STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

KEITH CREAGH
DIRECTOR

April 1, 2016

TO: All Interested Citizens, Organizations, and Government Agencies

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT
City of South Haven, Van Buren County
Wastewater System Improvements
State Revolving Fund Project Nos. 5602-01 and 5602-99

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 Ms. Cindy Clendenon, the project manager, at 517-284-5403, 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
CITY OF SOUTH HAVEN
WASTEWATER SYSTEM IMPROVEMENTS PROJECTS
April 2016

PROJECT IDENTIFICATION

Applicant: City of South Haven
539 Phoenix Street
South Haven, Michigan 49090

Authorized Representative: Mr. Brian Dissette, City Manager

SRF Project Numbers: 5602-01 and 5602-99

PROJECT OVERVIEW

The city of South Haven seeks low-interest loans through Michigan's SRF program to finance the engineering study, design, and SRF-eligible construction of improvements to the wastewater collection and treatment system. Projects will include the replacement and rehabilitation of leaking or structurally inadequate sanitary sewers and manholes; consolidation and upgrades to three wastewater lift stations; installation of new forcemain; and a series of improvements to the wastewater treatment plant (WWTP). The attached Figures 1 and 2 show the locations of proposed projects.

Some of the wastewater projects funded through the SRF program will include improvements to water mains, storm sewers, roads, and streetscapes. However, costs for these non-SRF components will be addressed through a variety of non-SRF funding mechanisms. The SRF-funded and non-SRF projects over the next 12 years are expected to cost a total of approximately $31.2 million as summarized in Table 1.

Table 1. Summary of Estimated Project Costs

SRF Fiscal Years (FY)	SRF Funding	Non-SRF Funding	Total
FY 2016	$7.83 million	$7.81 million	$15.64 million
FY 2019-2023	$6.26 million	$0.80 million	$7.06 million
FY 2025-2026	$7.03 million	$1.50 million	$8.53 million
Total	**$21.12 million**	**$10.11 million**	**$31.23 million**

This Environmental Assessment (EA) focuses on the projects seeking funding in SRF fiscal years (FY) 2016 through 2021. Future projects anticipated to begin construction in FY 2022 or later also are included, but a subsequent EA will be necessary after June 2021 to reaffirm and update the information.

EXISTING WASTEWATER SYSTEM

The city of South Haven is located along Lake Michigan and is a typical mixture of residential, business-commercial, industrial, and recreational areas. The city is adjoined by Casco Township (Allegan County) to the north and South Haven Charter Township (Van Buren County) to the south and east. The township populations are concentrated along and near the lake, with remaining households scattered in the larger rural and agricultural areas.

The South Haven sanitary sewer service area consists of the entire city of South Haven and also significantly populated areas of the two adjacent townships. Table 2 provides population estimates for the communities served. Although the SRF project planning study area included the city and both townships, the specific wastewater problems and facilities described in the remainder of this EA are all located within the city in Van Buren County.

Table 2. Communities Served by the City of South Haven Wastewater Collection and Treatment System

Customer Community	2010 (Census)	2030 (2)
South Haven Charter Township (1)	3,983	4,294
Casco Township (1)	2,823	3,496
City of South Haven	4,403	5,319
Total Population	11,209	13,109
Estimated Total Service Area Population	9,105	11,752

(1) A portion of the township population is outside the South Haven sanitary sewer system service area
(2) Based on projections by the Southwest Michigan Planning Commission

The South Haven sanitary sewer system is a separated system, which means the storm sewer system utilizes different pipes: there are no combined sewers and no combined sewer overflow (CSO) discharge points. The sanitary sewer system includes trunk and lateral sewers, interceptors, 34 lift stations, manholes, the WWTP, and the WWTP outfall to the Black River. Although newer sewers are made of polyvinyl chloride pipe, the most antiquated sewers date to the early 1900s and are predominantly vitrified clay pipes with either brick or grouted block manholes.

The WWTP is located in the northern part of the city along the Black River, which is the receiving water for treated effluent. The current annual average daily flow is approximately 1.39 million gallons per day (MGD) and seasonally varies between approximately 1.0 MGD (winter) and 1.5 MGD (summer). The flow in future years is expected to increase only slightly. The permitted design flow is 2.19 MGD. The plant uses a return activated sludge treatment process and a sludge digestion process that yields biosolids for farmland application.

RECENT HISTORY OF WET-WEATHER PROBLEMS

Chronic wet-weather issues within the South Haven sanitary sewer collection system and wastewater treatment system continue to yield elevated system flows during storms. Although the increase in seasonal population during the summer contributes to increased flows in the sewer system and at the WWTP, the primary factor is infiltration and inflow (I/I). The depth to groundwater is shallow, and soils are poorly drained. Antiquated sanitary sewers and manholes

in poor physical condition are prone to infiltration by groundwater, even during dry weather. Clear water enters the wastewater collection system (as infiltration) through defects in the buried pipes and manholes. Inflow enters the collection system through a direct connection such as a catch basin, county drain, residential or commercial roof drain and/or footing drain, yard drain, field tile, or holes in manhole covers.

Since the late 1990s, the city has worked steadily toward the elimination of excessive I/I, the elimination of sanitary sewer overflows (SSO), and the prevention of sewer backups in basements. Between 2001 and 2004, the Department of Environmental Quality (DEQ) required the city to conduct wet-weather studies and implement corrective actions in accordance with a compliance schedule in the city's National Pollutant Discharge Elimination System (NPDES) Permit No. MI0020320. The St. Joseph Street Sewer District construction project of 2003 is merely one example of stepwise efforts to address wet-weather issues.

Despite ongoing improvements since the late 1990s, average dry-weather flow at the WWTP continues to meet the federal-state definition of "excessive" infiltration. Recent hydraulic modeling identified sewer segments that are unable to pass the 25-year, 24-hour design storm event as required by the DEQ policy for SSOs. To determine which areas of the wastewater system are most in need of corrective improvements, the city recently conducted several investigations, including I/I studies in the year 2000 and Sanitary Sewer Evaluation Studies (SSES) in 2002, 2007, 2008, and 2011. The sewer studies included utility mapping, data compilations and review, field investigations, smoke testing, and sewer televising. The conditions of 34 lift stations were evaluated in a 2011 study. The most recent sewer flow-monitoring program began in Spring 2012 and was complete in late 2013, followed by a computer modeling of the sewer system. As noted later in this document, the sewer and lift station planning and design projects between 2011 and 2015 were largely funded through state grants.

Today, the NPDES permit that was issued July 30, 2015, requires South Haven to properly operate and maintain the sewer system, treatment works, and associated controls and procedures used to comply with the terms and conditions of the permit. In addition, the current permit requires the development and implementation of an Asset Management Program that meets specified criteria.

NEED FOR SRF PROJECTS

During heavy storms, large wet-weather flows in the wastewater system sometimes lead to SSO events in which raw sanitary sewage is discharged to the environment. SSOs from overflows at the Main Lift Station (LS) have created nuisances such as sewage and debris in the roadway adjacent to several homes. These overflows also may indirectly flow into the Black River. Elsewhere, residents in areas tributary to the Indian Grove LS have experienced numerous sewer backups in basements over the past several years.

Since 2001, most of the SSO events in the sanitary sewer collection system during larger storms have been attributable to capacity deficiencies at the Indian Grove LS and Main LS, the latter of which serves most of the wastewater service areas of the city of South Haven and South Haven Township. In addition, the Indian Grove LS and its forcemain were installed in the 1950s and both are badly deteriorated. Cracks in the forcemain have caused prior SSO releases of raw sewage at and near the three aerial crossings of a small unnamed creek just north of the station. From the station, this creek flows 1,200 feet west to Lake Michigan.

The South Haven WWTP does not have sufficient capacity to provide complete treatment for peak storm flows. Originally constructed in 1933, the South Haven WWTP has undergone various upgrades since 1963, when most of the existing structures were built. A facility evaluation and master plan completed in 2010 identified various process, mechanical, structural, electrical, and architectural deficiencies in the WWTP and in the nearby Wells LS and Main LS that deliver flow to the WWTP.

ALTERNATIVES ANALYSIS

The city of South Haven evaluated alternatives to achieve cost-effective rehabilitation and replacement of the wastewater system components described in this EA. The first alternative is to take no action. Because taking no action will not reduce SSO events, nor resolve capacity issues within the sanitary sewer system, nor correct physical deficiencies in sewer infrastructure, the city did not consider the “no-action” alternative to be feasible, and it was not considered further.

A second alternative is to regionalize the wastewater system, but this is a moot option because the South Haven sanitary sewer collection system and treatment plant already serve a broad region including the city and adjoining townships. A third alternative is to improve system operations by better training, better operating procedures, and so on. The city deemed operational improvements alone to be an inadequate solution to address excessive I/I, antiquated infrastructure, and deteriorating equipment. The feasible alternatives and methods are summarized in the following paragraphs.

For wet-weather sanitary sewer projects, the construction costs and the projected quantity of I/I removal for each project were compared to the costs to transport the I/I to the WWTP for treatment. Where necessary, transport and treatment costs considered upgrades that may be needed to increase system capacity to make the option viable: for example, upsizing pipes, and adding capacity to lift stations and the WWTP to accommodate higher flows. For all wet-weather projects, the comparative cost analyses indicated that removing I/I from the sanitary sewer system is the most cost-effective option. Where rehabilitation and reconstruction both were technically feasible options for removing I/I, the comparative costs were further evaluated (e.g., the South Indiana Avenue Project; the Indiana Avenue and Edgell Street Project).

The cost-effective analysis of the Center Street Sewer Separation project evaluated the costs of transport and treatment against the costs of disconnecting nine catch basins and reconstructing the storm and sanitary sewers. Removal of excess wet-weather flow is more cost effective.

For sanitary sewer projects addressing the structural conditions of pipes rather than wet-weather clear-water removal, a cost-effective analysis was conducted when it was realistic. For the East Edgell Street project, either rehabilitation or reconstruction are viable options; therefore, a cost-effective analysis was conducted. But in other projects involving significant and numerous defects in existing pipe alignment, deformations in the pipe barrel, or other defects that would prevent rehabilitation, full replacement (reconstruction) is the only technically feasible option. Similarly, if a manhole structure is so severely dilapidated that it cannot be rehabilitated, then replacement is the only feasible alternative.

The Black River Street sewer project will involve rerouting the existing sewer from beneath private residential structures to an accessible location within an easement or right-of-way where soil conditions are more suitable. Technical considerations were the primary factors

determining the optimal sewer alignment due to the poor soils, residential location, and constraints on sewer depths and routes. The most cost-effective and technically feasible alternative is to reroute the gravity collection sewer to the middle of Black River Street and connect it to a new lift station located within the Black River Street right-of-way. The new LS on Black River Street will pump sewage beneath the Black River via a new forcemain that will discharge to the sanitary sewer just upstream of the newly consolidated Main/Wells LS. Installation of this new forcemain will eliminate the need for the existing gravity sewer beneath the Black River at the existing Main LS, thus allowing the gravity sewer to be filled and abandoned once the current Main LS is decommissioned.

For the Main LS project, a transportation and treatment alternative to address excess flows would require reconstruction of the station with additional pumping capacity and continued operation of the Wells LS in its current configuration. However, it is it not technically feasible to reconstruct the Main LS on the same site because it is currently located on a small, crowded parcel, and the configuration of the incoming sewers includes an underground river crossing of the Black River. A technically feasible alternative is to construct a new Main LS at the WWTP. This new station will consolidate the functions of the current Main and Wells stations, both of which will eventually be decommissioned and demolished.

For the Indian Grove LS project, a relocation is not technically feasible due to its location among residential homes and the associated absence of suitable locations nearby. Two rehabilitation alternatives that were considered share pump replacement to increase capacity, rehabilitation of dry well piping, and upgrades to mechanical and control equipment. The main difference between the two alternatives is whether to replace or rehabilitate the architectural superstructure (masonry structure, brick veneer, roof, and drain system). Over the 50-year lifespan of the structure, replacement was shown to be more cost-effective. Design options for the Indian Grove LS and forcemain replacement project also considered tree and grading improvements, options for exterior building features that will be compatible with the neighborhood location, and two easement requirements for the forcemain replacement to Monroe Boulevard.

Ultimately, reconstruction of the Indian Grove LS at the existing site was shown to be the most cost-effective and has the least environmental impact because it will not require new land acquisition and will not change the existing footprint of the station. The forcemain will be relocated slightly and buried deeper to eliminate the aerial creek crossings currently in place.

Regarding WWTP improvements, three feasible options include constructing a new plant process (oxidation ditch) at the existing site; relocating the plant farther away from the Black River; or renovating the existing plant at the existing site. The cost analyses indicated that renovating the existing plant is the most cost-effective option. Renovation also has the least environmental impact because it will not require new land acquisition or easements and will not significantly change the footprint of the existing WWTP.

For the sub-projects at the WWTP, the city evaluated alternatives for replacing or rehabilitating deteriorated equipment. In all cases, replacement was shown to be more cost-effective than rehabilitation because the equipment is at or near the end of its expected life. In addition, the city considered and selected the advantages of variable-speed pumps that will allow the pumps to operate at their most efficient duty points depending on flow rates.

Four alternatives were considered for biosolids handling as follows: mechanical thickening with liquid storage; gravity thickening with liquid storage; gravity thickening with anaerobic digestion;

and dewatering with landfilling. The first three alternatives included the continued land application of biosolids. The chosen alternative will involve the addition of mechanical thickening and the utilization of existing digesters for storage tanks to provide 180 days of storage. The supernatant return from the thickening process is not expected to cause any significant changes in the liquid treatment process.

Treated effluent currently is disinfected via chlorine gas and then dechlorinated via sodium bisulfite before discharge to the Black River. Because the gas disinfection system is near the end of its useful life, the city plans to upgrade and convert the system to liquid chlorine (sodium hypochlorite). A liquid system will enhance operator safety and improve security of the plant site, which is situated near residential areas and the busy river waterfront.

Disinfection of treated effluent via ultraviolet (UV) light was considered, but this option was not feasible because the existing chlorine contact tank has been useful as a supplemental settling basin in the event of a biological process upset or other settling issues. The dual-cell feature in the existing contact tank provides the ability to take down one side for cleaning and draining while the other side is kept in service. In addition, a UV disinfection alternative would require a significantly greater capital cost expenditure than converting to a liquid chlorine system.

SELECTED ALTERNATIVES

The city of South Haven has organized the most cost-effective alternatives into four construction phases scheduled over roughly a 12-year period. At the time of this EA (March 2016), the city already has completed and paid for construction of a Phase I sewer project described in the SRF project plan: namely, the Dyckman Avenue project. The Kalamazoo Street project (to Aylworth) and Peterson Ravine manhole rehabilitation project are underway using non-SRF funding sources.

Construction projects anticipated to seek SRF funding in FY 2016 and future fiscal years are summarized in Tables 3 through 5. These projects will reduce excess wastewater flows resulting from inflow and infiltration of clear water; address structural deficiencies in the wastewater collection system and lift stations; and make a series of necessary improvements to the WWTP.

For sanitary sewer improvements that address structural deficiencies rather than I/I removal, the SRF program reimburses for rehabilitating or replacing only the sanitary sewer pipes and appurtenances that are in the poorest physical condition. Generally speaking, SRF-eligible pipe defects must be rated as either a Grade 4 (poor) or Grade 5 (immediate action) according to the Pipeline Assessment Certification Program of the National Association of Sewer Service Companies (NASSCO). Likewise, only manholes with ratings of Grade 4 or 5 are eligible for SRF funding, as per a NASSCO Manhole Assessment Certification Program Level 2 inspection.

For sanitary sewer projects involving street excavation, additional work may be done simultaneously on the city's water distribution system, storm sewer system, roadways, and streetscapes (e.g., bike racks, recreational signage); however, these costs are not eligible for SRF funding. The SRF program reimburses only the improvements necessary to accomplish eligible wastewater projects: for example, moving a fire hydrant or relocating a water main to enable sanitary sewer installation, restoring the roadway trench, or replacing utility connections disrupted by the sewer construction. Where necessary, the costs eligible for SRF funding will be apportioned using a standard method known as an Alternative Justifiable Expenditure (AJE).

The estimated pre-design costs that are eligible and not eligible for SRF funding are noted in Tables 3-5.

It should be noted that Segment 1 project estimates do not include engineering or other non-construction costs because these costs will not be part of the SRF loan or the associated AJE. However, for future Segments 2 and 3, all construction and non-construction cost estimates are included because the city has not yet decided whether to include non-construction costs on future SRF loan applications.

Table 3. Pre-Design Cost Estimates for SRF Segment 1 Projects (FY 2016)

Phase II Project	Description and Non-SRF Costs (where applicable)	SRF Eligible Cost
Kalamazoo Street Sewer Reconstruction	Replacement of structurally deficient sewers and manholes on Kalamazoo Street south of Aylworth to Cable Avenue, including one block of Aylworth Avenue and Cartwright Street from Kalamazoo Street east to Center Street (approximately 2,525 feet).	$480,647
Indian Grove LS Reconstruction	Reconstruction of station's building superstructure (walls, roof); replacement of pumps, plumbing, equipment, controls; and addition of flow meter.	$363,906
Indian Grove Forcemain Replacement	Replacement of forcemain at unnamed creek crossing, and extension of forcemain to Monroe Boulevard (approximately 1,400 feet). Non-forcemain components of the Monroe Boulevard Sewer Reconstruction project (Aylworth to city limits) will be city-funded. Estimated SRF-ineligible cost = $1,684,648.	$255,078
Main LS Consolidation	Consolidation of Main LS and Wells LS into one facility; will involve major construction at the WWTP, including a new, consolidated Main/Wells LS, renovated headworks building, new screening process, and extension of sewers from the existing lift station to the new Main/Wells LS. Non-eligible construction items include storm sewer construction along a current drainage ditch and water main improvements from Dunkley to Wells. Estimated SRF-ineligible cost = $525,387.	$4,728,488
Black River Street Sewer Reconstruction	Replacement of structurally deficient sewer between Manholes 562A, 562, and 563 (approximately 800 feet). Construction of new lift station in the Black River Street right-of-way. Estimated SRF ineligible street and storm sewer improvements = $323,105.	$1,292,422
North Shore Drive Sewer Reconstruction	Replacement of structurally deficient sanitary sewers and manholes on North Shore Drive between Dyckman Avenue and Baseline Road (approximately 4,525 feet). Estimated SRF-ineligible improvements including storm sewer, roadway, and beach access = $2,845,217.	$711,304
Other Costs	Engineering and other non-construction costs. Estimated costs not expected to be included in the SRF loan = $2,428,000.	$0
	Total SRF Cost	**$7,831,845**

Table 4. Pre-Design Cost Estimates for SRF Segment 2 Projects (FY 2019 – FY 2023)

Phase III Project	Description and Non-SRF Costs (where applicable)	SRF Eligible Cost
Abell Avenue Sewer Reconstruction	Replacement of structurally deficient sanitary sewers and manholes on Abell Avenue from Indiana Avenue to Kalamazoo Street (approximately 525 feet). Estimated SRF-ineligible cost = $146,377.	$277,416
East Edgell Street Sewer Rehabilitation	In-place rehabilitation of structurally deficient sanitary sewers and manholes on East Edgell Street from Kalamazoo Street to Manhole 409 just west of Center Street (approximately 350 feet). Estimated ineligible cost = $354,798.	$76,502
Lyon Street Sewer Reconstruction	Replacement of structurally deficient sanitary sewers and manholes on Lyon Street mid-block between Indiana Avenue and Kalamazoo Street (approximately 200 feet). Estimated SRF-ineligible cost = $297,181.	$131,253
WWTP Settling Tanks and Sludge Equipment Replacement	Construction of at least two new secondary clarifiers, including algae brushes on all four settling tanks, and new drive mechanisms on the existing two tanks.	$2,490,000
WWTP Chemical Feed, Mechanical Thickening, and Administrative	Replacement of ferric chloride feed pumps and piping. Installation of a new mechanical sludge thickening process to improve the ability of the plant to store biosolids during winter when land application is prohibited. Improvements to the Administration-Lab Building.	$3,290,000
	Total SRF Cost	**$6,265,171**

Table 5. Pre-Design Cost Estimates for Segment 3 SRF Projects (FY 2025 – FY 2026)

Phase IV Project	Description and Non-SRF Costs (where applicable)	SRF Eligible Cost
North Indiana Avenue Sewer Reconstruction	Replacement of structurally deficient sewers on Indiana Avenue between South Haven Street and Van Buren Street, including adjacent South Haven Street, Monroe Street, and Clinton Street (approximately 2,595 feet). Estimated SRF-ineligible cost = $957,610.	$1,427,049
South Indiana Avenue Sewer Rehabilitation	Removal of I/I by cured-in-place pipe rehabilitation of sanitary sewers on South Indiana Avenue, including adjacent Humphrey Street, Elkenburg Street, Cable Avenue, Cartwright Avenue, and Spencer Avenue (approximately 4,586 feet).	$481,403
Indiana Avenue and Edgell Street Sewer Rehabilitation	Removal of I/I by cured-in-place pipe rehabilitation of two segments of sanitary sewer (approximately 600 feet) as follows: Indiana Avenue between Lyon Street and Edgell Street; and Edgell Street from Indiana Avenue west approximately 310 feet.	$125,780
Center Street Sewer Reconstruction	Replacement of structurally deficient sewers and manholes on Center Street between Aylworth Avenue and Abell Avenue (approximately 712 feet). Estimated SRF-ineligible cost = $234,676.	$338,411
Center Street Sewer Separation	Removal of I/I by removing nine catch basins and eliminating cross-connections while reconstructing sanitary and storm sewers on Center Street between the Peterson Ravine crossing and Lyon Street (approximately 700 feet). Estimated SRF- ineligible cost = $332,007.	$429,399
WWTP Aeration Tanks, Chlorine Tank, and Site Improvements	Expansion of biological treatment equipment to provide additional liquid treatment capacity of up to 2.0 MGD annual average flow to provide extra reserve capacity for handling wet-weather flow excursions, as well as to rehabilitate and/or replace aged treatment capacity. Convert chlorine gas disinfection to liquid sodium hypochlorite. Rehabilitate deteriorated site features.	$4,228,000
	Total SRF Cost	**$7,030,042**

COST IMPACTS

Between 2011 and 2014, the city of South Haven received three grants through the DEQ Revolving Loan program, collectively totaling $2,052,764. The State Revolving Fund/Strategic Water Quality Initiatives Fund (S2) grant projects 9133-01 and 9133-02 were 90-percent grants that paid for conducting SRF project planning studies (including SSES and flow monitoring activities), preparing the plan, and submitting it to the DEQ as the first step in applying for SRF loan assistance. A subsequent grant through the Stormwater, Asset Management, and Wastewater (SAW) program is paying for a portion of the design of sanitary sewer and lift station projects identified in the SRF project plan. Additionally, the SAW grant is helping fund the city's development of asset management programs for its wastewater and stormwater systems, including a sewer rate study, financial analysis, capital improvement planning process, and operation and maintenance strategies. The budget period for the SAW grant ends in December 2017, but the asset management portion is expected to be complete in Spring 2017. As a point of clarification, the city's local match for these S2/SAW grants is not eligible for SRF loan assistance.

The city of South Haven meets the SRF criteria for being a disadvantaged community. This designation will provide the city with $500,000 in loan principal forgiveness for FY 2016 if the SRF loan closes by the end of September 2016. The designation also gives the city an option for a 30-year loan term instead of the standard 20-year term. The interest rates for FY 2016 are 2.75 percent and 2.5 percent, respectively. Principal forgiveness amounts and interest rates for potential SRF loans closing in future fiscal years will be announced on an annual basis.

In addition to SRF financing, the city continues to explore options for conventional municipal bond financing, as well as new grants and/or low-interest loans through the Michigan Department of Transportation, Michigan Economic Development Corporation, U.S. Department of Agriculture's (USDA) Rural Development program, and U.S. Department of Commerce's Economic Development Administration, to name just four. For example, the city is considering loans through the USDA Rural Development program for some WWTP improvements, and these loans offer 30-year loan terms at roughly 4 percent interest.

The construction projects described in this EA will be conducted in phases over approximately 12 years. The impact to sewer users for several phased projects will be less than a single large project because the costs will be incurred gradually and the debt for each loan project will be staggered and retired over either a 20-year or 30-year period (for loans offering a 30-year option). Therefore, rate increases for sewer customers are expected to be implemented gradually over a long-term period.

The construction of sewer system improvements and associated water-road improvements will be financed through a combination of methods, including SRF financing, local water-sewer-road funds, local Downtown Development Authority funds, and grants or loans from other state or federal sources. For projects in FY 2016, the city may levy special assessments for construction of the North Shore Drive, Kalamazoo Street, and Black River Street sanitary sewer projects and Monroe Boulevard road-water projects. A stepwise schedule is being followed to ensure local and state approvals are obtained prior to the SRF loan closing. Future projects within the streets also may employ a special assessment to apportion some of the project costs.

For only the SRF-funded portions of projects, Table 6 provides the estimated equivalent cost per sewer customer account based on 4,265 total user accounts, of which roughly 3,000 are in the city. Table 6 illustrates the equivalent funds necessary to retire the new sanitary

sewer-related debt, and does not necessarily mean that rates will increase by these amounts. At the time of this EA (April 2016), local discussions continue regarding a proposed regional water-sewer authority, but the potential new arrangement, if implemented, will not change how the SRF debt will be retired: namely, through the help of rate payers.

In June 2015 when the SRF project plan was adopted by the South Haven city council, the average billing for sewer service was $63.32 per quarter for an average household. City users will pay for the work on the sewer system, lift stations, and WWTP, whereas township users will only be required to contribute toward lift station and WWTP improvements where they see a benefit. These cost impacts are illustrated in Table 6 below.

Table 6. Estimated Incremental Monthly Cost Impacts of SRF Loan Projects

SRF Loan Segment	SRF Fiscal Year	City Customer Per Month	Township Customer
Segment 1	2016	$6.00	$3.00
Segment 2	2019	$4.94	$3.19
Segment 3	2025	$5.56	$4.31

As of March 2016, a sewer rate study is being conducted as part of the SAW grant to better define future rate scenarios. Anticipated to be completed by the end of 2016 or early 2017, the rate study will take into account the additional costs for water, storm sewer, road, and streetscape improvements associated with the SRF projects, but not funded via the SRF program.

CONSTRUCTION IMPACTS

The proposed sewer projects described in this EA will occur within the rights-of-way of city streets and in dedicated easement areas, either existing or future. The sewer and forcemain work will require excavation of existing sewer pipes and appurtenances, installation of replacements, and restoration of the ground surface, streets, curbs, and sidewalks to pre-construction conditions. Additional improvements to roads, storm sewers, water mains, and streetscapes will occur, but are not eligible for SRF loan funding.

Two lift station projects will occur on city property in residential areas. The WWTP projects primarily will occur on city property inside the plant's property boundary and on other city-owned lands. Construction of a new lift station at the WWTP will involve installation of a new structure in a grassy area near the southwest corner of the existing plant. Construction of a new lift station for the Black River Street sewer will involve a new structure in the street right-of-way.

Before construction can proceed, the city or contractor must obtain all required permits, which will entail the DEQ construction permits issued under the authority of Part 41, Sewerage Systems, of 1994 Public Act (PA) 451, as amended; construction site stormwater discharge permits from the DEQ; soil erosion and sedimentation control permits under Part 91; and local building permits from the city of South Haven for the Main/Wells LS consolidation and Indian Grove LS rehabilitation. Additional permits will be required for work not being funded through the SRF program: namely, road permits from Michigan Department of Transportation, and Act 399 permits from the DEQ for water main replacements and other water system improvements. Permits related to the land-water interface are discussed below.

Land-Water Interface

Western portions of the city of South Haven, South Haven Charter Township, and Casco Township border Lake Michigan and contain public beaches and public access sites. None of the SRF-funded portions of the proposed construction projects described in this EA will occur on public beaches, or in coastal areas regulated by 1994 PA 451, including designated high-risk erosion areas and critical dune areas. Consequently, work funded by the SRF will not require DEQ permits under Part 323, Shorelands Protection and Management; Part 325, Great Lakes Submerged Lands; or Part 353, Sand Dunes Protection and Management. However, the city of South Haven will submit a joint permit application package to the DEQ Water Resource Division in order to determine permit requirements for non-SRF portions of the North Shore Drive and Monroe Boulevard projects, which closely approach regulated coastal areas in some locations.

No rivers in or near the construction areas are designated under the National Wild and Scenic Rivers Program or the Michigan Natural Rivers program. However, two projects will occur within the 100-year floodplain of the Black River: namely, the Black River Street sewer project, and the Main/Wells LS consolidation project. Prior to construction of these two projects plus the Indian Grove LS and creek crossing (described below), either the city or the contractor will apply to the DEQ for permits under the floodplain regulatory authority of Part 31, Water Resources Protection, of 1994 PA 451, as amended.

The three aerial pipe crossings of a small unnamed creek near the Indian Grove LS will be removed, and the buried portions will be capped and abandoned. The aerial crossings will be replaced by a single underground crossing utilizing a construction method known as horizontal direction drilling, or HDD. It is anticipated that the underground crossing will not require a DEQ permit under Part 301, Inland Lakes and Streams, because minimum clearances will be maintained between the top of the pipe and the bottom of the creek bed. Moreover, bore pits will be located outside of the creek's floodplain; stream banks will not be disturbed; and the boring operation will not result in the eruption or release of drilling fluids.

It is not anticipated that a permit will be needed under Part 303, Wetlands Protection of 1994 PA 451, as amended. The underground route beneath the creek will not directly impact regulated wetlands if present.

In the cases described above, the DEQ and the U.S. Army Corps of Engineers (if applicable) will review the final project designs and permit applications to make final determinations as to which permits are necessary based on the location and nature of the proposed work.

Trees and Threatened or Endangered Species

The city of South Haven is situated within the range of several state listed and federally-listed species. In compliance with SRF requirements, the city has contacted the U.S. Fish and Wildlife Service and the Michigan Natural Features Inventory, which concurred with the finding of "no effect". Except as noted in the following paragraphs, construction will not occur in areas containing suitable habitat, and documentations of state-listed species occurrences within the 1.5-mile search buffer are considered historic (more than 50 years ago).

The federally-listed Indiana bat and Northern long-eared bat may be present in Van Buren County. In Michigan, the Indiana bat forages in the summer along wooded streams and rivers, and nests in trees in or near the floodplain. Regarding the Northern long-eared bat, no known hibernation sites (in caves or abandoned mines) or roost trees have been documented within

1.5 miles of the project area. However, proposed construction activity occurs within the larger 150-mile zone for white-nose syndrome, a fungal disease that affects these bat species. The cited zone map was published by the U.S. Fish and Wildlife Service on February 29, 2016. The Northern long-eared bat typically roosts and forages in forested areas and uses cavities and crevices in either living or dead trees. Foraging primarily occurs in areas along woodland edges, woodland clearings, and over small woodland ponds.

To avoid potential interference with bat roosting and nesting, tree removals along the Black River and city streets will be performed between October 1 and March 31. If isolated tree removals become necessary between April 1 and September 30, an assessment will be made by a certified biologist to determine the presence of threatened or endangered bat species.

Aside from the three tree removals on Black River Street, the greatest number of trees to be impacted occur along non-SRF portions of the North Shore Drive and Monroe Boulevard projects. A total of approximately 12 mature trees (larger than 6 inches in diameter) will be removed to enable construction, and another 37 trees that are diseased or aged are being removed by city crews before construction commences. Post-construction mitigation of tree removals will include replacements with healthy, 3-inch-diameter trees.

General Construction Impacts

For the FY 2016 sanitary sewer projects and associated projects, construction is expected to begin in the fall of 2016, followed by either a slow down or temporary shut-down during the busiest part of the summer tourism season in 2017, probably between July 4 and Labor Day. Construction will resume in the fall of 2017. Another construction slow-down may be scheduled for Summer 2018 for projects still ongoing at that time. In future years, SRF projects and non-SRF project components likewise will be scheduled to accommodate busy tourism seasons and local festivals.

Sewer projects will cause some traffic disruptions when work is occurring in or near the street. Traffic control planning and construction phasing should alleviate most concerns. Access to residential properties will be maintained at all times. Projects at the WWTP will cause minimal traffic disruptions because most work will be in the interior of the property.

The Black River Street sewer project and Main/Wells LS projects will create temporary work zones along and near the Black River waterfront that may be inconvenient for local residents, tourists, and visitors to Black River Park. Visitors to Black River Park may see and hear construction taking place at the Main/Wells LS and WWTP, and access to the park will be restricted or rerouted during construction of the collection sewers from the existing Main LS to the newly consolidated station. Additional construction may be occurring at Black River Park not related to sewer projects, but related to the city's long-term improvement plan for the park. In the Black River Street sewer project, riverfront properties (including the parking lots and carports of several condominiums) will be disrupted when the buried sewer is excavated, sealed, and rerouted.

For the sewer projects, many telephone poles will be relocated. Residents and businesses will experience brief interruptions in telephone service when the poles are being replaced. Some poles along North Shore Drive will be replaced by underground cable, thereby improving the visual appearance of the streetscape. Resident and businesses will be notified prior to these brief disruptions.

In general, construction activities will generate construction traffic, dust, and diesel fumes in the immediate area of work, but these minor, localized, temporary impacts will be controlled by standard mitigation measures. Known contaminated soils exist near the Main/Wells LS consolidation project, and near the WWTP. Ongoing soils testing and analysis will determine if regulated materials will be disturbed during construction. If contaminated soils or contaminated groundwater are encountered, technical specifications in the contract documents will address the proper removal, handling, and disposal of these materials.

None of the projects described in this EA will affect known historical, archaeological, or tribal sites. No prime farmland will be affected.

PUBLIC PARTICIPATION

After a 30-day public notice period and availability of the SRF project plan, the public hearing on the project plan was held at 7:30 p.m. on June 15, 2015, at the South Haven City Hall. The engineering consultant presented wastewater system problems, improvement options, social and environmental impacts, estimated costs per household, and the construction schedules. During the hearing, the mayor, city manager, city council members, and one resident asked a few questions, all of which are documented in the final project plan and in the verbatim transcript appended to the plan. After the hearing, the council held a meeting to further discuss the project plan, and then formally adopted it by resolution, including a designation of the city manager as the SRF authorized representative. The hearing record remained open for written comments until June 22, 2015, but none were received. The DEQ received the adopted plan on July 1, 2015.

The city of South Haven began contacting property owners in Fall 2015 to discuss possible easements that could be required for construction of the forcemain from Indian Grove LS and the sewer rerouting and new forcemain construction on Black River Street. The contacts also informed residents of other upcoming work. The city and its engineering consultant also have met with several service groups to present the upcoming construction plans. The city's Web site postings and additional public meetings, open houses, and council presentations are scheduled for 2016 to ensure that homeowners, tenants, and business owners are kept apprised of construction plans for the FY 2016 projects. Door hangers or flyers will be distributed door-to-door immediately before construction begins. Similar public outreach activities will be conducted for future projects.

AGENCIES CONSULTED

Michigan Department of Environmental Quality
Michigan State Historic Preservation Officer
Southeast Michigan Council of Governments
Tribal Historic Preservation Officers
U.S. Fish and Wildlife Service

REASONS FOR CONCLUDING NO SIGNIFICANT IMPACTS

The projects will have no adverse direct, indirect, or cumulative effects on socioeconomic, cultural, or environmental features. Minor construction impacts will be localized to the construction zones and will be temporary. These impacts can be mitigated with sound construction practices and adherence to permit requirements.

Questions regarding this Environmental Assessment should be directed to:

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Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
P.O. Box 30241
Lansing, Michigan 48909-7741
Telephone: 517-284-5433
E-Mail: ButlerS2@michigan.gov

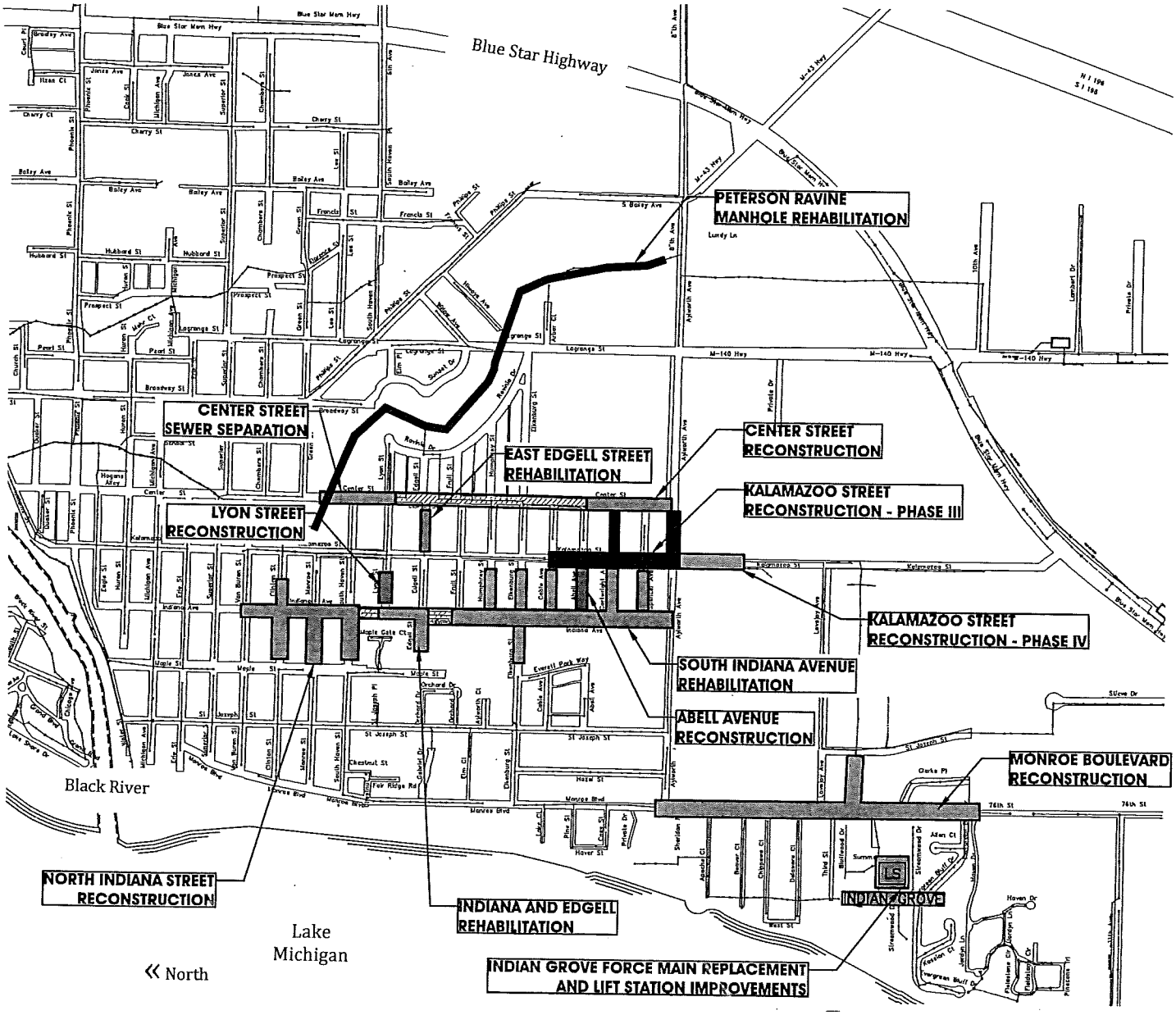

Figure 1. Location of Sanitary Sewer Projects South of Phoenix Street
City of South Haven, Michigan

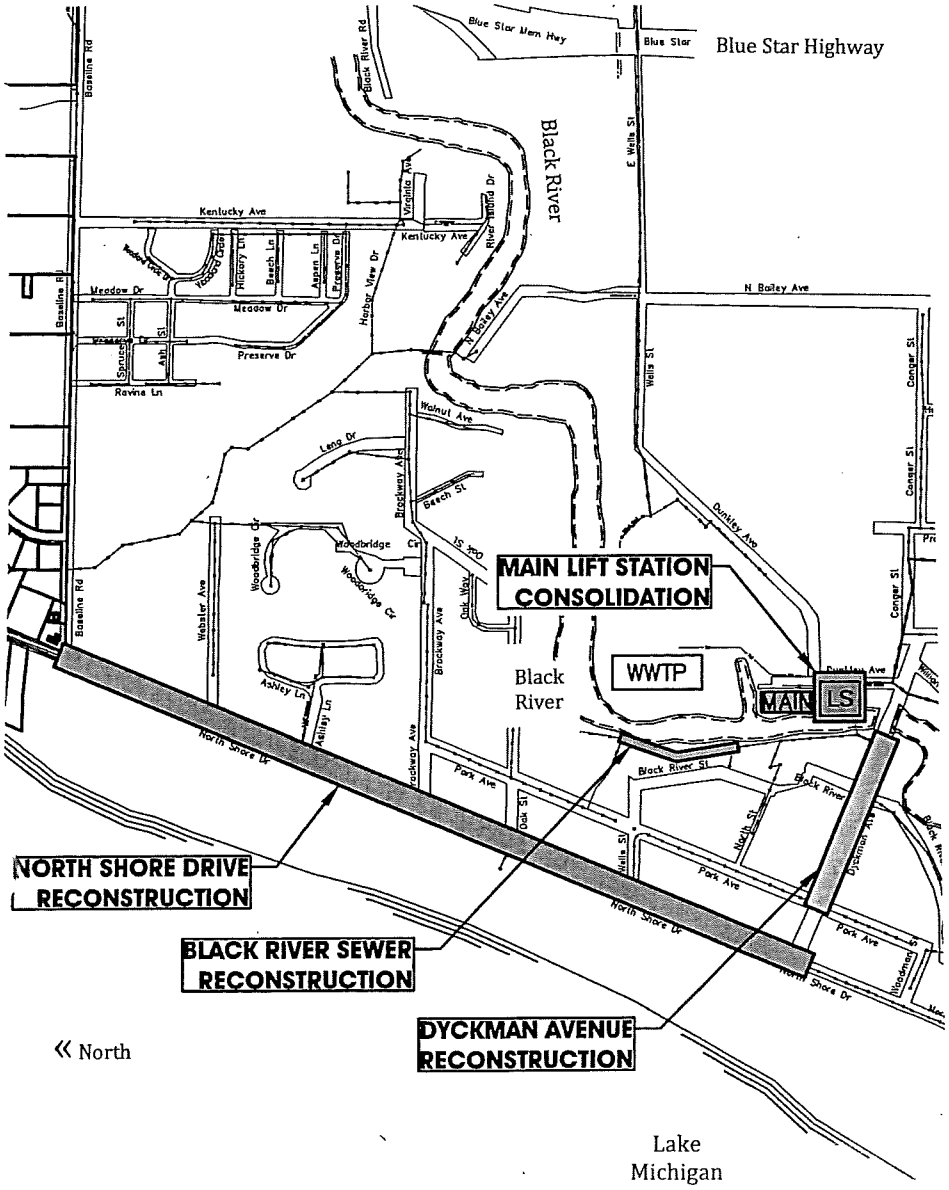

Figure 2. Location of Sanitary Sewer and Wastewater Treatment Plant (WWTP) Projects North of Phoenix Street

City of South Haven, Michigan