:	KMW	4/29/2019	SRF	DRWRP
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	0.00	LFT	\$48.00	\$0.00
VALVES	4.00	EA	\$1,850.00	\$7,400.00
FITTINGS	10.00	EA	\$475.00	\$4,750.00
FIRE HYDRANTS	0.00	EA	\$4,300.00	\$0.00
CONNECTIONS	3.00	EA	\$1,800.00	\$5,400.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	0.00	LFT	\$22.00	\$0.00
BITUMINOUS PAVING, 3"	210.00	TON	\$88.00	\$1,848.00
AGGREGATE BASE, 4"	1250.00	SYD	\$5.80	\$725.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$967.50
RESTORATION	0.00	SYD	\$9.25	\$0.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$30,090.50
PROJECT CLEAN-UP	1.00	LS	\$300.91	\$300.91
MOBILIZATION	1.00	LS	\$1,504.53	\$1,504.53
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,009.05	\$33,809.69

The fire flows and the piping servicing the properties along this section of Fitch Avenue are dependent on a 6 inch 1980 ductile iron pipe. This pipe will not require replacement.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	5.00	EA	\$1,600.00	\$8,000.00
TEMPORARY WATER SERVICE	0.00	LFT	\$4.75	\$0.00
TEMPORARY WATER SERVICE CONNECTIONS	5.00	EA	\$165.00	\$825.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
CONSTRUCTION SUBTOTAL				\$10,850.00
PROJECT CLEAN-UP	1.00	LS	\$108.50	\$108.50
MOBILIZATION	1.00	LS	\$542.50	\$542.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,085.00	\$12,191.06

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	0.00	LFT	\$40.00	\$0.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	2.00	EA	\$3,000.00	\$6,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$2,075.00	\$8,300.00
TAP EXISTING DRAINAGE STRUCTURE	2.00	EA	\$400.00	\$800.00
CURB AND GUTTER	700.00	LFT	\$22.00	\$15,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	210.00	TON	\$88.00	\$1,848.00
AGGREGATE BASE, 4"	1250.00	SYD	\$5.80	\$725.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$967.50
RESTORATION	50.00	SYD	\$9.25	\$462.50
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$41,503.00
PROJECT CLEAN-UP	1.00	LS	\$415.03	\$415.03
MOBILIZATION	1.00	LS	\$2,075.15	\$2,075.15
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,150.30	\$46,632.77

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$215,719.40

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Cedar Sreet Reconstruction Project	2022-1	By:	KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$1,392.00
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$3,520.00
EMBANKMENT	300.00	CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	900.00	CYD	\$6.75	\$6,075.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$1,935.00
DRIVEWAY, CONC., 6"	100.00	SYD	\$50.00	\$5,000.00
RESTORATION	50.00	SYD	\$9.25	\$462.50
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$30,459.50</u>
PROJECT CLEAN-UP	1.00	LS	\$304.60	\$304.60
MOBILIZATION	1.00	LS	\$1,522.98	\$1,522.98
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,045.95	\$34,224.29

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	270.00	LFT	\$40.00	\$10,800.00
4' DIA. MANHOLE, COMPLETE WITH COVER	2.00	EA	\$2,200.00	\$4,400.00
SANITARY LATERALS, COMPLETE	2.00	EA	\$1,700.00	\$3,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	200.00	FT	\$17.00	\$3,400.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
SIDEWALK REPLACEMENT	250.00	SFT	\$8.25	\$2,062.50
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$5,280.00
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$2,088.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$2,902.50
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$47,358.00</u>
PROJECT CLEAN-UP	1.00	LS	\$473.58	\$473.58
MOBILIZATION	1.00	LS	\$2,367.90	\$2,367.90
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,735.80	\$53,211.45

The existing sanitary sewer is a 6 inch 1922 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Confirm pipe and manhole NASSCO ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	200.00	SFT	\$5.25	\$1,050.00
6" CONCRETE SIDEWALK	100.00	SFT	\$6.00	\$600.00
ADA SIDEWALK RAMP	100.00	SFT	\$13.25	\$1,325.00
RESTORATION	50.00	SYD	\$9.25	\$462.50
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$3,437.50</u>
PROJECT CLEAN-UP	1.00	LS	\$34.38	\$34.38
MOBILIZATION	1.00	LS	\$171.88	\$171.88
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$343.75	\$3,862.38

BUDGET ESTIMATE FOR FISCAL YEAR: 2022 - 2024

Eligibility Notes

Project:	Cedar Street Reconstruction Project	2022-1	By:	KMW	4/29/2019	SRF	DWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	400.00	LFT	\$48.00	\$19,200.00
VALVES	4.00	EA	\$1,850.00	\$7,400.00
FITTINGS	10.00	EA	\$475.00	\$4,750.00
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00
CONNECTIONS	3.00	EA	\$1,800.00	\$5,400.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	100.00	FT	\$6.00	\$600.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	1.00	EA	\$2,000.00	\$2,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$5,280.00
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$2,088.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$2,902.50
RESTORATION	50.00	SYD	\$9.25	\$462.50
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$62,483.00
PROJECT CLEAN-UP	1.00	LS	\$624.83	\$624.83
MOBILIZATION	1.00	LS	\$3,124.15	\$3,124.15
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,248.30	\$70,205.90

The fire flows and the piping servicing the properties along this section of Cedar Street are dependent on a 4 inch 1913 sand cast iron pipe. This project will upsize the existing pipe to an 8 inch D.I. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	2.00	EA	\$1,600.00	\$3,200.00
TEMPORARY WATER SERVICE	200.00	LFT	\$4.75	\$950.00
TEMPORARY WATER SERVICE CONNECTIONS	2.00	EA	\$165.00	\$330.00
RESTORATION	50.00	SYD	\$9.25	\$462.50
SIDEWALK REPLACEMENT	250.00	SFT	\$8.25	\$2,062.50
CURB AND GUTTER	59.00	LFT	\$22.00	\$1,298.00
CONSTRUCTION SUBTOTAL				\$8,303.00
PROJECT CLEAN-UP	1.00	LS	\$83.03	\$83.03
MOBILIZATION	1.00	LS	\$415.15	\$415.15
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$830.30	\$9,329.25

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	100.00	LFT	\$40.00	\$4,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	2.00	EA	\$3,000.00	\$6,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$2,075.00	\$8,300.00
TAP EXISTING DRAINAGE STRUCTURE	4.00	EA	\$400.00	\$1,600.00
CURB AND GUTTER	650.00	LFT	\$22.00	\$14,300.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$3,520.00
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$1,392.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$1,935.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$48,972.00
PROJECT CLEAN-UP	1.00	LS	\$489.72	\$489.72
MOBILIZATION	1.00	LS	\$2,448.60	\$2,448.60
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,897.20	\$55,024.94

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$225,858.21

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Division Street Reconstruction Project	2022-2	By:	KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	1800.00	SYD	\$5.80	\$2,088.00
BITUMINOUS PAVING, 3"	300.00	TON	\$88.00	\$5,280.00
EMBANKMENT	400.00	CYD	\$7.75	\$3,100.00
EARTH EXCAVATION	1500.00	CYD	\$6.75	\$10,125.00
MODIFIED SUBBASE, CIP	670.00	CYD	\$21.50	\$2,881.00
DRIVEWAY, CONC., 6"	200.00	SYD	\$50.00	\$10,000.00
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$46,924.00
PROJECT CLEAN-UP	1.00	LS	\$469.24	\$469.24
MOBILIZATION	1.00	LS	\$2,346.20	\$2,346.20
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,692.40	\$52,723.81

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00	The existing sanitary sewer is 8 inch 1908 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Segment from MH 218 to 227 has structural index score of 5100. Confirm pipe and manhole NASSCO ratings as part of process.
SANITARY SEWER	600.00	LFT	\$40.00	\$24,000.00	
4' DIA. MANHOLE, COMPLETE WITH COVER	4.00	EA	\$2,200.00	\$8,800.00	
SANITARY LATERALS, COMPLETE	4.00	EA	\$1,700.00	\$6,800.00	
MISC.	1.00	LS	\$5,000.00	\$5,000.00	
ROCK EXCAVATION	20.00	CYD	\$100.00	\$2,000.00	
DEWATERING	0.00	FT	\$17.00	\$0.00	
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00	
RESTORATION	100.00	SYD	\$9.25	\$925.00	
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00	
SIDEWALK REPLACEMENT	300.00	SFT	\$8.25	\$2,475.00	
BITUMINOUS PAVING, 3"	300.00	TON	\$88.00	\$7,920.00	
AGGREGATE BASE, 4"	1800.00	SYD	\$5.80	\$3,132.00	
MODIFIED SUBBASE, CIP	670.00	CYD	\$21.50	\$4,321.50	
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00	
CONSTRUCTION SUBTOTAL				\$75,573.50	
PROJECT CLEAN-UP	1.00	LS	\$755.74	\$755.74	
MOBILIZATION	1.00	LS	\$3,778.68	\$3,778.68	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,557.35	\$84,914.38	

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	2900.00	SFT	\$5.25	\$15,225.00
6" CONCRETE SIDEWALK	300.00	SFT	\$6.00	\$1,800.00
ADA SIDEWALK RAMP	200.00	SFT	\$13.25	\$2,650.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
CONSTRUCTION SUBTOTAL				\$20,600.00
PROJECT CLEAN-UP	1.00	LS	\$206.00	\$206.00
MOBILIZATION	1.00	LS	\$1,030.00	\$1,030.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$2,060.00	\$23,146.16

4. WATERMAIN CONSTRUCTION

BUDGET ESTIMATE FOR FISCAL YEAR:		2022 - 2024	Eligibility Notes				
Project:	Division Street Reconstruction Project	2022-2	By:	KMW	4/29/2019	SRF	DWRF
EMPLOYEE ESTIMATE			LS	\$0.00	\$0.00		
WATER MAIN	600.00		LFT	\$48.00	\$28,800.00		
VALVES	4.00		EA	\$1,850.00	\$7,400.00		The fire flows and the piping servicing the properties along this section of Division Street are dependent on a 4 inch 1951 sand cast iron pipe. This project will upsize the existing pipe to an 8 inch D.I. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe.
FITTINGS	15.00		EA	\$475.00	\$7,125.00		
FIRE HYDRANTS	1.00		EA	\$4,300.00	\$4,300.00		
CONNECTIONS	5.00		EA	\$1,800.00	\$9,000.00		
CHECK VALVE	0.00		LS	\$25,000.00	\$0.00		
MISC	1.00		LS	\$5,000.00	\$5,000.00		
WATER MAIN REMOVE	400.00		FT	\$6.00	\$2,400.00		
ROCK EXCAVATION	20.00		CYD	\$100.00	\$2,000.00		
BL&P CHARGES FOR HOLDING POLES	2.00		EA	\$2,000.00	\$4,000.00		
CURB AND GUTTER	50.00		LFT	\$22.00	\$1,100.00		
BITUMINOUS PAVING, 3"	300.00		TON	\$88.00	\$7,920.00		
AGGREGATE BASE, 4"	1800.00		SYD	\$5.80	\$3,132.00		
MODIFIED SUBBASE, CIP	670.00		CYD	\$21.50	\$4,321.50		
RESTORATION	100.00		SYD	\$9.25	\$925.00		
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00		
<u>CONSTRUCTION SUBTOTAL</u>					<u>\$89,423.50</u>		
PROJECT CLEAN-UP	1.00	LS		\$894.24	\$894.24		
MOBILIZATION	1.00	LS		\$4,471.18	\$4,471.18		
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		\$8,942.35	\$100,476.24		

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	4.00	EA	\$1,600.00	\$6,400.00
TEMPORARY WATER SERVICE	500.00	LFT	\$4.75	\$2,375.00
TEMPORARY WATER SERVICE CONNECTIONS	4.00	EA	\$165.00	\$660.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	0.00	SFT	\$8.25	\$0.00
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$12,560.00</u>
PROJECT CLEAN-UP	1.00	LS	\$125.60	\$125.60
MOBILIZATION	1.00	LS	\$628.00	\$628.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,256.00	\$14,112.42

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	600.00	LFT	\$40.00	\$24,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$3,000.00	\$12,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	10.00	EA	\$2,075.00	\$20,750.00
TAP EXISTING DRAINAGE STRUCTURE	1.00	EA	\$400.00	\$400.00
CURB AND GUTTER	1700.00	LFT	\$22.00	\$37,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	300.00	TON	\$88.00	\$10,560.00
AGGREGATE BASE, 4"	1800.00	SYD	\$5.80	\$4,118.00
MODIFIED SUBBASE, CIP	670.00	CYD	\$21.50	\$5,389.00
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$125,317.00</u>
PROJECT CLEAN-UP	1.00	LS	\$1,253.17	\$1,253.17
MOBILIZATION	1.00	LS	\$6,265.85	\$6,265.85
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$12,531.70	\$140,806.18

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$0.00</u>
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$416,179.19

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
<u>SEWER SYSTEM LAND ACQUISITION</u>	0	AC	<u>\$17,500</u>	<u>\$0.00</u>
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

\$530,159

Project:	Division Street Reconstruction Project	2022-3	By:	KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	6400.00	SYD	\$5.80	\$11,136.00
BITUMINOUS PAVING, 3"	1075.00	TON	\$88.00	\$28,380.00
EMBANKMENT	500.00	CYD	\$7.75	\$3,875.00
EARTH EXCAVATION	4625.00	CYD	\$6.75	\$31,218.75
MODIFIED SUBBASE, CIP	2310.00	CYD	\$21.50	\$14,899.50
DRIVEWAY, CONC., 6"	200.00	SYD	\$50.00	\$10,000.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$110,184.25</u>
PROJECT CLEAN-UP	1.00	LS	\$1,101.84	\$1,101.84
MOBILIZATION	1.00	LS	\$5,509.21	\$5,509.21
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$11,018.43	\$123,803.02

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	400.00	LFT	\$40.00	\$16,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	6.00	EA	\$2,200.00	\$13,200.00
SANITARY LATERALS, COMPLETE	12.00	EA	\$1,700.00	\$20,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	400.00	FT	\$17.00	\$6,800.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	120.00	LFT	\$22.00	\$2,640.00
SIDEWALK REPLACEMENT	640.00	SFT	\$8.25	\$5,280.00
BITUMINOUS PAVING, 3"	1075.00	TON	\$88.00	\$18,920.00
AGGREGATE BASE, 4"	6400.00	SYD	\$5.80	\$7,424.00
MODIFIED SUBBASE, CIP	2310.00	CYD	\$21.50	\$9,933.00
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$114,522.00</u>
PROJECT CLEAN-UP	1.00	LS	\$1,145.22	\$1,145.22
MOBILIZATION	1.00	LS	\$5,726.10	\$5,726.10
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$11,452.20	\$128,676.92

Part of the existing sanitary sewer was slip lined in 2012 and will not require replacement. The remaining 6 inch 1901 clay pipe will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Segment from MH 143 to 143A has index rating of 5136. Confirm pipe and manhole NASSCO ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	4000.00	SFT	\$5.25	\$21,000.00
6" CONCRETE SIDEWALK	1000.00	SFT	\$6.00	\$6,000.00
ADA SIDEWALK RAMP	200.00	SFT	\$13.25	\$2,650.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$32,425.00</u>
PROJECT CLEAN-UP	1.00	LS	\$324.25	\$324.25
MOBILIZATION	1.00	LS	\$1,621.25	\$1,621.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,242.50	\$36,432.73

BUDGET ESTIMATE FOR FISCAL YEAR: 2022 - 2024

Eligibility Notes

Project:	Division Street Reconstruction Project	2022-3	By:	KMW	4/29/2019	SRF	DWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	1500.00	LFT	\$48.00	\$72,000.00
VALVES	15.00	EA	\$1,850.00	\$27,750.00
FITTINGS	20.00	EA	\$475.00	\$9,500.00
FIRE HYDRANTS	2.00	EA	\$4,300.00	\$8,600.00
CONNECTIONS	6.00	EA	\$1,800.00	\$10,800.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	500.00	FT	\$6.00	\$3,000.00
ROCK EXCAVATION	50.00	CYD	\$100.00	\$5,000.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	1075.00	TON	\$88.00	\$28,380.00
AGGREGATE BASE, 4"	6400.00	SYD	\$5.80	\$11,136.00
MODIFIED SUBBASE, CIP	2310.00	CYD	\$21.50	\$14,899.50
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$204,090.50
PROJECT CLEAN-UP	1.00	LS	\$2,040.91	\$2,040.91
MOBILIZATION	1.00	LS	\$10,204.53	\$10,204.53
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$20,409.05	\$229,316.09

The fire flows and the piping servicing the properties along this section of Division Street are dependent on a 4 inch 1901, 6 inch 1886, and 6 inch 1959 sand cast iron pipe. This project will upsize the existing pipe to 8 inch D.I. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	12.00	EA	\$1,600.00	\$19,200.00
TEMPORARY WATER SERVICE	800.00	LFT	\$4.75	\$3,800.00
TEMPORARY WATER SERVICE CONNECTIONS	12.00	EA	\$165.00	\$1,980.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	640.00	SFT	\$8.25	\$5,280.00
CURB AND GUTTER	120.00	LFT	\$22.00	\$2,640.00
CONSTRUCTION SUBTOTAL				\$33,825.00
PROJECT CLEAN-UP	1.00	LS	\$338.25	\$338.25
MOBILIZATION	1.00	LS	\$1,691.25	\$1,691.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,382.50	\$38,005.77

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	600.00	LFT	\$40.00	\$24,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	6.00	EA	\$3,000.00	\$18,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	12.00	EA	\$2,075.00	\$24,900.00
TAP EXISTING DRAINAGE STRUCTURE	2.00	EA	\$400.00	\$800.00
CURB AND GUTTER	3000.00	LFT	\$22.00	\$66,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	1075.00	TON	\$88.00	\$18,920.00
AGGREGATE BASE, 4"	6400.00	SYD	\$5.80	\$7,424.00
MODIFIED SUBBASE, CIP	2310.00	CYD	\$21.50	\$9,933.00
RESTORATION	1500.00	SYD	\$9.25	\$13,875.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$190,852.00
PROJECT CLEAN-UP	1.00	LS	\$1,908.52	\$1,908.52
MOBILIZATION	1.00	LS	\$9,542.60	\$9,542.60
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$19,085.20	\$214,441.31

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$770,675.84

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Fern Place Reconstruction Project	2022-4	By:	KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	1335.00	SYD	\$5.80	\$3,097.20
BITUMINOUS PAVING, 3"	225.00	TON	\$88.00	\$7,920.00
EMBANKMENT	100.00	CYD	\$7.75	\$775.00
EARTH EXCAVATION	1000.00	CYD	\$6.75	\$6,750.00
MODIFIED SUBBASE, CIP	500.00	CYD	\$21.50	\$4,300.00
DRIVEWAY, CONC., 6"	100.00	SYD	\$50.00	\$5,000.00
RESTORATION	50.00	SYD	\$9.25	\$462.50
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$38,054.70</u>
PROJECT CLEAN-UP	1.00	LS	\$380.55	\$380.55
MOBILIZATION	1.00	LS	\$1,902.74	\$1,902.74
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,805.47	\$42,758.26

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00	The piping servicing the sanitary sewer was slip lined in 2006 and will not replacement. Manhole structures and laterals that require replacement will be done at this time. Confirm manhole NASSCO ratings as part of process.
SANITARY SEWER	100.00	LFT	\$40.00	\$4,000.00	
4' DIA. MANHOLE, COMPLETE WITH COVER	5.00	EA	\$2,200.00	\$11,000.00	
SANITARY LATERALS, COMPLETE	4.00	EA	\$1,700.00	\$6,800.00	
MISC.	1.00	LS	\$5,000.00	\$5,000.00	
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00	
DEWATERING	200.00	FT	\$17.00	\$3,400.00	
PUMP & BYPASS	1.00	LS	\$5,000.00	\$5,000.00	
RESTORATION	100.00	SYD	\$9.25	\$925.00	
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00	
SIDEWALK REPLACEMENT	250.00	SFT	\$8.25	\$2,062.50	
BITUMINOUS PAVING, 3"	225.00	TON	\$88.00	\$1,980.00	
AGGREGATE BASE, 4"	1335.00	SYD	\$5.80	\$774.30	
MODIFIED SUBBASE, CIP	500.00	CYD	\$21.50	\$1,075.00	
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00	
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$51,116.80</u>	
PROJECT CLEAN-UP	1.00	LS	\$511.17	\$511.17	
MOBILIZATION	1.00	LS	\$2,555.84	\$2,555.84	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,111.68	\$57,434.84	

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	1700.00	SFT	\$5.25	\$8,925.00
6" CONCRETE SIDEWALK	300.00	SFT	\$6.00	\$1,800.00
ADA SIDEWALK RAMP	50.00	SFT	\$13.25	\$662.50
RESTORATION	600.00	SYD	\$9.25	\$5,550.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$16,937.50</u>
PROJECT CLEAN-UP	1.00	LS	\$169.38	\$169.38
MOBILIZATION	1.00	LS	\$846.88	\$846.88
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,693.75	\$19,030.98

BUDGET ESTIMATE FOR FISCAL YEAR: 2022 - 2024

Eligibility Notes

Project:	Fern Place Reconstruction Project	2022-4	By:	KMW	4/29/2019	SRF	DWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	400.00	LFT	\$48.00	\$19,200.00
VALVES	3.00	EA	\$1,850.00	\$5,550.00
FITTINGS	10.00	EA	\$475.00	\$4,750.00
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00
CONNECTIONS	2.00	EA	\$1,800.00	\$3,600.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	100.00	FT	\$6.00	\$600.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	225.00	TON	\$88.00	\$5,940.00
AGGREGATE BASE, 4"	1335.00	SYD	\$5.80	\$2,322.90
MODIFIED SUBBASE, CIP	500.00	CYD	\$21.50	\$3,225.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$62,512.90
PROJECT CLEAN-UP	1.00	LS	\$625.13	\$625.13
MOBILIZATION	1.00	LS	\$3,125.65	\$3,125.65
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,251.29	\$70,239.49

The water main servicing the residents along this section of Fern Place are dependent on 4 inch 1910 cast iron piping. This project will upsize the existing pipe to an 8 inch D.I.P. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe. All water services will be replaced.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	4.00	EA	\$1,600.00	\$6,400.00
TEMPORARY WATER SERVICE	300.00	LFT	\$4.75	\$1,425.00
TEMPORARY WATER SERVICE CONNECTIONS	4.00	EA	\$165.00	\$660.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
SIDEWALK REPLACEMENT	250.00	SFT	\$8.25	\$2,062.50
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
CONSTRUCTION SUBTOTAL				\$12,572.50
PROJECT CLEAN-UP	1.00	LS	\$125.73	\$125.73
MOBILIZATION	1.00	LS	\$628.63	\$628.63
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,257.25	\$14,126.46

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	200.00	LFT	\$40.00	\$8,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$3,000.00	\$12,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	12.00	EA	\$2,075.00	\$24,900.00
TAP EXISTING DRAINAGE STRUCTURE	4.00	EA	\$400.00	\$1,600.00
CURB AND GUTTER	700.00	LFT	\$22.00	\$15,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	225.00	TON	\$88.00	\$3,960.00
AGGREGATE BASE, 4"	1335.00	SYD	\$5.80	\$1,548.60
MODIFIED SUBBASE, CIP	500.00	CYD	\$21.50	\$2,150.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$77,483.60
PROJECT CLEAN-UP	1.00	LS	\$774.84	\$774.84
MOBILIZATION	1.00	LS	\$3,874.18	\$3,874.18
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,748.36	\$87,060.57

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$290,650.60

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Oak Street Reconstruction Project	2022-5	By:	KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	2700.00	SYD	\$5.80	\$3,132.00
BITUMINOUS PAVING, 3"	450.00	TON	\$88.00	\$7,920.00
EMBANKMENT	300.00	CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	2000.00	CYD	\$6.75	\$13,500.00
MODIFIED SUBBASE, CIP	1000.00	CYD	\$21.50	\$4,300.00
DRIVEWAY, CONC., 6"	450.00	SYD	\$50.00	\$22,500.00
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$67,127.00
PROJECT CLEAN-UP	1.00	LS	\$671.27	\$671.27
MOBILIZATION	1.00	LS	\$3,356.35	\$3,356.35
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,712.70	\$75,423.90

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	800.00	LFT	\$40.00	\$32,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	3.00	EA	\$2,200.00	\$6,600.00
SANITARY LATERALS, COMPLETE	20.00	EA	\$1,700.00	\$34,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	100.00	CYD	\$100.00	\$10,000.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	200.00	LFT	\$22.00	\$4,400.00
SIDEWALK REPLACEMENT	1000.00	SFT	\$8.25	\$8,250.00
BITUMINOUS PAVING, 3"	450.00	TON	\$88.00	\$11,880.00
AGGREGATE BASE, 4"	2700.00	SYD	\$5.80	\$4,698.00
MODIFIED SUBBASE, CIP	1000.00	CYD	\$21.50	\$6,450.00
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$134,053.00
PROJECT CLEAN-UP	1.00	LS	\$1,340.53	\$1,340.53
MOBILIZATION	1.00	LS	\$6,702.65	\$6,702.65
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$13,405.30	\$150,621.95

The existing sanitary sewer is an 8 inch 1903 and 1905 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Confirm pipe and manhole NASSCO ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	1000.00	SFT	\$5.25	\$5,250.00
6" CONCRETE SIDEWALK	400.00	SFT	\$6.00	\$2,400.00
ADA SIDEWALK RAMP	200.00	SFT	\$13.25	\$2,650.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
CONSTRUCTION SUBTOTAL				\$11,225.00
PROJECT CLEAN-UP	1.00	LS	\$112.25	\$112.25
MOBILIZATION	1.00	LS	\$561.25	\$561.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,122.50	\$12,612.41

4. WATERMAIN CONSTRUCTION

BUDGET ESTIMATE FOR FISCAL YEAR:		2022 - 2024	Eligibility Notes				
Project:	Oak Street Reconstruction Project	2022-5	By:	KMW	4/29/2019	SRF	DWRF
EMPLOYEE ESTIMATE			LS	\$0.00	\$0.00		
WATER MAIN	900.00		LFT	\$48.00	\$43,200.00		
VALVES	6.00		EA	\$1,850.00	\$11,100.00		The fire flows and the piping servicing the properties along this section of Oak Street are dependent on a 4 inch 1887 sand cast iron pipe. This project will upsize the existing pipe to an 8 inch D.I. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe.
FITTINGS	12.00		EA	\$475.00	\$5,700.00		
FIRE HYDRANTS	1.00		EA	\$4,300.00	\$4,300.00		
CONNECTIONS	5.00		EA	\$1,800.00	\$9,000.00		
CHECK VALVE	0.00		LS	\$25,000.00	\$0.00		
MISC	1.00		LS	\$5,000.00	\$5,000.00		
WATER MAIN REMOVE	200.00		FT	\$6.00	\$1,200.00		
ROCK EXCAVATION	100.00		CYD	\$100.00	\$10,000.00		
BL&P CHARGES FOR HOLDING POLES	2.00		EA	\$2,000.00	\$4,000.00		
CURB AND GUTTER	50.00		LFT	\$22.00	\$1,100.00		
BITUMINOUS PAVING, 3"	450.00		TON	\$88.00	\$11,880.00		
AGGREGATE BASE, 4"	2700.00		SYD	\$5.80	\$4,698.00		
MODIFIED SUBBASE, CIP	1000.00		CYD	\$21.50	\$6,450.00		
RESTORATION	100.00		SYD	\$9.25	\$925.00		
TRAFFIC CONTROL	1.00		LS	\$2,000.00	\$2,000.00		
<u>CONSTRUCTION SUBTOTAL</u>					<u>\$120,553.00</u>		
PROJECT CLEAN-UP	1.00	LS		<u>\$1,205.53</u>	\$1,205.53		
MOBILIZATION	1.00	LS		<u>\$6,027.65</u>	\$6,027.65		
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS		<u>\$12,055.30</u>	\$135,453.35		

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	20.00	EA	\$1,600.00	\$32,000.00
TEMPORARY WATER SERVICE	800.00	LFT	\$4.75	\$3,800.00
TEMPORARY WATER SERVICE CONNECTIONS	20.00	EA	\$165.00	\$3,300.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SIDEWALK REPLACEMENT	1000.00	SFT	\$8.25	\$8,250.00
CURB AND GUTTER	200.00	LFT	\$22.00	\$4,400.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$53,600.00</u>
PROJECT CLEAN-UP	1.00	LS	<u>\$536.00</u>	\$536.00
MOBILIZATION	1.00	LS	<u>\$2,680.00</u>	\$2,680.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	<u>\$5,360.00</u>	\$60,224.96

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	0.00	LFT	\$40.00	\$0.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	0.00	EA	\$3,000.00	\$0.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	0.00	EA	\$2,075.00	\$0.00
TAP EXISTING DRAINAGE STRUCTURE	0.00	EA	\$400.00	\$0.00
CURB AND GUTTER	1400.00	LFT	\$22.00	\$30,800.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	450.00	TON	\$88.00	\$7,920.00
AGGREGATE BASE, 4"	2700.00	SYD	\$5.80	\$3,132.00
MODIFIED SUBBASE, CIP	1000.00	CYD	\$21.50	\$4,300.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$53,152.00</u>
PROJECT CLEAN-UP	1.00	LS	<u>\$531.52</u>	\$531.52
MOBILIZATION	1.00	LS	<u>\$2,657.60</u>	\$2,657.60
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	<u>\$5,315.20</u>	\$59,721.59

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$0.00</u>
PROJECT CLEAN-UP	1.00	LS	<u>\$0.00</u>	\$0.00
MOBILIZATION	1.00	LS	<u>\$0.00</u>	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	<u>\$0.00</u>	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$494,058.16

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
<u>SEWER SYSTEM LAND ACQUISITION</u>	0	AC	<u>\$17,500</u>	<u>\$0.00</u>
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

\$634,042

Project:	Ohio Street Reconstruction Project	2022-6	By:	KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$1,392.00
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$3,520.00
EMBANKMENT	200.00	CYD	\$7.75	\$1,550.00
EARTH EXCAVATION	900.00	CYD	\$6.75	\$6,075.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$1,935.00
DRIVEWAY, CONC., 6"	350.00	SYD	\$50.00	\$17,500.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$43,572.00</u>
PROJECT CLEAN-UP	1.00	LS	\$435.72	\$435.72
MOBILIZATION	1.00	LS	\$2,178.60	\$2,178.60
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$4,357.20	\$48,957.50

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00	The piping servicing the sanitary sewer is 8 inch 2013 PVC and will not require replacement. Laterals that require replacement will be done at this time. Confirm NASSCO ratings as part of process.
SANITARY SEWER	0.00	LFT	\$40.00	\$0.00	
4' DIA. MANHOLE, COMPLETE WITH COVER	0.00	EA	\$2,200.00	\$0.00	
SANITARY LATERALS, COMPLETE	14.00	EA	\$1,700.00	\$23,800.00	
MISC.	1.00	LS	\$5,000.00	\$5,000.00	
ROCK EXCAVATION	20.00	CYD	\$100.00	\$2,000.00	
DEWATERING	0.00	FT	\$17.00	\$0.00	
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00	
RESTORATION	200.00	SYD	\$9.25	\$1,850.00	
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	150.00	LFT	\$22.00	\$3,300.00	
SIDEWALK REPLACEMENT	750.00	SFT	\$8.25	\$6,187.50	
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$5,280.00	
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$2,088.00	
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$2,902.50	
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00	
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$60,408.00</u>	
PROJECT CLEAN-UP	1.00	LS	\$604.08	\$604.08	
MOBILIZATION	1.00	LS	\$3,020.40	\$3,020.40	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,040.80	\$67,874.43	

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	2000.00	SFT	\$5.25	\$10,500.00
6" CONCRETE SIDEWALK	200.00	SFT	\$6.00	\$1,200.00
ADA SIDEWALK RAMP	100.00	SFT	\$13.25	\$1,325.00
RESTORATION	600.00	SYD	\$9.25	\$5,550.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$18,575.00</u>
PROJECT CLEAN-UP	1.00	LS	\$185.75	\$185.75
MOBILIZATION	1.00	LS	\$928.75	\$928.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,857.50	\$20,870.87

Project:	Ohio Street Reconstruction Project	2022-6	By:	KMW	4/29/2019	SRF	DWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	500.00	LFT	\$48.00	\$24,000.00
VALVES	3.00	EA	\$1,850.00	\$5,550.00
FITTINGS	12.00	EA	\$475.00	\$5,700.00
FIRE HYDRANTS	1.00	EA	\$4,300.00	\$4,300.00
CONNECTIONS	2.00	EA	\$1,800.00	\$3,600.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	20.00	CYD	\$100.00	\$2,000.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$5,280.00
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$2,088.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$2,902.50
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$68,445.50
PROJECT CLEAN-UP	1.00	LS	\$684.46	\$684.46
MOBILIZATION	1.00	LS	\$3,422.28	\$3,422.28
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,844.55	\$76,905.36

This will complete the project that was started in 2013 with the sanitary sewer main replacement. The water main servicing the residents along this section of Ohio Street are dependent on as 4 inch 1909 cast iron piping. This project will upsize the existing pipe to an 8 inch D.I.P. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe. All water services will be replaced.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	14.00	EA	\$1,600.00	\$22,400.00
TEMPORARY WATER SERVICE	500.00	LFT	\$4.75	\$2,375.00
TEMPORARY WATER SERVICE CONNECTIONS	14.00	EA	\$165.00	\$2,310.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SIDEWALK REPLACEMENT	750.00	SFT	\$8.25	\$6,187.50
CURB AND GUTTER	150.00	LFT	\$22.00	\$3,300.00
CONSTRUCTION SUBTOTAL				\$38,422.50
PROJECT CLEAN-UP	1.00	LS	\$384.23	\$384.23
MOBILIZATION	1.00	LS	\$1,921.13	\$1,921.13
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$3,842.25	\$43,171.52

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	100.00	LFT	\$40.00	\$4,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	2.00	EA	\$3,000.00	\$6,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$2,075.00	\$8,300.00
TAP EXISTING DRAINAGE STRUCTURE	2.00	EA	\$400.00	\$800.00
CURB AND GUTTER	700.00	LFT	\$22.00	\$15,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	200.00	TON	\$88.00	\$3,520.00
AGGREGATE BASE, 4"	1200.00	SYD	\$5.80	\$1,392.00
MODIFIED SUBBASE, CIP	450.00	CYD	\$21.50	\$1,935.00
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$52,047.00
PROJECT CLEAN-UP	1.00	LS	\$520.47	\$520.47
MOBILIZATION	1.00	LS	\$2,602.35	\$2,602.35
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,204.70	\$58,480.01

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$316,259.69

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Park Street Reconstruction Project	2022-7	By:	KMW	4/29/2019	SRF	DWRP
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$3,480.00
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$8,800.00
EMBANKMENT	300.00	CYD	\$7.75	\$2,325.00
EARTH EXCAVATION	2200.00	CYD	\$6.75	\$14,850.00
MODIFIED SUBBASE, CIP	1000.00	CYD	\$21.50	\$4,300.00
DRIVEWAY, CONC., 6"	600.00	SYD	\$50.00	\$30,000.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$76,280.00
PROJECT CLEAN-UP	1.00	LS	\$762.80	\$762.80
MOBILIZATION	1.00	LS	\$3,814.00	\$3,814.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,628.00	\$85,708.21

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00	The existing sanitary sewer is a 10 inch 1931 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. The cross country sewer that crosses the Pine Street intersection will be intercepted into the Park Street sanitary sewer. Pipe segment from MH 685 to 687 has index score of 4121. Confirm pipe and manhole NASSCO ratings as part of process.
SANITARY SEWER	900.00	LFT	\$40.00	\$36,000.00	
4' DIA. MANHOLE, COMPLETE WITH COVER	4.00	EA	\$2,200.00	\$8,800.00	
SANITARY LATERALS, COMPLETE	25.00	EA	\$1,700.00	\$42,500.00	
MISC.	0.00	LS	\$5,000.00	\$0.00	
ROCK EXCAVATION	1.00	CYD	\$100.00	\$100.00	
DEWATERING	0.00	FT	\$17.00	\$0.00	
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00	
RESTORATION	300.00	SYD	\$9.25	\$2,775.00	
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00	
CURB AND GUTTER	250.00	LFT	\$22.00	\$5,500.00	
SIDEWALK REPLACEMENT	1300.00	SFT	\$8.25	\$10,725.00	
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$13,200.00	
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$5,220.00	
MODIFIED SUBBASE, CIP	1000.00	CYD	\$21.50	\$6,450.00	
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00	
CONSTRUCTION SUBTOTAL				\$139,270.00	
PROJECT CLEAN-UP	1.00	LS	\$1,392.70	\$1,392.70	
MOBILIZATION	1.00	LS	\$6,963.50	\$6,963.50	
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$13,927.00	\$156,483.77	

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	2000.00	SFT	\$5.25	\$10,500.00
6" CONCRETE SIDEWALK	500.00	SFT	\$6.00	\$3,000.00
ADA SIDEWALK RAMP	400.00	SFT	\$13.25	\$5,300.00
RESTORATION	500.00	SYD	\$9.25	\$4,625.00
CONSTRUCTION SUBTOTAL				\$23,425.00
PROJECT CLEAN-UP	1.00	LS	\$234.25	\$234.25
MOBILIZATION	1.00	LS	\$1,171.25	\$1,171.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$2,342.50	\$26,320.33

Project:	Park Street Reconstruction Project	2022-7	By:	KMW	4/29/2019	SRF	DWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	900.00	LFT	\$48.00	\$43,200.00
VALVES	10.00	EA	\$1,850.00	\$18,500.00
FITTINGS	20.00	EA	\$475.00	\$9,500.00
FIRE HYDRANTS	2.00	EA	\$4,300.00	\$8,600.00
CONNECTIONS	3.00	EA	\$1,800.00	\$5,400.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	100.00	FT	\$6.00	\$600.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$13,200.00
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$5,220.00
MODIFIED SUBBASE, CIP	1000.00	CYD	\$21.50	\$6,450.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$123,695.00
PROJECT CLEAN-UP	1.00	LS	\$1,236.95	\$1,236.95
MOBILIZATION	1.00	LS	\$6,184.75	\$6,184.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$12,369.50	\$138,983.70

This is a continuation of the 2007 reconstruction project from Fourth to Pine. The fire flows and the piping servicing the properties along this section of Park Street are dependent on a 4 inch 1931 and 6 inch 1958 sand cast iron pipe. This project will upsze the existing pipe to an 8 inch D.I. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	25.00	EA	\$1,600.00	\$40,000.00
TEMPORARY WATER SERVICE	1000.00	LFT	\$4.75	\$4,750.00
TEMPORARY WATER SERVICE CONNECTIONS	25.00	EA	\$165.00	\$4,125.00
RESTORATION	399.00	SYD	\$9.25	\$3,690.75
SIDEWALK REPLACEMENT	1300.00	SFT	\$8.25	\$10,725.00
CURB AND GUTTER	250.00	LFT	\$22.00	\$5,500.00
CONSTRUCTION SUBTOTAL				\$68,790.75
PROJECT CLEAN-UP	1.00	LS	\$687.91	\$687.91
MOBILIZATION	1.00	LS	\$3,439.54	\$3,439.54
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$6,879.08	\$77,293.29

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	100.00	LFT	\$40.00	\$4,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	2.00	EA	\$3,000.00	\$6,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$2,075.00	\$8,300.00
TAP EXISTING DRAINAGE STRUCTURE	2.00	EA	\$400.00	\$800.00
CURB AND GUTTER	1300.00	LFT	\$22.00	\$28,600.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$8,800.00
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$3,480.00
MODIFIED SUBBASE, CIP	1000.00	CYD	\$21.50	\$4,300.00
RESTORATION	500.00	SYD	\$9.25	\$4,625.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$75,905.00
PROJECT CLEAN-UP	1.00	LS	\$759.05	\$759.05
MOBILIZATION	1.00	LS	\$3,795.25	\$3,795.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,590.50	\$85,286.86

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$570,076.16

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Sherman Street Reconstruction Project	2022-8	By: KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	L (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	4700.00	SYD	\$5.80	\$8,178.00
BITUMINOUS PAVING, 3"	800.00	TON	\$88.00	\$21,120.00
EMBANKMENT	500.00	CYD	\$7.75	\$3,875.00
EARTH EXCAVATION	3400.00	CYD	\$6.75	\$22,950.00
MODIFIED SUBBASE, CIP	1700.00	CYD	\$21.50	\$10,965.00
DRIVEWAY, CONC., 6"	600.00	SYD	\$50.00	\$30,000.00
RESTORATION	500.00	SYD	\$9.25	\$4,625.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$111,463.00</u>
PROJECT CLEAN-UP	1.00	LS	\$1,114.63	\$1,114.63
MOBILIZATION	1.00	LS	\$5,573.15	\$5,573.15
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$11,146.30	\$125,239.83

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	100.00	LFT	\$40.00	\$4,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	5.00	EA	\$2,200.00	\$11,000.00
SANITARY LATERALS, COMPLETE	23.00	EA	\$1,700.00	\$39,100.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	50.00	CYD	\$100.00	\$5,000.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	250.00	LFT	\$22.00	\$5,500.00
SIDEWALK REPLACEMENT	400.00	SFT	\$8.25	\$3,300.00
BITUMINOUS PAVING, 3"	800.00	TON	\$88.00	\$14,080.00
AGGREGATE BASE, 4"	4700.00	SYD	\$5.80	\$5,452.00
MODIFIED SUBBASE, CIP	1700.00	CYD	\$21.50	\$7,310.00
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$111,442.00</u>
PROJECT CLEAN-UP	1.00	LS	\$1,114.42	\$1,114.42
MOBILIZATION	1.00	LS	\$5,572.10	\$5,572.10
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$11,144.20	\$125,216.23

The piping servicing the sanitary sewer was slip lined in 2011 and will not require replacement. Manhole structures and laterals that require replacement will be done at this time. Confirm manhole NASSCO ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	0.00	SFT	\$5.25	\$0.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	0.00	SFT	\$13.25	\$0.00
RESTORATION	0.00	SYD	\$9.25	\$0.00
<u>CONSTRUCTION SUBTOTAL</u>				<u>\$0.00</u>
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

BUDGET ESTIMATE FOR FISCAL YEAR: 2022 - 2024

Eligibility Notes

Project:	Sherman Street Reconstruction Project	2022-8	By:	KMW	4/29/2019	SRF	DWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	1400.00	LFT	\$48.00	\$67,200.00
VALVES	12.00	EA	\$1,850.00	\$22,200.00
FITTINGS	20.00	EA	\$475.00	\$9,500.00
FIRE HYDRANTS	4.00	EA	\$4,300.00	\$17,200.00
CONNECTIONS	4.00	EA	\$1,800.00	\$7,200.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	500.00	FT	\$6.00	\$3,000.00
ROCK EXCAVATION	50.00	CYD	\$100.00	\$5,000.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	100.00	LFT	\$22.00	\$2,200.00
BITUMINOUS PAVING, 3"	800.00	TON	\$88.00	\$21,120.00
AGGREGATE BASE, 4"	4700.00	SYD	\$5.80	\$8,178.00
MODIFIED SUBBASE, CIP	1700.00	CYD	\$21.50	\$10,965.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$186,613.00
PROJECT CLEAN-UP	1.00	LS	\$1,866.13	\$1,866.13
MOBILIZATION	1.00	LS	\$9,330.65	\$9,330.65
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$18,661.30	\$209,678.37

The water main servicing the residents along this section of Sherman Street are dependent on 6 inch 1960 cast iron piping. This project will upsize the existing pipe to an 8 inch D.I.P. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe. All water services will be replaced.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	23.00	EA	\$1,600.00	\$36,800.00
TEMPORARY WATER SERVICE	1400.00	LFT	\$4.75	\$6,650.00
TEMPORARY WATER SERVICE CONNECTIONS	23.00	EA	\$165.00	\$3,795.00
RESTORATION	400.00	SYD	\$9.25	\$3,700.00
SIDEWALK REPLACEMENT	400.00	SFT	\$8.25	\$3,300.00
CURB AND GUTTER	250.00	LFT	\$22.00	\$5,500.00
CONSTRUCTION SUBTOTAL				\$59,745.00
PROJECT CLEAN-UP	1.00	LS	\$597.45	\$597.45
MOBILIZATION	1.00	LS	\$2,987.25	\$2,987.25
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,974.50	\$67,129.48

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	600.00	LFT	\$40.00	\$24,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	4.00	EA	\$3,000.00	\$12,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	8.00	EA	\$2,075.00	\$16,600.00
TAP EXISTING DRAINAGE STRUCTURE	1.00	EA	\$400.00	\$400.00
CURB AND GUTTER	2200.00	LFT	\$22.00	\$48,400.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	800.00	TON	\$88.00	\$14,080.00
AGGREGATE BASE, 4"	4700.00	SYD	\$5.80	\$5,452.00
MODIFIED SUBBASE, CIP	1700.00	CYD	\$21.50	\$7,310.00
RESTORATION	500.00	SYD	\$9.25	\$4,625.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$139,867.00
PROJECT CLEAN-UP	1.00	LS	\$1,398.67	\$1,398.67
MOBILIZATION	1.00	LS	\$6,993.35	\$6,993.35
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$13,986.70	\$157,154.56

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$684,418.47

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

Project:	Summit Street Reconstruction Project	2022-10	By:	KMW	4/29/2019	SRF	DWRF
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Parameters used in this estimate:

Testing Services	1.00%
Construction Engineering:	6.00%
Contingencies Rate:	6.00%
Inflation:	3.00%
Street System:	M (Major/Local)

1. ROADWAY ITEMS

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$3,480.00
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$8,800.00
EMBANKMENT	500.00	CYD	\$7.75	\$3,875.00
EARTH EXCAVATION	2222.00	CYD	\$6.75	\$14,998.50
MODIFIED SUBBASE, CIP	1111.00	CYD	\$21.50	\$4,777.30
DRIVEWAY, CONC., 6"	500.00	SYD	\$50.00	\$25,000.00
RESTORATION	200.00	SYD	\$9.25	\$1,850.00
SHOULDER, 7 INCH	0.00	SYD	\$0.00	\$0.00
SIDEWALK, 4"	0.00	SFT	\$5.25	\$0.00
MISC. CONCRETE STRUCTURE REMOVAL	0.00	CYD	\$0.00	\$0.00
SIGNING & TRAFFIC CONTROL	1.00	LS	\$5,000.00	\$5,000.00
MAINTAINING ACCESS	1.00	LS	\$4,750.00	\$4,750.00
CONSTRUCTION SUBTOTAL				\$72,530.80
PROJECT CLEAN-UP	1.00	LS	\$725.31	\$725.31
MOBILIZATION	1.00	LS	\$3,626.54	\$3,626.54
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$7,253.08	\$81,495.61

2. SANITARY SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
SANITARY SEWER	1000.00	LFT	\$40.00	\$40,000.00
4' DIA. MANHOLE, COMPLETE WITH COVER	6.00	EA	\$2,200.00	\$13,200.00
SANITARY LATERALS, COMPLETE	20.00	EA	\$1,700.00	\$34,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
DEWATERING	0.00	FT	\$17.00	\$0.00
PUMP & BYPASS	0.00	LS	\$5,000.00	\$0.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	200.00	LFT	\$22.00	\$4,400.00
SIDEWALK REPLACEMENT	1100.00	SFT	\$8.25	\$9,075.00
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$13,200.00
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$5,220.00
MODIFIED SUBBASE, CIP	1111.00	CYD	\$21.50	\$7,165.95
TRAFFIC CONTROL	1.00	LS	\$4,000.00	\$4,000.00
CONSTRUCTION SUBTOTAL				\$142,035.95
PROJECT CLEAN-UP	1.00	LS	\$1,420.36	\$1,420.36
MOBILIZATION	1.00	LS	\$7,101.80	\$7,101.80
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$14,203.60	\$159,591.59

The existing sanitary sewer is a 8 inch 1940 clay pipe and will be replaced with 8 inch PVC piping. All sanitary sewer manholes and laterals will be replaced. Confirm pipe and manhole NASSCO ratings as part of process.

3. SIDEWALK CONSTRUCTION

4" CONCRETE WALK	2000.00	SFT	\$5.25	\$10,500.00
6" CONCRETE SIDEWALK	0.00	SFT	\$6.00	\$0.00
ADA SIDEWALK RAMP	500.00	SFT	\$13.25	\$6,625.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
CONSTRUCTION SUBTOTAL				\$19,900.00
PROJECT CLEAN-UP	1.00	LS	\$199.00	\$199.00
MOBILIZATION	1.00	LS	\$995.00	\$995.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$1,990.00	\$22,359.64

Project:	Summit Street Reconstruction Project	2022-10	By:	KMW	4/29/2019	SRF	DWRF
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4. WATERMAIN CONSTRUCTION

EMPLOYEE ESTIMATE		LS	\$0.00	\$0.00
WATER MAIN	850.00	LFT	\$48.00	\$40,800.00
VALVES	9.00	EA	\$1,850.00	\$16,650.00
FITTINGS	20.00	EA	\$475.00	\$9,500.00
FIRE HYDRANTS	3.00	EA	\$4,300.00	\$12,900.00
CONNECTIONS	4.00	EA	\$1,800.00	\$7,200.00
CHECK VALVE	0.00	LS	\$25,000.00	\$0.00
MISC	1.00	LS	\$5,000.00	\$5,000.00
WATER MAIN REMOVE	0.00	FT	\$6.00	\$0.00
ROCK EXCAVATION	0.00	CYD	\$100.00	\$0.00
BL&P CHARGES FOR HOLDING POLES	2.00	EA	\$2,000.00	\$4,000.00
CURB AND GUTTER	50.00	LFT	\$22.00	\$1,100.00
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$13,200.00
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$5,220.00
MODIFIED SUBBASE, CIP	1100.00	CYD	\$21.50	\$7,095.00
RESTORATION	100.00	SYD	\$9.25	\$925.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$125,590.00
PROJECT CLEAN-UP	1.00	LS	\$1,255.90	\$1,255.90
MOBILIZATION	1.00	LS	\$6,279.50	\$6,279.50
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$12,559.00	\$141,112.92

The fire flows and the piping servicing the properties along this section of Summit Street are dependent on a 4 inch 1925 sand cast iron pipe. This project will upsize the existing pipe to an 8 inch D.I. piping to improve fire flows, align with City standards, increase residential flows, and replace aged/failing pipe.

5. WATER LATERAL CONSTRUCTION

NEW WATER SERVICES	20.00	EA	\$1,600.00	\$32,000.00
TEMPORARY WATER SERVICE	1000.00	LFT	\$4.75	\$4,750.00
TEMPORARY WATER SERVICE CONNECTIONS	20.00	EA	\$165.00	\$3,300.00
RESTORATION	300.00	SYD	\$9.25	\$2,775.00
SIDEWALK REPLACEMENT	1100.00	SFT	\$8.25	\$9,075.00
CURB AND GUTTER	200.00	LFT	\$22.00	\$4,400.00
CONSTRUCTION SUBTOTAL				\$56,300.00
PROJECT CLEAN-UP	1.00	LS	\$563.00	\$563.00
MOBILIZATION	1.00	LS	\$2,815.00	\$2,815.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$5,630.00	\$63,258.68

Confirm if lead in laterals as part of construction process.

6. STORM SEWER CONSTRUCTION

EMPLOYEE ESTIMATE		EA	\$0.00	\$0.00
12" RCP STORM SEWER	300.00	LFT	\$40.00	\$12,000.00
15" RCP STORM SEWER	0.00	LFT	\$46.00	\$0.00
18" RCP STORM SEWER	0.00	LFT	\$70.00	\$0.00
4' DIA. DRAINAGE STRUCTURES, COMPLETE	6.00	EA	\$3,000.00	\$18,000.00
2' DIA. DRAINAGE STRUCTURES, COMPLETE	12.00	EA	\$2,075.00	\$24,900.00
TAP EXISTING DRAINAGE STRUCTURE	5.00	EA	\$400.00	\$2,000.00
CURB AND GUTTER	1500.00	LFT	\$22.00	\$33,000.00
MISC.	1.00	LS	\$5,000.00	\$5,000.00
BITUMINOUS PAVING, 3"	500.00	TON	\$88.00	\$8,800.00
AGGREGATE BASE, 4"	3000.00	SYD	\$5.80	\$3,480.00
MODIFIED SUBBASE, CIP	1100.00	CYD	\$21.50	\$4,730.00
RESTORATION	500.00	SYD	\$9.25	\$4,625.00
TRAFFIC CONTROL	1.00	LS	\$2,000.00	\$2,000.00
CONSTRUCTION SUBTOTAL				\$118,535.00
PROJECT CLEAN-UP	1.00	LS	\$1,185.35	\$1,185.35
MOBILIZATION	1.00	LS	\$5,926.75	\$5,926.75
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$11,853.50	\$133,185.93

7. OTHER ITEMS

BITUMINOUS PAVING, 3" (BIKE PATH)		TON	\$88.00	\$0.00
AGGREGATE BASE, 6"		SYD	\$9.00	\$0.00
EARTH EXCAVATION		CYD	\$6.75	\$0.00
EMBANKMENT		CYD	\$7.75	\$0.00
COLORED STAMPED CONCRETE		SYD	\$90.00	\$0.00
CONSTRUCTION SUBTOTAL				\$0.00
PROJECT CLEAN-UP	1.00	LS	\$0.00	\$0.00
MOBILIZATION	1.00	LS	\$0.00	\$0.00
TOTAL, 6% CONTINGENCIES ADDED	1.00	LS	\$0.00	\$0.00

8. PROJECT CONSTRUCTION TOTAL

\$601,004.37

9. LAND ACQUISITION

GENERAL FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STREET FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
STORM WATER FUND LAND ACQUISITION	0	AC	\$17,500	\$0.00
WATER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
SEWER SYSTEM LAND ACQUISITION	0	AC	\$17,500	\$0.00
TOTAL LAND ACQUISITION:				\$0.00

10. PROJECT TOTAL

APPENDICES

Appendix G – Agency Notification Letters

Note. Full Letter including enclosures is provided for Fish and Wildlife. Subsequent letters do not include enclosures as part of this document.

March 1, 2019

Scott Hicks
U. S. Fish & Wildlife Service
East Lansing Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823-6316

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear U. S. Fish & Wildlife Service,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. Enclosed please find the following information relative to the proposed projects:

- Project Descriptions
- Attachment A – General Location Map
- Attachment B – Project Location Map (Wastewater Treatment Plant, Lincoln Avenue Booster Pump Station and Street Improvement Maintenance Program (SIMP) Projects with Sanitary Sewer Line Replacements)
- Attachment C – Project Site Map and Photos (Wastewater Treatment Plant)
- Attachment D – Project Site Map and Photos (Lincoln Avenue Pump Station)
- Attachment E – Project Location Map (Street Reconstruction Projects with Sanitary and Water Line Replacements).

By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects.

We do not anticipate any proposed project will result in control or structural modification of any natural stream or other body of water. On behalf of the City of Marquette, Donohue & Associates, Inc.

(Donohue) seeks applicable U.S. Fish & Wildlife Service clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within the next 45 days, if possible, in order to meet MDEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

If you should have any questions about this submittal, please contact me or by phone at 414-651-2435 at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Heisel". The signature is written in a cursive, slightly slanted style.

Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

City of Marquette SRF - Project Descriptions

Water & Sewer System Upgrades – SRF Program

City of Marquette, Michigan

Revised: February 15, 2019

The City of Marquette is intending on upgrading its public water and wastewater systems over a multi-year plan that is comprised of two separate sets of project components. Detailed descriptions of the projects and project locations are provided below. **Attachment A** illustrates the general location of the City of Marquette.

Wastewater Treatment Plant Solids Handling Improvements)

Project Description: Modify solids handling system including a new cake storage area and new gravity belt thickening in existing building. This alternative includes a new gravity belt thickener in the existing Thickener Room, new cake storage building adjacent to liquid storage tank no. 2, a new truck loadout building adjacent to the Thickener Room and a screw conveyor system from the existing gravity belt thickener/belt filter press to truck loadout.

The equipment provides process redundancy and increases on-site storage of solids during periods when beneficial reuse of solids is not available.

Project Location: The project is located at the Marquette Wastewater Treatment Plant. See **Attachment B** for the location of the wastewater treatment plant. See **Attachment C** for proposed location of improvements at the treatment plant.

Lincoln Avenue Booster Pump Station Improvements

Project Description: Engineering analysis and mechanical and electrical improvements to the booster pump station to improve performance and operation. The proposed projects do not include any work on the pump station structure or sitework.

Project Location: The project is located at the Lincoln Street Booster Pump Station. See **Attachment B** for City of Marquette site map. See **Attachment D** for location the location of the pump station.

Street Improvement Maintenance Program (SIMP) Projects with Sanitary Sewer Line Replacements

Project Description: Street improvements are completed in conjunction with the City's sanitary sewer replacement program. The tables below (planned projects for 2020, 2021 and 2022) provide the planned SIMP locations for consecutive years.

Project Locations: See **Attachment B** for the mapped project locations by year.

City of Marquette SRF - Project Descriptions

Table. SIMP Projects (2020)

Location	Linear Feet
Pine (Hewitt To Ohio)	373
Pine (Michigan To Arch)	368
Pine (Arch To Ridge)	367
Hebard (Magnetic To College)	380
Hebard (College To Kaye)	349
Gray (Mildred To Elm)	458
N Seventh (Park To Crescent)	389
N Seventh (Crescent To Harrison)	520
N Seventh (Harrison To Hewitt)	399
W Hewitt (Fourth To Oak)	207
W Hewitt (Oak To Sixth)	832
W Hewitt (Sixth To Seventh)	487
W Baraga (650' W Of Seventh To Seventh)	375
W Baraga (Seventh To Altamont)	489
W Baraga (Altamont To Fifth)	566
Coles (Ridge To Mcclellan)	585
W Bluff (Lincoln To Seymour)	836
W Bluff (Seymour To Morgan)	685
E Michigan (Pine To Spruce)	755
Spruce (Michigan To Arch)	367
Spruce (Arch To Ridge)	366
Union (Wilkinson To Van Evera)	283
Total	10,434

Table. SIMP Projects (2021)

Location	Linear Feet
Longyear (S Entrance Dobson Place To Union)	617
Longyear (Wright To S Entrance Dobson Place)	470
Wilkinson (Norwood To Center)	661
Center (Presque Isle To Dead End East)	200
Center (Presque Isle To Fitch)	375
Center (Fitch To Longyear)	370
Center (Longyear To Wilkinson)	370
West (Fair To Mildred)	660
Woodland (Waldo To S Of Center)	415
Woodland (S Of Center To Center)	401
Woodland (Center To S Of Wright)	662
Woodland (S Of Wright To Wright)	653
Fairway (Grove To N Cul De Sac)	1125
Tierney (N Dead End To Mid Block)	299
Hillside (Altamont To Bay View)	559

City of Marquette SRF - Project Descriptions

Bay View (Hillside To Altamont)	366
Fisher (Seventh To W Dead End)	346
Adams (Jackson To Genesee)	329
W Arch (Front To Third)	629
Lincoln (Ridge To Mid Block)	397
Lincoln (Mid Block To Jefferson)	392
S Fifth (Spring To Mid Block)	309
Norway (Magnetic To College)	405
Norwood (Gray To Kimber)	330
Total	11,341

Table. SIMP Projects (2022)

Location	Linear Feet
High (Arch To Michigan)	366
W Ridge (Third To Fourth)	562
W Ridge (Fifth To Sixth)	575
E Baraga (Front To Lakeshore)	227
Heikkala (Altamont To Mid Block)	575
Heikkala (Mid Block To Altamont)	373
Lincoln (425' North To 850' North)	436
Lincoln (Center To 425' North)	429
Lincoln (Washington To Bluff)	244
Garfield (Washington To Bluff)	306
E Main (Front To Lakeshore)	281
W Michigan (Seventh To Sixth)	472
E Michigan (Front To High)	212
E Michigan (High To Pine)	323
N Seventh (Hewitt To Michigan)	687
N Seventh (Michigan To Ridge)	111
W Hampton (Division To Adams)	444
E Arch (Pine To High)	325
E Arch (High To Front)	436
E Ridge (Spruce To Pine)	751
E Ridge (Pine To High)	336
Blemhuber (Champion To Division)	380
Blemhuber (Division To Adams)	660
Craig (Division To Adams)	510
Craig (Adams To Altamont)	730
Total	10751

City of Marquette SRF - Project Descriptions

Cured In Place Pipe Lining Projects

Project Description: Trench less rehabilitation of sanitary sewer lines with the installation of a liner pipe. This project will rehabilitate approx. 10,000 feet of sanitary sewer with pipe sizes ranging from 6" dia. to 24" dia. Cured in place pipe lining will increase the service life of these sewers in excess of 50 years and minimizes the disruption to traffic, avoids excavation in the street, avoids excavation in areas such as, parking lots, back yards, wooded areas, and areas of high structural interference. The rehabilitation does not require excavation or disturb the surface conditions.

Project Location: Varies.

Water and Sewer Reconstruction Projects

Project Description: Water and sewer reconstructions are completed to address water distribution and sanitary sewer system improvements. The tables below (planned projects for 2020, 2021 and 2022) provide the planned reconstruction locations for consecutive years.

Project Locations: See **Attachment E** for the mapped reconstruction project locations by year.

Table. 2020 Water and Sewer Reconstruction Projects

Project Number	Project Location	Project Description
2020-1	Front Street (Magnetic Street to Fair Avenue)	Replacement and upgrade of 1400 feet of street, 1400 feet of water main, water services, 1300 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension of 400 feet of storm sewer, replacement and addition of 2800 feet of curb, and approx. 1500 feet of sidewalk.
2020-2	Hewitt Avenue (Pine to Spruce Street)	Replacement and upgrade of 900 feet of street, 900 feet of water main, water services, 900 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 600 feet of storm sewer, replacement and addition of 1800 feet of curb, and approx. 1000 feet of sidewalk.
2020-3	Allouez Road (W. Nicolet Blvd. to LaSalle Road)	Replacement and upgrade of 1800 feet of street, 1800 feet of water main, water services, 600 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension of 2400 feet of storm sewer, replacement and addition of 3600 feet of curb.
2020-4	College Avenue (Presque Isle Ave. to Front Street)	Replacement and upgrade of 1200 feet of street, 1120 feet of water main, water services, 1200 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 500 feet of storm sewer, replacement of 2400 feet of curb, and approx. 2400 feet of sidewalk.
2020-5	Hewitt Avenue (Third to Front Street)	Replacement and upgrade of 700 feet of street, 700 feet of water main, water services, 600 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and

City of Marquette SRF - Project Descriptions

Project Number	Project Location	Project Description
		replacement of 400 feet of storm sewer, replacement of 1400 feet of curb, and approx. 500 feet of sidewalk.
2020-7	Marquette Drive (Lakeview Drive to North End)	Replacement and upgrade of 1450 feet of street, 1450 feet of water main, water services, 100 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension of 1000 feet of storm sewer, addition of 3100 feet of curb.
2020-8	Lakeview Drive (Marquette Drive to South End)	Replacement and upgrade of 625 feet of street, 625 feet of water main, water services, 100 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension of 400 feet of storm sewer, addition of 1350 feet of curb.
2020-9	Union Street (Wilkinson Ave to Presque Isle Ave.)	Replacement and upgrade of 1300 feet of street, water main valves, hydrants, water services, 100 sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 500 feet of storm sewer, replacement and addition of 1400 feet of curb, and approx. 900 feet of sidewalk.

Table. 2021 Water and Sewer Reconstruction Projects

Project Number	Project Location	Project Description
2021-1	Altamont Street Upgrade (Grandview to Pioneer)	Replacement and upgrade of 700 feet of street, water main valves, hydrants, 100 feet of sanitary sewer main, sanitary sewer manholes, replacement of storm sewer structures, replacement and addition of 1400 feet of curb, and approx. 500 feet of sidewalk.
2021-2	College Avenue Reconstruction (Front to Pine)	Replacement and upgrade of 900 feet of street, 950 feet of water main, water services, 950 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension of 400 feet of storm sewer, replacement and addition of 1600 feet of curb, and approx. 700 feet of sidewalk.
2021-4	Gravel Street Upgrade (Washington Street Alley)	Replacement and upgrade of 2200 feet of alley, extension and replacement of 1700 feet of storm sewer.
2021-5	Jefferson Street Storm Sewer Upgrade (Garfield to Sheridan)	Replacement and upgrade of sanitary sewer manholes, possible extension of storm sewer to Sheridan Avenue, addition of storm water structures and erosion control.
2021-6	Kildahl Avenue Reconstruction (McClellan to West)	Replacement and upgrade of 650 feet of street, water valves, hydrants, water services, 100 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement

City of Marquette SRF - Project Descriptions

Project Number	Project Location	Project Description
		of 300 feet of storm sewer, replacement and addition of 1300 feet of curb.
2021-8	Meeske Avenue Reconstruction (Washington to Ridge)	Replacement and upgrade of 800 feet of street, 100 feet of water main, water services, 100 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension of 700 feet of storm sewer, replacement and addition of 1600 feet of curb.
2021-9	Morgan Street Reconstruction (Washington to Bluff)	Replacement and upgrade of 300 feet of street, 300 feet of water main, water services, 300 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 400 feet of storm sewer, replacement of 600 feet of curb, and approx. 400 feet of sidewalk.
2021-10	Nicolet Boulevard Upgrade (Raymbault to U.S. 41)	Replacement and upgrade of 1200 feet of street, 1000 feet of water main, water services, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 1600 feet of storm sewer, addition of 2400 feet of curb,
2021-12	Spruce Street Reconstruction (Magnetic to College)	Replacement and upgrade of 500 feet of street, 500 feet of water main, water services, replacement of 1000 feet of curb, and approx. 200 feet of sidewalk.
2021-13	Spruce Street Reconstruction (Michigan to Hewitt)	Replacement and upgrade of 750 feet of street, 750 feet of water main, water services, 600 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, replacement of 700 feet of storm sewer, replacement of 1500 feet of curb, and approx. 500 feet of sidewalk.
2021-14	Wright Street Reconstruction (Sugarloaf to Vanevera)	Replacement and upgrade of 1100 feet of street, 1100 feet of water main, water services, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 1100 feet of storm sewer, replacement of 2200 feet of curb, and approx. 1600 feet of sidewalk.
2021-16	Fitch Avenue Reconstruction (Union to Harlow)	Replacement and upgrade of 400 feet of street, water valves, water services, sanitary sewer manholes, sanitary sewer laterals, storm sewer structures, replacement and addition of 800 feet of curb, and extension of 400 feet of sidewalk.

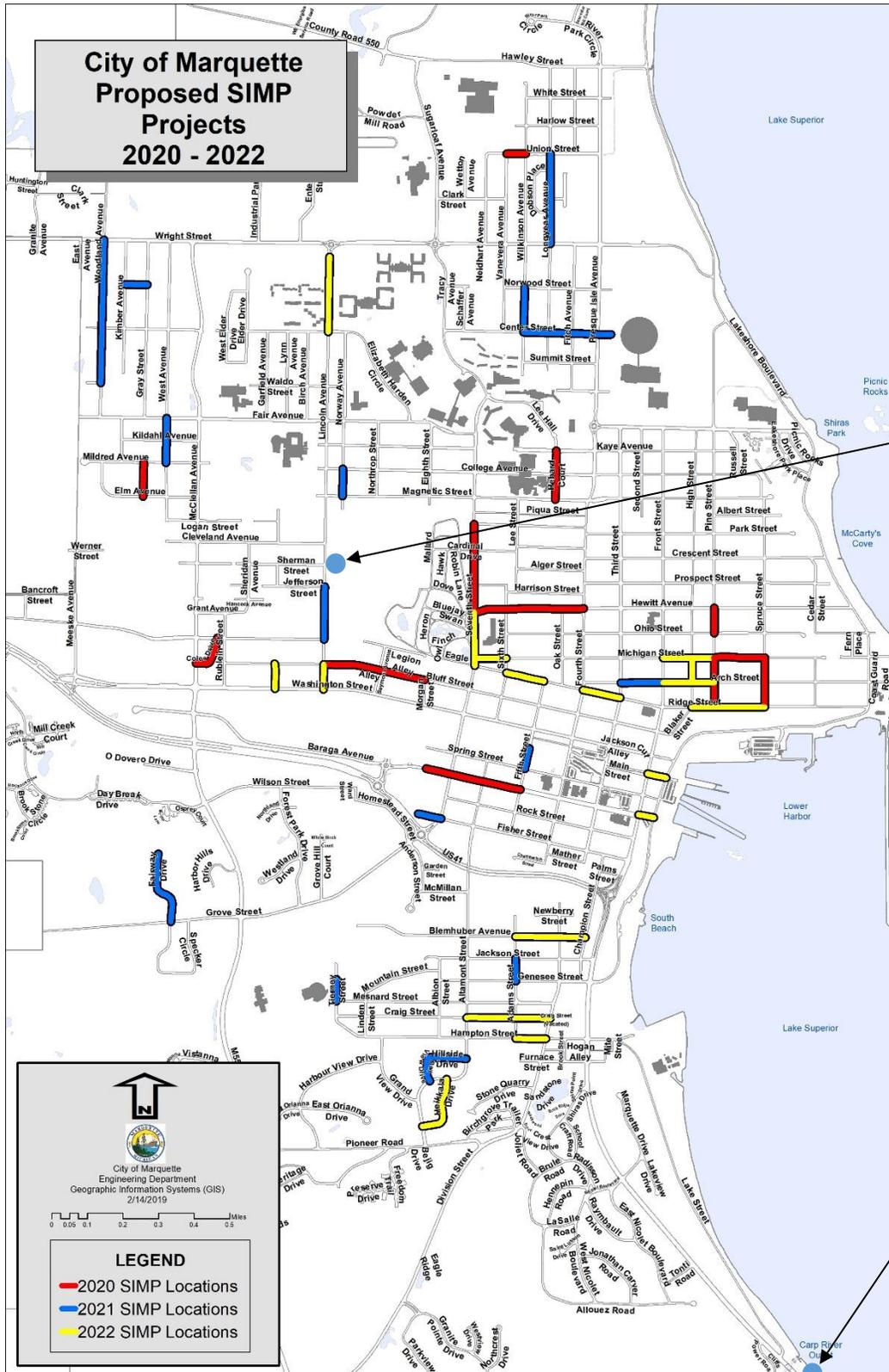
Table. 2022 Water and Sewer Reconstruction Projects

Project Number	Project Location	Project Description
2022-1	Cedar Street Reconstruction (Prospect to Crescent)	Replacement and upgrade of 400 feet of street, 400 feet of water main, water services, 270 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 100 feet of storm sewer, replacement and addition of 800 feet of curb, and approx. 300 feet of sidewalk.

City of Marquette SRF - Project Descriptions

Project Number	Project Location	Project Description
2022-2	Division Street Reconstruction (Blemhuber to Newberry)	Replacement and upgrade of 600 feet of street, 600 feet of water main, water services, 600 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 600 feet of storm sewer, replacement and addition of 1800 feet of curb, and approx. 600 feet of sidewalk.
2022-3	Division Street Reconstruction (Hampton to Joliet)	Replacement and upgrade of 1600 feet of street, 1500 feet of water main, water services, 400 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 600 feet of storm sewer, replacement and addition of 3200 feet of curb, and approx. 1000 feet of sidewalk.
2022-4	Fern Place Upgrade (Michigan to Ohio)	Replacement and upgrade of 400 feet of street, 400 feet of water main, water services, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 200 feet of storm sewer, replacement and addition of 800 feet of curb, and approx. 400 feet of sidewalk.
2022-5	Oak Street Reconstruction (Ridge to Ohio)	Replacement and upgrade of 900 feet of street, 900 feet of water main, water services, 800 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, replacement and addition of 1800 feet of curb, and approx. 600 feet of sidewalk.
2022-6	Ohio Street Reconstruction (Cedar to Fern)	Replacement and upgrade of 500 feet of street, 500 feet of water main, water services, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 100 feet of storm sewer, replacement and addition of 1000 feet of curb, and approx. 800 feet of sidewalk.
2022-7	Park Street Reconstruction (Pine to Spruce)	Replacement and upgrade of 900 feet of street, 900 feet of water main, water services, 900 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 100 feet of storm sewer, replacement and addition of 1800 feet of curb, and approx. 1000 feet of sidewalk
2022-8	Sherman Street Upgrade (Sheridan to Lincoln)	Replacement and upgrade of 1400 feet of street, 1400 feet of water main, water services, 100 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension of 600 feet of storm sewer, replacement and addition of 2800 feet of curb.
2022-10	Summit Street Reconstruction (Longyear to Presque Isle)	Replacement and upgrade of 1000 feet of street, 850 feet of water main, water services, 1000 feet of sanitary sewer main, sanitary sewer manholes, sanitary sewer laterals, extension and replacement of 300 feet of storm sewer, replacement and addition of 2000 feet of curb, and approx. 1000 feet of sidewalk.

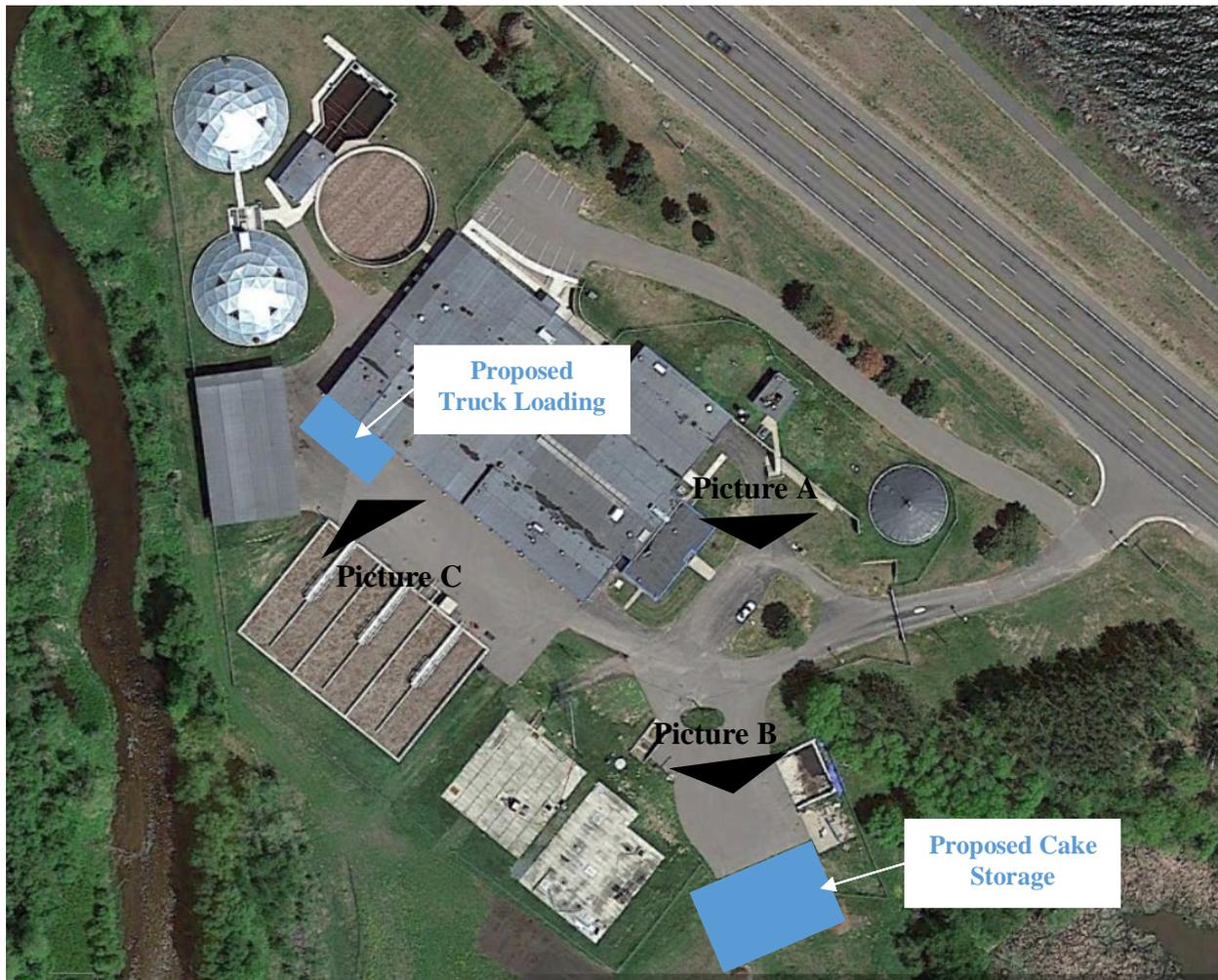
ATTACHMENT B – Project Location Map (Wastewater Treatment Plant, Lincoln Avenue Booster Pump Station and Street Improvement Maintenance Plan (SIMP) Projects with Sanitary Sewer and Water Line Replacements)



Lincoln Avenue
Booster Pump
Station
501 Lincoln Avenue
See Attachment C
for Site Plan

Marquette
Wastewater
Treatment Plant
1930 US 41
See Attachment D
for Site Plan

ATTACHMENT C – Project Site Map and Photos (Wastewater Treatment Plant)



Picture A



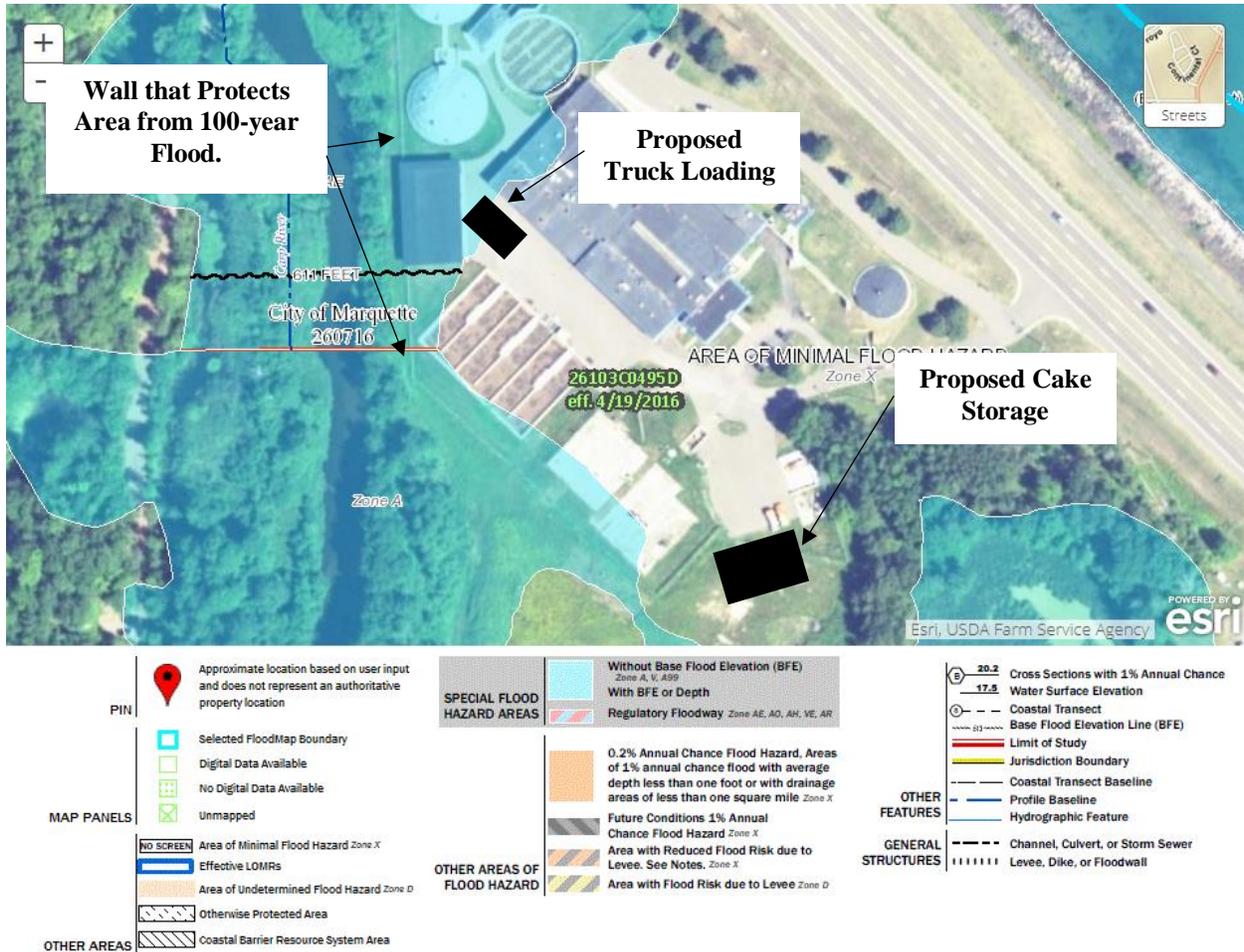
Picture B



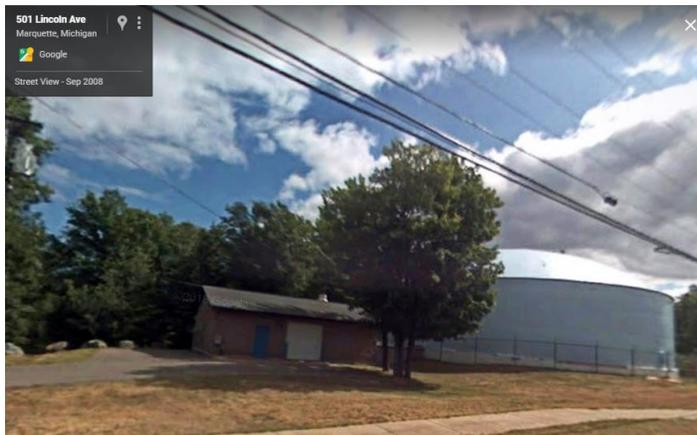
Picture C

ATTACHMENT C – Project Site Map and Photos (Wastewater Treatment Plant)

The 2017 FEMA 100 year floodplain map for the Marquette service area can be accessed through the following web address and searching for Marquette, MI: <https://msc.fema.gov/portal/search#searchresultsanchor>. The figure below illustrates the FEMA 100-year floodplain mapping for the treatment facility along with the proposed improvements. The proposed truck loading is shown partially in the floodplain. As part of the 2008 construction, a wall was provided that protects the existing secondary clarifiers, aeration, cake storage and other assets from a 100-year flood. The proposed truck loading area will also be protected by this wall.

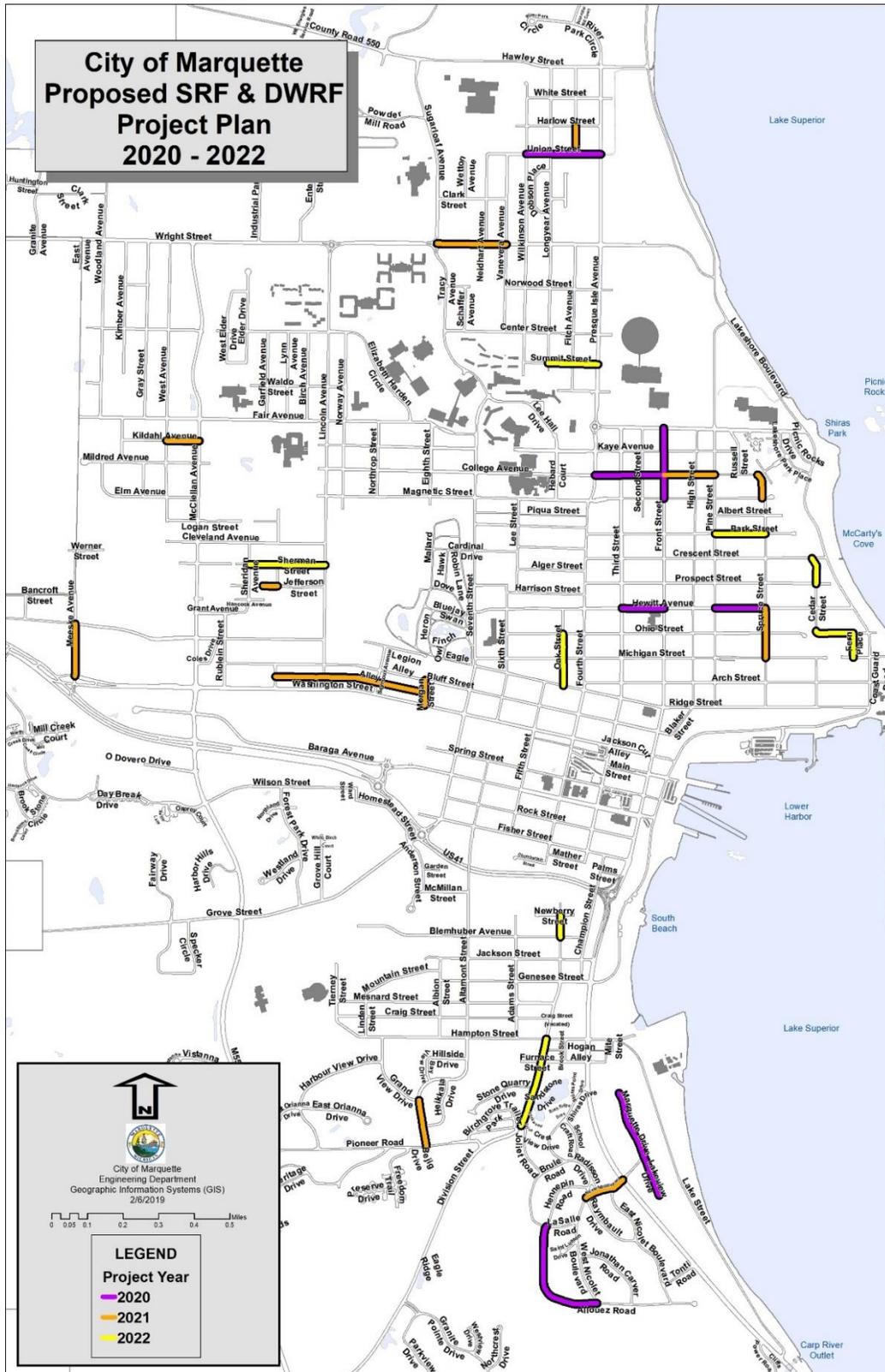


ATTACHMENT D – Project Site Map and Photos (Lincoln Avenue Pump Station)



Picture A

ATTACHMENT E – Project Location Map (Street Reconstruction Projects with Sanitary Sewer and Water Line Replacements)



March 1, 2019

Hannahville Potawatomi Indian Community
Earl Meshigaud
N-14911 Hannahville B-1 Road
Wilson, MI 49896
earlmeshigaud@hannahville.org

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear Mr. Meshigaud,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. Enclosed please find the following information relative to the proposed projects:

- Project Descriptions
- Attachment A – General Location Map
- Attachment B – Project Location Map (Wastewater Treatment Plant, Lincoln Avenue Booster Pump Station and Street Improvement Maintenance Program (SIMP) Projects with Sanitary Sewer Line Replacements)
- Attachment C – Project Site Map and Photos (Wastewater Treatment Plant)
- Attachment D – Project Site Map and Photos (Lincoln Avenue Pump Station)
- Attachment E – Project Location Map (Street Reconstruction Projects with Sanitary and Water Line Replacements).

By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects. On behalf of the City of Marquette, Donohue & Associates, Inc. (Donohue) seeks clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within the next 45 days, if possible, in order to meet DEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

MDEQ has directed that we also request that the Hannahville Potawatomi Indian Community transmit to the MDEQ a copy of any comments or clearances your office issues to Donohue. We request that said duplicate correspondence be directed to: Municipal Facilities Section, MDEQ Environmental Science and Services Division, P. O. Box 30457, Lansing, MI, 48909-7957.

If you should have any questions about this submittal, please contact me by phone at 414-651-2435 at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Heisel". The signature is written in a cursive, slightly slanted style.

Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

March 1, 2019

Keweenaw Bay Indian Community
Gary Loonsfoot Jr., THPO
16429 Bear Town Road
Baraga, MI 49908
1-906-353-6623 ext. 4178
gloonsfoot@kbic-nsn.gov

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear Mr. Loonsfoot Jr,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. Enclosed please find the following information relative to the proposed projects:

- Project Descriptions
- Attachment A – General Location Map
- Attachment B – Project Location Map (Wastewater Treatment Plant, Lincoln Avenue Booster Pump Station and Street Improvement Maintenance Program (SIMP) Projects with Sanitary Sewer Line Replacements)
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- Attachment D – Project Site Map and Photos (Lincoln Avenue Pump Station)
- Attachment E – Project Location Map (Street Reconstruction Projects with Sanitary and Water Line Replacements).

By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects. On behalf of the City of Marquette, Donohue & Associates, Inc. (Donohue) seeks clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within the next 45 days, if possible, in order to meet DEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

If you should have any questions about this submittal, please contact me by phone at 414-651-2435 at your earliest convenience.

Sincerely,

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Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

March 1, 2019

Lac Vieux Desert Band of Lake Superior Chippewa Indians
Giiwegiizhigookway Martin, THPO
P.O. Box 249
Watersmeet, MI 49969
1-906-358-0137
gmartin@lvdtribal.com

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear Mr. Martin,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. Enclosed please find the following information relative to the proposed projects:

- Project Descriptions
- Attachment A – General Location Map
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- Attachment C – Project Site Map and Photos (Wastewater Treatment Plant)
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- Attachment E – Project Location Map (Street Reconstruction Projects with Sanitary and Water Line Replacements)

By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects. On behalf of the City of Marquette, Donohue & Associates, Inc. (Donohue) seeks clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within the next 45 days, if possible, in order to meet DEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

If you should have any questions about this submittal, please contact me by phone at 414-651-2435 at your earliest convenience.

Sincerely,

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Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

March 1, 2019

Michigan Department of Environmental Quality
Land-Water Interfaces
Water Resources Division
1504 West Washington Street
Marquette, MI 49855

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear Environmental Coordinator,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. The City doesn't anticipate any of the projects will impact land-water interfaces including inland lakes and streams, wetlands, the 100-year floodplain or the Great Lakes shores. Enclosed please find the following information relative to the proposed projects:

- Project Descriptions
- Attachment A – General Location Map
- Attachment B – Project Location Map (Wastewater Treatment Plant, Lincoln Avenue Booster Pump Station and Street Improvement Maintenance Program (SIMP) Projects with Sanitary Sewer Line Replacements).
- Attachment C – Project Site Map and Photos (Wastewater Treatment Plant)
- Attachment D – Project Site Map and Photos (Lincoln Avenue Pump Station)
- Attachment E – Project Location Map (Street Reconstruction Projects with Sanitary and Water Line Replacements)

By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects. On behalf of the City of Marquette, Donohue & Associates, Inc. (Donohue) seeks clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within the next 45 days, if possible, in order to meet

DEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

If you should have any questions about this submittal, please contact me by phone at 414-651-2435 at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Heisel". The signature is written in a cursive, slightly slanted style.

Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

March 1, 2019

Michigan Natural Features Inventory
1st Floor Constitution Hall
525 W. Allegan St.
Lansing, MI 48933

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear Michigan Natural Features Inventory,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. Enclosed please find the following information relative to the proposed projects:

- Project Descriptions
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- Attachment D – Project Site Map and Photos (Lincoln Avenue Pump Station)
- Attachment E – Project Location Map (Street Reconstruction Projects with Sanitary and Water Line Replacements).

By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects.

We do not anticipate any proposed project will result in control or structural modification of any natural stream or other body of water. On behalf of the City of Marquette, Donohue & Associates, Inc. (Donohue) seeks applicable Michigan Natural Features Inventory clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within

the next 45 days, if possible, in order to meet MDEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

If you should have any questions about this submittal, please contact me by phone at 414-651-2435 at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Heisel". The signature is written in a cursive, slightly slanted style.

Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

March 1, 2019

Sault Ste. Marie Tribe of Chippewa
Colleen Medicine
523 Ashmun
Sault Ste. Marie, MI 49783
1-906-635-6050
cmedicine@saulttribe.net

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear Ms. Medicine,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. Enclosed please find the following information relative to the proposed projects:

- Project Descriptions
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By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects. On behalf of the City of Marquette, Donohue & Associates, Inc. (Donohue) seeks clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within the next 45 days, if possible, in order to meet DEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

If you should have any questions about this submittal, please contact me by phone at 414-651-2435 at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Heisel". The signature is written in a cursive style with a large initial "C".

Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

March 1, 2019

State Historic Preservation Office (SHPO)
Environmental Review Office
Michigan Historical Center
702 West Kalamazoo Street
P. O. Box 30740
Lansing, MI 48909-8240

Re: City of Marquette
Water & Sewer System Improvements – SRF/DWRF Program

Dear SHPO,

The City of Marquette, Michigan intends to construct several improvements to its water treatment system, wastewater treatment system and its water distribution and collection systems. The City plans to complete these projects over the next 3 years and intends to fund the projects in part by using Michigan Department of Environmental Quality (MDEQ) State Revolving Fund low interest loan proceeds.

The proposed projects include upgrading the wastewater treatment plant and Lincoln Avenue Water Pump Station. The City is also planning street improvement maintenance projects and street reconstruction projects for areas that include sanitary and water line replacements. Enclosed please find the following information relative to the proposed projects:

- State Historical Preservation Office Application for Section 106 Review
- Project Descriptions
- Attachment A – General Location Map
- Attachment B – Project Location Map (Wastewater Treatment Plant, Lincoln Avenue Booster Pump Station and Street Improvement Maintenance Program (SIMP) Projects with Sanitary Sewer Line Replacements).
- Attachment C – Project Site Map and Photos (Wastewater Treatment Plant)
- Attachment D – Project Site Map and Photos (Lincoln Avenue Pump Station)
- Attachment E – Project Location Map (Street Reconstruction Projects with Sanitary and Water Line Replacements)

Project's Area of Potential Effects (APE): The attachments are included to provide additional detail related to the projects and define the Project Area of Potential Effects (APE). The area of potential effect for each project group are summarized as follows:

Wastewater Treatment Plant Project - Attachment C provides a site plan and pictures of the Marquette Area Wastewater Treatment Facility. The plant's perimeter site fence is considered the limits of the project's Area of Potential Effects. There are no major structures in the near vicinity of the plant buildings.

Lincoln Avenue Pump Station – Attachment D provides a site plan and pictures of the Lincoln Avenue Booster Pump Station. The project does not include work on the structure or site.

Street Improvements and Maintenance Projects with Sanitary and Water Pipe Replacement – The projects involve work in the street right of way.

Street Reconstruction Projects with Sanitary and Water Pipe – The projects involve work in the street right of way.

Cured in Place Pipe Lining – No work is done on the surface.

By this letter and the attachments, the City of Marquette is notifying the addressee of the City's intent to proceed with these projects.

On behalf of the City of Marquette, Donohue & Associates, Inc. (Donohue) seeks applicable State Historic Preservation Office clearance on the projects, so that the projects can qualify for MDEQ Revolving Fund Loans. We request this clearance be acted upon within the next 45 days, if possible, in order to meet MDEQ's schedule for issuing loans. Please forward any sign-off correspondence to me at the address listed above.

If you should have any questions about this submittal, please contact or by phone at 414-651-2435 at your earliest convenience.

Sincerely,



Craig Heisel
Process Engineer

Enclosures: As noted

Cc: Curt Goodman

APPENDICES

Appendix H – Public Hearing and Resolution Information

MARQUETTE CITY COMMISSION

PUBLIC HEARING

COMMISSION CHAMBERS

MONDAY, APRIL 8, 2019 - 6:00 P.M.

RESOLUTION ADOPTING THE
STATE REVOLVING FUND/DRINKING WATER REVOLVING FUND
FINAL PROJECT PLAN



Rutkowski Court Reporting, LLC

Natalia Rutkowski, CSR, RPR

2562 Huron Street

Marquette, Michigan 49855

Phone: (906) 250-1462

rutkowskicourtreporting@gmail.com

www.rutkowskicourtreporting.com

April 8, 2019

MARQUETTE CITY COMMISSION

PUBLIC HEARING

COMMISSION CHAMBERS

MONDAY, APRIL 8, 2019 6:00 p.m.

SUBJECT: Resolution Adopting the State Revolving Fund/
Drinking Water Revolving Fund
Final Project Plan

PRESENTERS: Craig Heisel, Donohue & Associates, Inc.
Curt Goodman, Director of Municipal Utilities

IN ATTENDANCE:

Curt Goodman, Director of Municipal Utilities
Craig Heisel, Donohue & Associates
Mayor Frederick Stonehouse
Mayor Pro-tem Sarah Reynolds
Commissioner David Campana
Commissioner Peter Frazier
Commissioner Jennifer Hill
Commissioner Paul Schloegel
Commissioner Jenna Smith
City Manager, L. Michael Angeli
Police Chief, Blake Rieboldt
Finance Director, Gary Simpson
Assistant to City Manager, Jen LePage
City Attorney, Ronald Keefe
City Clerk, Kris Hazeres

REPORTED BY: Natalia Rutkowski, CSR #9088
Certified Shorthand Reporter
Registered Professional Reporter
Rutkowski Court Reporting, LLC
2562 Huron Street
Marquette, Michigan 49855
(906) 250-1462

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PUBLIC HEARING OPENED FOR PUBLIC COMMENT	20
COMMISSIONER QUESTIONS	21
MOTION	30
ROLL CALL VOTE	31

* * * * *

1 (At 6:00 p.m., City Commission Meeting began)

2 (At 6:41 p.m., Public Hearing on the SRF/DWRF
3 Project Plan began)

4 MAYOR STONEHOUSE: Number 4, Drinking
5 Water/Sewage Water.

6 Clerk, if you would read the background,
7 please.

8 CITY CLERK HAZERES: Thank you.

9 On background: On January 28th, 2019, the
10 Marquette City Commission approved a professional
11 services agreement with Donohue and Associates, Inc.,
12 for the preparation of a State Revolving Fund/Drinking
13 Water Revolving Fund Project Plan. The Project Plan is
14 the first step in the SRF/DWRF loan process in securing
15 financing. To secure funding and to be considered for
16 loan forgiveness, a Public Hearing is required. The
17 SRF/DWRF Project Plan must be adopted by the City
18 Commission in the form of resolutions by May 1, 2019.

19 Fiscal effect: None with this action.

20 Recommendation: Following the Public Hearing,
21 approve the attached resolutions adopting a final
22 SRF/DWRF Project Plan for water and wastewater system
23 improvements, and designate the City Manager as the
24 Authorized Project Representative.

25 Alternatives: As determined by the Commission.

1 MAYOR STONEHOUSE: Mr. Goodman, I believe you
2 have a presentation for us?

3 MR. GOODMAN: Correct.

4 PRESENTATION BY CURT GOODMAN

5 MR. GOODMAN: My name is Curt Goodman. I'm the
6 Director of Municipal Utilities. We're going to do a
7 joint presentation here. I'm going to talk a little bit
8 about the State Revolving Fund/Drinking Water Revolving
9 Fund, and then Craig Heisel from Donohue is going to talk
10 about some of the requirements that are required as part
11 of this presentation.

12 In putting together this presentation,
13 I thought it might be a good idea to just give an
14 overview of what the State Revolving Fund and Drinking
15 Water Fund is, just sort of the importance of it, as we
16 look for alternative financing plans to finance some of
17 our much-needed infrastructure.

18 The City of Marquette is part -- there is an
19 adopted strategic plan. And one of the key components of
20 the strategic plan on infrastructure is to maintain
21 mandatory compliance, operational performance, maintain a
22 safe work environment. You always look for ways to
23 improve efficiency that would reduce, you know, your
24 costs of operations and conserve water and other
25 resources. So that's really what we're doing, is we're

1 really following the City of Marquette's adopted
2 strategic plan.

3 I've done quite a few budgets in the last,
4 probably, 20 years. And every time we do a budget
5 presentation about water/sewer, during the budget
6 process, you know, this Commission and past Commissions
7 always asked, what financial options are out there to
8 fund these much-needed infrastructure projects? So
9 that's what we're trying to do, is to give the City
10 Commission some options to finance our plan.

11 The SRF/DWRF loan program was established by
12 the Federal Clean Water Act and Safe Drinking Water Acts.
13 There's 51 state programs that operate the program that
14 we're looking at to participate.

15 Some of the key components, it's definitely
16 low-interest loans for infrastructure improvements.

17 I want to emphasize, too, that SRF is, you
18 know, mostly sewer revolving funds on the wastewater side
19 and drinking water. Unfortunately, there isn't, like,
20 the streets. Stormwater isn't part of this. So this
21 just pays for some of the water and sewer costs.

22 And probably the big one that I want to talk a
23 little bit more about is, if you're -- This will be the
24 fifth SRF/DWRF program that I've participated in. And
25 one thing with -- Through this program, we've been very,

1 very fortunate to get principal loan forgiveness.

2 And the benefit of being in this program is
3 that opportunities do come up to get 40 percent
4 forgiveness. The Governor might put together a program
5 that gives people, or communities that are involved in
6 SRF/DWRF, the first crack at some grant money, some loan
7 forgiveness. So that's really something I'd like to
8 stress. You know, without being in this program, you
9 don't even have an opportunity.

10 A little bit more on it.

11 In 2015, as last updated, clean water had
12 60 million dollars, which was for wastewater;
13 drinking water, 27 million.

14 One thing this program does, which I think is a
15 good, positive thing, is it does require financial
16 sustainability. That means, you do have to show that you
17 have enough revenue coming in versus your expenses going
18 out.

19 And when I talk about principal forgiveness,
20 if there's anything, projects -- And we're looking at
21 this really, really closely. If we can, in some way,
22 tie some of our projects that you'll see -- Craig will
23 show a little bit later -- into some sort of Green
24 project, then we would qualify for loan forgiveness.

25 So that's really my challenge in the next,

1 you know, couple of months, is to really put on my
2 salesman hat and talk to the DEQ, and say, hey, you know,
3 we're doing some good projects that -- you know, please
4 consider us for loan forgiveness.

5 As I mentioned before, this will be probably
6 the fifth SRF/DWRF that I've been involved in.

7 A little bit of history.

8 2003 was our first one. This was a Lift
9 Station project. One thing, during that project, we were
10 able to fund the fiber optic that the City currently uses
11 as the backbone for communications. And that was sort of
12 a -- I was able to get that in there to using the SRF
13 Fund to pay for that.

14 And in 2006, we were all set to do a
15 wastewater treatment plant upgrade. We were talking
16 about 15.3 million dollars. And just because we were in
17 the program, I believe it was Governor Granholm who came
18 out with a -- it's called an S2 program for design and
19 engineering. And in December of that year, within
20 probably about two, three weeks, we were awarded
21 \$956,000. And that was just a -- I call it a Christmas
22 present. And it made Judy Akkala, who was the City
23 Manager at the time, a pretty happy person.

24 And then another grant we got was the \$25,000
25 S2 grant.

1 And then the most recent one, we funded the
2 Island Beach Water Main Project, and a couple projects at
3 the wastewater plant, and we were able to prove that some
4 of those projects qualified for Green Reserve money.

5 And once again, not being in this program, we
6 wouldn't have realized those loan forgiveness. So that's
7 the really cool benefit about it.

8 One thing that -- In putting together the
9 State Revolving/DWRF Project Plan, it's very important
10 that we have used information through the Capital
11 Improvement Plan, the most recent financial plan that was
12 presented to the City Commission, some of the strategic
13 planning. So all of the -- Everything that we are
14 providing here has been discussed at the Commission and
15 public input level. And so we are following, you know,
16 pretty much a pretty good path of what the Commission's
17 direction has provided us.

18 This does fall in line, you know, regardless if
19 we use SRF/DWRF funding -- bonding, you know. If we
20 don't use it, we're still going to have to follow the
21 financial plan moving forward. So whatever mechanism the
22 Commission decides to use, we still have to -- it's
23 important that we stick to that financial plan. And
24 again, that will be up to the Commission as we go through
25 the budget process.

1 And one thing, too, that this -- what we're
2 asking the Commission tonight is really to approve a
3 resolution to submit a Project Plan to be considered.

4 We're not -- All we want to do is, we want to
5 just get lined up. The State goes through a pretty
6 detailed process. And then they'll say, okay, our
7 three-year -- this is a three-year plan, and saying that,
8 you know, there is funding for Marquette, and it meets
9 the criteria to move forward.

10 The good thing about this program is you only
11 bond of what you -- projects you do. So it's like a draw
12 account. I think we explained that during a previous
13 meeting. So if the Commission only approves, you know,
14 four projects, that's the only projects that will be --
15 you know, go to the next step. So it's totally up to the
16 City Commission and the residents during the budget
17 process to decide what goes into the 2020, 2021, and 2022
18 Project Plan.

19 So that's sort of a nutshell.

20 Once again, I'm a proponent of this. It is
21 time-consuming. It's sort of -- It takes a little bit
22 of -- It takes work, but I think as you can see, it has
23 paid off for the benefit of the city. And I do think
24 it's a fiscal responsibility looking for alternative
25 funding sources.

1 Okay. Moving forward.

2 The second part of this presentation, Craig is
3 going to talk about. These are some requirements that we
4 have to include in this Public Hearing. So we're going
5 to go through some of the projects and some of the
6 requirements, just so that -- it's important that we meet
7 the required Public Hearing requirements. So with that,
8 Craig.

9 PRESENTATION BY CRAIG HEISEL

10 MR. HEISEL: Thank you, Curt.

11 Thank you, Commission, for letting me be here
12 today.

13 So again, Curt kind of gave some of the
14 background of the SRF and DWRP, kind of, loan history,
15 and some of the, kind of, successful history that the
16 City has, kind of, working with this program.

17 And then I plan to kind of walk through the
18 details of the Project Plan, and then just provide some
19 background on the specific projects that are part of it.

20 And as Curt mentioned, this is kind of the
21 first step in this process, developing the Project Plan,
22 and then going through this Public Hearing process,
23 you know, just to kind of move forward with it.

24 So this first slide is a little bit about the
25 requirements for developing the Project Plan.

1 The first element is identifying opportunities
2 for investment within the system, and then establishing
3 priorities. And the City really does that as part of
4 their strategic planning process. So all we're kind of
5 doing is building upon that, kind of, foundation that the
6 City does, you know, kind of through their different
7 processes.

8 And then the next step is, is kind of looking
9 at some alternatives in order to implement that strategic
10 plan.

11 And as part of the requirements of putting this
12 Project Plan together, the guidelines from the Michigan
13 Department of Environmental Quality, we have to look at
14 different alternatives.

15 One alternative is the no action. So if the
16 City didn't take this -- look at this investment and took
17 no action, you know, what would be the cost and benefits
18 or risks to the City for that no action?

19 And then another alternative is looking at
20 opportunities for optimization or regionalization. So
21 that was also included as part of the Project Plan. And
22 then also looking at what these investments might do from
23 a cost benefit arrangement.

24 And then the next step is, you know,
25 identifying the most favorable alternative, the

1 recommendations, and then considering what impacts those
2 costs would have on the users.

3 So that's really kind of in a -- you know, a
4 five-bullet-point discussion on how the Project Plan is
5 developed.

6 And then a little bit on the goals of it.

7 You know, again, just to reinforce what Curt
8 has said, you know, the concept is to kind of build upon
9 the City's strategic planning process, and then focus --
10 as far as these SRF/DWRF loans are concerned, focus on
11 developing drinking water and wastewater treatment
12 infrastructure, and then again, to follow, kind of, this
13 2000- -- or the six-year Capital Improvement Plan that
14 the City has developed. And it was incorporated in the
15 2018 rate analysis. So really, the approach is to kind
16 of just keep building upon that information.

17 And then there's a couple kinds of projects
18 that are included in the Project Plan.

19 The first ones are associated with the Street
20 Reconstruction Projects and Street Improvement
21 Maintenance Projects. And then with those projects, the
22 SRF and DWRF loans would fund the water system, and then
23 the wastewater collection system improvements that are
24 associated with those projects. So in addition to the --
25 As part of the Street Reconstruction Projects, if pipes

1 are replaced or improved upon, this funding would then
2 address that.

3 Then another, kind of, group of projects that
4 are a part of this are ones that the City is planning to
5 submit with the idea of, you know, hopefully getting the
6 40 percent loan forgiveness as part of it.

7 So there's two projects that are associated
8 with that. One is the Lincoln Water Booster Pump
9 Station, and hopefully, that will qualify for loan
10 forgiveness for energy efficiency.

11 And then there's a second project that's
12 associated with improvements to the biosolids handling at
13 the wastewater plant. And then we're hopeful that that,
14 through kind of a business plan process, would also
15 qualify for this loan forgiveness.

16 And then the next few slides I have are just
17 kind of details associated with those projects.

18 So this first one here is associated with the
19 City Street Improvement Maintenance Project.

20 So the City has an approach where they look at
21 their different streets, and do a, kind of, Paser rating
22 analysis. And then the streets that are planned for
23 improvement, the approach is to incorporate -- in our
24 Project Plan is to incorporate the replacement of the
25 sewer laterals as part of that. So if you're going to do

1 a pavement improvement project, we want to make sure
2 we're addressing some of the infrastructure underneath
3 that street as part of it.

4 And the map just kind of shows the different
5 locations by year of where those projects are found.
6 So there's a number of different projects by year that
7 are incorporated in that.

8 Again, the goals are to extend the life of
9 assets, and then coordinate street repairs with
10 improvements, the infrastructure that's underneath the
11 streets, and then overall, the intent is to, you know,
12 provide the service at the lowest cost.

13 What happened to our map there?

14 But this is another project that's associated
15 with the streets, and this is what we call the Street
16 Reconstruction Project. So in this case, instead of just
17 repaving the streets, the streets are excavated. And
18 then this is -- This project, the SRF/DWRF component of
19 it, includes replacement of the sewer pipes, and then the
20 drinking water pipes that are beneath the street.

21 And in most cases where this is done, the
22 adequacy for fire flows for the streets and then the
23 capacity of the sewer lines needs to be increased to
24 account for certain services in those areas.

25 So this map, if it were illustrated here,

1 would show, kind of, where the different locations are of
2 those projects that are by year.

3 And again, you know, aligning with the Street
4 Improvement Maintenance Projects, the intent here is to
5 coordinate street replacements with the infrastructure
6 beneath the street, and then manage, kind of, overall
7 replacement costs, and then also to address some
8 deficiencies in the system such as collection system
9 capacity, and then also fire water flow.

10 So this project is associated with the
11 Lincoln Avenue Water Booster Pump Station. So this pump
12 station provides service to, I think, the -- kind of the
13 eastern half of the city of -- the eastern part of the
14 city of Marquette.

15 And so the intent for this project is to look
16 at that system providing that service, and see if there
17 are ways to improve energy efficiency maybe through
18 variable speed drives or things like that, and also to
19 address some aging infrastructure. This pump station is
20 about 30 years old.

21 And then again, the hope is, because, you know,
22 we'll reduce the overall energy consumption for the
23 system, that this would qualify for a Green Project
24 Reserve project. And then we would submit a business
25 case for that loan forgiveness.

1 And then the final, kind of, major project
2 that's a part of it is the Solids Handling Improvements
3 Project at the wastewater treatment plant. So this
4 project involves some additional process equipment, some
5 additional biosolid storage, and then some, kind of,
6 solids load-out facilities.

7 And the intent here is to kind of maintain the
8 City's ability to beneficially reuse the biosolids,
9 to manage risks associated with their National Pollution
10 Discharge Elimination System Compliance, and then also,
11 overall, kind of, lower the cost for disposing of the
12 biosolids.

13 And again, because of the nature of this
14 project, the hope is that this will qualify for a
15 Green Project Reserve and loan forgiveness, and a
16 business plan will be developed as part of this to
17 support that.

18 So we kind of -- We talked a little bit about
19 putting the Project Plan together, and some of the
20 elements that are associated with that. And then we've
21 kind of talked about some of the projects that are
22 incorporated into the Project Plan. And then also, a
23 requirement with this process is to address environmental
24 impacts that may be associated with that.

25 So the Project Plan was -- The elements of the

1 Project Plan were sent out to different regulatory
2 agencies: The Michigan Natural Features, Land and Water,
3 U.S. Fish and Wildlife, and some other locations. So the
4 intent is to get some feedback on these departments'
5 interpretation of the City's Project Plan as it's related
6 to the environmental impacts.

7 And then we also looked at the direct impacts
8 that may be associated with these projects. You know,
9 again, we want to make sure we're mitigating potential
10 impacts with noise, dust, and things like that,
11 especially with the Street Reconstruction Projects.

12 The intent is for the street projects to be --
13 to take place in the street right away, so there
14 shouldn't be any issues with impacts to areas outside of
15 that.

16 And then another element that was evaluated
17 was, you know, these projects, will they impact wetlands
18 or floodplains, things like that. And the way that the
19 projects are set up now, there should be no impact there.

20 And then also, we looked at indirect impacts.
21 There should be no impact on changes to land use or
22 impacts to air or water quality.

23 So this is a table of -- it just itemizes the
24 different kind of projects that are included in the
25 Project Plan, and then kind of summarizes the planned

1 implementation by year.

2 And you could see that 2020 includes some --
3 what we call Street Reconstruction Projects. So there's
4 eight projects that are associated with that. And then
5 also the Street Improvement Maintenance Projects, costs
6 associated with that.

7 And then 2021 has a number of additional
8 projects that include more street reconstructions, more
9 pavement improvements, some pipe lining, and then also,
10 evaluation of the Lincoln Water Booster Pump Station,
11 and then the Solids Handling Project that we discussed.

12 And then 2022 has some additional
13 reconstruction projects, pavement projects, and also,
14 improvements to the Lincoln Water Pump Station.

15 So this is my final slide, and this is just
16 kind of a summary.

17 So again, you know, just to further reinforce
18 what Curt went through, the goal is to align our
19 infrastructure improvements with, you know, the City
20 strategic plan that also was incorporated in the 2018
21 rate analysis. So these projects that we kind of just
22 walked through are -- you know, a lot of them are the
23 same projects that were evaluated as part of that
24 process.

25 Then we looked at the impact of rates on users,

1 on the water system and on the sewer system. And again,
2 the intent there is for that to align with that 2018
3 rate analysis. And those rates that are summarized up
4 there don't include the possibility of the principal
5 forgiveness that we talked about.

6 And then again, to reinforce that, you know,
7 the Commission isn't allocating funds through this
8 process. All we're trying to do is just get approval to
9 submit the Project Plan to the State, and then just keep
10 moving forward with this process.

11 And so I speak for Curt, we appreciate your
12 time.

13 MAYOR STONEHOUSE: Commissioners, any
14 questions?

15 CITY ATTORNEY KEEFE: Your Honor --

16 MAYOR STONEHOUSE: Commissioner Campana?

17 CITY ATTORNEY KEEFE: Your Honor, I don't want
18 to interrupt, but this is a Public Hearing, and I think
19 you need to open the Public Hearing at some point.

20 MAYOR STONEHOUSE: Could we do Commissioner
21 questions before the Public Hearing, or post the
22 Public Hearing, or as part of that?

23 CITY ATTORNEY KEEFE: I think the Public
24 Hearing ought to take place first.

25 MAYOR STONEHOUSE: Then we'll do it that way.

1 Public Hearing is declared open.

2 Any members of the public desiring to address
3 the issue before the Commission, please do so now.

4 PUBLIC HEARING OPENED FOR PUBLIC COMMENT

5 MR. LUTTENBERGER: Matt Luttenberger,
6 1406 Garfield Avenue, here in the city of Marquette.

7 I'm sharing just because somebody has to say
8 thank you very much for doing all of this.

9 I am curious, though, about the map, and which
10 projects are done at which time. That would be something
11 helpful to look at in a PDF for me.

12 But, no, for the most part -- It struck me as
13 odd that there's \$120 -- well, the rate fee that you had,
14 the five-year rate changes. We're up to about \$120 for
15 our monthly fees for city water and sewer. It just seems
16 high for having such a resource that we have. But I
17 understand it. I mean, don't get me wrong, I understand
18 it. There's a lot of projects that have to happen.

19 I would like to see, however, a bond taken out
20 to kind of reduce the cost of what it is to the city
21 residents as a fee base, if possible, because I know the
22 finances that we just listened to has a lot of
23 restrictions about what we can spend money on.

24 But the thought is to try to keep the cost of
25 living down for the city residents. And we all know that

1 it has to happen. We all know that it's going to happen.
2 But if there's a way that you can tell a new couple that
3 comes into town, or a new family that comes into town,
4 or an existing family that's in town, you folks really --
5 I mean, we are all paying this universally, and I get
6 that. There's a common cost to improving our water
7 systems. But if we can present less than a 3-figure
8 monthly cost for our water, I would like to see that.

9 And again, thank you for your time. Thank you
10 for the map. Thank you.

11 MAYOR STONEHOUSE: Anyone else desiring to
12 address the issue before us?

13 Seeing none, the Public Hearing is closed.

14 Commissioners, any questions?

15 Commissioner Hill?

16 COMMISSIONER QUESTIONS

17 COMMISSIONER HILL: All right. I love this
18 stuff, you all, so be careful. This is my -- This is
19 where I geek out.

20 Because having clean water and having --
21 treating our wastewater and sending it out to the lake in
22 a healthy condition is part of what makes Marquette a
23 great place to live, as the public commenter was just
24 saying.

25 So if -- One of my questions is -- I have three

1 questions.

2 What would you -- If you were getting to have
3 one more thing on this plan, what's the thing you had to
4 cut off that you wished you could also get done? Can you
5 even -- Is it possible to say that? I'm just curious.
6 Like, I'm sure you've spent so much time thinking about
7 these things that need to get done. What's the other
8 thing that needs to happen, as we think about ...

9 MR. GOODMAN: Yeah. Basically, as we
10 mentioned before, the Project Plan follows the adopted
11 Capital Improvement Plan.

12 In 2020, there was a lot of projects that were
13 delayed from 2019. And what we did is, we did include
14 the 2019 into the 2020 Project Plan for the Commission to
15 consider.

16 As I mentioned before, it's the City's,
17 you know, decision to set the bond limit or whatever --
18 Whatever projects they wish to do will be incorporated
19 into the Project Plan.

20 So I don't have any other projects. I don't
21 have any in my back pocket at all. But again, these are
22 all based on, you know, the budget process, the CIP
23 process, so ... And again, we tried to really follow the
24 protocol as assessing the needs.

25 COMMISSIONER HILL: Thank you. So that means,

1 Public, that we're going to have the budget hearings.
2 We've already set them in August. So when you're tired
3 of playing outside in the beautiful August weather, come
4 on in and talk to us about budget stuff, because it's
5 going to be really important, because that's what's
6 determining what we're talking about right now. Those
7 will be up on the website.

8 So I know that, like, in the polar vortex year,
9 we had a lot of broken pipes. We've had some let-run
10 orders this year, even with the crazy winter that we had.

11 Is there anything to know about how you've had
12 to plan for climate change or other extreme events in
13 making these recommendations?

14 MR. GOODMAN: Well, I think any time you make
15 any improvement to infrastructure, it's going to improve
16 to deal with the elements. I know the engineering
17 standards, the City has looked at those for the depth of
18 water mains, sewer mains. So a lot of those -- Any time
19 you do a project, a lot of these outside influences are
20 taken into consideration.

21 I know for cooler temperatures, when they --
22 when you have a water main project, you always like to
23 loop the water main. And that does a couple things.
24 It's for better fire flow, and also, it gives -- it keeps
25 the water moving instead of some of the dead-ends that

1 the City has.

2 So I do think, you know, good engineering
3 principles are taken into consideration for climate
4 change. So I think that the City does a pretty good job,
5 you know, of dealing with that.

6 COMMISSIONER HILL: Are we -- I feel like I
7 remember learning, in the polar vortex winter of '13/'14,
8 that we had to bury the pipes deeper. Are we still doing
9 that?

10 MR. GOODMAN: Oh, yes. Yeah. I think at the
11 time, the standard was 6 feet, and I think the
12 requirement now is a minimum of 7 feet. And I do think a
13 certain deal with the soil conditions. I think they also
14 put additional insulation in.

15 COMMISSIONER HILL: And then my last question
16 is, how -- It's likely that, you know, you're planning
17 three years ahead. How do you roughly plan for the --
18 The costs, I would expect, are going to rise every year.
19 Is inflation built into these costs, and how is that
20 accounted for?

21 MR. GOODMAN: Yeah. If you go to the next
22 step, part -- You've got Part 1, 2, 3 application.
23 The program does allow for a 15 percent contingency.
24 And once again, the beauty of this program, it's very
25 flexible. So if the City doesn't, you know, approve all

1 the projects in 2020, we can then move it to 2021, and
2 then -- But we'll -- These are budgeted numbers. I think
3 the engineering department really does an excellent job
4 in their cost estimates that you consider inflationary,
5 so ... You know, so those are -- That's a good point.

6 COMMISSIONER HILL: And then would the -- If we
7 do go forward with Lakeshore Boulevard, would any of this
8 be impacted by the spending that's going to happen on --
9 potentially happen on Lakeshore Boulevard?

10 MR. GOODMAN: No. This -- None of the projects
11 listed in this was included. Lakeshore was not included.
12 I know there's some costs to help out, you know, for some
13 water/sewer, you know, infrastructure, but it was not
14 included in this.

15 COMMISSIONER HILL: Thank you.

16 MAYOR STONEHOUSE: Other questions?

17 Commissioner Schloegel?

18 COMMISSIONER SCHLOEGEL: Thanks, guys.

19 Just a clarification. At the beginning,
20 I wasn't sure if you said it or not the way I heard it.

21 But all of -- Whatever comes from both the
22 SRF and DWRP, the monies that -- that can be directly
23 used in conjunction with all of our SIMP programs for the
24 next -- at least, the next three years that we have them
25 out with that?

1 MR. GOODMAN: Correct.

2 COMMISSIONER SCHLOEGEL: Okay. For some reason
3 there, I thought you said that they were not.

4 MR. GOODMAN: Yeah.

5 COMMISSIONER SCHLOEGEL: But these are all
6 eligible. And since these are already laid out from the
7 engineering department, it's pretty easy to plug them in
8 where you can use them. Okay.

9 I wasn't sure if it was just specific uses,
10 whether it's laterals and things along those lines?

11 MR. GOODMAN: Yeah. I think in the last slide,
12 anything -- they're broken out. Anything that deals with
13 SIMP for water and sewer, that's what's eligible, so ...

14 MR. SCHLOEGEL: Okay. SIMP is, for the people
15 that are like me, it's the Street Improvement Maintenance
16 Project. Those are the things that they've been
17 outlining for, at least, three years out, sometimes even
18 five, if I'm not mistaken.

19 MR. GOODMAN: And we talked earlier about the
20 Green Reserve. I'm really hoping that maybe some of
21 those laterals, you know, some of them might qualify for
22 it. You know, it's worth a shot.

23 COMMISSIONER SCHLOEGEL: Okay. It's exciting.

24 MAYOR STONEHOUSE: Any other Commissioners?

25 Commissioner Campana?

1 COMMISSIONER CAMPANA: Curt, thank you for the
2 presentation.

3 Sir, thank you.

4 It seems too good to be true. I mean, we're
5 doing -- We get benefits for things that we're already
6 doing. I mean, you looked at all these projects, and the
7 City is already doing them.

8 Is this something that we have to apply for
9 every year, or is it a long-term, the --

10 MR. GOODMAN: It's basically -- You know,
11 I made a recommendation in January. You know, I talked
12 to the Finance Director. I talked to the City Manager.
13 We were looking for ways that we could in some way,
14 possibly, you know, finance some of these projects with a
15 benefit. And again, I do believe with the Governor's
16 action to improve -- you know, find funding for
17 infrastructure, I just thought it would be a good idea.

18 So I did bring this forward back in January.
19 The Commission approved, you know, authorizing the hiring
20 of Donohue to assist in putting -- You know, the
21 Project Plan right now that's been on public notice is
22 271 pages, you know. So there was a lot of work put into
23 this in the last two months, you know, just to get to
24 this step.

25 But, yeah, each year you'll have to do a

1 shorter version of an application. This is the big
2 portion of it.

3 COMMISSIONER CAMPANA: So when we apply, is
4 there a chance we won't be accepted into this
5 Project Plan, or is it kind of like, if you apply, you
6 get it?

7 MR. GOODMAN: Well, in August, they'll come out
8 with a priority list, and then that's when all the
9 communities, they evaluate. But I've been told by the
10 DEQ that there's plenty of money in this program to fund
11 all of the projects.

12 COMMISSIONER CAMPANA: Last question.

13 If we get loan forgiveness, do we get money
14 back? Does that affect the rates at all? Will the
15 rate -- Or does it just hold the rates from going up?
16 Because each year we look at, you know, raising the water
17 rates, and I believe we're on schedule to raise them.

18 MR. GOODMAN: Correct.

19 COMMISSIONER CAMPANA: Do we get a break
20 somewhere, or is it --

21 MR. GOODMAN: That would be up to the
22 Commission's decision. Part of the process, too, we have
23 to do a user charge evaluation. So that's another step
24 that once we do the Part 1 application, you'll be getting
25 more information of exactly the impact. We'll have

1 better numbers then.

2 COMMISSIONER CAMPANA: Okay. And if I didn't
3 say it, in defense of our water rates, for the city of
4 Marquette, their rates are in the middle of the pack of
5 the communities across the U.P., so I don't feel like we
6 have high rates. I mean, they're high, but there's a lot
7 of places that have it higher.

8 MR. GOODMAN: Yeah.

9 COMMISSIONER CAMPANA: So we're still okay,
10 I feel.

11 MR. GOODMAN: Yeah. I do hear word on the
12 street right now -- not the -- Other communities right
13 now, you're going to see some pretty double-digit rate
14 increases in the next year, big time.

15 COMMISSIONER CAMPANA: Good. Thank you.
16 That's a lot of important work. Thank you.

17 MAYOR STONEHOUSE: Well, thank you very much
18 for giving us the information you did, and the
19 presentation, the detail in it. It is a critical thing
20 for us. It's a great opportunity to participate in the
21 program. And certainly, when we're talking good, clean
22 drinking water and how we handle our discharge, it is
23 vital. So as plowing as this might have been, it is
24 something that you have to do, because it is, again,
25 critically important to all of us. Thank you.

1 Commissioners, we will need a motion, and then
2 we will do a roll call vote.

3 MOTION

4 MAYOR STONEHOUSE: Commissioner Campana?

5 COMMISSIONER CAMPANA: I'd like to make a
6 motion. We approve the attached resolutions adopting a
7 final State Revolving Fund/Drinking Water Revolving Fund
8 Project Plan for water and wastewater system
9 improvements, and designate the City Manager as the
10 Authorized Project Representative.

11 MAYOR STONEHOUSE: Is there a second?

12 Commissioner Pro-tem?

13 MAYOR PRO-TEM REYNOLDS: Second.

14 MAYOR STONEHOUSE: Any other Commissioner?

15 Hearing any -- Or excuse me.

16 Commissioner Campana, any further comments?

17 COMMISSIONER CAMPANA: No. I just think this
18 is a very good project. It's going to benefit the city.
19 I can see no negatives -- I do not see any negatives.

20 MAYOR STONEHOUSE: Thank you.

21 Pro-tem Reynolds?

22 MAYOR PRO-TEM REYNOLDS: No, nothing further.

23 MAYOR STONEHOUSE: If you will please conduct
24 the roll call.

25 CITY CLERK HAZERES: Thank you, Mayor.

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ROLL CALL

CITY CLERK HAZERES: Commissioner Campana?

COMMISSIONER CAMPANA: Yes.

CITY CLERK HAZERES: Commissioner Frazier?

COMMISSIONER FRAZIER: Yes.

CITY CLERK HAZERES: Commissioner Hill?

COMMISSIONER HILL: Yes.

CITY CLERK HAZERES: Commissioner Schloegel?

COMMISSIONER SCHLOEGEL: Yes.

CITY CLERK HAZERES: Commissioner Smith?

COMMISSIONER SMITH: Yes.

CITY CLERK HAZERES: Mayor Pro-tem Reynolds?

MAYOR PRO-TEM REYNOLDS: Yes.

CITY CLERK HAZERES: And Mayor Stonehouse?

MAYOR STONEHOUSE: Yes.

Motion passes 7-0.

(At 7:19 p.m., Public Hearing on the SRF/DWRF
Project Plan concluded)

April 8, 2019

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CERTIFICATION

I certify that this transcript, consisting of 32 pages, is a true, correct, and complete record of the Public Hearing Regarding the Resolution to Adopt the State Revolving Fund/Drinking Water Revolving Fund Final Project Plan, before the Marquette City Commission on April 8th, 2019.

Date: April 12, 2019



Natalia Rutkowski, CSR #9088
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Notary Public, Marquette, Michigan
My Commission Expires 12-11-2022

**A RESOLUTION ADOPTING A FINAL PROJECT PLAN
FOR WATER SYSTEM IMPROVEMENTS AND
DESIGNATING AN AUTHORIZED PROJECT REPRESENTATIVE**

WHEREAS, the City of Marquette (legal name of applicant) recognizes the need to make improvements to its existing water treatment and distribution system; and

WHEREAS, the City of Marquette (legal name of applicant) authorized Donohue & Associates, Inc. (name of consulting engineering firm) to prepare a Project Plan, which recommends the construction of Water System Improvements; and

WHEREAS, said Project Plan was presented at a Public Hearing held on April 8, 2019 and all public comments have been considered and addressed;

NOW THEREFORE BE IT RESOLVED, that the City of Marquette (legal name of applicant) formally adopts said Project Plan and agrees to implement the selected alternative as described in the submitted SRF/DWRF Project Plan.

BE IT FURTHER RESOLVED, that the City Manager (title of the designee's position), a position currently held by L.M. Angeli (name of the designee), is designated as the authorized representative for all activities associated with the project referenced above, including the submittal of said Project Plan as the first step in applying to the State of Michigan for a Drinking Water Revolving Fund Loan to assist in the implementation of the selected alternative.

Yeas: Seven

Nays: Zero

I certify that the above Resolution was adopted by City of Marquette (the governing body of the applicant) on April 8, 2019.

BY: Kris Hazeres, City Clerk
Name and Title

Kris Hazeres
Signature

4-8-19
Date

**A RESOLUTION ADOPTING A FINAL PROJECT PLAN
FOR WASTEWATER SYSTEM IMPROVEMENTS or
NPS POLLUTION CONTROL/STORMWATER IMPROVEMENTS AND
DESIGNATING AN AUTHORIZED PROJECT REPRESENTATIVE**

WHEREAS, the City of Marquette (legal name of applicant) recognizes the need to make improvements to its existing wastewater treatment and collection system or its existing NPS pollution control/stormwater treatment system; and

WHEREAS, the City of Marquette (legal name of applicant) authorized Donohue & Associates, Inc. (name of consulting engineering firm) to prepare a Project Plan, which recommends the construction of Wastewater System Improvements; and

WHEREAS, said Project Plan was presented at a Public Hearing held on April 8, 2019 and all public comments have been considered and addressed;

NOW THEREFORE BE IT RESOLVED, that the City of Marquette (legal name of applicant) formally adopts said Project Plan and agrees to implement the selected alternative as described in the submitted SRF/DWRF Project Plan.

BE IT FURTHER RESOLVED, that the City Manager (title of the designee's position), a position currently held by L.M. Angeli (name of the designee), is designated as the authorized representative for all activities associated with the project referenced above, including the submittal of said Project Plan as the first step in applying to the State of Michigan for a revolving fund loan to assist in the implementation of the selected alternative.

Yeas: Seven
Nays: Zero
Abstain: Zero
Absent: Zero

I certify that the above Resolution was adopted by City of Marquette (the governing body of the applicant) on April 8, 2019.

BY: Kris Hazeres, City Clerk
Name and Title

Kris Hazeres
Signature

4-8-19
Date

SIGN-IN SHEET

PROJECT TITLE: SRF/DWRF Project Plan - Public Hearing

LOCATION: Marquette, MI

DATE: 04/08/19

NAME (Printed Last, First)

SIGNATURE

	NAME (Printed Last, First)	SIGNATURE
1	COODMAN CURT	Curt Coodman
2	Simpson, Gary	Gary W. Simpson
3	LePage, Jennifer	Jennifer LePage
4	KEEFE Rieboldt Blake R	Blake Rieboldt
5	KEEFE, RONALD	Ronald Keefe
6	Smith, Jenna	Jenna Smith
7	Paul Schloegel	Paul Schloegel
8	L. MICHAEL Angele	L.M. Angele
9	Hill, Jennifer	Jennifer Hill
10	FRED STONEHOUSE	Fred Stonehouse
11	CAMPANA DAVID	David Campana
12	Reynolds Sarah	Sarah Reynolds
13	Heisel, Craig	Craig Heisel
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AFFIDAVIT OF PUBLICATION

STATE OF MICHIGAN

AFFIDAVIT OF PUBLICATION

For the County of **MARQUETTE**

In the matter of: Notice of Public Hearing
Marquette City Commission
City of Marquette Draft Project Plan
Water & Sewer Improvement
SRF/DWRF Projects
April 8, 2019

Size: 2 x 11

State of **MICHIGAN**, County of Marquette ss.

JAMES A. REEVS

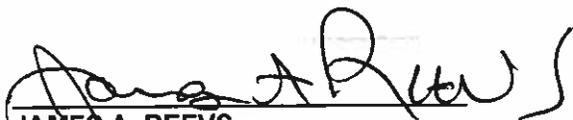
being duly sworn, says that he is

PUBLISHER

of **THE MINING JOURNAL**

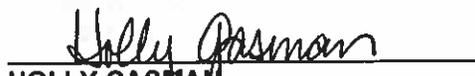
a newspaper published and circulated in said county and otherwise qualified according to Supreme Court Rule; that annexed hereto is a printed copy of a notice which was published in said newspaper on the following date, or dates, to-wit

March 6, 2019



JAMES A. REEVS

Subscribed and sworn to before me this 6th day of March 2019.



HOLLY GASMAN
Notary Public for **MARQUETTE** County, Michigan
Acting in the County of Marquette
My commission expires: May 25, 2025

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the Marquette City Commission will hold a Public Hearing on the following recommended item:

City of Marquette Draft Project Plan for the Water & Sewer Improvement – SRF/DWRF Projects

The public hearing will be held in City Commission Chambers at City Hall, 300 West Baraga Avenue at 6:00 p.m. on Monday, April 8, 2019. Any person wishing to comment on the proposed item may do so at that time.

The purpose of the hearing is to receive comment and views of interested persons on the Draft Project Plan and the environmental impacts of the proposed improvements that are being considered under this 3-year improvements plan. Discussions on the conditions of the existing infrastructure, the alternatives evaluated, the anticipated environmental impacts, project costs and estimated impacts of costs to the users will be presented at the hearing.

The Utility's plan includes projects necessary to achieve service level objectives including safety, environmental compliance and efficiency. The proposed projects include:

- Upgrading the Lincoln Avenue Water Pump Station to improve energy efficiency and water system performance
- Modifying the wastewater treatment plant's biosolids handling system to improve efficiency, reduce costs and reduce the environmental impact of solids disposal
- Replacing water distribution system pipes to improve the water distribution system reliability and performance
- Replacing or lining wastewater collection system pipes to improve reliability and performance.

Reconstruction of several existing streets within the City of Marquette over a period of 3 years is included in the plan. Within the scope of these street replacement projects are plans to replace sewers and water mains that are beneath them. These sewers and water mains are in poor condition and/or undersized. The total estimated project cost for improvements to these streets, (excluding their associated water and sewer replacements) is \$2,915,000. The sewer and water main replacement portions of each of these projects are considered eligible for low interest loans issued by the State of Michigan's Department of Drinking Water Quality (MDEQ) Clean Water State Revolving Fund and Drinking Water Revolving Fund respectively. The total forecasted costs for all water distribution and water treatment system related projects over the three-year period is \$5,856,880. The total forecasted costs for all sewer system and wastewater treatment plant-related projects is \$7,082,303. The total forecasted project cost for all of the water and sewer related activities over the planned period is \$12,939,183.

In order to finance these projects, the City of Marquette is intending on pursuing low-interest loans from the Drinking Water Revolving Fund for all potable water related treatment plant and distribution system improvements and loans from the Clean Water State Revolving Fund (SRF) loan program. The projected impacts on the costs for a typical residential customer will be discussed at the public hearing.

Copies of the plan detailing the proposed project will be available for public inspection on March 7, 2019 in the City Clerk's office at Marquette City hall.

Written comments received through the close of the public hearing on April 8, 2019 will be entered into the public hearing record and should be sent to the City Clerk's office 300 West Baraga Avenue, Marquette, Michigan 49855.

If you require assistance to participate in this hearing, please provide advance notice to the office of the City Clerk.

Kris M. Hazeres
Marquette City Clerk

Public Hearing SRF/DWRF Water and Sewer System Improvements

Marquette City Commission
Marquette, Michigan

April 8, 2019




City of Marquette Infrastructure Investment Goals

- Invest in improvements that align with City's adopted strategic plan:
 - Maintain regulatory compliance and operational performance
 - Maintain a safe work environment
 - Improve energy efficiency
 - Conserve water and other resources

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SRF/DWRF Loan Programs

- Established by Federal Clean Water Act and Safe Drinking Water Acts
- 51 separate state programs
- Low interest loans for infrastructure improvements
- Opportunities for principle forgiveness

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SRF/DWRF Loan Programs

- Managed by Michigan Department of Environmental Quality
- 2015 Loan Disbursements
 - Clean Water \$60M
 - Drinking Water \$27M
- Requires Fiscal Sustainability Planning (asset management plan)
- Green Project Reserve (qualifies for principle forgiveness)
 - Green Infrastructure, Water Conservation, Energy Efficiency, Green Innovative
- Current Loan Terms
 - 20 year
 - 2.0%

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City of Marquette SRF/DWRF History

- City has a successful history with SRF/DWRF program
- Without the SRF/DWRF program many City project improvements/savings would not have been realized:
 - 2003 - Lift station project - This project paid for the City of Marquette fiber current network system that is currently used by all City operations. (20 year loan/2.0% interest)
 - 2006 - Wastewater plant project - (S2 grant for design and engineering \$956,000- (1.58% interest rate)
 - 2012 - Lift Station Upgrades Design - S2 grant, \$25,000 design engineering
 - 2013 - Island Beach Water main and Water plant upgrade - SRF/DWRF loan forgiveness = \$353,004

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2018 – Utility Financial Plan (as presented to Commission – Nov. 2018)

- Forecast revenue under existing rates
- Forecast operating expenditures
- Forecast capital expenditures
- Identify adjustments to meet financial objectives
 - 90 days O&M and debt service in reserves
 - Debt service coverage 1.25x annual debt service
 - Cash fund some projects

Rate Design Overview

Purpose: Recover the total level of revenue indicated by the financial plans and meet the City's objectives.

Challenge: balance need for increased fixed revenues with impact to low usage customers.

Water and Sewer

- Alt. 1 – Across the Board Increase
- Alt. 2 – Higher Fixed Charge

Five Year Monthly Bill Impacts
\$1000.00 \$2000.00 \$3000.00 \$4000.00 \$5000.00



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2020 – 2022 SRF/DWRF Project Plan Approach

- ### SRF/DWRF Project Plan
- Project Plan Requirements
- Evaluate system deficiencies
 - Establish priorities
 - Evaluate alternatives
 - Make recommendations
 - Consider user fee impacts

- ### SRF/DWRF Project Plan
- Goals and Objectives
- **Goals**
 - Align with City's strategic plan
 - Focus on infrastructure improvements
 - Following 6-year CIP program included in rate analysis
 - **Projects**
 - Replacing water distribution system pipes to improve the water distribution system reliability and performance
 - Replacing or lining wastewater collection system pipes to improve reliability and performance

- ### SRF/DWRF Project Plan
- Opportunity for principle forgiveness
- Pursue Principle Forgiveness through Green Project Reserve (40% loan forgiveness)
 - Upgrading the Lincoln Avenue Water Pump Station to improve energy efficiency and water system performance.
 - Modifying the wastewater treatment plant's biosolids handling system to improve efficiency, reduce costs and reduce the environmental impact of solids disposal

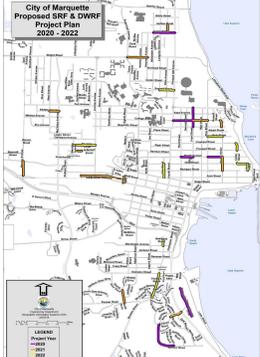
SRF/DWRF Project Plan – Street Improvement Maintenance Projects (Water and Sewer Improvements)

- **Project Goals**
 - Extend the useful life of existing streets
 - Coordinate lateral improvements with street repaving
 - Reduce overall public service costs to City



SRF/DWRF Project Plan – Street Reconstruction Projects (Water and Sewer Improvements)

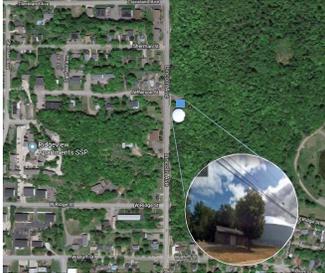
- **Project Goals**
 - Coordinate water and sewer improvements with street projects
 - Reduce overall replacement costs
 - Improve fire service and water and wastewater capacity



SRF/DWRF Project Plan

Lincoln Avenue Water Pump Station

- Project Goals
 - Improve water system hydraulics
 - Improve water system energy efficiency and water conservation
 - Manage repair/replacement and system reliability
- Analyzing system hydraulic performance and energy efficiency
- Replacing or refurbishing (3) horizontal split case pumps and 60 hp motors and variable speed drives
- Replacing or refurbishing isolation valves and pressure control valves
- Replacing the motor control center
- Providing soft start or variable speed drives.



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SRF/DWRF Project Plan

Wastewater Treatment Plant Solids Handling Improvements

- Project Goals
 - Reduce risk of NPDES non-compliance
 - Reduce solids handling cost
 - Increase solids handling flexibility and promote sustainability
- Thickening redundancy – thickening is more critical to plant operations in the event of equipment failure than dewatering.
- Increasing disposal of cake biosolids to reduce annual expenses.
- Provide at least 200 days of biosolids storage.
- Potential Green Project Reserve.



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SRF/DRWR Project Plan –

Environmental Impacts

- Coordinated with Michigan Natural Features, MDEQ land-water and U.S. Fish & Wildlife
- Evaluated Direct Impacts
 - Mitigate impacts of construction including traffic, noise and dust
 - Street improvement projects are in right of way
 - No projects are constructed in sensitive areas including wetlands or floodplain
- Evaluated Indirect Impacts
 - No changes to land use
 - No impacts to air or water quality

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SRF/DWRF Project Plan

Project List by Year

Project Name	2020		2021		2022	
	Sewer	Water	Sewer	Water	Sewer	Water
Street Reconstruction Water and Sewer Improvements - 8 Projects	\$1,351,845	\$1,990,261				
SIMP and Sanitary Sewer Lateral Replacements	\$335,000	\$0				
Street Reconstruction Water and Sewer Improvements - 12 Projects			\$772,121	\$1,502,420		
Cured In Place Pipe Lining (10,000 ft)			\$400,000	\$0		
Lincoln Water Pumping Station- Engineering Evaluation			\$0	\$40,000		
SIMP and Sanitary Sewer Lateral Replacements			\$445,000	\$0		
WWTP- Solids Handling Improvements			\$2,211,000	\$0		
Street Reconstruction Water and Sewer Improvements - 9 Projects					\$1,257,337	\$1,988,099
SIMP and Sanitary Sewer Lateral Replacements					\$310,000	\$0
Lincoln Water Pumping Station- Upgrade					\$0	\$336,100
Total	\$1,686,845	\$1,990,261	\$3,828,121	\$1,542,420	\$1,567,337	\$2,324,199

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SRF/DWRF Project Plan

User Impacts

- Align infrastructure improvements with 2018 Rate Analysis
- Costs do not include possible principle forgiveness
 - 2020: \$1.38/month for water + \$1.17/month for sewer
 - 2021: \$1.07/month for water + \$2.65/month for sewer
 - 2022: \$1.61/month for water + \$1.09/month for sewer
- City Commission will have opportunity to approve projects as part of annual budgeting process

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