Preliminary Engineering Report

Wastewater System Improvements

Prepared for

City of Bronson

Branch County, Michigan

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2220861

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1 INTRODUCTION

The City of Bronson (City) is the owner of a wastewater collection system that consists of approximately 12.8 miles of sewers and force mains, two lift stations and a WWTP. The City is currently under an Administrative Consent Order (ACO) from the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD) for various violations of the National Pollutant Discharge Elimination System (NPDES) Permit at the wastewater treatment plant (WWTP). Many of the permit violations are associated with excessive amounts of inflow and infiltration (I/I) in the wastewater collection system. To meet the ACO requirement, the City is applying for United States Department of Agriculture Rural Development (USDA-RD) funding with this document to address excessive I/I to meet the Remedial Design Standard (RDS), and ensure that the expected average daily flow, maximum day flow, and peak hourly flow at the WWTP are consistent with the WWTP's Basis of Design.

In 2021, a Wastewater System Evaluation was performed as part of the Stormwater, Asset Management and Wastewater (SAW) program guided by EGLE. Based on the 2021 Wastewater System Evaluation, several challenges were identified with the sanitary sewer, force main, lift stations, and WWTP and a series of recommended improvements were outlined. This Preliminary Engineering Report (PER) has been prepared for the United States Department of Agriculture Rural Development - Rural Utility Services Program to apply for a low-interest loan. The purpose of this report is to present a comprehensive plan and evaluation of alternatives for improving the existing wastewater collection system. The evaluation of alternatives includes an analysis of cost, technical feasibility, and environmental impacts for projects that are needed over the next 20 years. The Wastewater System Evaluation has been submitted as a supplemental attachment with the application.

Project completion will significantly improve the capacity, reliability, and performance of the wastewater collection system and treatment system.

2 PROJECT PLANNING

2.1 Location

The City is located in Branch County in southwest Michigan, approximately 10 miles west of the City of Coldwater. The existing wastewater collection system and service area is shown in Figure

1. It shows the lift stations, gravity sewer, force main, and wastewater treatment plant. Figure 2 shows the wastewater treatment plant with its various processes labelled. Figure 3 contains a USGS quadrangle map showing the predominant natural features, elevation contours, rivers, lakes, and natural dwellings within and around the City limits, as well as, the proposed project locations.

2.2 Environmental Resources Present

The City and the service area are primarily developed into residential areas and commercial areas. The wastewater system is confined to existing developed rights-of-way and city-owned properties and/or easements and work on the system will not impact any known environmental resources. In addition, all disturbed areas will be restored to their pre-construction condition. A separate environmental report has been prepared as part of the application.

2.3 Growth Areas and Populations Trends

The historical and projected population for the City is shown in Table 1. Population projections were based on historical data shows growth from 1980 to 2020 at a rate of 0.04% per year. The population of the City is projected to continue increasing at the same rate from 2020 to 2045. As shown in the table, the City's population increased from 1980 to 2000, where it peaked, and has decreased between 2000 and 2020. The estimated Year 2020 population for the City is 2,345 persons.

2.4 Community Engagement

The City has followed USDA requirements for publishing public notices of the project process. They may also elect to hold a public meeting during a regular council meeting to provide more detail of the projects to interested citizens.

3 EXISTING FACILITIES

3.1 History

The City's wastewater system includes 66,600 feet of gravity sewer pipes ranging from 8 to 18 inches in diameter, 890 lineal feet of force main pipes ranging from 6 to 8 inches in diameter, and 253 manholes. The gravity sewer pipe materials are primarily clay and concrete pipe installed in 1957 and 1968 and PVC pipe installed from 1993 to the present. The majority of the collection

system was constructed in the 1950's. The aging pipes are experiencing challenges with infiltration.

The manholes are primarily brick structures for the older manholes and precast concrete structures for the newer manhole structures. The force mains are cast iron pipe material. All of the wastewater collected is treated by the WWTP owned and maintained by the City.

The City has two lift stations – Corey Street Lift Station and Walker Street Lift Station. Corey Street Lift Station is a can type station that was constructed in 1968. It serves a small residential area on the east side of the City. The Walker Street Lift Station is a below-grade dry well/wet well station that was constructed in 1957 and rehabilitated many times. It serves the majority of the area south of Chicago Street.

The WWTP generally consists of influent screening, grit removal, activated sludge treatment, secondary clarification, and ultraviolet (UV) disinfection prior to discharging final effluent to Drain #30. Waste activated sludge is thickened before being pumped to storage tanks until the biosolids can be hauled off site for land application.

The WWTP was originally constructed in 1958 as a trickling filter treatment plant. In 1974, the WWTP was improved to include influent screening, grit removal, an additional primary settling tank, and storage digester. In 1993, much of the WWTP equipment was upgraded, removed, or retrofitted, and the oxidation ditch, final clarifiers, tertiary traveling bridge filters, gravity thickener, sludge storage tank, and UV disinfection system were installed. Currently, the grit chamber, tertiary filters, digesters, and effluent pump station are not used.

Table 2 is a summary of the City's sanitary sewer system. Appendix A contains a set of figures summarizing the sanitary sewer and force mains prepared during the SAW assessment. A map of the existing facilities is shown in Figure 1.

3.2 Condition of Existing Facilities

The following condition assessments are based on results of the 2021 Wastewater System Evaluation, which catalogued the condition of the existing assets, and the 2021 Sewer Flow Study, which analyzed capacity.

3.2.1 System Wide Sanitary Sewer

The gravity sewer pipes were found to be in various structural conditions with various defects. Fifteen (15%) were found in good structural condition, along with 73-percent in fair condition and the remaining 12-percent were in poor or failed condition.

Due to the age and quantity of clay pipe within sewer system, numerous defects have been found. There are currently 29 pipes that are rated with a Risk of Failure (RoF) score of 4 or 5 and the ratings are general caused by cracks, fractures, minor breaks, broken pipes, holes, or other issues. The pipes are still holding their shape; however, they do have significant infiltrations at the joints and numerous root intrusions that cause an ongoing operations and maintenance (O&M) issue.

Pipes within the collection system exhibiting various forms of infiltration at the time of closed-circuit television (CCTV) were documented in the Wastewater Evaluation report. Most pipes exhibited numerous infiltration defect locations on the same pipe run (manhole to manhole). In total, 131 pipes have documented infiltration, which does not include the 12 pipes near the treatment plant that were not able to be CCTV due to the pipes being surcharged. The number pipes with the most sever ratings of these infiltration defects are as follows:

- Gushers – 16 defects (11 pipes)
- Runners – 347 defects (64 pipes)
- Weeper – 114 defects (20 pipes)
- Dripper – 170 defects (12 pipes)
- Stain – 281 defects (24 pipes)

3.2.2 Chicago Street

An 8-inch clay sanitary sewer located on E. Chicago Street has a utility penetration 6’ upstream of SNMH-236 per CCTV.

3.2.3 W. Railroad Street

An 8-inch clay sanitary sewer located on W. Railroad Street shows a broken pipe 11’ and 57’ downstream of SNMH-121 per CCTV.

3.2.4 Division Street

Joint offset and broken wye on broken 8-inch clay sanitary sewer. Sewer is located on Division Street between South and Chicago Streets.

3.2.5 Franklin Street

Two wye need repairs and there is broken 8-inch clay sanitary sewer. Sewer is located on Franklin Street West of Shaffmaster Blvd. Defects located 218' and 245' downstream of SNMH-167 per CCTV.

3.2.6 201 Industrial Avenue

Connection of 2 storm structures to the sanitary system was discovered in 2019 during smoke testing, which allow inflow to the sanitary system during storm events. Location of the catch basins at on the back side of the DPW building located at 201 Industrial Drive.

3.2.7 N. Douglas and Railroad Street

Connection of 3 storm structures to the sanitary system was discovered in 2019 during smoke testing, which allow inflow to the sanitary system during storm events. Location of the catch basins are at the intersection of W. Railroad Street and N. Douglas Street.

3.2.8 System Wide Manholes

During SAW assessments, field condition assessment and smoke testing indicate that 41 structures require some form of rehabilitation for structural defects, infiltration, or casting replacements to help minimize inflow during storm events. These manholes are located system wide.

3.2.9 Lift Station and Force Main

3.2.9.1 Corey Street

The Corey Street Lift Station is generally in fair to poor condition. Design firm capacity is 150 gpm at 45 ft TDH. The pumps and can structure are corroding, and there are signs of leaks at the check valve shafts and force main wall penetration. There are also signs of infiltration in the wet well. The steps are corroding, and there is concrete failure and exposed rebar at the lateral penetration. Overall issues include corrosion of equipment and

the can structure, signs of leaking or infiltration in the can and wet well, and original or obsolete equipment. The results of a cathodic protection system survey indicate that the system is inoperative and not adequately protecting the can from corrosion. The survey also revealed possible signs of exterior corrosion of the can based on measurements of the wall thickness. The main control panel is corroding and showing signs of electrical damage and wear. The main electrical service and distribution equipment appear to be original, and the lighting is incandescent. The heater is corroding and is out of operation.

The sanitary force main on Wayne Street is an 8-inch cast iron pipe totaling 875 feet. This force main was installed in 1968 and runs from Corey Street to 275 feet south of US-12 to the existing sanitary sewer. Currently the force main is considered oversized and past its useful life.

3.2.9.2 Walker Street

The Walker Street Lift Station is generally in poor condition. Design firm capacity is 300 gpm at 15 ft TDH. The station is generally in poor condition. According to operators, both pumps tend to shear their shafts, which need to be replaced every 4 – 5 years. Most of the equipment is corroding, including the pumps, valves, piping, sump pump, vents, wet well ladder, conduit, and transducer stilling well. At the time of the condition assessment, the force main was leaking near the ceiling penetration. The isolation valves are difficult to actuate, and the Pump No. 2 suction valve has no handwheel. The wet well casting is corroding, and the dry well coating is failing. There is spalling concrete and exposed rebar at one of the conduit penetrations in the wet well, and the structure accumulates excessive rags and debris.

The wet well and dry well are located below Walker Street while the controls are located along the curb, making entrance into either structure or operation of the control panel unsafe. The wooden control panel support is rotted and is no longer supporting the panel. The control panel is corroding and in poor condition. The main electrical service and distribution equipment appear to be original, and the lighting is incandescent. The exhaust fan blower is corroding and appears out of operation. There is exposed abandoned wiring in the wet well.

The results of the Sewer Flow Study and historical flow data indicate that the firm capacity of the station cannot accommodate peak flows due to I/I.

3.2.10 Wastewater Treatment Plant

The WWTP faces challenges with climate resilience, and it cannot treat extreme weather flows to meet regulatory limits. The WWTP receives wastewater via an 18-inch gravity sewer. The treated effluent from the WWTP is discharged by gravity to County Drain No. 30 via an 18-inch pipe. The most recent NPDES permit for the WWTP was issued in April 2019. This permit sets maximum quality and quantity effluent limits for various contaminants. The City has an Industrial Pretreatment Program (IPP) for industry to enforce local limits throughout the service area.

According to the WWTP Basis of Design, the design average daily flow of the WWTP is 0.5 million gallons per day (MGD) and the design peak hour flow is 1.5 MGD. Flow data was analyzed in the 2021 revision of the WWTP Capacity Analysis. Between January 2017 and December 2019, the average influent flow observed was 0.73 MGD, approximately 147% of the design average day flow. The wastewater system summary is found in Appendix A.

3.2.10.1 Influent Pump Station

The influent pump station process has been modified several times over the years. The grinder channel, manual bar screen bypass channel, and wet well were constructed in 1974. The grinder, stop plates, manual bar screen, pumps, some piping, and some valves were replaced in 1993.

The grinder is currently out of service due to frequent plugging and is in need of new cutters. The existing control panel was damaged when the basement flooded in the past and needs to be replaced. There is no bypass around the flow meter to allow for maintenance or replacement. The three variable frequency drives (VFDs) dedicated to the Influent Pumps in motor control center (MCC) B are not working and thus, the pumps are always on the bypass contactors. Several valves are leaking including Influent Pump No. 2 discharge isolation, Influent Pump No. 3 discharge isolation, and two other influent pump station isolation valves. The piping from the pumps to the grit tank has failed coating and significant corrosion.

3.2.10.2 Grit Removal

The grit removal process was constructed in 1974 and replaced in 1993 with a vortex style grit removal system. There is major corrosion of the grit effluent channel. The blower, grit pump, and washer/classifier are not currently in use. The grit classifier motor, grit removal blower motor, monorail and hoist are not functional.

3.2.10.3 Disinfection

The UV disinfection system was installed in 1993. It is an older Trojan 3000 System and parts are difficult to get. The control panel was struck by lightning and does not work. The Owner operates the process manually based on fecal coliform counts.

3.2.10.4 Recirculation Pump Station

The Recirculation Pump Station was constructed in 1993. The recirculation tank was initially a primary settling tank in 1974. Two of the three recirculation pumps are no longer functioning. The recirculation flow meter was removed and replaced with an uncoated pipe. There is corrosion of the discharge piping.

3.2.10.5 Return Activated Sludge & Waste Activated Sludge

The RAS/WAS process was constructed in 1993. There are three RAS pumps but only RAS Pump No. 1 and No. 3 are in service. The pumps were rebuilt in 2014 but are not operating near their design capacity. Pump No.1 is operating at 50% and Pump No. 3 is operating at 58%. There are three VFDs dedicated to the RAS Pumps in MCC-C in the Process Control Building. They are not working thus always on the bypass contactors. All RAS/WAS piping, valves, and flow meters are in good condition.

3.2.10.6 Sludge Storage

The storage tank was constructed in 1993. Some assets are in poor condition. There is significant corrosion of the decant/overflow well. There is also corrosion of the manway door and of the tank below the manway door. The manway door is also missing several screws. Water is getting into the storage tank via gaps in the cover. The solids loadings pump discharge to storage tank valve is loose.

3.2.10.7 Ferric Chloride Feed

The Ferric Chloride Feed system was installed in 1974. The buried piping that conveys the ferric chloride to the grit tank and oxidation ditch could not be observed so it is assumed in poor condition based on the age of the pipes. There is major corrosion of the exterior of the storage tank, the concrete spill containment area of the feed pumps, and the metal supports of the feed pumps.

3.2.10.8 Administration Building

The Administration Building was originally constructed in 1958. The grit removal, chemical feed, and chlorine rooms were added in 1974. The tertiary filter room was added in 1993. The existing exterior façade of the building show signs of age and wear. Window and door lintels and the antenna pole are rusted. There is brick discoloration, loose metal panel fasteners, damaged brick, open junction boxes, loose fascia, cracked sealant, unused paint stenciling, and loose window and door head mortar. The coiling door channel also jams. The laboratory as a whole is showing signs of age and deterioration. Counters show excessive wear around sinks, and epoxy sink basins are heavily worn. The cabinets are corroding on the inside of several areas.

3.2.10.9 Process Control Building

The Process Control Building was constructed in 1993 and is showing signs of its age. The roof walkway pads are loose, paint is peeling off doors, and there is corrosion of the doors and their frames. In general, brick cleaning and grout repair is needed, and portions of the building fascia need to be replaced.

3.2.10.10 Maintenance Building

The Maintenance Building was constructed in 1993 and is showing signs of its age on the exterior. There is missing rake at the south elevation, corrosion of the doors and faded paint, missing door weatherstrippings, and loose foam inserts at top of siding, clouded and cracked window glass, and the wood trim around louver is peeling.

3.3 Financial Status of Existing Facilities

3.3.1 Current Rate Schedule

The current rate schedule for wastewater system users is $1.51 per 1000 gallons, and a monthly wastewater operations rate billed quarterly as follows:

Meter Size	Rate
¾"	$47.60
1"	$119.00
1 1/2"	$238.00
2"	$380.80
3"	$714.00
4"	$1,190.00
6"	$2,380.00

The rate schedule and minutes adopting the rates is included in Appendix B.

3.3.2 Annual Operation and Maintenance Costs

The City's O&M budget for the 2022-2023 fiscal year is approximately $423,200 (excluding depreciation).

3.3.3 Other Capital Improvement Programs

The City had a SAW grant that was obtained in 2018 and ended in 2021 that developed their sanitary Capital Improvement Plan and project needs.

3.3.4 Existing Debts and Reserve Accounts

The City currently has an outstanding 1993 USDA Unlimited Tax General Obligation Bond for its sewer system. It has a balance of $242,000 with an annual payment of $33,100 in 2022.

Based on the General Funds Balance Sheet dated December 31, 2022, the City has Cash and Cash equivalents (current and noncurrent) of approximately $1,277,053. Of which, $15,018 is restricted.

4 NEED FOR PROJECT

4.1 Health, Sanitation, and Security

The project need described in this section was determined through the asset management process and represents the highest priority WWTP and collection system needs.

The proposed improvements reduce the chances of contamination of nearby groundwater, along with reducing the amount of I/I causing the treatment plant violations. The lift stations pose safety hazards to the operators and give rise to several maintenance challenges. At Walker Street Lift Station, both of the pumps tend to shear their shafts and it is difficult to access the station, since the station is below the road and the controls are located along the curb. At Corey Street Lift station, the main control panel shows signs of electrical damage and may have code violations.

The WWTP faces challenges with flows above the designed treatment capacity. There are current flow limitations within the treatment system that add risk of overflows and contamination to waters of the state. The infiltration that is occurring within the systems has caused several recorded violations of the NPDES permit.

The WWTP historically had measurable concentrations of Per- and Polyfluoroalkyl Substances (PFAS) in the waste stream. PFAS are a family of chemicals that are regulated by EGLE. Biosolids containing PFAS have been contained and stored at the WWTP site. Part of the proposed project will include removal and proper disposal of PFAS sludge to avoid contamination.

Without the construction of the proposed projects, the water quality of groundwater, local streams, creeks and rivers, and the buildings served by the wastewater system could be degraded or severely harmed. Repairing or replacing the aging infrastructure reduces the chances of contamination of nearby groundwater, along with reducing the amount of water causing the treatment plant violations.

4.2 Aging Infrastructure

Much of the sanitary sewer that is experiencing structural failure is clay sewer that was installed in the 1950's. There are numerous structural defects that need to be addressed with lining and/or replacement. The lift stations have antiquated technology past their useful life.

4.3 Reasonable Growth

Although there is not significant future growth anticipated at this time, the City is looking to maintain buildable properties for potential future growth.

4.4 Orders of Enforcement Action

The City's system is under ACO 05505. To meet the ACO requirement, the City is applying for USDA-RD funding with this document to address excessive I/I to meet the RDS, and ensuring that the expected average daily flow, maximum day flow, and peak hourly flow at the WWTP are consistent with the WWTP's Basis of Design. A copy of the ACO is included in Appendix D.

5 ALTERNATIVES CONSIDERED

5.1 Design Criteria

The design criteria for the collection system is infiltration, which is discussed in the ACO, and structural reinforcement. The new design must meet the RDS during the 24-hour 25-year storm event, which requires a reduction in flow of approximately 523,000 gpd.

The lift station design criteria is focused on proper operation at the design flows. Historical flow data at the Walker Street Lift Station indicated that firm capacity has been exceeded. A Sewer Flow Study indicated that modelled 24-hour 25-year flows to Walker Lift Station exceed the firm capacity of the station. Safe lift station structures are a design goal for both lift stations.

The design criteria for the WWTP is meeting the RDS for the 24-hour 25-year storm event, which is an annual average of 0.5 MGD or less to the WWTP and to limit peak flows to within the WWTP Basis of Design. The primary reason for the proposed projects is to address the ACO, including capacity, structural concerns, and NDPES compliance at the WWTP. The WWTP design must meet NPDES permit limitations.

5.2 Map

See Figure 1 for a map of the existing wastewater system and Figure 2 is of the WWTP. Figures 3 and 4 are maps of the proposed sanitary sewer improvements described below as Alternative 4.

5.3 Alternative 1: Various Considerations

5.3.1 Collection System

5.4.1.1 Reconstruction

Reconstruction of the various pipelines in need of repair would resolve the infiltration issues associated with the ACO. However, reconstruction also adds increase costs for surface replacement (roadway, sidewalk, curb) along with reconstruction of storm and water mains are typically required as the sanitary is deeper and impacts these other public utilities. Also, reconstruction of sanitary in this area also requires dewatering and treatment costs of contamination in the dewatering. It was therefore decided that reconstruction would not be pursued.

5.3.2 Lift Stations

5.4.2.1 Rehabilitation

Due to the poor condition of the structures at the existing lift stations, it was determined that rehabilitating the lift stations would not be feasible. The Walker Street Lift Station has close proximity to traffic, and the required confined space entry is a safety risk for operators. while the Corey Street Lift Station is experiencing severe corrosion of the can structure. Both stations have undersized wet wells.

5.3.3 Wastewater Treatment Plant

5.4.3.1 Headworks

Replacing individual equipment may be the least capital-intensive option initially but will result in a greater overall cost. Risk associated with bypass pumping, project sequencing and coordination, challenges related to unknown conditions, and challenges associated with making equipment fit into existing infrastructure would increase project costs. The is no room within the existing building to install an automatically cleaned screen. It was decided that a new Headworks should be constructed.

5.4 Alternative 2: Regionalization

Regional alternatives would not be cost-effective due to distance. The nearest municipality is Coldwater, which is about 10 miles away. Therefore, regional alternatives were not considered further.

5.5 Alternative 3: No Action

5.5.1 Collection System

Another alternative is the "No Action" alternative. This alternative consists of no action and would not address any of the issues identified in the 2021 Wastewater System Evaluation or the ACO. Both of the City's lift stations are in poor condition. Results of the Sewer Flow Study indicate that Walker Street Lift Station cannot accommodate peak flows. The lift stations pose safety hazards to the operators and give rise to several maintenance challenges. The WWTP is experiencing severe capacity challenges, which is described in the ACO. It needs improvements to address capacity, operational, and reliability concerns. Therefore, the no action alternative was not considered further.

5.5.1.1 Environmental Impacts

By not repairing the aging sewer with numerous structural deficiencies, there could potentially be contamination to the nearby soils and groundwater. By not replacing the lift stations, there could potentially be contamination to the nearby soils and groundwater. By not repairing the WWTP with numerous structural deficiencies, there could potentially be contamination to the nearby soils and groundwater.

5.5.1.2 Land Requirements

Not applicable.

5.5.1.3 Potential Construction Problems

Not applicable.

5.5.1.4 Sustainability Considerations

As this alterative consists of no action, there would be no cost for construction. Operations and maintenance costs would not immediately increase. However, as some of

the maintenance issues addressed by other alternatives would not be solved, maintenance costs would increase over time. Additionally, the City would violate their ACO with EGLE and incur significant fines. As this alterative consists of no action, there would be no cost for construction. Operations and maintenance costs would not immediately increase. However, as some of the maintenance issues addressed by other alternatives would not be solved, maintenance costs would increase over time. Additionally, the City would violate their ACO with EGLE and incur significant fines.

5.5.1.5 Cost Estimates

As this alterative consists of no action, there would be no cost for construction. Operations and maintenance costs would not immediately increase. However, as some of the maintenance issues addressed by other alternatives would not be solved, maintenance costs would increase over time.

5.6 Alternative 4: Proposed Projects

5.6.1 Collection System

Sanitary sewer that is structurally compromised, as identified during the SAW CCTV process, will be lined and grouted. Manholes throughout the system require lining and casting replacement to maintain proper function. Some areas of the sewer with an offset joint or broken pipe will have point repairs done.

- Chicago Street Sanitary Point Repair
- W. Railroad Street Sanitary Point Repair
- Division Street Sanitary Point Repair
- Franklin Street Sanitary Point Repair

The following catch basins will be disconnected from sanitary sewer and connected to storm sewer.

- 210 Industrial Avenue
- N. Douglas and Railroad Street

5.6.1.1 Environmental Impacts

Since the proposed projects (point repairs, grouting, manhole rehabilitation, and pipe lining) require only minimal excavating for the point repairs include removing and replacing existing infrastructure, and the other improvements are trenchless (do not require digging or excavating), the projects in this alternative will have no permanent significant environmental impacts. Since the project includes replacing existing infrastructure, a categorial exclusion applies for the environmental report associated with these projects. These projects are also exempt from EGLE permits as it does not change capacity of the system. Soil Erosion and Sedimentation Control (SESC) best management practices will be implemented to minimize sediment runoff for the point repair excavating.

The noise and air pollution inherent to the construction process will be minimized by requiring the contractor to keep a strict timetable and use equipment that is within regulatory emission standards for vehicle emissions.

5.3.1.2 Land Requirements

Projects to be performed are within the limits of property and street rights-of-way that is owned by the City. No land is required for the improvements to the collection system.

5.6.1.2 Potential Construction Problems

As the improvement projects consist of typical lining, grouting, manhole rehabilitation, and point repairs, no construction problems are anticipated. Contractors will have to be cognizant of other existing utility lines such as gas, power, cable, and internet.

5.6.1.3 Sustainability Considerations

The proposed projects will improve and replace aged and deteriorated sanitary sewer to prevent contamination of nearby soils and groundwater.

5.6.1.4 Cost Estimates

Construction costs including construction contingencies, based on 2025 construction numbers, is estimated to be $6,185,000 for the proposed improvements, with $6,185,000

of the proposed construction costs to utilize RD funds. Operations and maintenance costs would not immediately increase.

5.6.2 Lift Stations

At Corey Street Lift Station and Walker Street Lift Station, the lift station and force main will be replaced. Both lift stations will be relocated.

5.6.2.1 Environmental Impacts

Since the proposed projects include removing and relocating existing infrastructure, the projects in this alternative will have minor environmental impacts. However, the impacts will be limited to existing street right-of ways and the proposed parcel of land the lift stations will be constructed upon. All required permits will be obtained, and SESC best management practices will be implemented to minimize sediment runoff. Dewatering may be required during wet well installation.

The noise and air pollution inherent to the construction process will be minimized by requiring the contractor to keep a strict timetable and use equipment that is within regulatory emission standards for vehicle emissions.

5.3.2.2 Land Requirements

Projects to be performed will be within the limits of property that is owned by the City or within dedicated easements and rights-of-way. The City is in the process of obtaining the easements for the proposed relocation of the two lift station.

5.6.2.3 Potential Construction Problems

As the improvement projects consist of typical infrastructure projects including replacing lift stations, force main replacement, and small portions of gravity sewer construction to relocate the station no construction problems are anticipated. Contractors will have to be cognizant of other existing utility lines such as gas, power, cable, and internet. For the lift station wet wells, deep excavation is anticipated which may require dewatering and temporary bypass pumping.

5.6.2.4 Sustainability Considerations

The proposed projects will improve and replace aged and antiquated lift stations to provide reliable wastewater collection for future generations. It will be designed to be a sustainable part of the City's infrastructure for years to come. Efficient pumps will be chosen to save energy.

5.6.2.5 Cost Estimates

Construction costs including construction contingencies, based on 2025 construction numbers, is estimated to be $2,604,000 for the proposed improvements, with $2,604,000 of the proposed construction costs to utilize RD funds. Operations and maintenance costs are not anticipated to change immediately.

5.6.3 Wastewater Treatment Plant

A new Headworks will be constructed including new mechanical screening equipment, grit removal equipment, and associated piping and appurtenances. The existing UV system will be replaced with current UV technology. The activated sludge pumps, VFDs, bypass contactors, valves, and flow meters will be replaced in the RAS/WAS system. PFAS sludge that is currently stored on-site will be properly disposed of in an approved landfill. The Supervisory, Controls, and Data Acquisition (SCADA) System will be updated. The ferric chloride bulk storage tank, chemical feed pumps, and chemical feed piping will be replaced. Recirculation pumps and flow meter will be replaced. Additional WWTP Buildings and Facilities Improvements will also be conducted including:

- Administrative Building Electrical Improvements
- Administrative Building Meter/Backflow Replacement
- Lab Improvements
- Grit Room Ventilation
- Chemical Room Ventilation
- Chemical Room Water Heater and Tepid Valve
- Administrative Building Basement Level/Sludge Room Heat Exchanger

- Site SE Rated MTS/Portable Power Connection
- WWTP Building Lighting Improvements
- WWTP Building Envelope Improvements

5.6.3.1 Environmental Impacts

Since the proposed projects include constructing a new influent pump station and headworks on an adjacent parcel, the projects in this alternative will have minor environmental impacts. The WWTP improvements occur on the existing WWTP site and will replace and upgrade existing treatment components. All required permits will be obtained, and storm water control best management practices will be implemented to minimize sediment runoff. There is the potential for PFAS contaminated groundwater.

The noise and air pollution inherent to the construction process will be minimized by requiring the contractor to keep a strict timetable and use equipment that is within regulatory emission standards for vehicle emissions.

5.6.3.1.1 PFAS Disposal

PFAS-laden sludge is currently stored on-site. To minimize environmental risk, PFAS sludge will be disposed of at a landfill in accordance with the state standards.

5.3.3.2 Land Requirements

Projects to be performed will be within the limits of property that is owned by the City. The City previously obtained the parcel to the west of the existing WWTP site for the purpose of constructing a new influent pump station and headworks building.

5.6.3.3 Potential Construction Problems

Contractors will have to be cognizant of other existing process lines and utility lines such as gas, power, cable, and internet. The contractor will also need to work with the City's WWTP operator while upgrading and/or replacing components at the WWTP to maintain operations. Some of the construction may require deep excavation and dewatering, these conditions pose unique challenges during construction. Construction sequencing will maintain WWTP operation, which may require temporary bypass pumping. Temporary

shut-downs of processes and alternate methods of disinfection may be temporarily used. There is potential for PFAS contaminated groundwater to be encountered at the WWTP site.

5.6.3.4 Sustainability Considerations

Efficient equipment will be chosen for within the plant, which will save energy. High efficiency lighting and HVAC options were chosen. The influent station will have more efficient pumps operating on variable frequency drives. The screen and upgraded grit system will protect downstream pumps. Within the disinfection process, transmittance will be measured to determine required UV intensity. The SCADA System will result in energy savings since aeration can be adjusted based on dissolved oxygen requirements.

5.6.3.5 Cost Estimates

Construction costs including construction contingencies, based on 2025 construction numbers, is estimated to be $11,213,000 for the proposed improvements, with $11,213,000 of the proposed construction costs to utilize RD funds. Operations and maintenance costs are not anticipated to immediately change from current amounts as a result of the proposed project, except for inflationary costs.

5.6.4 Cost Estimates

Construction costs including construction contingencies, based on 2025 construction numbers, is estimated to be $20,002,000 for the proposed improvements, with $20,002,000 of the proposed construction costs to utilize RD funds. Full costs including engineering, legal, and administrative costs are provided with the application in Appendix C. Operations and maintenance costs are not anticipated to immediately increase from current levels as a result of the proposed project. A full life cycle cost analysis for Alternative 4 is included in Table 3.

6 SELECTION OF AN ALTERNATIVE

6.1 Life Cycle Cost Analysis

Life cycle costs for each of the alternatives are shown in Table 3. An analysis period of 20 years was used. The present worth of the proposed project is higher than the do nothing alternative, but the proposed project is required by EGLE.

6.2 Non-Monetary Factors

The alternatives were developed to address the main issues presented in the 2021 Wastewater System Evaluation. Those issues represent the safety and dependability of the system, see previously discussed factors.

7 PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

Based on the above analysis, it was determined that Alternative 4 is the best alternative to address the issues raised in the 2021 Wastewater System Evaluation.

7.1 Preliminary Project Design

Alternative 4 includes the following projects:

1. #001 Chicago Street sanitary point repair: dig and replace a portion of broken pipe with the utility penetration and remove the penetrating utility.
2. #050 W. Railroad Street sanitary point repair: dig and replace offset joint, prior to lining the sewer pipe.
3. #060 Division Street sanitary point repair: dig and repair the sanitary wye/joint offset, prior to lining the sanitary pipe.
4. #061 Franklin Street sanitary point repair: dig and repair the sanitary wye/joint offset, prior to lining the sanitary pipe.
5. #090 210 Industrial Avenue: Disconnect storm basins from sanitary sewer.
6. #091 N. Douglas and Railroad Street: Disconnect storm basins from sanitary sewer.
7. #130/#140 System-wide Sanitary Lining: use a cured-in-place lining to systematically repair the sanitary system and resolve O&M and structural issues.
8. #150/#145 System-wide Sanitary Grouting: use chemical grout to systematically repair the sanitary system and resolve infiltration issues.
9. #160 System-wide Manhole work: address numerous manhole deficiencies identified during the SAW assessments.
10. #410/#505 Corey Street Lift Station and Force Main: Replace and relocate the lift station and force main.

11. #510 Walker Street Lift Station and Force Main: Replace and relocate the lift station and force main.
12. #551 WWTP Headworks Improvements: Construct a new Headworks with influent lift station, new mechanical screening, and grit removal equipment.
13. #553 WWTP UV Disinfection System: Replace the obsolete UV system with current technology.
14. #554 WWTP Return Activated Sludge & Waste Activated Sludge: Replace the activated sludge pumps and associated VFDs, bypass contactors, valves, and flow meters.
15. #564 WWTP SCADA System: Upgrade the SCADA system based on programmable logic controllers and computer interface software.
16. #567 WWTP Recirculation Pump Station: Install new pumps at the recirculation pump station.
17. #568 WWTP Ferric Chloride Feed: Replace the bulk storage tank, chemical feed pumps, and feed piping.
18. #555 WWTP Administration Building Electrical Improvements: Replace the MCC-A, the low-voltage step down transformers, and panel boards.
19. #556 WWTP Administration Building Meter/Backflow Replacement: Replace the water meter and backflow preventer.
20. #557 WWTP Lab Improvements: Renovate the laboratory and sample room including replacement of lab counters, metal cabinets, drop ceiling system, plumbing fixtures and piping, fume hood, and electrical outlets.
21. #558 WWTP Grit Room Ventilation: Install a new make-up air and exhaust system.
22. #559 WWTP Chemical Room Ventilation: Install a new ventilation system.
23. #560 WWTP Chemical Room Water Heater and Tepid Valve: Install a new water heater and tepid water valve.
24. #561 WWTP Basement Level/Sludge Room Heat Exchanger: Replace the heat exchanger.

25. #562 WWTP Site SE Rated MTS / Portable Power Connection: Install a fused service disconnect at the utility transformer.
26. #563 WWTP Building Lighting Improvements: Upgrade lighting fixtures in all buildings.
27. #565 WWTP Building Envelope Improvements: Selective replacement of building fascia, cleaning, repairs, and maintenance.
28. #566 WWTP PFAS Sludge Disposal: Dispose PFAS-laden sludge in an approved landfill.

7.2 Project Schedule

Project implementation is planned according to the timeline set forth in the ACO, which allows the proposed projects identified in the City's Corrective Action Plan (CAP) to be designed and constructed in two phases. The purpose of the two phases in the ACO and CAP is to propose projects in Phase I that are intended to address the ACO and then determine the effectiveness of I/I reduction based on the constructed projects in Phase I. After determining the effectiveness of the implemented projects in Phase I, a second round of projects (if necessary) would be developed and implemented to continue to address the I/I concerns of the ACO if Phase I was not effective enough to bring the City into compliance with the ACO.

Per the ACO, Part 41 applications for Phase I projects shall be submitted to EGLE by December 30, 2023. These projects are to be completed by December 29, 2025. Part 41 applications for Phase II projects shall be submitted to EGLE by December 20, 2027. These projects are to be completed by December 29, 2029.

The following is a tentative schedule for the progression of the overall project:

Milestone	Estimated Completion Date
Submit Application	4/28/2023
USDA Approval	6/30/2023
Complete Design	12/31/2023
Permit Approval	03/01/2024
Authorization to Bid	05/03/2024
Bid Opening	06/04/2024
Loan Closing	07/15/2024
Contract Award	07/15/2024
Construct Start	09/02/2024
Construction Completion	12/26/2025

7.3 Permit Requirements

The following permits will need to be obtained for this project prior to construction:

- EGLE Part 41 Wastewater Construction Permit
- Sediment and Erosion Control Permit from Branch County Drain Commission

7.4 Total Project Cost Estimate (Engineer's Opinion of Probable Cost)

The total project cost for Phase I is approximately $24,006,000 (2025 dollars), of which the total amount is anticipated to be funded with RD loans. The details, including costs for construction, legal counsel, bond counsel, engineering, and contingencies are provided in Appendix B.

7.5 Annual Operating Budget

Based on the City's audit for the fiscal year ending on June 30, 2022, the operating income for the wastewater system was approximately $608,060 and the operating expenses were approximately $389,372 (excluding depreciation).

7.5.1 Income

The current rate schedule for wastewater system users is $1.51 per 1000 gallons, and a monthly wastewater operations rate billed quarterly as follows:

Meter Size	Rate	Customer Count	Meter Equivilent	Revenue per year
¾"	$47.60	840	840	$479,808
1"	$119.00	7	17.5	$9,996
1 1/2"	$238.00	12	60	$34,272
2"	$380.80	3	24	$13,709
3"	$714.00	2	30	$17,136
4"	$1,190.00	0	0	0
6"	$2,380.00	1	50	$28,560
	TOTAL	**865**	**1021.5**	**$583,481**

The current rate schedule for wastewater system users is $1.51 per 1000 gallons, and a monthly Sewer Ready to Serve Charge of $47.60 (per ¾" equivalent). These rates took effect September 12, 2022. A copy of the resolution is included in Appendix B.

Connections to the City's wastewater collection system has a meter equivalent billed of 1021.5. The billable flow is approximately 37,281,000 gallons from metered customers and 3,607,340 gallons from un-metered customers (based on 47,465 gal/year per un-metered customer). Based on $1.51 per 1000 gallons generates $61,741. The proposed project does not anticipate adding additional connections to the system over time. Based on these rates and customers, the yearly income generated is approximately $645,222.

7.5.2 Annual Operations and Maintenance Costs

The annual O&M costs for the existing City's wastewater system are approximately $423,200 in 2022/23. Projected O&M expenses for 2025/26 are $489,900 based on a 5% inflationary increase.

There are some O&M changes anticipated with the proposed new sanitary sewer in the City. The increases will cover costs of treatment and increased supplies and maintenance. Part of these increases will be offset by a decrease in engineering fees. A breakdown of O&M costs is included in Appendix B.

7.5.3 Debt Repayments

The City currently has an outstanding 1993 USDA Unlimited Tax General Obligation Bond for its sewer system. It has a balance of $242,000 with an annual payment of $33,100 in 2022 and $31,050 in 2025.

As a funding source is yet to be determined, along with the associated interest rate, term length or a loan, and if any grants are obtained, the debt repayment is based on the following assumptions:

Without any loan forgiveness or grant, a $24,006,000 loan at an interest rate of 2.25-percent amortized over 40 years is assumed for Phase I. The corresponding annual debt service including principal and interest will average approximately $1,109,061 over the life of the loan.

The City will issue Wastewater Revenue Bonds that revenues of the wastewater system charged and collected by the City will be used for repayment of the loan.

7.5.4 Reserves

The reserves that are necessary to ensure that adequate funds are being generated to pay for wastewater system expenses and the proposed project will be assumed as 10-percent of the annual debt payment requirement. Therefore, the debt service reserve used for the proposed project is $110,906 per year.

7.5.5 Short-lived Assets

The short-lived assets reserves (SLA) represent the money that is set aside to replace the assets with an expected useful life less than 15 years. The SLA reserves associated with the lift stations and WWTP are $107,000 per year. Inflated at 5% per year, the SLA in 2025 is $130,100. A list of SLA items is provided in Appendix B.

7.5.6 Summary

The following is a summary of the annual operation, maintenance, and reserve information for projected year 2025:

O&M	$489,900
SLA Reserves	$130,100
Existing Debt	$31,050
New Debt	$1,109,061
Debt Reserve	$110,906
Total	$1,871,017

7.6 Conclusions and Recommendations

The City's wastewater system needs improvements for structural concerns, I/I compliance with the RDS per the ACO, and aging infrastructure assets that are past their useful life. Due to the current condition of the system, it is recommended that the City improve the quality of the wastewater system as described in this report. This will improve the health and security of the system in addition to providing reliable service for current wastewater flows.

Therefore, the City is applying for USDA Rural Development funding in the amount of $24,006,000 for the recommended improvements.

Tables

Year	Population / Projection
1970 [1]	2,390
1980 [1]	2,271
1990 [1]	2,342
2000 [1]	2,421
2010 [1]	2,349
2020 [1]	2,345
2025 [2]	2,335
2030 [2]	2,365
2035 [2]	2,375
2040 [2]	2,385
2045 [2]	2,395

[1] Historic population data 1970 to 2020 is from the U.S. Census Bureau.

[2] Population projections through 2050 are based on historical growth (0.04%)

Existing System Sewer Summary

Community Name: City of Bronson

Collection Sewer:

Type: Gravity

See Appendix A for sanitary sewer & force main details

No. of Manholes **253**

Lift Stations:

L.S. No.	Type	Firm Cap.	Year Cons.	Condition
Corey LS	Submersible	150 gpm	1968	Fair to Poor
Walker LS	Submersible	300 gpm	1957	Poor

Wastewater is directed to a City-owned Wastewater Treatment Plant

Present Worth Analysis & Short Lived Depreciation

Community Name: City of Bronson

Federal Discount Rate for Water Resources Planning (Interest Rate) i = 0.04875
Number of Years, n = 20 years

Descriptive Alt Name 4: Proposed Project	
Initial Capital Costs =	$24,006,000
Annual Operations & Maintenance Costs =	$489,900
Future Salvage Value =	$0
Present Worth of 20 years of O & M =	$6,170,467
PW = Annual OM *(1+i)^n-1 / i*(1+i)^n	
Present Worth of 20 yr Salvage Value =	$0
PW = FSV* 1 / (1 + i)^n	
Alternate 1 Total Present Worth =	$30,176,467

Descriptive Alt Name 3: No Action	
Initial Capital Costs =	$0
Annual Operations & Maintenance Costs =	$489,900
Future Salvage Value =	$0
Present Worth of 20 years of O & M =	$6,170,467
Present Worth of 20 yr Salvage Value =	$0
Alternative 2 Total Present Worth =	$6,170,467

Figures

S MATTESON LAKE RD
INDUSTRIAL AVE
BURR OAK RD
WASTEWATER TREATMENT PLANT
RAYMOND ST
MATILDA ST
MILL ST
W RAILROAD ST
STATE ST
N RUGGLES ST
N MATTESON ST
BUCHANAN ST
WINONA ST
WASHINGTON ST
N LINCOLN ST
SHERMAN ST
UNION ST
ALBERS RD
DIVISION ST
SHAFFMASTER BLVD
N DOUGLAS ST
FRANKLIN ST
FREMONT ST
E CHICAGO ST
YORK ST
N WALKER ST
CYNTHIA ST
S LINCOLN ST
S PARHAM RD
SOUTH ST
W CHICAGO ST
WALKER STREET L.S.
E COREY ST
W COREY ST
COREY STREET L.S.
CITY OF BRONSON
COMPTON ST
ROOSEVELT ST
MCKINLEY ST
JACKSON ST
WAYNE ST
OAK DR
WALNUT ST
MOWRY AVE
S RUGGLES ST
S MATTESON ST
W GRANT ST
E GRANT ST
RUDD ST
S WALKER ST
BRONSON TOWNSHIP
ORLAND RD
CEMETERY RD

0 250 500 1,000 Feet

LEGEND

Gravity Sewer Diameter	Force Main Diameter	
6"	6"	City of Bronson Lift Station
8"	8"	City of Bronson Sanitary Manhole
10"		Private Manhole
12"		Private Gravity Sewer
15"		County Drain
16"		
18"		

CITY OF BRONSON
family. friends. neighbors.

BRANCH COUNTY, MICHIGAN

USDA RD PRELIMINARY ENGINEERING REPORT

FIGURE 1: EXISTING WASTEWATER SYSTEM

NOVEMBER 2022

Prein&Newhof

2220861

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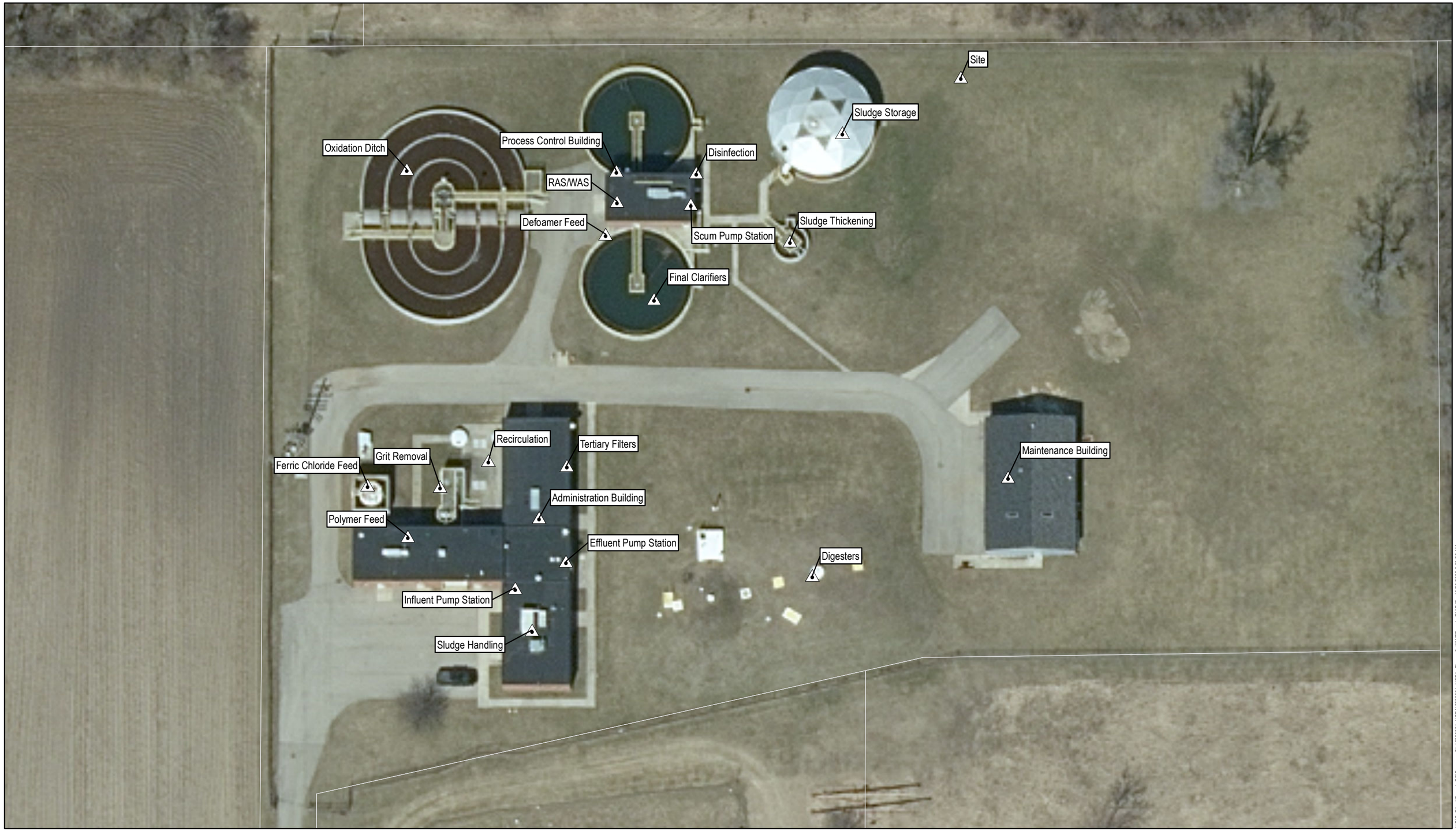

CITY OF BRONSON
family. friends. neighbors.

SCALE: 1 " = 40 '

LEGEND

△ WWTP Process

CITY OF BRONSON

BRANCH COUNTY, MICHIGAN

USDA RD PRELIMINARY ENGINEERING REPORT

FIGURE 2: WASTEWATER TREATMENT PLANT

NOVEMBER 2022

Prein&Newhof

2220861

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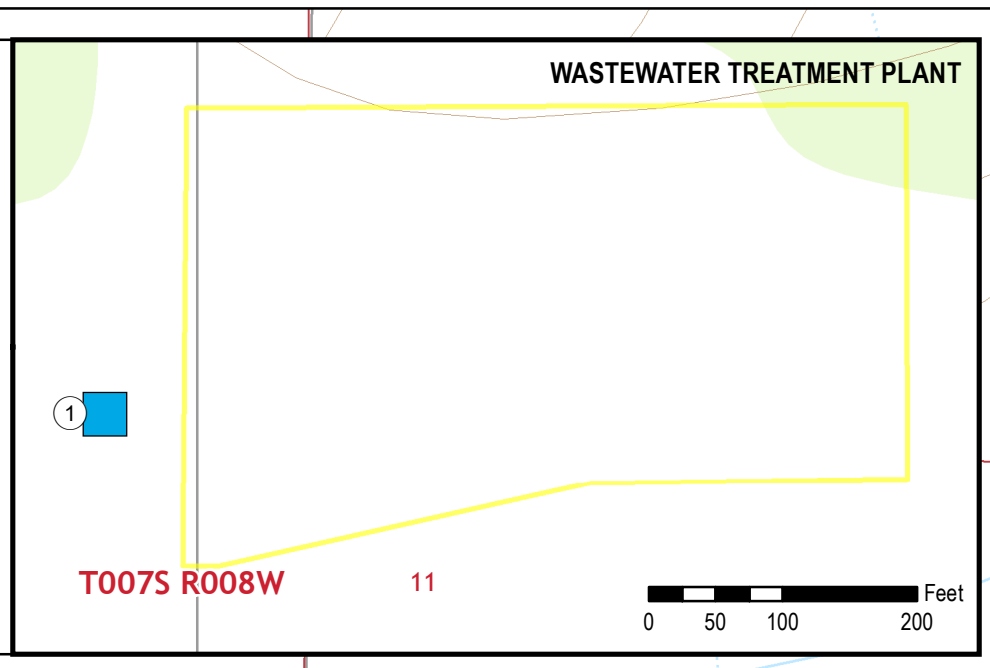
WWTP PROPOSED PROJECTS

1. New Headworks Building
2. Disinfection System
3. RAS/WAS
4. SCADA System
5. Final Clarifier Rehabilitation
6. Recirculation Pump Station
7. Ferric Chloride Feed
8. Administration Building Electrical Improvements
9. Administration Building Meter/Backflow Replacement
10. Lab Improvements
11. Grit Room Ventilation
12. Chemical Room Ventilation
13. Chemical Room Water Heater and Tepid Valve
14. Basement Level / Sludge Room Heat Exchanger
15. Site SE Rated MTS / Portable Power Connection
16. Building Lighting Improvements
17. Building Envelope Improvements
18. PFAS Sludge Disposal



T007S R008W

WASTEWATER TREATMENT PLANT (SEE INSET ABOVE)

Bronson

Bronson

CITY OF BRONSON

BRONSON TOWNSHIP

WALKER STREET L.S.

COREY STREET L.S.

INDUSTRIAL ST
RAYMOND ST
MILL ST
W RAILROAD ST
E RAILROAD ST
STATE ST
FILLMORE ST
W Chicago St
E Chicago St
YORK ST
COMPTON ST
ROOSEVELT ST
E COREY ST
E COREY
W GRANT ST
E GRANT ST
ALBERS RD
DIVISION ST
SHAFFMASTER BLVD
N RUGGLES ST
S RUGGLES ST
MOWRY AVE
S DOUGLAS ST
N WALKER ST
N MATTESON ST
BUCHANAN ST
WINONA ST
WASHINGTON ST
N LINCOLN ST
SHERMAN ST
MATILDA ST
JACKSON ST
WAYNE ST
OAK DR
WALNUT ST

11 11 12 12 13 14

LEGEND

Collection System Projects

- Utility Penetration Removal
- Point Repair
- Eliminate Storm Structures from Sanitary
- Lining
- Grouting
- Manhole Rehabilitation
- Lift Station Replacement
- Force Main Replacement
- Surcharged Sewer (Lining and Grouting - TBD)

WWTP Projects (See Inset)

- Proposed Headworks

N

Feet
0 250 500 1,000

CITY OF BRONSON
family, friends, neighbors.

BRANCH COUNTY, MICHIGAN

USDA RD PRELIMINARY ENGINEERING REPORT

FIGURE 3:
USGS QUADRANGLE MAP AND PROPOSED PROJECTS

NOVEMBER 2022

Prein&Newhof
2220861

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WWTP PROPOSED PROJECTS

1. New Headworks Building
2. Disinfection System
3. RAS/WAS
4. SCADA System
5. Final Clarifier Rehabilitation
6. Recirculation Pump Station
7. Ferric Chloride Feed
8. Administration Building Electrical Improvements
9. Administration Building Meter/Backflow Replacement
10. Lab Improvements
11. Grit Room Ventilation
12. Chemical Room Ventilation
13. Chemical Room Water Heater and Tepid Valve
14. Basement Level / Sludge Room Heat Exchanger
15. Site SE Rated MTS / Portable Power Connection
16. Building Lighting Improvements
17. Building Envelope Improvements
18. PFAS Sludge Disposal

WASTEWATER TREATMENT PLANT *(SEE INSET ABOVE)*

WALKER STREET L.S.

COREY STREET L.S.

CITY OF BRONSON

BRONSON TOWNSHIP

BURR OAK RD
ALBERS RD
MILL ST
W RAILROAD ST
STATE ST
N RUGGLES ST
UNION ST
N DOUGLAS ST
N MATTESON ST
DIVISION ST
SHAFFMASTER BLVD
FRANKLIN ST
YORK ST
SOUTH ST
W CHICAGO ST
BUCHANAN ST
E CHICAGO ST
CYNTHIA ST
S LINCOLN ST
N LINCOLN ST
MATILDA ST
RAYMOND ST
WINONA ST
WASHINGTON ST
SHERMAN ST
FILLMORE ST
FREMONT ST
INDUSTRIAL AVE
E COREY ST
MCKINLEY ST
JACKSON ST
WAYNE ST
OAK DR
WALNUT ST
ROOSEVELT ST
COMPTON ST
MOWRY AVE
S RUGGLES ST
S DOUGLAS ST
S MATTESON ST
W GRANT ST
E GRANT ST
RUDD ST
PARK ST
S WALKER ST
ORLAND RD

LEGEND

Collection System Projects
- Utility Penetration Removal
- Point Repair
- Eliminate Storm Structures from Sanitary
- Lining
- Grouting
- Manhole Rehabilitation
- Lift Station Replacement
- Force Main Replacement
- Surcharged Sewer (Lining and Grouting - TBD)

WWTP Projects (See Inset)
- Proposed Headworks

Wastewater System
- Gravity Sewer
- Force Main
- Lift Station
- Manhole
- Private Manhole
- Private Gravity Sewer
- County Drain

N

Feet
0 250 500 1,000

CITY OF BRONSON
family. friends. neighbors.

BRANCH COUNTY, MICHIGAN

USDA RD PRELIMINARY ENGINEERING REPORT

FIGURE 4:
PROPOSED PROJECTS

NOVEMBER 2022

Prein&Newhof
2220861

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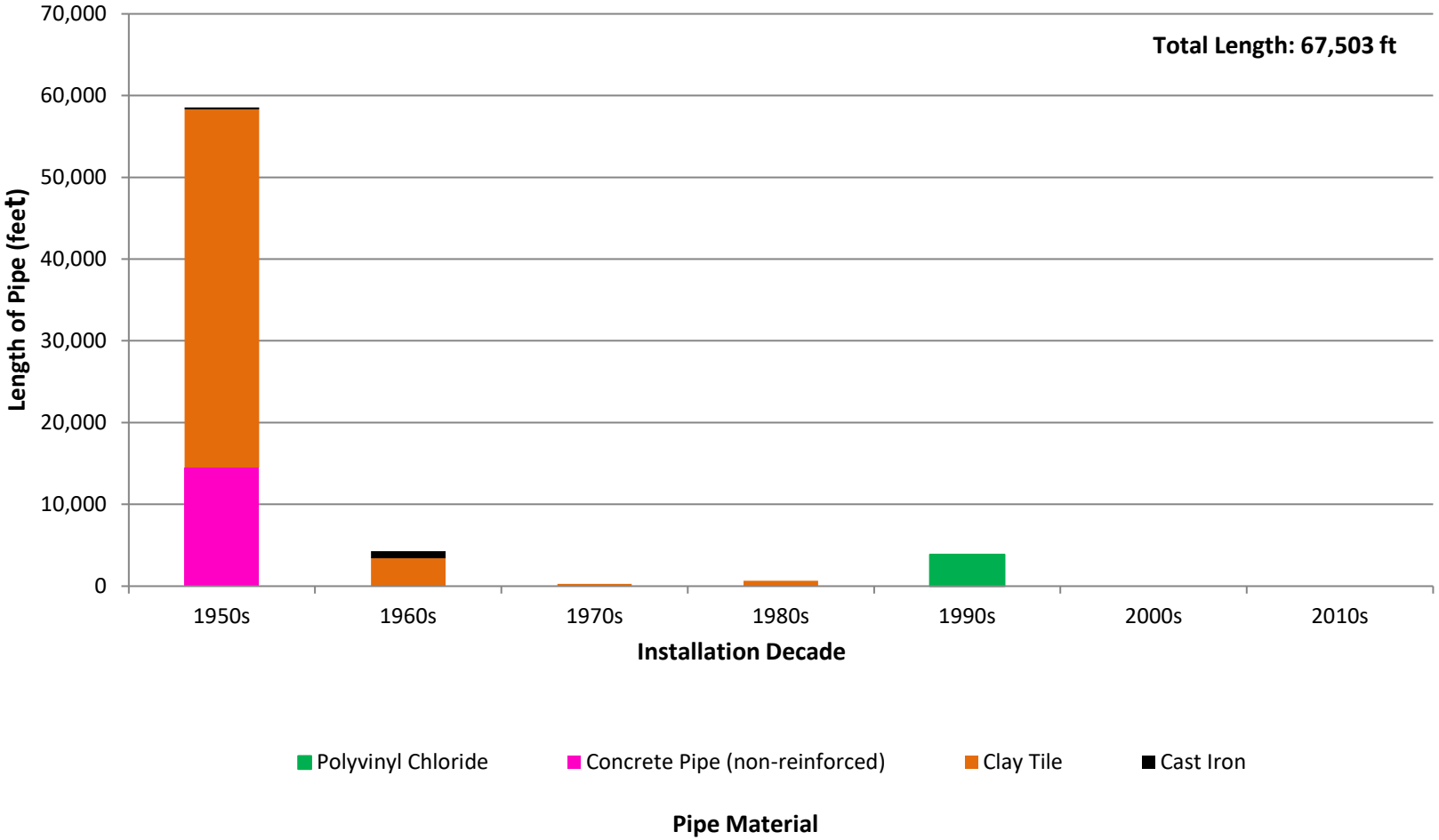
Appendix A

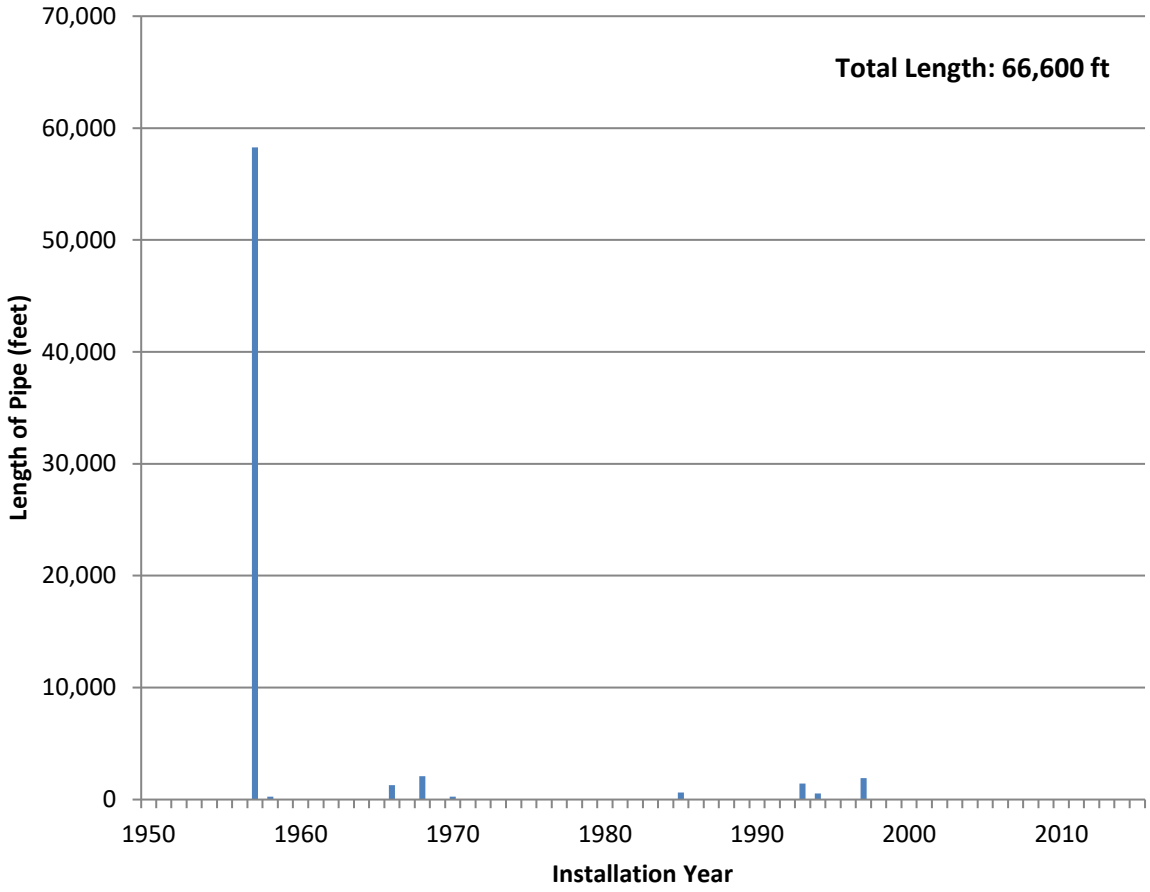
Existing Wastewater System Summary

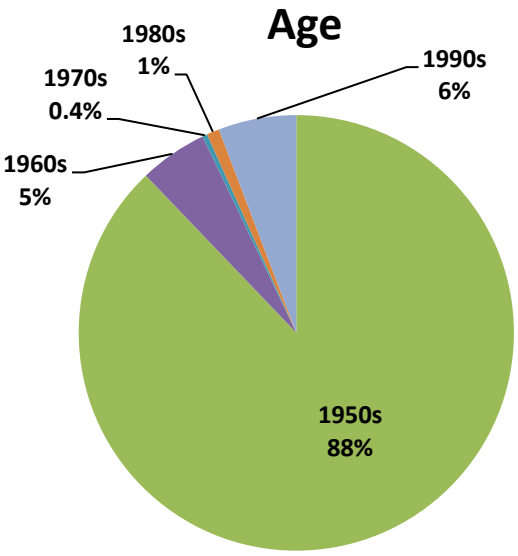
Gravity Sewer and Force Main Inventory Summary

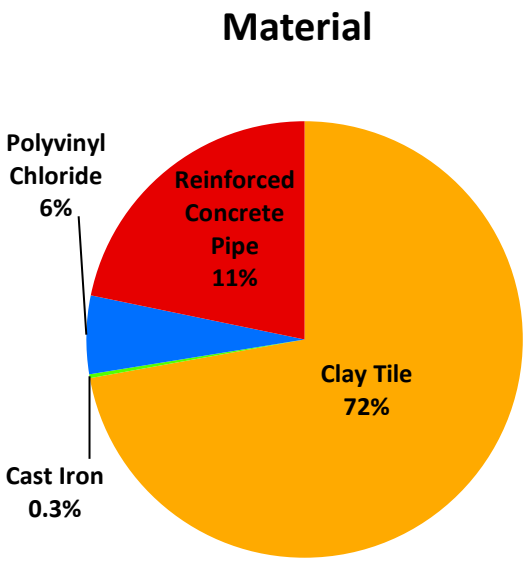


Includes publicly owned gravity sewer and force main pipe. Does not include Buchanan Township, service laterals or private systems.

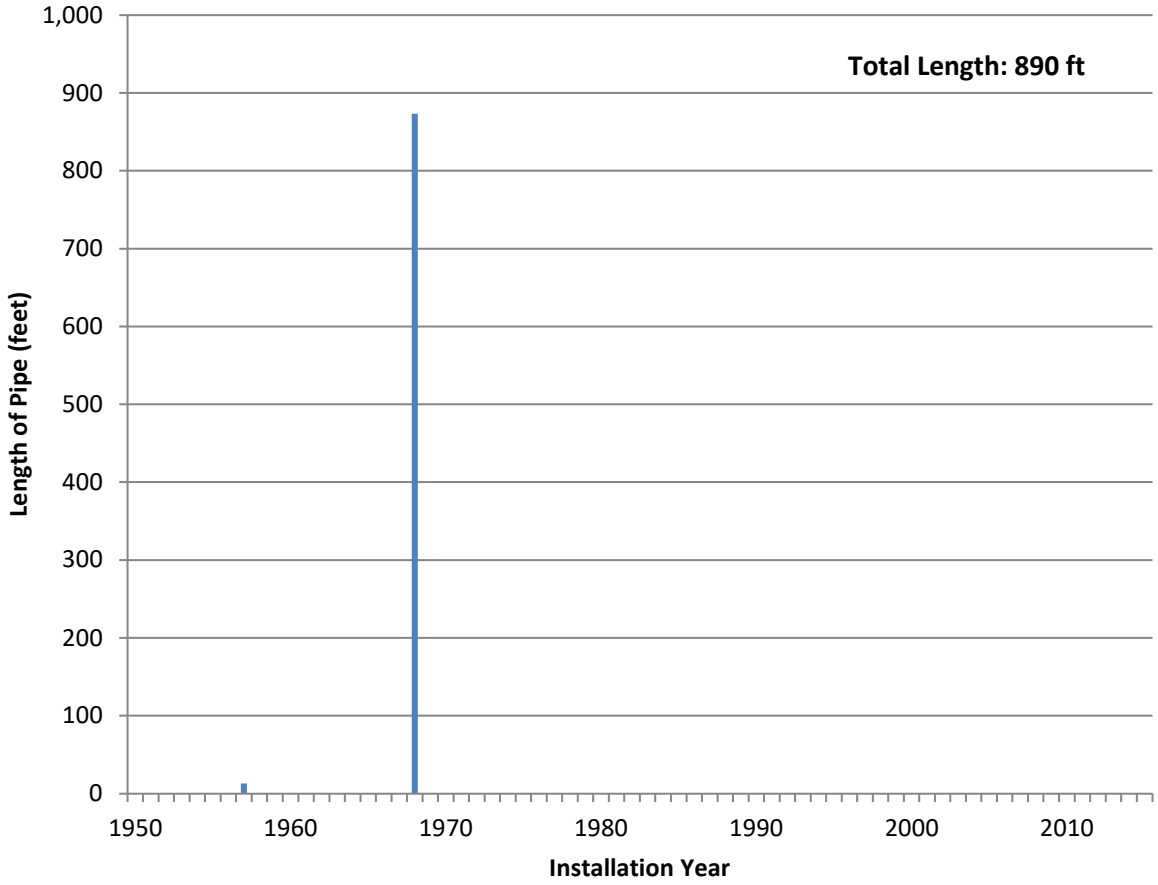
Gravity Sewer Age and Materials

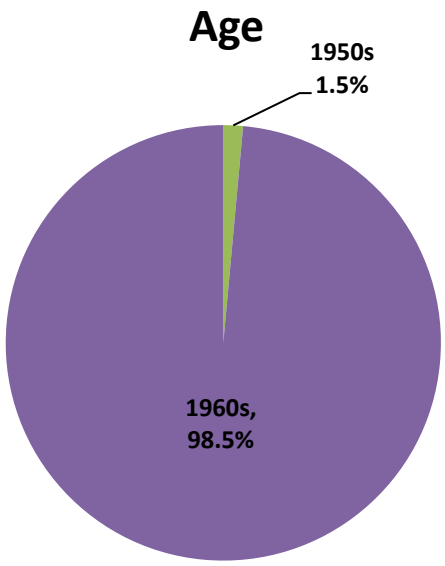


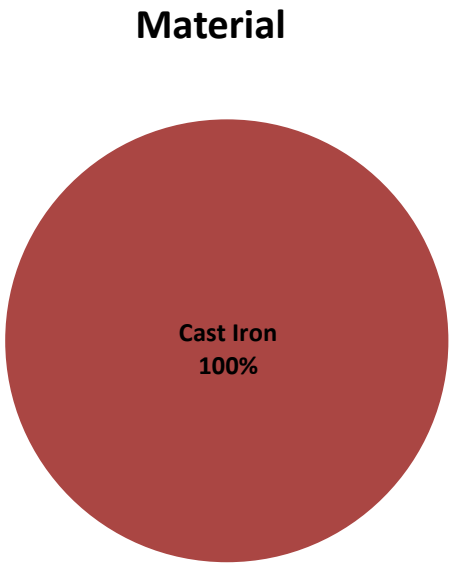




Force Main Age and Materials







Risk of Failure Rating Summary

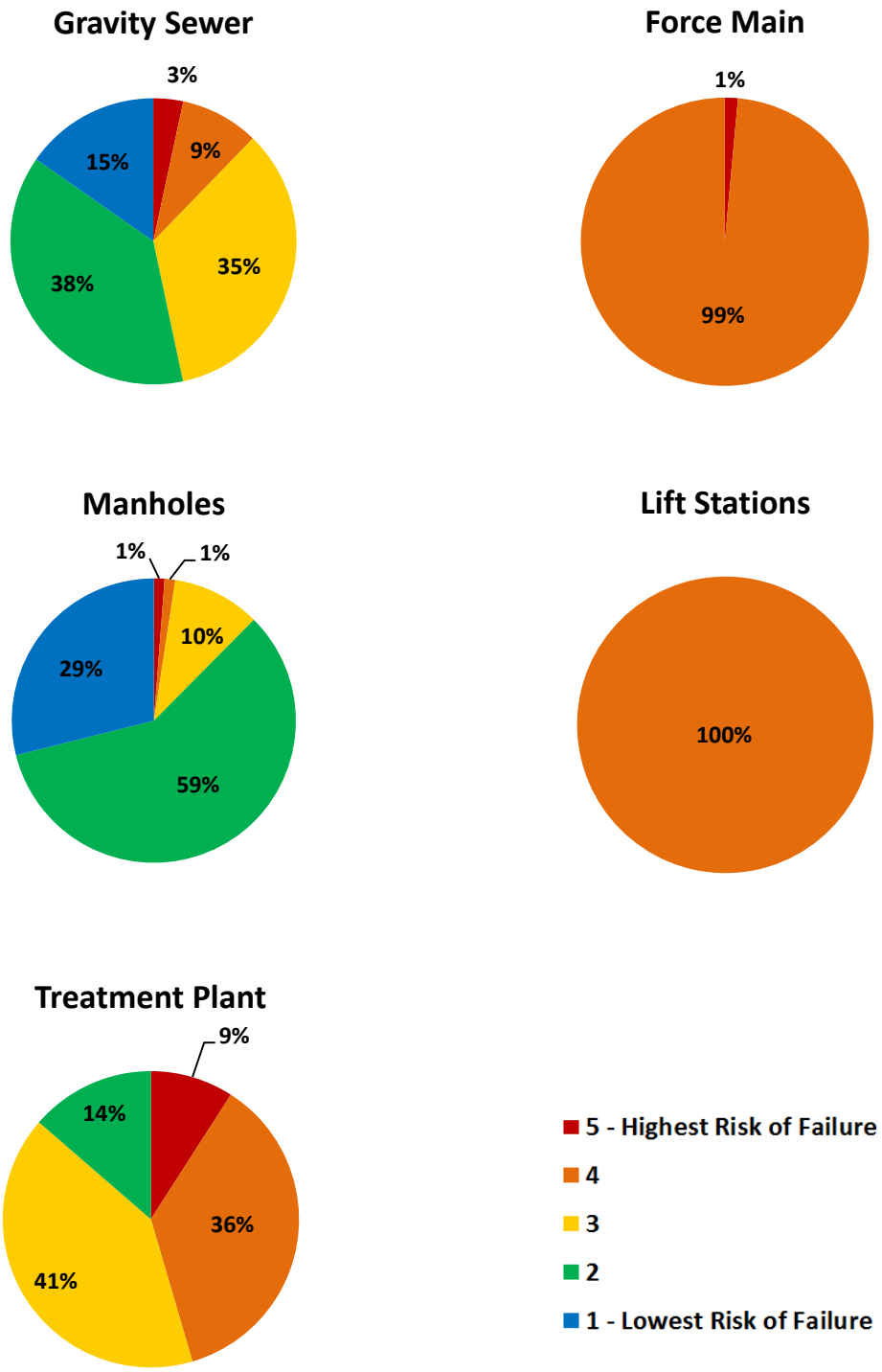
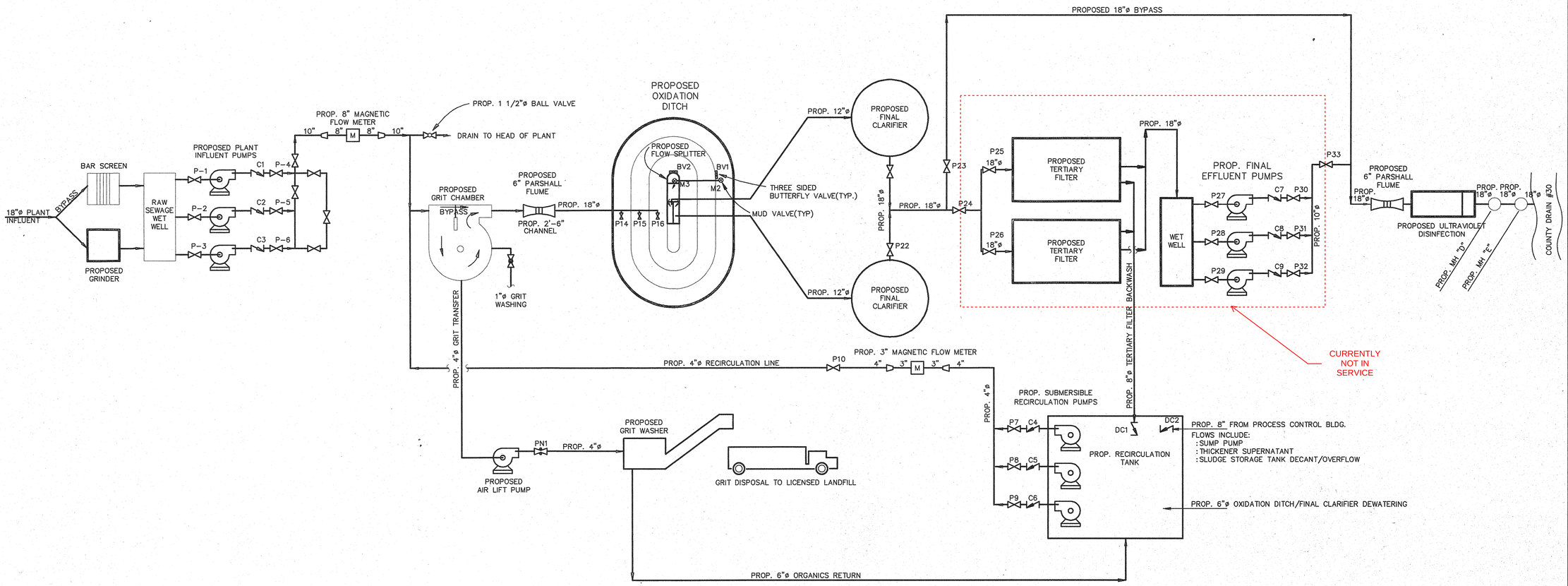


FIGURE 7A - LIQUID STREAM PROCESS SCHEMATIC



WW Engineering & Science
5555 Glenwood Hills Parkway, SE • Grand Rapids, MI 49512 • (616) 942-9600

NO.	DATE	BY	REVISIONS
1	8/4	DCH	BID SET
	10/21	DCH	
	1/6	DCH	

AS-CONSTRUCTED

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

CITY OF BRONSON
BRANCH COUNTY, MICHIGAN
1993 WWTP IMPROVEMENTS

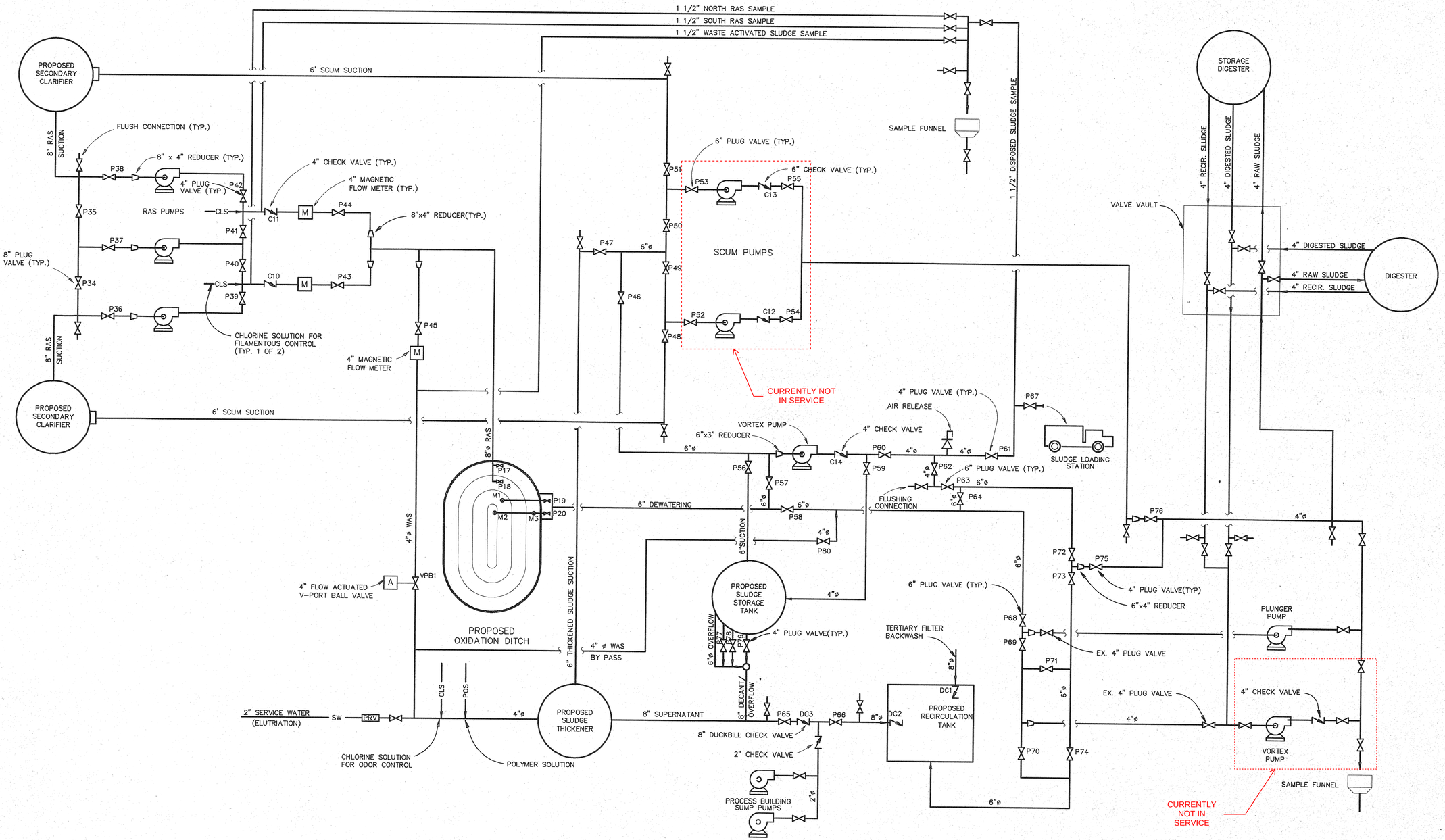
PLANT FLOW DIAGRAM

DESIGNED BY D.C.H.	DATE AUG. 92
DRAWN BY J.S.C.	DATE AUG. 92
CHECKED BY J.K.P.	DATE OCT. '92
FILE 89752P2	EDIT JSC012293
SCALE NONE	
DRAWING 1:1	
PLOT	
PROJECT 89752.00	

P2

SHEET NO.

FIGURE 7B - SOLID STREAM PROCESS SCHEMATIC



WW Engineering & Science
5555 Glenwood Hills Parkway, SE • Grand Rapids, MI 49512 • (616) 942-3600

NO.	REVISIONS	BY	DATE
1	AS-CONSTRUCTED		
	BID SET		

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

CITY OF BRONSON
BRANCH COUNTY, MICHIGAN
1993 WWTP IMPROVEMENTS

SLUDGE PROCESS FLOW DIAGRAM

DESIGNED BY	D.C.H.	DATE	9/92
DRAWN BY	P.A.D.	DATE	9/92
CHECKED BY	J.K.P.	DATE	OCT. '92
FILE	89752P3	EDIT	CVB122892
SCALE	NONE		
DRAWING	1		
PLOT			
PROJECT	89752		

P3

SHEET NO.

Appendix B

Wastewater Customer and Rates

CITY OF BRONSON

USDA APPLICATION

FOR WASTEWATER	ANSWERS
Total gallons collected from residential **and** other customers (do not include wholesale) for your fiscal year August 1, 2021 - July 31, 2022.	**40,788,649**
Of the Total Annual Gallons collected, how many Gallons were collected from Single Family Dwellings	**38,773,749**
What are the total number of existing connections on the system	**865**
Of the total number of existing connections, how many are Single Family Dwellings	**840**
What is the total annual revenue from residential **and** other customers (do not include wholesale) for your fiscal year August 1, 2021 - July 31, 2022.	**$ 608,060.00**
	TOTAL REVENUE (sewer only)
The City of Bronson has a total of 865 existing connections (metered and un-metered).	

Notes:

The City does not distinguish between residential and non-residential, but uses AWWA meters for equivalents

The City has 3 customers comprised of 76 Single Family Equivalent (Library -1, Housing - 47, Mobile Manor - 28) that are un-metered

Large meters are assumed Commercial and 3/4" meters are assumed single family

The City has 25 Large Meters (greater than 3/4") - commercial

3/4" meters = 840 (single family) includes the 76 un-metered

For the 764 metered customers (840-76) used 35,265,648 gallons = 3,846.6 gallons per month

For the 25 large meters, they used 2,014,900 gallons = 6,716 gallons per month

Un-metered is assumed at (3/4" usage) = 76 x 3,846.6 gallons / per month = 3,508,101 gallon for the 12 month period

Note that City actually assumes 3,955 gal/month for un-metered customers for billing purposes.

Total Gallons = 40,788,649 / year

RESOLUTION #22-09-09

A RESOLUTION OF THE BRONSON CITY COUNCIL ESTABLISHING RATES TO BE CHARGED FOR WATER AND WASTEWATER SERVICE PROVIDED BY THE CITY OF BRONSON.

The following preamble and resolution were introduced by Council member _____

and supported by Council member _____ .

WHEREAS, Pursuant to Article IX, Section 2 of Ordinance 127 and Article X, Section 2 of Ordinance 128, both as amended, the Bronson City Council may review, modify and revise the rates to be charged for water and wastewater service in the City of Bronson and establish rules and regulations pertaining to these services; and

WHEREAS, the Bronson City Council has established a goal to comply with sound business practices and state statute by operating the municipal water and wastewater facilities financially independent of City property tax revenue; and

WHEREAS, the Bronson City Council adopted a comprehensive schedule of utility charges and rates on May 23, 1984 with Resolution No. 84-05-19, and amended these charges with Resolution No. 84-12-38; Resolution No. 85-06-25; Resolution No. 86-06-13; Resolution No. 87-06-10; Resolution No. 89-06-14; Resolution No. 90-06-12; Resolution No. 91-08-16; Resolution No. 92-09-17; Resolution No. 93-06-14; Resolution No. 94-08-12; Resolution No.95-07-11; and Resolution No. 96-08-20; and Resolution 97-08-20; and Resolution No.98-08-14; and Resolution No. 99-08-11; and Resolution No. 00-09-09; and Resolution No. 01-09-05; and Resolution No. 02-09-12; and Resolution No. 03-09-21; and Resolution No. 04-09-07; Resolution No. 05-09-04; Resolution No. 06-09-09 ; Resolution No. 07-08-09; Resolution No. 08-08-08; 09-08-07; 11-09-10; 12-09-20; 13-09-09; 14-09-09; 15-09-12, 16-09-12 , 17-08-08, 18-09-09, 19-09-13; 20-08-12 and 21-09-09;

WHEREAS, Bronson City Staff has evaluated the current financial condition of the water and wastewater operations, and

WHEREAS, the Bronson City Council desires to adjust the existing rates so to enable these services to operate financially independent of City property tax revenue.

NOW THEREFORE BE IT RESOLVED that water and wastewater utility charges shall be amended to reflect the following rates:

	Water	Wastewater
Base Capacity Charge (3/4" equivalent)	$25.60	$47.60
Commodity Charge per 1,000 Gallons	$ 1.38	$ 1.51

AYES: _____

NAYS: _____

ABSENT: _____

THIS RESOLUTION DECLARED _____ THIS _____ DAY OF _____ 2022.

I hereby certify that this is a true copy of a resolution adopted by the City Council of Bronson at its meeting held on Monday, September 12,2022 at the Bronson City Hall.

_____ Karen A. Smith, City Clerk

CITY OF BRONSON
WATER & WASTEWATER CHARGES

Adopted May 23, 1984	Amended August 8, 1994	Amended Sept. 13, 2004
Amended December 20, 1984	Amended July 10, 1995	Amended Sept. 12, 2005
Amended June 24,1985	Amended August 12, 1996	Amended Sept. 11, 2006
Amended June 30, 1986	Amended August 11, 1997	Amended Aug. 13, 2007
AmendedJune30,1987	Amended August 10, 1998	Amended Aug. 11, 2008
Amended June 26, 1989	Amended August 9, 1999	Amended Aug. 10, 2009
Amended June 25, 1990	Amended Sept. 11, 2000	Amended Sept. 12,2011
Amended August 12, 1991	Amended Sept. 10, 2001	Amended Sept. 10,2012
Amended September 14, 1992	Amended Sept. 9, 2002	Amended Sept. 9, 2013
Amended June 28, 1993	Amended Sept. 8, 2003	Amended Sept. 9,2014
Amended Sept. 14,2015	Amended Sept. 12,2016	Amended Aug. 14,2017
Amended Sept. 10,2018	Amended Sept. 9,2019	Amended Aug. 10,2020
Amended Sept. 9, 2021	Amended Sept. 12, 2022	

Related Ordinances: Wastewater #127, Water #128

1. Capacity/Readiness to Serve Charge - Fixed costs of the utility systems are covered with revenue based on capacity. The charge is based on meter size and ratios as recommended by the American Water Works Association (AWWA)

METER SIZE (in inches)	WATER	WASTEWATER
3/4	25.60	47.60
1	64.00	119.00
1 2	128.00	238.00
2	204.80	380.80
3	384.00	714.00
4	640.00	1190.00
6	1280.00	2380.00

Additional apartments, trailer pads, or commercial units on a master meter shall pay a capacity/readiness to serve charge of 75% of the above listed applicable monthly charge per unit.

2. Commodity Charge - Operating costs of utility systems are recovered with revenue based on the number of thousands of gallons used.

Commodity Charge	Water	$ 1.38
	Wastewater	$ 1.51

3. Tap-on/Connection Fee - These are one-time charges for new connections to buy-into the system; i.e., a charge for system availability and to off set for past system investments. If tap-on/connection is for sewer only, the nearest equivalent meter-size rate, as determined by the City Manager, will be used as basis for tap-on/connection fee. Ratios are based on AWWA recommendations.

METER SIZE(inches)	WATER	WASTEWATER
3/4	1000	1000
1	1200	1200
2	1500	1400
4	1700	1450
6	1900	1650

4. Meters - (Article V, Sec. 1&6 of Ord. 128) All new water use must be metered. Meters will be furnished, installed, tested and maintained by the City at the customers expense, and shall remain the property of and under the control of the City. Meter costs shall not be included in the tap-on/connection charge.

5. Meter Testing - (Article V, Sec. 8 of Ord. 128) The customer may request that a meter be tested upon depositing with

the City an amount based on the meter's size. If the meter is found to register more than 3% fast, the deposit shall be returned to the customer and the meter repaired or replaced. If the meter is found to register less than 3% fast, the City shall retain the deposit.

METER SIZE (in inches)	METER TESTING DEPOSIT
3/4	$10.00
1	40.00
1/2	60.00
2	75.00
3	100.00
4	150.00
6	200.00

6. Hydrant Use - (Article VI, Sec.1 of Ord. 128) No person shall open, or cause to be opened, any fire hydrant except for authorized employees of the City or members of the City Public Safety Department, except in the case of an emergency, without first securing a "Permit to use Fire Hydrant" from the City. A deposit of $50.00 will be required. Such person must report to the City when such use is terminated, at which time a hydrant inspection will be made by the City. The cost of the estimated amount of Public Water used and the cost of any necessary repair, if needed, shall be deducted from the deposit and the difference (if any) shall be refunded to the permit holder. A minimum charge shall be $10.00. If the deposit is insufficient to cover said costs, the permit holder shall pay the difference.

7. Swimming Pools - Residential Users may fill a pool from their own home service as long as a "before and after fill meter reading" is given to City staff. These readings will determine the amount to be voided from sewer fee determination.

8. Outside Users - Services located outside of the city limits shall be charged for services at 150% of the listed inside-city rates and charges.

9. Non-metered Users - Non-metered water and sewer customers will be charged a minimum rate based on 125% of the average usage in the most appropriate meter size class, as determined by the City Manager.

10. Turn-On/Off Fee - (Article X, Sec. 5 of Ord, 128)

Customer requested shut-off	$ 0
Customer requested turn-on	25.00/occurrence
Late payment shut-off	25.00/occurrence
Late payment turn-on	20.00/occurrence

11. Payment - (Article XI, Sec. 1 of Ord, 128) Delinquent balances shall be assessed a penalty of 10% of the unpaid balance.

12. Partial Payment - Not less than 50% of a payment due will be accepted as partial payment of account. In cases of partial payment, total balance due must be received within five (5) working days.

13. Responsibility of Payment - (Article 1, Sec. 9 of Ord. 128) Owners of property are responsible for payment and compliance.

14. Deposits and Prepayments - If due cause exists, the City may require the following of a potential utility customer:

A. Co-signature which makes the co-signer responsible for payment if customer fails to make payment.

B. Prepayment of one billing period's service based on the average rate for the class and type of service being requested.

C. A deposit of 150% of the average rate for the class and type of service. The deposit shall be returned to the customer if, after two (2) years, the customer has paid all billings before their penalty date. If, during two years, a late payment penalty is charged, the deposit is forfeited. The City shall pay interest on

deposits in excess of $100.00 at an interest rate established by the City from time to time. If, at any time, the City deems any cash deposit to be inadequate, the customer may be required to make and additional deposit. Upon failure to do so, the City shall have the right to discontinue service to such customer.

15. Customer Service Charge - (Article X, Sec. 4 of Ord. 128) Effective July 1, 1984, miscellaneous services shall be charged at a rate of time, material and equipment rental plus 20%. For non-residents the 50% Outside User surcharge shall apply.

16. City Responsibility - (Article III, Sec. 1 of Ords. 127 & 128) The City Manager shall be responsible for the supervision, operation, and management of the utility systems.

17. For complete Utility Rules and Rates, refer to:

Water: Resolutions				Wastewater: Resolutions			
84-05-19	96-08-20	08-08-08	21-09-09	84-05-19	96-08-20	08-08-08	21-09-09
84-12-38	97-08-20	09-08-07	22-09-09	84-12-38	97-08-20	09-08-07	22-09-09
85-06-25	98-08-14	11-09-10		85-06-25	98-08-14	11-09-10	
86-06-13	99-08-11	12-.09-10		86-06-13	99-08-11	12-09-10	
87-06-10	00-09-09	13-09-09		87-06-10	00-09-09	13-09-09	
89-06-14	01-09-05	14-09-09		89-06-14	01-09-05	14-09-09	
90-06-12	02-09-12	15-09-12		90-06-12	02-09-12	15-09-12	
91-08-16	03-09-21	16-09-12		91-08-16	03-09-21	16-09-12	
92-09-17	04-09-07	17-08-08		92-09-17	04-09-07	17-08-08	
93-06-14	05-09-04	18-09-09		93-06-14	05-09-04	18-09-09	
94-08-12	06-09-09	19-09-13		94-08-12	06-09-09	19-09-13	
95-05-11	07-08-09	20-08-12		95-07-11	07-08-09	20-08-12	

(Ordinance provisions supersede resolution provisions)

Karen A. Smith, City Clerk

City of Bronson
Revenue Test
Charges for Service - Sewer

METERED CUSTOMERS

Meter Size	Equiv. Factor	RTS	Customer Count	EFU	Revenue
3/4"	1	$ 47.60	764	764	$436,397
1"	2.5	119.00	7	17.5	$9,996
1 1/2"	5	238.00	12	60	$34,272
2"	8	380.80	3	24	$13,709
3"	15	714.00	2	30	$17,136
4"	25	1,190.00	0	0	$0
6"	50	2,380.00	1	50	$28,560
			789	945.5	**$540,070**

Volume Charge	Volume (per 1000)	
$1.51	37,281	**$56,294**
Total Revenue from Metered Customers		**$596,363**

UN-METERED CUSTOMERS

The City has 3 unmetered customers and comprised of 76 (Single Family) units.
They are each charged a RTS of the 3/4" meter
Un-meter customers are assumed by the City that each EFU to use 47,465 gal/year (3,955 gal/month)

Meter Size	Equiv. Factor	RTS	Customer Count	EFU	Revenue
Unmetered (3/4" equivalent)	1	$47.60	76	76	**$43,411**

Volume Charge	Volume (per 1000)	EFU	
$1.51	47.465	76	**$5,447**
Total Revenue from Un-Metered Customers			**$48,858**

TOTAL PROJECTED REVENUE (METERED AND UNMETERED) **$645,222**

Wastewater Fund	2019-2020 Actual	2020/2021 Actual	2021/2022 Budget	2021/2022 Projected	2022/2023 Proposed
Gross Revenue					
Services Charges	605,865	553,359	519,062	580,223	535,598
Penalties	6,000	3,000	5,000	9,377	7,000
Industrial Pretreatment Program Fees	500	-		-	-
Interest	8,000	14,000	5,025	1,114	500
New Service Hookups		0	-	-	-
Grants	900,000	639,000	420,570	231,774	-
Miscellaneous	2,000	1,000	100	1,446	100
Capital Contributions			118,840	-	-
Total Fund Revenue	**1,522,365**	***1,210,359***	***1,068,597***	***823,934***	***543,198***
Operational Expenses					
Wages & Benefits	229,457	211,676	216,619	248,377	224,655
Office & Printing Costs	5,550	5,900	5,800	3,724	5,800
Tools, Chemicals, Supplies & Equipment	29,700	29,200	42,700	25,654	37,750
Professional Development	1,400	1,400	1,400	913	1,400
Building Maintenance	2,200	2,300	2,300	566	2,300
Utilities	38,500	38,500	38,500	48,982	40,000
Uniforms	700	300	300	185	300
Engineering/Consulting	~~1,000,000~~	~~710,000~~	~~539,410~~	~~62,096~~	~~20,000~~
Land Application of Waste	30,000	30,000	30,000	11,915	15,000
Maintenance & Service Contracts	15,000	12,000	12,000	8,926	12,260
Industrial Pretreatment Program Expenses	1,000	1,000	1,000	-	1,000
State License Fees	3,500	3,500	12,500	3,214	12,500
Miscellaneous	1,500	1,500	1,500	18,500	1,500
Property & Liability Insurance	9,130	10,043	11,047	11,164	11,044
Sanitary Sewer System Maintenance	15,000	15,000	15,000	1,102	10,000
Legal Fees & Legal Notices	15,500	10,500	10,500	15,200	17,500
Vehicles & Equipment	24,227	27,540	28,021	28,020	30,188
Total Operational Expenses	~~***1,422,365***~~	~~***1,110,359***~~	~~***968,598***~~	~~***488,538***~~	~~***443,198***~~
	$422,365	$400,359	$429,188	$426,442	$423,198
Funded Depreciation					
Capital Depreciation	***100,000***	***100,000***	***100,000***	***124,000***	***100,000***
Total Expenses & Depreciation	**1,522,365**	***1,210,359***	***1,068,598***	***612,538***	***543,198***
Net Fund Revenue	**0**	**0**	**0**	**211,396**	**0**
Net Fund Balance (Cash on Hand)	**925,717**	**1,021,272**	**1,021,272**	**1,071,859**	**1,071,859**

The Wastewater Treatment Plant has a maximum capacity of 1.8 million gallons per day. During rainy spring weather, the plant routinely sees flows of around 1 million gallons per day while average operation is around 250,000 gallons per day.

Effluent from the plant is monitored for a variety of substances and testing is conducted pursuant to regulations set by the Michigan Department of Environmental Quality (MDEQ).

Operating Budget
For First Full Year After Construction

Community Name: City of Bronson **County:** Branch

Address: 141 S Matteson Street
Bronson, MI 49028-1396

A. Applicant Fiscal Year: **From:** 2025 **To:** 2026

B. Operating Income:	**From Sewer Rates & Charges:**	$645,222
	Other	$0
	Total Operating Income:	$645,222
C. Operating Expenses:		
	Administrative/Office	$22,921
	Contracted Services - waste treatment (land application)	$17,364
	Contracted Services - Other (Maintenance and Service Contracts)	$14,192
	Engineering	$0
	Insurance/Audit	$12,785
	Legal	$20,258
	Other - IPP	$1,158
	Other - Vehicle Expenses	$34,946
	Salaries/Benefits	$261,687
	Repairs/Maintenance	$14,239
	Supplies and Chemicals	$44,048
	Utilities	$46,305
	Total Operating Expenses:	$489,903
D.	**Net Operating Income:**	$155,319
E. Non Operating Income:		
	Interest:	$500
	Other: Penealties and Miscellaneous	$7,100
	Total Non Operating Income:	$7,600
F.	**Net Income**	$162,919
G. Expenditures/Transfers		
	Repair, Replacement & Improvement Fund (SLA)	$130,100
	Bond Reserve	$110,906
	Payment to USDA Loan	$1,109,061
	Payment to Other Loans	$31,050
	Total Expenditures/Transfers:	$1,381,117
	Excess/Deficit over net income:	-$1,218,198

Debt Service Report

Local Unit Name:	City of Bronson
Local Unit Code:	122010
Current Fiscal Year End Date:	6/30/2021
Debt Name:	Improvements
Issuance Date:	10/1/1993
Issuance Amount:	$590,000
Debt Instrument (or Type):	GO Bonds
Repayment Source(s):	GO Bond Fund

Years Ending	Principal	Interest	Total
2020	$ 19,000	$ 15,000	$ 34,000
2021	$ 19,000	$ 14,050	$ 33,050
2022	$ 20,000	$ 13,100	$ 33,100
2023	$ 20,000	$ 12,100	$ 32,100
2024	$ 21,000	$ 11,100	$ 32,100
2025	$ 21,000	$ 10,500	$ 31,500
2026	$ 22,000	$ 9,000	$ 31,000
2027	$ 22,000	$ 7,900	$ 29,900
2028	$ 22,000	$ 6,800	$ 28,800
2029	$ 22,000	$ 5,700	$ 27,700
2030	$ 23,000	$ 4,600	$ 27,600
2031	$ 23,000	$ 3,450	$ 26,450
2032	$ 23,000	$ 2,300	$ 25,300
2033	$ 23,000	$ 1,150	$ 24,150
Totals	**$ 300,000**	**$ 116,750**	**$ 416,750**

Commentary: The City was able to pay off the 2001 Pierce Fire Truck early from the revenue from the Fire Protection Special Assessment

Bond Schedule (without Grant)

Date: ***03/22/23***

Borrower Name:	**City of Bronson**	
Interest Rate:	2.250%	
Yrs Deferred Principle	0	
Principal:	**$24,006,000**	(round to nearest $1000)
Ammort. Factor	0.0000	
Ammortized Payment:	$1,109,061	

Year	1st Interest	2nd Interest	Principal Paid	Total Year Payment	Loan Balance
					24,006,000
1	270,068	270,068	569,000	1,109,135	23,437,000
2	263,666	263,666	582,000	1,109,333	22,855,000
3	257,119	257,119	595,000	1,109,238	22,260,000
4	250,425	250,425	608,000	1,108,850	21,652,000
5	243,585	243,585	622,000	1,109,170	21,030,000
6	236,588	236,588	636,000	1,109,175	20,394,000
7	229,433	229,433	650,000	1,108,865	19,744,000
8	222,120	222,120	665,000	1,109,240	19,079,000
9	214,639	214,639	680,000	1,109,278	18,399,000
10	206,989	206,989	695,000	1,108,978	17,704,000
11	199,170	199,170	711,000	1,109,340	16,993,000
12	191,171	191,171	727,000	1,109,343	16,266,000
13	182,993	182,993	743,000	1,108,985	15,523,000
14	174,634	174,634	760,000	1,109,268	14,763,000
15	166,084	166,084	777,000	1,109,168	13,986,000
16	157,343	157,343	794,000	1,108,685	13,192,000
17	148,410	148,410	812,000	1,108,820	12,380,000
18	139,275	139,275	831,000	1,109,550	11,549,000
19	129,926	129,926	849,000	1,108,853	10,700,000
20	120,375	120,375	868,000	1,108,750	9,832,000
21	110,610	110,610	888,000	1,109,220	8,944,000
22	100,620	100,620	908,000	1,109,240	8,036,000
23	90,405	90,405	928,000	1,108,810	7,108,000
24	79,965	79,965	949,000	1,108,930	6,159,000
25	69,289	69,289	970,000	1,108,578	5,189,000
26	58,376	58,376	992,000	1,108,753	4,197,000
27	47,216	47,216	1,015,000	1,109,433	3,182,000
28	35,798	35,798	1,037,000	1,108,595	2,145,000
29	24,131	24,131	1,061,000	1,109,263	1,084,000
30	12,195	12,195	1,085,000	1,109,390	-1,000

Short-Lived Assets

Item	Quantity	Unit Cost	Total Cost	useful life	cost/year
Lift Stations SLA					
LS Pumps (>300 gpm)	2	$25,000	$50,000	15	$3,333
LS Pumps (<300 gpm)	2	$35,000	$70,000	15	$4,667
LS Controls	2	$35,000	$70,000	15	$4,667
WWTP SLA					
Headworks	1	$350,000	$350,000	15	$23,333
Oxidation Ditch	1	$105,000	$105,000	15	$7,000
UV System	1	$110,000	$110,000	15	$7,333
RAS/WAS	1	$200,000	$200,000	15	$13,333
Admin - Electrical	1	$200,000	$200,000	15	$13,333
Lab	1	$40,000	$40,000	15	$2,667
Recirculation	1	$130,000	$130,000	15	$8,667
Ferric Chloride	1	$80,000	$80,000	15	$5,333
Misc.	1	$200,000	$200,000	15	$13,333
TOTAL (2022)			**$1,605,000**		**$107,000**
TOTAL (2025/26)			**$1,950,900**		**$130,100**

These unit costs were determined based on the cost estimates in Appendix C.

Appendix C

Engineer's Estimate of Construction Costs

City of Bronson
2220861

Appendix C - Summary Table

2022 Proposed USDA Project

Project ID#	Location & Description	Construction Cost	Contingencies (10%)	Total Construction Cost
001	Chicago Street	$37,650	$3,765	$41,415
050	W. Railroad Street (Dig/Repair and Sanitary Full Liner)	$33,600	$3,360	$36,960
060	Division Street (Dig/Repair and Sanitary Full Liner)	$33,600	$3,360	$36,960
061	Franklin Street (Dig/Repair and Sanitary Full Liner)	$33,600	$3,360	$36,960
090	201 Industrial Avenue - disconnect CB behind DPW from sanitary (Inflow removal)	$34,200	$3,420	$37,620
091	N. Douglas and Railroad Street - disconnect 3 storm structures from sanitary (Inflow removal)	$72,500	$7,250	$79,750
130	System Wide - Sanitary Full Liner w/o laterals (ROF 4 and 5)	$888,549	$88,855	$977,403
150	System wide grouting - I/I pipes (weepers, drippers, runners, and gushers)	$1,536,836	$153,684	$1,690,520
160	MH Lining and Casting Replacement	$367,200	$36,720	$403,920
140	Sanitary Lining (Surcharged Pipes)	$465,262	$46,526	$511,788
145	Grouting - (Surcharge Pipes)	$212,387	$21,239	$233,625
410	Corey LS - Forcemain Replacement	$142,000	$14,200	$156,200
505	Corey Street LS Improvements (Replace)	$605,500	$60,550	$666,050
510	Walker Street LS & Force Main Replacement	$815,000	$81,500	$896,500
551	Headworks Improvements	$3,750,000	$375,000	$4,125,000
553	UV Disinfection System Improvements	$386,000	$38,600	$424,600
554	RAS/WAS Improvements	$395,000	$39,500	$434,500
555	Admin Building Electrical Improvements	$178,000	$17,800	$195,800
556	Admin Building - Meter/Backflow - Replacement	$8,000	$800	$8,800
557	Lab Improvements	$398,000	$39,800	$437,800
558	Grit Room - Ventilation	$39,000	$3,900	$42,900
559	Chemical Room - Ventilation	$20,000	$2,000	$22,000
560	Chemical Room - water heater and tepid valve	$7,000	$700	$7,700
561	Basement Level/Sludge Room - heat exchanger	$16,000	$1,600	$17,600
562	Site - SE Rated MTS / Portable Power Connection	$24,000	$2,400	$26,400
563	Building Lighting Improvements	$70,000	$7,000	$77,000
564	WWTP SCADA System	$539,000	$53,900	$592,900
565	Building Envelope Improvements	$31,000	$3,100	$34,100
566	PFAS Sludge Disposal	$444,000	$44,400	$488,400
567	Recirculation Pump Replacements	$121,000	$12,100	$133,100
568	Ferric Chloride Feed Improvements	$311,000	$31,100	$342,100
	TOTAL (2022 dollars)	**$12,014,883**	**$1,201,488**	**$13,216,371**
	2025	**$18,178,000**	**$1,824,000**	**$20,002,000**

Note: Construction Costs Estimated increase at 25% for year 2023 and then 10% per year

Collection System

2022	$3,716,000	$372,000	$4,088,000
2025	$5,621,000	$564,000	**$6,185,000**

Lift Station

2022	$1,563,000	$157,000	$1,720,000
2025	$2,365,000	$239,000	**$2,604,000**

WWTP

2022	$6,737,000	$674,000	$7,411,000
2025	$10,192,000	$1,021,000	**$11,213,000**

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #001: Chicago Street - External Utility Penetration

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$3,400	$3,400
2	Utility Coordination and relocation of utility penetration	1	LS	$5,500	$5,500
3	Remove HMA pavement	50	SY	$25	$1,250
4	Remove & Replace curb	30	LF	$50	$1,500
5	Remove & Replace Drive Apron	1	LS	$2,500	$2,500
6	Excavate and repair 8" sanitary sewer	1	LS	$10,000	$10,000
7	Road Replacement, full depth (6" HMA, 8" Agg)	50	SY	$100	$5,000
8	Post Video Inspection	1	LS	$500	$500
9	Traffic Control	1	LS	$7,500	$7,500
10	Restoration	1	LS	$500	$500
	Construction Costs				$37,650

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #050: W. Railroad Street (Point Repair – Dig/Repair)

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$3,100	$3,100
2	Bypass Operation	1	LS	$1,000	$1,000
3	Remove HMA pavement	50	SY	$25	$1,250
4	Remove & Replace curb	30	LF	$50	$1,500
5	Excavate and repair 8" sanitary sewer	1	LS	$10,000	$10,000
6	Dewatering	1	LS	$10,000	$10,000
7	Road Replacement, full depth (4" HMA, 6" Agg)	50	SY	$75	$3,750
8	Post Video Inspection	1	LS	$500	$500
9	Traffic Control	1	LS	$2,000	$2,000
10	Restoration	1	LS	$500	$500
	Construction Costs				$33,600

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #060: Division Street (Point Repair – Dig/Repair)

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$3,100	$3,100
2	Bypass Operation	1	LS	$1,000	$1,000
3	Remove HMA pavement	100	SY	$25	$2,500
4	Excavate and repair 8" sanitary sewer / wye	1	LS	$10,000	$10,000
5	Dewatering	1	LS	$7,500	$7,500
6	Road Replacement, full depth (4" HMA, 6" Agg)	100	SY	$75	$7,500
7	Post Video Inspection	1	LS	$500	$500
8	Traffic Control	1	LS	$1,000	$1,000
9	Restoration	1	LS	$500	$500
	Construction Costs				$33,600

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #061: Franklin Street (Point Repair – Dig/Repair)

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$3,100	$3,100
2	Bypass Operation	1	LS	$1,000	$1,000
3	Remove HMA pavement	100	SY	$25	$2,500
4	Excavate and repair 8" sanitary sewer	1	LS	$10,000	$10,000
5	Dewatering	1	LS	$7,500	$7,500
6	Road Replacement, full depth (4" HMA, 6" Agg)	100	SY	$75	$7,500
7	Post Video Inspection	1	LS	$500	$500
8	Traffic Control	1	LS	$1,000	$1,000
9	Restoration	1	LS	$500	$500
	Construction Costs				$33,600

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #090: 201 Industrial Avenue (disconnect CB behind DPW from sanitary)

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$3,100	$3,100
2	Remove pavement	100	SY	$25	$2,500
3	Remove storm structures and storm pipes	1	LS	$4,000	$4,000
4	Core existing storm structure	1	LS	$1,000	$1,000
5	New Storm Structures	2	EA	$6,500	$13,000
6	12" storm pipe	26	LF	$100	$2,600
7	Pavement Replacement, full depth (4" HMA, 6" Agg)	100	SY	$75	$7,500
8	Traffic Control	1	LS	$500	$500
	Construction Costs				$34,200

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #091: N. Douglas and Railroad Street (disconnect 3 storm structures from sanitary)

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$6,600	$6,600
2	Remove pavement	280	SY	$10	$2,800
3	Remove and replace curb	50	LF	$50	$2,500
4	Remove storm structures and storm pipes	1	LS	$5,000	$5,000
5	Remove and replace sidewalk ramp	1	LS	$3,500	$3,500
6	New Storm Structures	4	EA	$6,000	$24,000
7	12" storm pipe	75	LF	$100	$7,500
8	Road Replacement, full depth (4" HMA, 6" Agg)	280	SY	$70	$19,600
9	Traffic Control	1	LS	$500	$500
10	Restoration	1	LS	$500	$500
	Construction Costs				$72,500

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #130: System Wide Lining

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Mobilization	1	LS	$15,000	$15,000
2	Traffic Control	1	LS	$15,000	$15,000
3	Bypass Operation	1	LS	$5,000	$5,000
4	6" Sewer Cleaning and CCTV (pre and post inspections)	239	LF	$6	$1,434
5	8" Sewer Cleaning and CCTV (pre and post inspections)	5,926	LF	$6	$35,556
6	10" Sewer Cleaning and CCTV (pre and post inspections)	1,041	LF	$7	$6,767
7	12" Sewer Cleaning and CCTV (pre and post inspections)	306	LF	$7	$2,142
8	6" Sanitary Sewer, CIPP	239	LF	$75	$17,925
9	8" Sanitary Sewer, CIPP	5,926	LF	$50	$296,300
10	10" Sanitary Sewer, CIPP	1,041	LF	$55	$57,255
11	12" Sanitary Sewer, CIPP	306	LF	$95	$29,070
12	Service Lateral Reinstatement	114	EA	$150	$17,100
13	Lateral Lining (Clean, CCTV, Service Connection + 10' liner)	30	EA	$10,000	$300,000
14	Work Allowance - dig and repair (complete with restoration)	1	LS	$80,000	$80,000
15	Pipe preparation - cutting or removal intruding tap	10	EA	$500	$5,000
16	Restoration	1	LS	$5,000	$5,000
	Construction Costs				$888,549

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #150: System Wide Grouting

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Mobilization	1	LS	$100,000	$100,000
2	Permits, bonding and inspection fees	1	LS	$25,000	$25,000
3	Traffic Control	1	LS	$127,500	$127,500
4	Cleaning and Televising Prep for grouting	36,088	EA	$7	$252,616
5	Additional Cleaning	252	HR	$250	$63,000
6	Bypass Operation	1	LS	$150,000	$150,000
7	Test Each Joint	8,400	EA	$65	$546,000
8	Seal Each Joint that Fail Air Test	1,000	EA	$50	$50,000
9	Grout	4,500	Gal	$25	$112,500
10	Post Video Inspection	36,088	LF	$3	$90,220
11	Restoration	1	LS	$20,000	$20,000
	Construction Costs				$1,536,836

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #160: Manhole Rehabilitation

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$33,400	$33,400
2	Traffic Control (5%)	1	LS	$15,000	$15,000
3	Lining / Structural	198	VF	$600	$118,800
4	Bypass Operation	39	EA	$1,000	$39,000
5	Infiltration - grouting (ROF 3 to 5)	11	EA	$2,000	$22,000
6	Infiltration - grouting (ROF 2)	21	EA	$1,500	$31,500
7	Casting adjustment/replacement	43	EA	$2,500	$107,500
	Construction Costs				$367,200

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #140: Sanitary Lining (Surcharged Pipes)

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Mobilization	1	LS	$15,000	$15,000
2	Traffic Control	1	LS	$15,000	$15,000
3	Bypass Operation	1	LS	$75,000	$75,000
4	8" Sewer Cleaning and CCTV (pre and post inspections)	357	LF	$6	$2,142
5	12" Sewer Cleaning and CCTV (pre and post inspections)	1,136	LF	$7	$7,952
6	15"/16" Sewer Cleaning and CCTV (pre and post inspections)	708	LF	$7	$4,956
7	18" Sewer Cleaning and CCTV (pre and post inspections)	816	LF	$7	$5,712
8	8" Sanitary Sewer, CIPP	357	LF	$50	$17,850
9	12" Sanitary Sewer, CIPP	1,136	LF	$95	$107,920
10	15"/16" Sanitary Sewer, CIPP	708	LF	$110	$77,880
11	18" Sanitary Sewer, CIPP	816	LF	$125	$102,000
12	Service Lateral Reinstatement	19	EA	$150	$2,850
13	Work Allowance - dig and repair (complete with restoration)	1	LS	$25,000	$25,000
14	Pipe preparation - cutting or removal intruding tap	2	EA	$500	$1,000
15	Restoration	1	LS	$5,000	$5,000
	Construction Costs				$465,262

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #145: Grouting - (Surcharge Pipes) - Phase II

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Mobilization	1	LS	$15,000	$15,000
2	Permits, bonding and inspection fees	1	LS	$2,500	$2,500
3	Traffic Control	1	LS	$15,000	$15,000
4	Cleaning and Televising Prep for grouting	3,017	EA	$7	$21,119
5	Additional Cleaning	24	HR	$250	$6,000
6	Bypass Operation	1	LS	$75,000	$75,000
7	Test Each Joint	750	EA	$65	$48,750
8	Seal Each Joint that Fail Air Test	100	EA	$50	$5,000
9	Grout	450	Gal	$25	$11,250
10	Post Video Inspection	3,107	LF	$3	$7,768
11	Restoration	1	LS	$5,000	$5,000
	Construction Costs				$212,387

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #410: Corey LS - Forcemain Replacement

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	General Conditions / Mobilization (10%)	1	LS	$12,900	$12,900
2	Remove pavement	170	SY	$20	$3,400
3	Remove and Replace Concrete Sidewalk	500	SF	$8	$4,000
4	Direction Drilled Forcemain (8")	750	LF	$120	$90,000
5	Connection of FM at LS	1	LS	$10,000	$10,000
6	Connection of FM at Existing MH	1	LS	$5,000	$5,000
7	HMA road patch - Complete	170	SY	$60	$10,200
8	Traffic Control	1	LS	$5,000	$5,000
9	Restoration	1	LS	$1,500	$1,500
	Construction Costs				$142,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #505: Corey Street LS Improvements (Replace)

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Bypass Pumping	1	LS	$10,000	$10,000
2	Demolition	1	LS	$15,000	$15,000
3	Precast Wet Well & Valve Chamber (inc. Excavation, Backfill & Dewatering)	1	LS	$150,000	$150,000
4	Pumps, Valves & Piping (including coating)	1	LS	$90,000	$90,000
5	Control Panel	1	LS	$65,000	$65,000
6	Electrical & Instrumentation	1	LS	$25,000	$25,000
7	Force Main	1	LS	$10,000	$10,000
8	Gravity Sewer	350	LF	$300	$105,000
9	4' Dia. Manhole	3	LS	$6,500	$19,500
10	Traffic Control	1	LS	$25,000	$25,000
11	Pipe Bollards	1	LS	$2,000	$2,000
12	Restoration	1	LS	$10,000	$10,000
13	General Conditions	1	LS	$79,000	$79,000
	Construction Costs				$605,500

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #510: Walker Street LS & Force Main Replacement

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Bypass Pumping	1	LS	$25,000	$25,000
2	Demolition	1	LS	$20,000	$20,000
3	Excavation & Backfill	1	LS	$140,000	$140,000
4	Precast Wet Well & Valve Chamber	1	LS	$150,000	$150,000
5	Pumps, Valves & Piping (inc. Coating)	1	LS	$100,000	$100,000
6	Control Panel	1	LS	$75,000	$75,000
7	Electrical & Instrumentation	1	LS	$35,000	$35,000
8	Generator & ATS	1	LS	$50,000	$50,000
9	5' Dia. Meter Chamber	1	LS	$25,000	$25,000
10	Force Main	1	LS	$15,000	$15,000
11	Gravity Sewer	1	LS	$20,000	$20,000
12	4' Dia. Manholes	1	LS	$15,000	$15,000
13	Traffic Control	1	LS	$5,000	$5,000
14	Restoration	1	LS	$25,000	$25,000
15	Allowance for Easement	1	LS	$10,000	$10,000
16	General Conditions	1	LS	$105,000	$105,000
	Construction Costs				$815,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #551: WWTP Headworks - Influent Pumping, Screening & Grit Removal

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Demolition	1	LS	$60,000	$60,000
2	Bypass Pumping	1	LS	$70,000	$70,000
3	Dewatering	1	LS	$50,000	$50,000
4	Excavation & Backfill	1	LS	$150,000	$150,000
5	Cast-In-Place Concrete	1	LS	$375,000	$375,000
6	Pumps, Valves, and Piping	1	LS	$280,000	$280,000
7	Gates	1	LS	$20,000	$20,000
8	Screening System	1	LS	$350,000	$350,000
9	Grit Removal System	1	LS	$274,000	$274,000
10	Building Enclosure (Masonry, Precast, Roof, Doors)	1	LS	$300,000	$300,000
11	HVAC & Plumbing Mechanical	1	LS	$130,000	$130,000
12	Metals (Railing, Grating, Stairs)	1	LS	$40,000	$40,000
13	Control Panels & Instrumentation	1	LS	$120,000	$120,000
14	Electrical Equipment and Wiring	1	LS	$800,000	$800,000
15	Coatings	1	LS	$50,000	$50,000
16	Sanitary Sewer	200	lf	$240	$48,000
17	Connection to Existing	1	LS	$10,000	$10,000
18	Site Concrete	1	LS	$40,000	$40,000
19	Paving	1	LS	$40,000	$40,000
20	Lawn Restoration	1	LS	$20,000	$20,000
21	General Conditions	1	LS	$323,000	$323,000
22	Bonds, Insurance, Permits	1	LS	$150,000	$150,000
23	Electrical Allowance	1	LS	$50,000	$50,000
	Construction Costs				$3,750,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #553: WWTP Disinfection Upgrades

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Demolition	1	LS	$15,000	$15,000
2	Bypass Pumping	1	LS	$50,000	$50,000
3	Trojan System UV3000B	1	LS	$140,000	$140,000
4	Installation Labor	1	LS	$30,000	$30,000
5	Electrical	1	LS	$65,000	$65,000
6	Instrumentation & Controls	1	LS	$35,000	$35,000
7	General Conditions	1	LS	$51,000	$51,000
	Construction Costs				$386,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #554: WWTP RAS / WAS Pumps Replacement

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Demolition	1	LS	$25,000	$25,000
2	RAS Pumps	3	LS	$26,000	$78,000
3	Installation Labor	1	LS	$30,000	$30,000
4	Valves & Piping	1	LS	$95,000	$95,000
5	Concrete	1	LS	$10,000	$10,000
6	Electrical	1	LS	$65,000	$65,000
7	Instrumentation & Controls	1	LS	$40,000	$40,000
8	General Conditions	1	LS	$52,000	$52,000
	Construction Costs				$395,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #555: WWTP Admin Building Electrical Improvements

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	MCC-A Replacment	1	LS	$150,000	$150,000
2	Transormers and Panelboards Replacement	1	LS	$28,000	$28,000
	Construction Costs				$178,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #557: WWTP Lab Room

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Lab Room - Interior Renovation	1	LS	$365,000	$365,000
2	Lab Room - Plumbing Fixtures	1	LS	$25,000	$25,000
3	Lab Room - Lab Hood Fan	1	LS	$8,000	$8,000
	Construction Costs				$398,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #556 - 565: WWTP Improvements (Misc)

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
556	Admin Building - Meter/Backflow - Replacement	1	LS	$8,000	$8,000
558	Grit Room - Ventilation	1	LS	$39,000	$39,000
559	Chemical Room - Ventilation	1	LS	$20,000	$20,000
560	Chemical Room - water heater and tepid valve	1	LS	$7,000	$7,000
561	Basement Level/Sludge Room - heat exchanger	1	LS	$16,000	$16,000
562	Site - SE Rated MTS / Portable Power Connection	1	LS	$24,000	$24,000
563	Building Lighting Improvements	1	LS	$70,000	$70,000
564	WWTP SCADA System	1	LS	$539,000	$539,000
565	Building Envelope Improvements	1	LS	$31,000	$31,000
	Construction Costs				$754,000.00

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #566: WWTP PFAS Sludge Disposal

Date:
November 2022

Project #:
2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Mobilization and Loadout Contractor	1	LS	$15,000	$15,000
2	Mobile Dewatering Unit	1	LS	$100,000	$100,000
3	Cake Disposal	2	LS	$133,000	$266,000
4	Demobilization	1	LS	$5,000	$5,000
5	General Conditions	1	LS	$58,000	$58,000
	Construction Costs				$444,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #567: WWTP Recirculation Pump Replacement

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Demolition	1	LS	$15,000	$15,000
2	Bypass Pumping	1	LS	$35,000	$35,000
3	Recirculation Pump	2	LS	$15,000	$30,000
4	Installation Labor	1	LS	$5,000	$5,000
5	Electrical	1	LS	$10,000	$10,000
6	Instrumentation & Controls	1	LS	$10,000	$10,000
7	General Conditions	1	LS	$16,000	$16,000
	Construction Costs				$121,000

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Estimate of Probable Cost

Owner:
City of Bronson

Project Title:
Project #568: WWTP Ferric Chloride Feed Improvements

Date: November 2022

Project #: 2220860 / 2220861

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Demolition	1	LS	$35,000	$35,000
2	Excavation	1	LS	$30,000	$30,000
3	Structural - Containment Area	1	LS	$30,000	$30,000
4	Coating System	1	LS	$10,000	$10,000
5	Storage Tank	1	LS	$71,000	$71,000
6	Metering Pumps	2	ea.	$10,000	$20,000
7	Chemical Feed Piping	1	LS	$39,000	$39,000
8	Electrical, Instrumentation & Controls	1	LS	$20,000	$20,000
9	Restoration	1	LS	$15,000	$15,000
10	General Conditions	1	LS	$41,000	$41,000
	Construction Costs				$311,000

Appendix D

EGLE Sanitary Sewer ACO 05505

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
WATER RESOURCES DIVISION

In the matter of:

ACO-05505
Date Entered: 2022-07-25 14:30:29 UTC

City of Bronson
141 South Matteson Street
Bronson, Michigan 49028
_____/

ADMINISTRATIVE CONSENT ORDER

This document results from allegations by the Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD). EGLE alleges the City of Bronson (City), which owns and operates a Wastewater Treatment Plant (WWTP) located at 408 Mill Street, Bronson, Branch County, Michigan (referred to herein as the City WWTP or Facility), is in violation of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.3101 *et seq.* (Part 31); Part 41, Sewerage Systems, of the NREPA, MCL 324.4101 *et seq.* (Part 41); and the associated administrative rules. The City is a person, as defined by Section 301 of the NREPA, MCL 324.301. The City and EGLE agree to resolve the violations set forth herein through entry of this Administrative Consent Order (Consent Order).

I. STIPULATIONS

The City and EGLE stipulate as follows:

1.1 The NREPA, MCL 324.101 *et seq.*, is an act that controls pollution to protect the environment and natural resources in the state.

1.2 Part 31 and the rules promulgated pursuant thereto provide for the protection, conservation, and the control of pollution of the water resources of the state.

1.3 Part 41 and the rules promulgated pursuant thereto provide for the proper planning, construction, and operation of sewerage facilities to prevent unlawful pollution of the water resources of the state.

1.4 EGLE is authorized by Sections 3106 and 3112(4) of Part 31, MCL 324.3106 and MCL 324.3112(4), and Section 4111 of Part 41, MCL 324.4111, to enter orders requiring persons to abate pollution or otherwise cease or correct activities in violation of a specific part. The Director of EGLE may delegate this authority to a designee under Section 301(b) of the NREPA, MCL 324.301(b).

1.5 The City consents to the issuance and entry of this Consent Order and stipulates that the entry of this Consent Order constitutes a final order of EGLE and is enforceable as such under Section 3112(4) of Part 31 and Section 4111 of Part 41. The City agrees not to contest the issuance of this Consent Order and that the resolution of this matter by the entry of this Consent Order is appropriate and acceptable. It is also agreed that this Consent Order shall become effective on the date it is signed by the Director of the WRD, delegate of the Director of EGLE, pursuant to Section 301(b) of the NREPA.

1.6 The City and EGLE agree that the signing of this Consent Order is for settlement purposes only and does not constitute an admission by the City that the law has been violated.

1.7 The signatory to this Consent Order certifies that they are fully authorized by the City to enter into the terms and conditions of this Consent Order and to execute and legally bind the City to this document. The City hereby agrees to comply with the requirements of this Consent Order to resolve the violations stated in Section II of this Consent Order and agrees to achieve compliance with Part 31, Part 41, and their administrative rules by fulfilling the terms of Section III of this Consent Order.

II. FINDINGS

2.1 The City WWTP services the Bronson area. The City is authorized to discharge from the City WWTP to County Drain #30 in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. MI0020729 (Permit), issued by EGLE on May 31, 2019.

2.2 On October 14, 2019, the WRD issued the City Violation Notice (VN) No. VN-009990. The VN identified the following violations:

a. In 2018 the City reported one effluent limit violation of Total Suspended Solids (TSS) percent removal and three effluent limit violations of Carbonaceous Oxygen Demand (CBOD5) maximum monthly average in the monthly Discharge Monitoring Reports (DMRs) as required by the NPDES Permit.

b. In 2019 the City reported three effluent limit violations of CBOD5 maximum monthly average, one effluent limit violation of CBOD5 seven-day average, and three effluent limit violations of Dissolved Oxygen daily minimum in the DMRs.

c. On February 13, 2020, the City reported one (1) effluent limit violation of TSS in the January 2020 DMR.

d. The City WWTP is designed to treat a design average flow of 0.5 million gallons per day (MGD) of sanitary sewage. Due to excessive amounts of Inflow and Infiltration (I&I), the City WWTP receives more than 0.5 MGD of sewage on a regular basis, which exceeds the WWTP's basis of design. This is a violation of Rule 55(1) of the Part 41 administrative rules, Mich Admin Code, R 299.2955(1), which states: "Sewerage systems shall be operated and maintained at all times as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants."

2.3 On October 24, 2019, the City submitted a response to VN-099900. Several of the actions within the VN response have already begun and the remainder will be completed with supervision of EGLE as outlined in Section III of this Consent Order.

2.4 On April 22, 2020, the WRD issued an Enforcement Notice (EN) to the City for its violations of Part 31 and the rules promulgated thereunder.

2.5 On May 20, 2020, the WRD and the City had a meeting to discuss the EN that was issued on April 22, 2020, and to discuss resolution through this Consent Order.

2.6 On November 17, 2020, the WRD issued the City VN-011230. The VN identified the following additional violations:

a. On June 8, 2020, the City reported in the May 2020 DMR one effluent limit violation of CBOD5 seven-day average and effluent limit violation of CBDO5 maximum monthly average.

b. On July 9, 2020, the City reported in the June 2020 DMR one effluent limit violation of CBOD5 maximum monthly average.

2.7 On March 31, 2021, the WRD issued Compliance Communication (CC) No. CC-003173 to the City regarding an inspection conducted on August 12, 2020, and items related to the City's Industrial Pretreatment Program (IPP) including improper sampling methods and inadequate IPP Procedures.

2.8 On May 25, 2021, the City submitted a capacity analysis, hydrogeological study, flow study, wastewater system evaluation, and smoke testing results.

2.9 On November 12, 2021, the WRD sent a letter to the City regarding biosolids and per- and polyfluroalkyl substances (PFAS) monitoring results at the WWTP. This letter is included as Exhibit A of this Consent Order.

2.10 On January 3, 2022, the WRD issued the City VN-01613 for the violation of discharges above the design average and peak daily flows that occurred during the months of October and November 2021. On January 14, 2022, the City submitted a written response to VN-01613.

2.11 On January 5, 2022, the City reported in the December 2021 DMR one effluent limit violation of TSS minimum monthly percent removal of 85 percent while the reported value was 83 percent. The City also notified the WRD that the WWTP had discharges exceeding the design average and peak daily flows for December 2021.

2.12 On February 18, 2022, the City reported that the WWTP had discharges exceeding the design average and peak daily flows for January 2022.

2.13 On April 14, 2022, the City reported that the WWTP had discharges exceeding the design average and peak daily flows for February 2022 and March 2022.

2.14 On June 21, 2022, the WRD met with the City to discuss the timeline for the City's two-phased approach of addressing the issues at the WWTP through entry of this Consent Order.

III. COMPLIANCE PROGRAM

IT IS THEREFORE AGREED AND ORDERED THAT The City shall take the following actions to comply with and prevent further violations of Parts 31 and 41:

3.1 The City shall remain compliant with the response activities outlined in the letter from the WRD dated November 12, 2021, included as Exhibit A of this Consent Order.

3.2 Upon the effective date of this Consent Order, the City shall submit bi-annual status report updates to the WRD of the projects related to Section II of this Consent Order starting on September 30, 2022, and ending when the Project Performance Certification (PPC) report required in Paragraph 3.10 of this Consent Order is approved by the WRD.

3.3 On or before January 15, 2023, the City Shall develop and submit to the WRD for review and approval a Corrective Action Plan (CAP) that describes projects to address the issues identified in the approved studies referenced in Paragraph 2.8 of this Consent Order and sets a schedule for the proposed improvements. These issues include addressing excessive I&I to meet the Remedial Design Standard (RDS), and ensuring that the expected average daily flow, maximum day flow, and peak hourly flow at the WWTP are consistent with the WWTP's basis of design. When determining the excessive I&I, evaluate the cost of I&I reduction versus the cost to transport and treat flows at the WWTP that may be expanded. This may result in a need to expand capacity of the WWTP. The RDS is the flow generated by the 25-year, 24-hour storm event, using growth conditions from April through October, normal soil moisture, and rainfall based Natural Resources Conservation Service Standard Type II distributions, Bratter-Sherill method, or equivalent. This shall include a written financial plan to pay for the projects identified in the CAP. If the WRD finds any deficiencies within the CAP, the City shall address those deficiencies within 30 days of notification from the WRD.

3.4 The City shall apply for all applicable state and federal funding opportunities including financial grants and loans for which the City would qualify for to implement projects identified in this Consent Order. The City shall notify the WRD that it has applied for each funding source within 14 days of an application submittal and shall notify the WRD of the determination of the application within 14 days of receiving the application decision.

a. The City shall submit an Intent To Apply (ITA) form for the Clean Water State Revolving Fund loan program by November 1, 2022, or the due date specified for ITAs for Fiscal Year 2024 (FY2024) consideration and shall submit the associated final project plans by June 1, 2023, or the due date specified for final project plans for FY2024 consideration.

b. The City shall apply for the United States Department of Agriculture, Rural Development, Rural Economic Development Loan & Grant Program in Michigan by June 1, 2023.

c. The City shall apply for any new state and federal funding opportunities as they become available prior to the application deadlines.

3.5 If funding is secured to cover the costs of the projects identified in this Consent Order, EGLE and the City shall amend this Consent Order to expedite the compliance schedule to be completed sooner than the due date of January 31, 2032, identified for the PPC to be submitted in Paragraph 3.10 of this Consent Order.

3.6 If the WRD finds any deficiencies or needs further action from the City upon review of the reports referenced in Paragraph 2.8 of this Consent Order, the City shall address those deficiencies within 30 days of the WRD's notification unless otherwise stated.

3.7 On or before December 30, 2023, the City shall submit a Part 41 permit application or applications for review and approval for the projects identified in the CAP and phase one of its approach. If at any time during the effective period of this Consent Order it is determined by the WRD or the City that additional Part 41 permits are needed to complete the projects identified in the CAP, phase two of its approach, or to address the excessive I&I, the City shall apply for the necessary additional Part 41 permit(s) by

December 20, 2027, or otherwise, as necessary to meet the compliance dates as required in this Consent Order.

3.8 Upon EGLE's approval of the Part 41 permit application, the City shall begin to implement the projects identified in the CAP. The City shall complete the projects identified in the CAP by December 29, 2025, for Phase One projects and by December 29, 2029, for Phase Two projects.

3.9 On or before October 1, 2030, the City shall submit a project performance certification work plan to the WRD for review and approval that includes proposed flow monitoring locations, and flow monitoring conducted during April 1 through October 31, 2031. The PPC shall evaluate if the City's sewer system will be in compliance with the RDS after the City completes construction of the EGLE-approved sanitary sewer projects required by this Consent Order, and the EGLE-issued Part 41 permit(s) plans and specifications to ensure that the average daily flow, maximum daily flow, and peak hour flows are consistent with the wastewater collection and WWTP basis of design.

3.10 On or before January 31, 2032, the City shall submit a report to the WRD for review and approval that documents if the PPC, conducted consistently with the approved work plan, was successful or not successful according to the conditions outlined in Paragraph 3.9 of this Consent Order.

3.11 If the PPC was not successful, then on or before April 1, 2032, the City shall submit to the WRD for review and approval a PPC CAP with an implementation schedule to meet the criteria detailed in Paragraph 3.9 of this Consent Order. If the WRD finds any deficiencies within the PPC CAP, the City shall address the deficiencies within 30 days of notification from the WRD. Once approved, the City shall implement the PPC CAP according to the approved schedule.

3.12 The City shall submit all reports, work plans, specifications, schedules, or any other writing required by this section to their MiWaters account and, if required, to the WRD, Kalamazoo District Office supervisor, at EGLE, 7953 Adobe Road, Kalamazoo, Michigan 49009-5025. The cover letter with each submittal shall identify the specific paragraph and requirement of this Consent Order that the submittal is intended to satisfy.

IV. EGLE APPROVAL OF SUBMITTALS

4.1 For any work plan, proposal, or other document, excluding applications for permits or licenses, that are required by this Consent Order to be submitted to EGLE by the City the following process and terms of approval shall apply.

4.2 All work plans, proposals, and other documents required to be submitted by this Consent Order shall include all the information required by the applicable statute and/or rule, and all the information required by the applicable paragraph(s) of this Consent Order.

4.3 In the event EGLE disapproves a work plan, proposal, or other document, it will notify the City, in writing, specifying the reasons for such disapproval. The City shall submit, within 30 days of receipt of such disapproval, a revised work plan, proposal, or other document which adequately addresses the reasons for EGLE's disapproval. If the revised work plan, proposal, or other document is still not acceptable to EGLE, EGLE will notify the City of this disapproval.

4.4 In the event EGLE approves with specific modifications a work plan, proposal, or other document, it will notify the City, in writing, specifying the modifications required to be made to such work plan, proposal, or other document prior to its implementation and the specific reasons for such modifications. EGLE may require the City to submit, prior to implementation and within 30 days of receipt of such approval with specific modifications, a revised work plan, proposal, or other document which adequately addresses such modifications. If the revised work plan, proposal, or other document is still not acceptable to EGLE, EGLE will notify the City of this disapproval.

4.5 Upon EGLE approval, or approval with modifications, of a work plan, proposal, or other document, such work plan, proposal, or other document shall be incorporated by reference into this Consent Order and shall be enforceable in accordance with the provisions of this Consent Order.

4.6 Failure by the City to submit an approvable work plan, proposal, or other document, within the applicable time periods specified above, constitutes a violation of this Consent Order

and shall subject the City to the enforcement provisions of this Consent Order, including the stipulated penalty provisions specified in Paragraph 9.3 of this Consent Order.

4.7 Any delays caused by the City's failure to submit an approvable work plan, proposal, or other document when due shall in no way affect or alter the City's responsibility to comply with any other deadline(s) specified in this Consent Order.

4.8 No informal advice, guidance, suggestions, or comments by EGLE regarding reports, work plans, plans, specifications, schedules, or any other writing submitted by the City will be construed as relieving the City of its obligation to obtain written approval, if and when required by this Consent Order.

V. EXTENSIONS

5.1 The City and EGLE agree that EGLE may grant the City a reasonable extension of the specified deadlines set forth in this Consent Order. Any extension shall be preceded by a written request in duplicate to WRD, Water Quality Enforcement Unit supervisor, at EGLE, P.O. Box 30458, Lansing, Michigan 48909-7958, and the WRD, Kalamazoo District Office supervisor at the address provided in Paragraph 3.12 of this Consent Order, no later than ten business days prior to the pertinent deadline, and shall include:

a. Identification of the specific deadline(s) of this Consent Order that will not be met.

b. A detailed description of the circumstances that will prevent the City from meeting the deadline(s).

c. A description of the measures the City has taken and/or intends to take to meet the required deadline.

d. The length of the extension requested and the specific date on which the obligation will be met.

The WRD, Kalamazoo District Office supervisor or a designee, in consultation with the WRD, Water Quality Enforcement Unit supervisor, shall respond in writing to such

requests. No change or modification to this Consent Order shall be valid unless in writing from EGLE, and if applicable, signed by both parties.

VI. REPORTING

6.1 The City shall verbally report any violation(s) of the terms and conditions of this Consent Order to the WRD, Kalamazoo District Office supervisor by no later than the close of the next business day following detection of such violation(s) and shall follow such notification with a written report within five business days following detection of such violation(s). The written report shall include a detailed description of the violation(s), as well as a description of any actions proposed or taken to correct the violation(s). The City shall report any anticipated violation(s) of this Consent Order to the above-referenced individual in advance of the relevant deadlines whenever possible.

VII. RETENTION OF RECORDS

7.1 Upon request by an authorized representative of EGLE, the City shall make available to EGLE all records, plans, logs, and other documents required to be maintained under this Consent Order or pursuant to the NREPA or its rules. All such documents shall be retained by the City for at least a period of five years from the date of generation of the record unless a longer period of record retention is required by the NREPA or its rules.

VIII. RIGHT OF ENTRY

8.1 The City shall allow any authorized representative or contractor of EGLE, upon presentation of proper credentials, to enter upon the premises of the Facility at all reasonable times for the purpose of monitoring compliance with the provisions of this Consent Order. This paragraph in no way limits the authority of EGLE to conduct tests and inspections pursuant to the NREPA and the rules promulgated thereunder, or any other applicable statutory provision.

IX. PENALTIES

9.1 Within 30 days after the effective date of this Consent Order, the City shall pay to the State of Michigan $1,868.61 as partial compensation for the cost of investigations and

enforcement activities arising from the violations specified in Section II of this Consent Order. Payment shall be made in accordance with Paragraph 9.5 of this Consent Order.

9.2 Within 30 days after the effective date of this Consent Order, the City shall pay to the State of Michigan a civil fine of $7,000 for the violations specified in Section II of this Consent Order. Payment shall be made in accordance with Paragraph 9.5 of this Consent Order.

9.3 For each failure to comply with a provision contained in Section III of this Consent Order, the City shall pay a stipulated penalty of $5,000. If, after 30 days from the original deadline, the City has not fully corrected the violation, the City shall pay stipulated penalties of $200 per violation per day for one to seven days of violation, $300 per violation per day for eight to 14 days of violation, and $500 per violation per day for each day of violation thereafter. Payments shall be made in accordance with Paragraph 9.5 of this Consent Order.

9.4 For each failure to comply with any provision of this Consent Order other than the provisions contained in Section III of this Consent Order, the City shall pay stipulated penalties of $200 per violation per day for one to seven days of violation, $300 per violation per day for eight to 14 days of violation, and $500 per violation per day for each day of violation thereafter. Payments shall be made in accordance with Paragraph 9.5 of this Consent Order.

9.5 The City shall pay all stipulated penalties within 30 days after receipt of the demand for payment of stipulated penalties from EGLE. The City agrees to pay all funds due pursuant to this Consent Order by check made payable to the State of Michigan and delivered to the Michigan Department of Transportation, Accounting Services Division, Cashier's Office for EGLE, P.O. Box 30657, Lansing, Michigan 48909-8157, or hand delivered to the Michigan Department of Transportation, Accounting Services Division, Cashier's Office for EGLE, 425 West Ottawa Street, Lansing, Michigan 48933. To ensure proper credit, all payments made pursuant to this Consent Order must include the **Payment Identification No. WRD60103**.

9.6 The City agrees not to contest the legality of the civil fine or costs paid pursuant to Paragraphs 9.1, and 9.2, above. The City further agrees not to contest the legality of any

stipulated penalties assessed pursuant to Paragraphs 9.3 or 9.4, above, but reserves the right to dispute the factual basis upon which a demand by EGLE for stipulated penalties is made.

9.7 EGLE reserves its rights to seek interest on any unpaid sums due pursuant to the terms of the Consent Order. Subject to the other provisions of this Section IX, EGLE may waive, in its unreviewable discretion, any portion of stipulated penalties and interest that has accrued pursuant to this Consent Order. This interest penalty shall be based on the rate set forth at MCL 600.6013(8), using the full increment of amount due as principal, and calculated from the due date for the payment until the delinquent payment is finally made in full.

X. FORCE MAJEURE

10.1 The City shall perform the requirements of this Consent Order within the time limits established herein, unless performance is prevented or delayed by events that constitute a "Force Majeure." Any delay in the performance attributable to a "Force Majeure" shall not be deemed a violation of the City's obligations under this Consent Order in accordance with this section.

10.2 For the purpose of this Consent Order, "Force Majeure" means an occurrence or nonoccurrence arising from causes not foreseeable, beyond the control of, and without the fault of the City, such as: an Act of God, untimely review of permit applications or submissions by EGLE or other applicable authority, and acts or omissions of third parties that could not have been avoided or overcome by the City's diligence and that delay the performance of an obligation under this Consent Order. "Force Majeure" does not include, among other things, unanticipated or increased costs, changed financial circumstances, or failure to obtain a permit or license as a result of the City's actions or omissions.

10.3 The City shall notify EGLE, by telephone, within 48 hours of discovering any event that may cause a delay in its compliance with any provision of this Consent Order. Verbal notice shall be followed by written notice within ten calendar days and shall describe, in detail, the anticipated length of delay, the precise cause or causes of delay, the measures taken by the City prevent or minimize the delay, and the timetable by which those

measures shall be implemented. The City shall adopt all reasonable measures to avoid or minimize any such delay. Nothing in this paragraph obviates the need to report violations as required by Paragraph 6.1 of this Consent Order.

10.4 Failure of the City to comply with the notice requirements and time provisions under Paragraph 10.3 shall render this Section X void and of no force and effect as to the particular incident involved. EGLE may, at its sole discretion and in appropriate circumstances, waive in writing the notice requirements of Paragraph 10.3, above.

10.5 If the parties agree that the delay or anticipated delay was beyond the control of the City, this may be so stipulated, and the parties to this Consent Order may agree upon an appropriate modification of this Consent Order. However, EGLE is the final decision-maker on whether or not the matter at issue constitutes a force majeure. The burden of proving that any delay was beyond the reasonable control of the City, and that all the requirements of this Section X have been met by the City, rests with the City.

10.6 An extension of one compliance date based upon a particular incident does not necessarily mean that the City qualifies for an extension of a subsequent compliance date without providing proof regarding each incremental step or other requirement for which an extension is sought.

XI. GENERAL PROVISIONS

11.1 With respect to any violations not specifically addressed and resolved by this Consent Order, EGLE reserves the right to pursue any remedies to which it is entitled for any failure on the part of the City to comply with the requirements of the NREPA and its rules.

11.2 EGLE and the City consent to enforcement of this Consent Order in the same manner and by the same procedures for all final orders entered pursuant to Parts 31 and 41.

11.3 This Consent Order in no way affects the City's responsibility to comply with any other applicable state, federal, or local laws or regulations.

11.4 The WRD reserves its right to pursue appropriate action, including injunctive relief to enforce the provisions of this Consent Order, and at its discretion, may also seek stipulated

fines or statutory fines for any violation of this Consent Order. However, the WRD is precluded from seeking both a stipulated fine under this Consent Order and a statutory fine for the same violation.

11.5 The parties agree to diligently and in good faith pursue informal negotiations to resolve any disputes arising out of this Consent Order prior to resorting to judicial enforcement. Such negotiations shall proceed in a timely manner.

11.6 Nothing in this Consent Order is or shall be considered to affect any liability the City may have for natural resource damages caused by the City's ownership and/or operation of the Facility. The State of Michigan does not waive any rights to bring an appropriate action to recover such damages to the natural resources.

11.7 In the event the City sells or transfers the Facility, it shall advise any purchaser or transferee of the existence of this Consent Order in connection with such sale or transfer. Within 30 calendar days, The City shall also notify the WRD, Kalamazoo District Office supervisor, in writing, of such sale or transfer, the identity and address of any purchaser or transferee, and confirm the fact that notice of this Consent Order has been given to the purchaser and/or transferee. The purchaser and/or transferee of this Consent Order must agree, in writing, to assume all the obligations of this Consent Order. A copy of that agreement shall be forwarded to the WRD, Kalamazoo District Office supervisor within 30 days of assuming the obligations of this Consent Order.

11.8 The provisions of this Consent Order shall apply to and be binding upon the parties to this action, and their successors and assigns.

11.9 This Consent Order constitutes a civil settlement and satisfaction as to the resolution of the violations specifically addressed herein; however, it does not resolve any criminal action that may result from these same violations.

11.10 The effective date of this Consent Order is the date it is signed by the Director of the WRD.

XII. TERMINATION

12.1 This Consent Order shall remain in full force and effect until terminated by a written Termination Notice (TN) issued by EGLE. Prior to issuance of a written TN, the City shall submit a request consisting of a written certification that the City has fully complied with the requirements of this Consent Order and has made payment of any fines, including stipulated penalties, required in this Consent Order. A suggested form for providing the required written certification is appended as Exhibit B of this Consent Order. Specifically, an acceptable certification shall include:

a. The date of compliance with each provision of the compliance program in Section III of this Consent Order, and the date any fines or penalties were paid.

b. A statement that all required information has been reported to the WRD, Kalamazoo District Office supervisor.

c. Confirmation that all records required to be maintained pursuant to this Consent Order are being maintained at the Facility.

EGLE may also request additional relevant information. EGLE shall not unreasonably withhold issuance of a TN.

Signatories

The undersigned CERTIFY they are fully authorized by the party they represent to enter into this Consent Order to comply by consent and to EXECUTE and LEGALLY BIND that party to it.

DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

E-SIGNED by Teresa Seidel
on 2022-07-25 14:30:29 EDT

Teresa Seidel, Director
Water Resources Division

2022-07-25 14:30:29 UTC

Date

CITY OF BRONSON

E-SIGNED by Brandon M. Mersman
on 2022-07-25 08:44:54 EDT

By: Brandon M. Mersman
Title: City Manager

2022-07-25 08:44:54 UTC

Date

APPROVED AS TO FORM:

E-SIGNED by Margaret A. Bettenhausen
on 2022-07-25 13:12:49 EDT

By: Margaret A. Bettenhausen, Assistant Attorney General
For: Robert P. Reichel, Division Chief
Environment, Natural Resources, and Agriculture Division
Michigan Department of Attorney General

2022-07-25 13:12:49 UTC

Date

EXHIBIT A

STATE OF MICHIGAN

DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

KALAMAZOO DISTRICT OFFICE

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

November 12, 2021

Mr. Charles Buckley, Wastewater Treatment Plant Supervisor
City of Bronson
141 South Matteson Street
Bronson, Michigan 49028

Dear Mr. Buckley:

SUBJECT: Biosolids and Per- and Polyfluoroalkyl Substances (PFAS) Monitoring Results
National Pollutant Discharge Elimination System (NPDES) Permit No. MI0020729
Designated Name: Bronson WWTP

On April 28, 2021, and October 13, 2021, the Bronson Wastewater Treatment Plant (WWTP) notified the Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division (WRD), that biosolids samples collected from the Bronson WWTP were analyzed for PFAS. This is in accordance with the requirements set forth in the WRD's *Interim Strategy for Land Application of Biosolids Containing PFAS* and the Residuals Management Program (RMP) Modification letter dated April 5, 2021, which became part of the WWTP's approved RMP.

The April 5, 2021, laboratory results indicated that the PFAS analyte, Perfluorooctanoic Sulfonate (PFOS), concentrations in biosolids were 35 micrograms per kilogram (ug/kg) or parts per billion (ppb). Additional samples were collected on September 8, 2021, with laboratory results indicating PFOS concentrations at 120 ppb. These analytical results suggest the WWTP is likely receiving wastewater from one or more sources that are discharging elevated concentrations of PFOS, which is concentrating in the facility's biosolids.

Based on variability of the WWTP PFAS results, the facility shall undertake the following activities should land application occur:

With the WWTP's current PFOS result in biosolids between 51 ug/kg and 149 ug/kg, the facility shall undertake the following response activities should land application occur:

- Land application rates shall be no more than 1.5 dry tons per acre to reduce overall loading to the site or submit an Alternative Risk Mitigation Strategy (ARMS). When submitting an ARMS, please do so through the Biosolids PFAS Monitoring Report located on the facility's Dashboard in MiWaters under the "As Needed" tab.

- Provide the most current PFOS analytical results and additional information specific to PFAS and biosolids in Michigan to landowners and farmers prior to the land application of biosolids. Information on notification requirements and sample templates can be obtained from Michigan Biosolids PFAS-related information and links.

- Beginning in calendar year 2022, collect a minimum of one (1) annual biosolids PFAS sample prior to initial land application each year, unless otherwise notified by the WRD's Biosolids Program staff.

- Continue sampling final effluent for PFAS, investigating potential sources (historical and/or active) to the WWTP, and submitting the information in MiWaters as previously directed by the WRD.

When submitting the biosolids PFAS results, Bronson WWTP notified EGLE WRD that the facility would land apply no more than 1.5 dry tons per acre to reduce overall loading to the site. On November 1, 2021, EGLE WRD met with Bronson WWTP to discuss the PFAS results and confirmed the reduced land application rate, and additional source investigation.

Please note that depending on the results of all samples collected and investigation findings, further sampling in other areas of the facility and collection system may be required; if sources are found, you may need to develop a Source Reduction Program (SRP).

Information on sampling PFAS in the final effluent, investigating potential sources, and developing an SRP can be obtained at IPP PFAS Initiative. This link contains numerous documents, including Frequently Asked Questions, Wastewater PFAS Sampling Guidance, and Recommended PFAS Screening and Evaluation Guidance. The WRD's IPP PFAS staff (copied on this letter) can assist the WWTP in PFAS source identification and reduction. This effort may also require further sampling in other areas of the facility and collection system. The IPP PFAS Staff Map shows regional staff contact information.

This Biosolids PFAS Monitoring Report acknowledgment does not constitute a release or waiver of liability for compliance with your NPDES Permit; your NPDES Permit Application; or Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). Please be advised that if new PFAS information becomes available or new standards or requirements are implemented, the WRD may require additional actions in accordance with the NREPA and its administrative rules.

Thank you for protecting Michigan's public health and environment from these emerging pollutants. Should you need further information, please contact me or Ms. Cindy Sneller at SnellerC@michigan.gov; 616-401-2471; or EGLE, WRD, Kalamazoo District Office, 7953 Adobe Road, Kalamazoo, Michigan 49009-5025.

Sincerely,

Jennifer Klang, District Supervisor
Kalamazoo District Office
Water Resources Division
269-568-2697
KlangJ@michigan.gov

JK:CS:DMM

cc: Mr. Mike Person, EGLE
Ms. Jennifer Bush, EGLE
Ms. Anne Tavalire, EGLE
Ms. Terri Shattuck, EGLE

Ms. Cindy Sneller, EGLE

EXHIBIT B

Michigan Department of Environment, Great Lakes, and Energy
Water Resources Division

ADMINISTRATIVE CONSENT ORDER TERMINATION REQUEST

The completion of this form is voluntary and is intended to be used as guidance for persons that are eligible to request EGLE to issue a Termination Notice of their Administrative Consent Order (ACO). However, it may not be relied upon as being legally sufficient to cover all potential issues related to the specific requirements of the ACO. EGLE does not assume any liability for the use of this document and encourages the user to seek independent legal advice before using this form to draft its certification and request for Termination of its ACO.

PLEASE TYPE OR PRINT

<table>
<tr><td>1.ACO</td><td colspan="3">ADMINISTRATIVE CONSENT ORDER NUMBER:</td></tr>
<tr><td rowspan="4">2. Facility Owner or Legally Authorized Representative</td><td colspan="3">Facility Owner/Legally Authorized Representative Who Signed the ACO:</td></tr>
<tr><td colspan="2">Address:</td><td>Address 2 or P.O. Box:</td></tr>
<tr><td>City:</td><td>State:</td><td>Zip Code:</td></tr>
<tr><td>Telephone:</td><td>Fax:</td><td>E-mail address:</td></tr>
<tr><td>3. Compliance Section</td><td colspan="3">Summarize each completed requirement in the Compliance Section of the ACO give the completion date. Please use additional sheets if necessary:</td></tr>
</table>

EXHIBIT B

Michigan Department of Environment, Great Lakes, and Energy
Water Resources Division

ADMINISTRATIVE CONSENT ORDER TERMINATION REQUEST

3.Certification	I, enter the name of owner or legally authorized representative, hereby certify that each requirement of the ACO that was entered into with the Department of Environment, Great Lakes, and Energy (EGLE) on enter the date has been complied with and completed including paying all money required by the ACO including but not limited to costs, civil fines, stipulated fines and fees. I also certify that all information that I am required to report to EGLE, enter District Office District Office Supervisor has been reported and that all records I am required to maintain pursuant to the ACO are being maintained at the facility (or other location as specified in Section 12 of the ACO). I hereby request that EGLE issue a Termination Notice, formally terminating the ACO in recognition of the resolution of the matters therein. I certify under penalty of law that this certification is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of a fine for having knowledge of violations and certifying that there are none. Print Name _____ Title _____ Signature _____ Date _____

Please mail this completed form to EGLE, Water Resources Division, District Office that is listed in Section III of the ACO the Owner/Legally Responsible Representative entered into with EGLE. Addresses for the district offices are listed below.

Bay City District Office
401 Ketchum Street, Suite B
Bay City, Michigan 48708

Cadillac District Office
120 West Chapin Street
Cadillac, Michigan 49601-2158

Gaylord District Office
2100 West M-32
Gaylord, Michigan 49735-9282

Grand Rapids District Office
State Office Building, 5th Floor
350 Ottawa Avenue NW, Unit 10
Grand Rapids, Michigan 49503-2341

Jackson District Office
301 E. Louis Glick Highway
Jackson, Michigan 49201-1556

Kalamazoo District Office
7953 Adobe Road
Kalamazoo, Michigan 49009-5026

Lansing District Office
525 West Allegan Street (Constitution Hall, 1S)
P.O. Box 30242
Lansing, Michigan 48909-7742

Marquette District Office
1504 West Washington Street
Marquette, Michigan 49855

Warren District Office
27700 Donald Court
Warren, Michigan 48092-2793