STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

KEITH CREAGH
DIRECTOR

February 1, 2016

TO: All Interested Citizens, Organizations, and Government Agencies

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT
Village of Vermontville, Eaton County
Lagoon and Collection System Improvements
State Revolving Fund Project No. 5637-01

The purpose of this notice is to seek public input and comment on a preliminary decision by the Michigan Department of Environmental Quality (DEQ) that an Environmental Impact Statement (EIS) is not required to implement recommendations discussed in the attached Environmental Assessment of a wastewater project plan submitted by the applicant mentioned above.

HOW WERE ENVIRONMENTAL ISSUES CONSIDERED?

Part 53, Clean Water Assistance, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, being Sections 324.5301 to 324.5316 of the Michigan Compiled Laws Annotated, requires the DEQ to evaluate all environmental implications of a proposed wastewater project. The DEQ has done this by incorporating a detailed analysis of the environmental effects of the proposed alternatives in its review and approval process. A project plan containing information on environmental impacts was prepared by the municipality and reviewed by the State. The DEQ has prepared the attached Environmental Assessment and found that the proposed project does not require the preparation of an EIS.

WHY IS AN EIS NOT REQUIRED?

Our environmental review concluded that no significant environmental impacts would result from the proposed action. Any adverse impacts have either been eliminated by changes in the project plan or will be reduced by the implementation of the mitigative measures discussed in the attached Environmental Assessment.

HOW DO I GET MORE INFORMATION?

A map depicting the location of the proposed project is attached. This information is also available on our website at www.michigan.gov/cleanwaterrevolvingfund under "Related Links." The Environmental Assessment presents additional information on the project, alternatives that were considered, impacts of the proposed action, and the basis for our decision. Further information can be obtained by calling or writing one of the contact people listed below.

HOW DO I SUBMIT COMMENTS?

Any comments supporting or disagreeing with this preliminary decision should be submitted to me at DEQ, Office of Drinking Water and Municipal Assistance, Revolving Loan Section, Constitution Hall, P.O. Box 30241, Lansing, Michigan 48909-7741. We will not take any action on this project plan for 30 calendar days from the date of this notice in order to receive and consider any comments.

WHAT HAPPENS NEXT?

In the absence of substantive comments during this period, our preliminary decision will become final. The applicant will then be eligible to receive loan assistance from this Agency to construct the proposed project.

Any information you feel should be considered by the DEQ should be brought to our attention. If you have any questions, please contact Izabel Hartman, the project manager, at 517-284-5408, or you may contact me. Your interest in this process and the environment is appreciated.

Sincerely,

Sonya T. Butler

Sonya T. Butler, Chief
Revolving Loan Section
Office of Drinking Water and Municipal Assistance
517-284-5433

Attachments

State Revolving Fund (SRF)
Environmental Assessment
Village of Vermontville, Eaton County
February 2016

I. PROJECT IDENTIFICATION

Applicant: Village of Vermontville, Eaton County

Authorized Representative: Ms. Ruth Wineman, Village President
121 Eastside Drive
Vermontville, Michigan 49096

SRF Project Number: 5637-01

II. PROJECT OVERVIEW

The village of Vermontville, located in Eaton County, is applying for an SRF loan to finance needed improvements to its wastewater system. The village owns and operates a municipal sewer collection system and wastewater treatment facility (WWTF) that serves the village.

The village received two planning grants from the Michigan Department of Environmental Quality (DEQ) through the SRF/Strategic Water Quality Initiatives Fund (S2) grant program in the amount of $125,991. The work included an infiltration and inflow (I/I) study, a Sewer System Evaluation Survey (SSES), and preparation of an SRF project plan.

The proposed project includes wastewater treatment facility and collection system improvements. The total cost is estimated at $1,002,635. This will result in an anticipated rate increase of approximately $13.08 per month for the typical residential customer when the project is complete.

Construction is expected to begin in July 2016 and be completed in May 2017.

III. PROJECT BACKGROUND

A. Natural Environment

The study and service area is located within the village of Vermontville, which is centrally located in Vermontville Township. See Figure 1 for a map of the service area. Land use is largely agricultural and residential with some commercial/industrial areas and is not anticipated to change significantly within the 20-year planning period.

The Thornapple River runs just south of the village limits and has a few unnamed tributaries that flow through the village. The existing WWTF discharges to one of these tributaries located just east of the treatment lagoons.

B. Population and Existing Flows

The projected population for the village of Vermontville is provided below:

Table 1: Population

	2015	2020	2025	2030	2035	2045
Village of Vermontville	793	799	811	827	842	879

Source: Tri-County Regional Planning Commission

The design treatment capacity of the Vermontville WWTF is 100 gallons per capita per day (gpcd). This means it was designed for 1,000 population equivalents at a rate of 100 gpcd for a design average flow of 100,000 gallons per day. The average daily flow for recent years was 97 gpcd. Therefore, the WWTF appears sufficient for the projected needs of the village.

C. Existing Facilities

Treatment Facilities

The village owns and operates a municipal WWTF that was constructed in 1972. Wastewater from the village is collected and transported to the treatment facility from one main pump station, Lift Station No. 3. From there, wastewater is pumped to two oxidation ponds (facultative lagoons) where flow can be directed through the ponds in either series or parallel operation. Treated effluent is then transferred to four different infiltration basins for ultimate disposal. Each of the seepage basins contains overflow pipes to direct effluent from one cell to the other and ultimately to the adjacent unnamed tributary to the Thornapple River. See Figure 2 for a diagram of the existing treatment system.

The system has been operating with few modifications or expansions throughout its history. However, some components of the facility are at the end of their useful lives, or there are other issues that have been identified for repair.

Collection System

The majority of the existing wastewater collection system was installed in 1972, and consists of approximately 25,900 feet of 8-inch-diameter collector sewer, 5,000 feet of 4-inch and 6-inch-diameter sanitary sewer force main, three lift stations (Lift Station No. 1 is a pneumatic ejector type, and Lift Station Nos. 2 and 3 are duplex pumping stations), and 2,020 feet of 2-inch-diameter pressure sewer. The majority of the sewer is asbestos cement pipe. Overall, the sanitary sewers are in good shape and only require normal maintenance. There have only been a couple of sewer line breaks in the last 22 years.

An I/I analysis was completed as part of the first S2 grant. I/I can cause additional wastewater volumes in sewage collection systems. Infiltration is water that enters a public sanitary sewer collection system from the soil through building foundation drains, defective pipe joints, broken or cracked pipes, or manholes. Inflow is water that enters the sanitary system through connected roof drains/downspouts, illicit cross-connections between storm and sanitary piping or catch basins, faulty manhole covers, or poor manhole replacement (placed in low areas that collect runoff). The program included placing flow meters in four different manholes throughout the collection system to evaluate variability of flows from different parts of the village.

The I/I study determined that infiltration into the system was not excessive, but inflow was. Since inflow was considered excessive, an SSES was recommended to identify possible sources of the inflow.

The SSES consisted of additional flow monitoring, inspection of 15 sanitary sewer manholes, closed circuit televising (CCTV) of approximately 20 percent of the gravity sewers, and door-to-door inspections to estimate the number of clear water connections to the sanitary sewer. It was estimated that approximately 25-50 percent of homes in the village have a sump pump connection to the sanitary system. Based on the study, it was concluded that the existing collection system is in relatively good condition, but does experience excessive inflow that is likely due to clear water connections to the sanitary sewer system. There are no known sewer bypasses or overflows in the village, so the excessive inflow has not created a concerning operational problem for the village to date.

D. Project Need

There are no court orders, consent orders, or compliance schedules in effect for the WWTF or collection system. However, the DEQ has concerns regarding the age and discharge method at the WWTF, specifically that it discharges wastewater to the seepage basins, as per the original design of the facility. The seepage basins now act as voluntary wetlands and discharge to groundwater. The facility currently operates under National Pollution Discharge Elimination System (NPDES) Permit MI0024261 (currently in the process of being reissued), which allows for surface water discharge, but under the permit, a groundwater discharge is not allowed. Therefore, based on this and the age of some components of the WWTF, the village needs to make substantial improvements to the facility in order to bring it into compliance with current regulations.

The SSES revealed that the collection system was in relatively good condition, but did identify a few pipe defects that need to be addressed. Lift Station No. 1 has stopped pumping in the past, and has difficulty keeping up with peak flows. The floors are in poor condition in Lift Station No. 3, the pumps were rebuilt several years ago due to failure of both pumps, and during heavy rains, both pumps have difficulty keeping up with flows.

IV. PROPOSED ACTION

An alternatives analysis was conducted to consider possible options to address the needs described above. Some alternatives were not feasible and were not considered further as principal alternatives, since they would not address the current system deficiencies in need of improvement. These included no action, optimizing performance of the existing facilities (collection system only), and a regional alternative.

A. Alternatives Considered

Treatment Facility Alternatives

Alternative 1 – Optimize Existing Treatment Facility (Meet Groundwater Discharge Permit Requirements)

It may be possible to apply for and obtain a groundwater discharge permit in accordance with Part 31 (Public Act 451 of 1994, as amended), but would require

further hydrogeological investigation to prove that the groundwater from the seepage beds is venting directly to the surface water and not impacting any useable aquifers, as the existing lagoon system does not meet groundwater discharge requirements. This type of analysis could be costly and time consuming, especially if the underlying geology is complex. There are current operational issues with this setup, and this alternative would require additional property for construction of additional seepage beds or for spray irrigation.

The oxidation ponds could operate more efficiently and remove wastewater pollutants to a higher degree if the facility could be operated in series rather than in parallel. The transfer structure would have to be replaced, along with structures within the treatment facility that have deteriorated.

Alternative 2 – Filter (Meet Surface Water Discharge Permit Requirements)

This alternative would consist of modifications to the existing wastewater oxidation ponds to allow for proper isolation with the ability to discharge to the surface water in accordance with current NPDES permit requirements. Per discussions with the Water Resources Division (WRD) of the DEQ, the future NPDES Permit would likely be a semi-annual discharge permit allowing discharge approximately March through May and October through December.

The existing seepage beds would be abandoned as well as the existing groundwater discharge component. In order to meet the phosphorus limits of the permit, a chemical feed system and filtration would be required. The sewer discharge from the lagoons would be passed through the filter media for final treatment before being discharged to the creek.

A maximum yearly design flow of 36 million gallons is anticipated based on the original basis of design. Historical flow indicates the average yearly flows are approximately 31 million gallons.

Alternative 3 – Polishing Pond (Meet Surface Water Discharge Permit Requirements)

This alternative is the same as Alternative No. 2, except in order to meet phosphorus limits, a chemical feed system and polishing pond will be used (instead of a filter system). To treat phosphorus levels, a chemical additive will be added to the sewer discharge as it enters the polishing pond, where it will be treated before discharge to the creek through a new outfall.

<u>Present Worth Analysis</u>

Table 2: WWTF Present Worth Analysis

Alternative	Capital Cost	Annual O&M	Salvage Value	Net Present Worth
Alt. 1	$1,219,594	$47,400	$385,457	$1,673,500
Alt. 2	$1,022,567	$57,300	$191,442	$1,682,400
Alt. 3	$820,203	$38,100	$327,703	$1,177,800

Collection System

Alternative 1 – Upgrade Pump Stations and Collection Piping to Accept Wet Weather Flows

To upgrade portions of the gravity collection system, pump stations and existing force mains to accept the 25-year, 24-hour design storm wet weather flows, significant upgrades would be required. It would be necessary to upgrade all three lift stations and replace many portions of force main and gravity sewer in the system. A cost-effectiveness analysis was completed to determine which sources of I/I could be removed economically from the collection system by comparing the costs to transport and treat the excessive flows versus the costs to rehabilitate the system for each I/I source that was identified (this is generally reflected in Table 3 below).

Alternative 2 – Remove Wet Weather Flows from the Collection System and Upgrade Select System Improvements

This alternative consists of replacing the pumps, valves, and piping in Lift Station No. 3, replacing all of Lift Station No. 1, and correcting the crucial pipe defects identified during the SSES. The pipe repair locations are shown on Figure 1 and are anticipated to be mostly minor in nature (such as removing debris in the line or spot repairs). A Clear Water Disconnect Program will also be created and executed (which will involve disconnecting private connections to the sanitary sewer system). The Clear Water Disconnect Program will be done outside of the SRF program, and it is anticipated that language regarding this will be placed in a village ordinance in the near future.

Table 3: Collection System Alternatives Present Worth Analysis

Alternative	Capital Cost	Annual O&M	Salvage Value	Net Present Worth
Alt. 1	$2,484,176	$5,700	$562,989	$2,329,600
Alt. 2	$596,846*	$2,300	$292,149	$508,200

*Includes SRF-ineligible costs ($414,414) for clear water removal on private property

B. Selected Alternative

For the WWTF improvements, the selected alternative is Alternative No. 3 (see Figure 3 for a diagram of the new treatment process), and for the collection system improvements, the selected alternative is Alternative No. 2, as each was determined to be the cost-effective solution.

C. Project Cost

The total project cost is estimated at $1,002,635. This includes planning, design, construction, contingencies, financial, administrative, legal, and engineering services.

Typical sewer bills are based on a flat rate plus usage rate based on an estimated 3,150 gallons per month for the average residential user. The following table shows the current and estimated proposed user rates once the proposed project is implemented.

Table 4: Vermontville Monthly Sewer User Rates

	Flat Rate	Usage Rate (per 1,000 gallons)	Total Monthly Cost (based on 3,150 gallons)
Current	$15.00	$2.51	$22.91
Proposed (2017)[1]	$25.00	$3.49	$35.99
Proposed (2046)[2]	$25.00	$6.76	$46.29

Rate changes beyond 2017 are estimated and include annual inflation
[1]Represents estimated rate when construction project is complete
[2]Represents estimated rate at end of loan term

This increase covers the total project cost, including debt service, operation, maintenance, and replacement costs. It is anticipated that the project will be funded by a low-interest loan through the SRF program administered by the DEQ and the Michigan Finance Authority. The village was determined to be disadvantaged by the DEQ, and therefore, is eligible for a 30-year loan at the current interest rate of 2.75 percent. In addition, the village is anticipated to receive principal forgiveness for a portion of the total loan, and consequently, the user costs may not increase to the extent described above.

D. Project Schedule

Construction is expected to begin in July 2016 and be completed in May 2017.

V. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. Primary Impacts

The proposed project will result in more reliable and efficient performance of the wastewater system and will bring the WWTF into compliance with the NPDES permit. The project will help reduce the potential for sewer overflows in the collection system during large storm events.

The short-term impacts related to project construction will be minimized through adherence to traffic and safety control regulations, soil erosion and sedimentation control measures, and dust control measures. Construction times should be limited to normal daylight hours, and noise from the construction should not be excessive.

The project has been reviewed by the DEQ, WRD, concerning potential impacts. There is a forested wetland along the unnamed creek where the new outfall is proposed. Therefore, construction of the pipe will require a permit under the Inland Lakes and Streams Act (Part 301, Public Act 451 of 1994, as amended), and likely the Wetland Protections Act (Part 303, Public Act 451 of 1994, as amended). The permit issued by the DEQ will include protective measures to minimize the impacts from the project. Every precaution shall be taken to prevent debris from entering any watercourse. Any debris reaching the watercourse during the removal and/or reconstruction of the structures shall be immediately retrieved from the water. All material shall be disposed of in an acceptable manner consistent with local, state, and federal regulations.

Construction of the new outfall pipe may require minor tree removal at the WWTF, and the area was determined by the Michigan Natural Features Inventory and the U.S. Fish and Wildlife Service (USFWS) as suitable habitat for the endangered Indiana bat and the threatened Northern long-eared bat. The USFWS determined

that the proposed project is not likely to adversely affect either species as all trees will be cleared between October 1 and March 31 of the year(s) the project is under construction when the bats are not present on the landscape, no more than 10 acres will be cut, and no more than 10 percent of suitable habitat for the species will be removed within a half-mile buffer surrounding the project.

The State Historic Preservation Office has determined that no historic properties or archaeological resources will be affected by the proposed project. Three Tribal Historic Preservation Officers were invited to comment on the proposed project; none had any objections.

B. Secondary Impacts

Construction of the proposed project will not have any adverse secondary impacts. The proposed project will not increase the wastewater service area.

VI. PUBLIC PARTICIPATION

On February 7, 2015, a notice for the public hearing was published in the *Maple Valley News*. The public hearing for the draft project plan was held on March 12, 2015, at the village office. There was no public in attendance aside from the council members, who voted to move forward with the proposed project. A resolution adopting the final plan was approved by the Village Council on April 9, 2015.

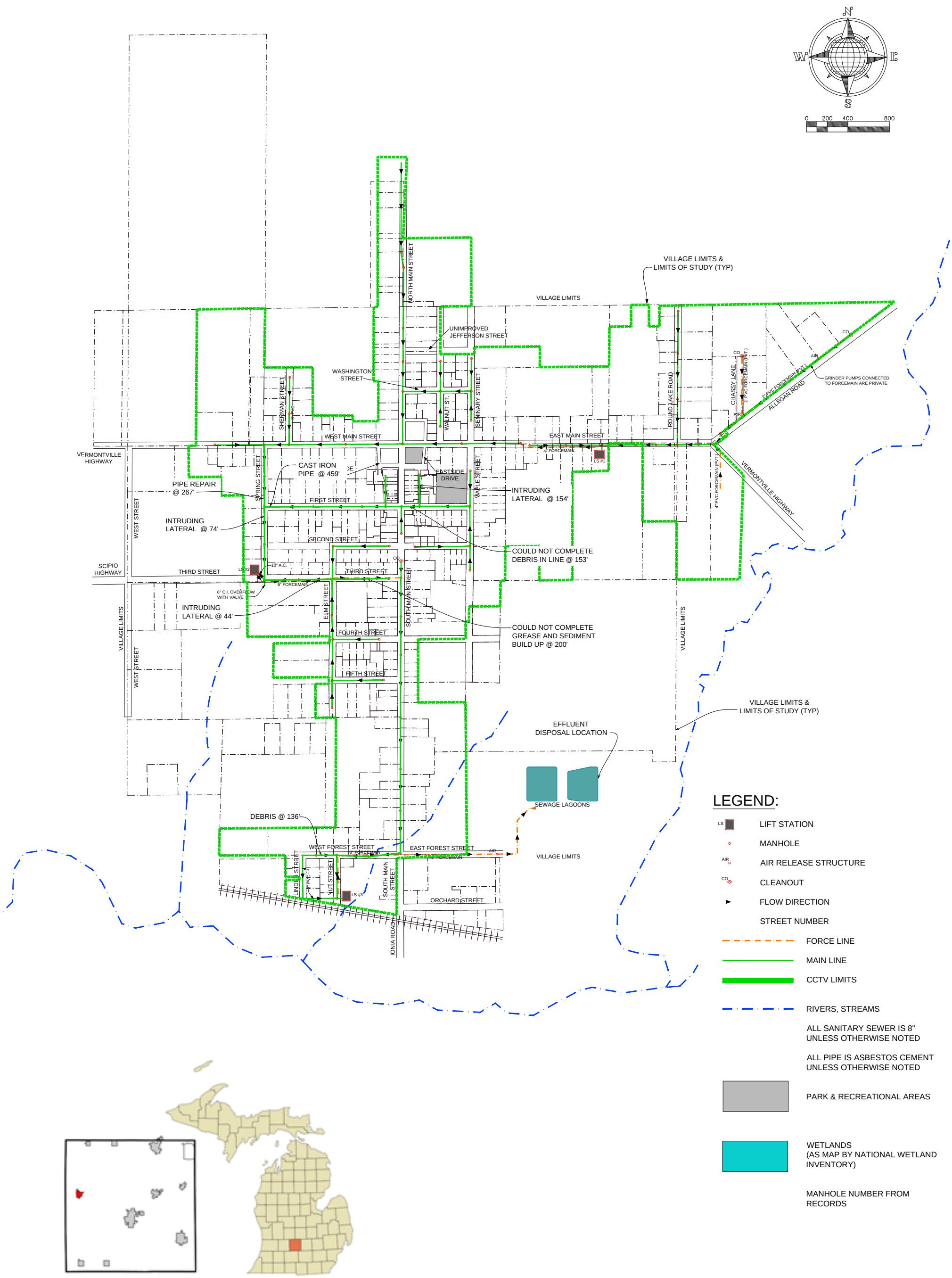
VII. REASONS FOR FINDING NO SIGNIFICANT IMPACT

Based on a review of the project plan and other information, no significant adverse environmental impacts were identified. Beneficial impacts of improved system reliability outweigh the minimal short-term adverse impacts. No long-term negative impacts are anticipated from the project.

Questions regarding this Environmental Assessment should be directed to:

Sonya T. Butler, Chief
Revolving Loan Section
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
P.O. Box 30241
Lansing, Michigan 48909-7741
Telephone: 517-284-5433
Email: ButlerS2@michigan.gov

FIGURE 1 - Village of Vermontville Service Area



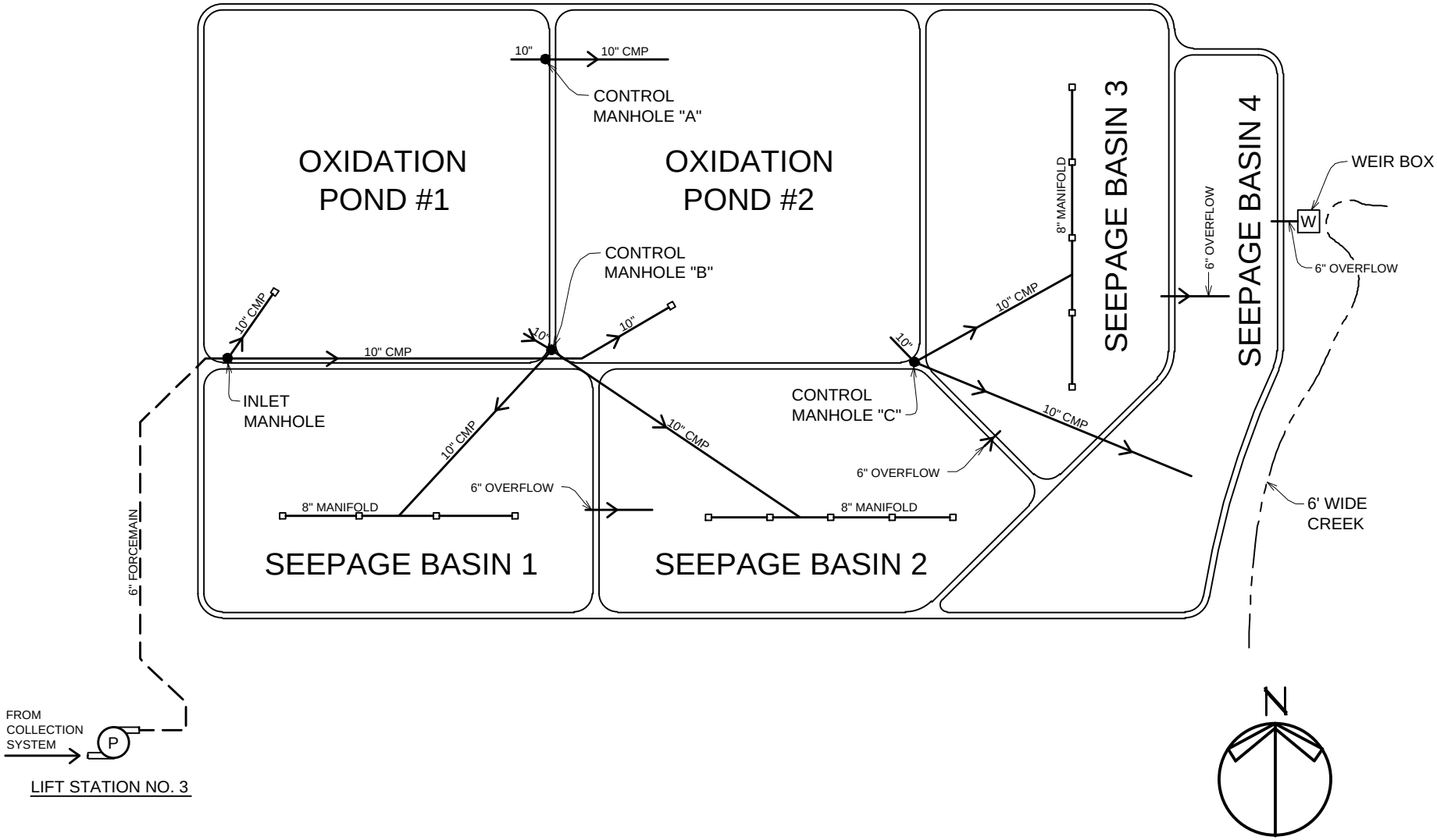


FIGURE 2 - EXISTING TREATMENT PROCESS FLOW DIAGRAM

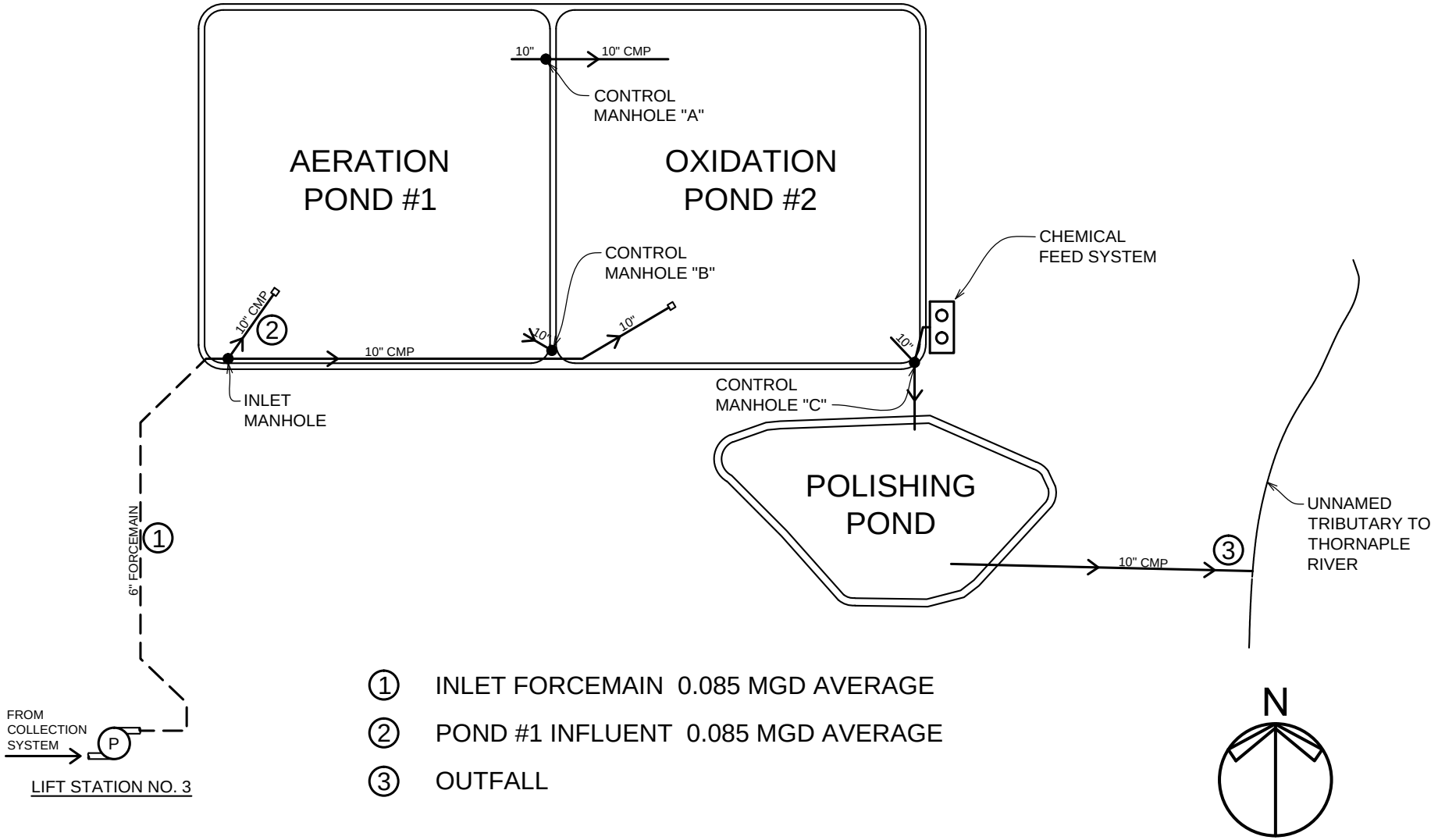


FIGURE 3 - PROPOSED
FLOW DIAGRAM (POLISHING POND)