



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



KEITH CREAGH
DIRECTOR

May 5, 2016

TO: All Interested Citizens, Organizations, and Government Agencies

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT
City of Fraser, Macomb County
Sanitary Sewer Collection Improvements
State Revolving Fund Project No. 5629-01

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 Mr. Jonathan Berman, the project manager, at 517-284-6664, or you may contact me. Your interest in this process and the environment is appreciated.

Sincerely,



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

Attachments

DEPARTMENT OF ENVIRONMENTAL QUALITY

City of Fraser, Macomb County
State Revolving Fund (SRF)
Environmental Assessment
May 2016

I. PROJECT IDENTIFICATION

Applicant: City of Fraser
Address: 3300 Garfield Road
Fraser, Michigan 48026
Authorized Representative: Mr. Richard Haberman, City Manager
SRF Project Number: 5629-01

II. PROJECT SUMMARY

The city of Fraser has applied for a loan through the SRF program to accomplish two objectives for its sanitary sewer system. One is to correct structural integrity defects by full-length cured-in-place pipe (CIPP) linings, sectional CIPP (or SCIPP) linings, and open-cut repairs. The other is removing sources of infiltration and inflow (I/I) by manhole rehabilitation and eliminating direct storm (i.e., clear water) connections to the sanitary sewer to make progress toward operating within contract capacity. Nearly all streets within the city limits will be targeted for at least one of these work items (see Figures 1 and 2). The total project cost is estimated at \$3,840,000. The typical residential user is expected to see an increase of \$2.89 to their monthly bill from the project. Construction is scheduled to begin in the fall of 2016 and be completed by the fall of 2017.

III. PROJECT BACKGROUND

Fraser is located south of Clinton Township and is bordered by the cities of Roseville, Warren, and Sterling Heights. The city limits are completely developed. The existing land use is mainly residential, followed by industrial, commercial, office, and recreation. According to the Southeast Michigan Council of Governments, the population of Fraser is expected to increase slightly during the 20-year planning period from the existing population of 14,027 to an estimated 14,896 in 2040.

The city owns and operates its sanitary sewer system with collectors built 40-60 years ago. Sewage is discharged from two outfalls to the 15 Mile Road Interceptor, owned and operated by the Oakland-Macomb Interceptor Drain Drainage District, and from there transported for treatment at the Great Lakes Water Authority plant in southwest Detroit. The city had an agreed purchase capacity with Macomb County of 21.7 cubic feet per second (cfs) from January 2008. Although the collection system has not experienced backups or overflows since the Hayes Masonic Sanitary Interceptor was completed in August 2011, wastewater flows exceed the contract capacity during wet weather. At the 25-year/24-hour design storm, flows are estimated at 42.9 cfs, which is essentially twice the city's 21.7 cfs contact capacity limit. As a result, the county and city recently updated the contract to temporarily accept the higher flows while requiring the

city to continue to implement methods to reduce its wet weather flows through this project.

The city received SRF/Strategic Water Quality Initiatives Fund (S2) grant funding in the amount of \$545,832 to investigate the capacity issues caused by extraneous I/I, identify structural integrity defects, and prepare an SRF project plan to address both concerns.

I/I is the combination of unwanted stormwater and groundwater entering sanitary sewers via direct and indirect sources. Wastewater flows during wet weather exceed Fraser's contract capacity due to I/I in the sanitary system. Excessive I/I was discovered via direct connections between sanitary and storm sewers (inflow only) and manhole defects that allow clear water to enter the sanitary sewer (infiltration and inflow). These sources of I/I were evaluated in comparison with a transport-and-treat option to confirm cost-effectiveness. Eliminating these I/I sources is estimated to remove 10.6 cfs of flow from the system at the design storm.

Due to past documented structural failures, possible significant soil movement, and the I/I contribution, collector sewers were cleaned, televised, and evaluated for structural integrity based upon the National Association of Sanitary Sewer Companies Pipeline Assessment and Certification Program (PACP) rating system. The PACP rating system provides standardized codes to document the condition of the sewer. A Grade 4 pipe is assigned if "a collapse is likely in the foreseeable future," and a Grade 5 pipe is assigned if "there is either a collapsed pipe, or where a collapse is imminent." Several areas of structural defects were found, including multiple fractures, holes in pipe, broken pipes, missing aggregate, and heavy hydrogen sulfide-induced corrosion. The proposed solutions are consistent with the PACP rating system and SRF eligibility requirements. Rehabilitation of the existing sewers in this project will address defects with a Grade 4 or Grade 5 PACP rating through CIPP/SCIPP linings and open cut repairs.

IV. PROPOSED PROJECT

The no-action alternative is not a viable option for two reasons. One, instead of accomplishing a reduction in the amount of I/I to the sanitary sewer, wet weather flow would remain at 42.9 cfs, which is considerably more than the 21.7-cfs contract capacity target at the design storm from the previous agreement. Two, structural integrity defects would still remain and worsen over time.

Fraser is served by a regional wastewater treatment system, and the problems identified in its SRF project plan concern the condition of its own internal collection system. Thus, the regional alternative was not considered further.

A. Contract Capacity Alternatives Considered

1. Alternative A1: Infiltration and Inflow Removal (Storm Disconnections and Manhole Rehabilitation)

Smoke test results and sewer maps were compared to identify direct connections between storm and sanitary sewers. These connections are a significant source of wet weather inflow. Aerial imagery and topography was used to estimate the amount of I/I that can be removed by eliminating direct storm connections via the repair of failing storm bulkheads and deteriorated storm pipes and joints, as well

as the separation of two previously missed catch basin connections that are transporting clear water to the sanitary sewers.

All known sanitary manholes were visually inspected with the results logged into manhole inspection reports and then entered into a database for the collection system. This information was used to estimate the amount of infiltration that can be removed at the design storm from the rehabilitation of defects in manhole frames, covers, chimneys, cones, walls, and inlet/outlet pipes, which currently allow for clear water to enter the sanitary sewers. The total expected wet weather flow reduction from Alternative A1 at the design storm is 10.6 cfs.

**2. Alternative A2: Transportation and Treatment
(555,974-Gallon Storage Facility for Wet Weather Flow)**

Alternative A2 would be to construct an estimated 555,974-gallon storage facility to hold peak flows during the design storm at the level of 10.6 cfs to match the amount of I/I, which is estimated to be removed through Alternative A1.

A monetary evaluation comparing Alternatives A1 with A2 was conducted through a present worth analysis to assess the cost of these options to address the same need. Total present worth is calculated by subtracting the present worth of salvage from total capital cost and adding present worth of operation, maintenance, and replacement (OM&R) costs and interest during construction. The estimated total present worth of Alternative A1 is \$1,436,439, while that of Alternative A2 is \$10,386,500. As such, Alternative A1 is the cost-effective approach for the city to reduce wet weather flow to address contract capacity issues.

B. Structural Integrity Defects Alternatives Considered

**1. Alternative B1:
Cured-in-Place Pipe Lining, Full Length and Sectional, and Select Open-Cut
Removal and Replacement**

Full-length trenchless rehabilitation of sewers involves installing a CIPP liner inside a pipe. This is a resin saturated felt tube of polyester, which is inverted or pulled through the sewer line. Hot water or steam cures the resin and forms a tight-fitting and corrosion resistant replacement pipe. After installing the pipe, laterals are restored internally with a robotically controlled cutting device. The CIPP option was evaluated under Alternative B1 for structural defects where an entire manhole to manhole segment must be addressed.

Sectional trenchless rehabilitation of sewers is nearly identical to CIPP, but is limited to a section of a pipe instead of the entire length. The SCIPP option was evaluated further under Alternative B1 for those cases where only isolated structural defects exist while the majority of the pipe is in good to fair condition.

Open-cut removal and replacement (OCRR) consists of the excavation of a site to completely remove either an entire segment or an individual section of a pipe. The OCRR method was evaluated further under Alternative B1 for those cases where the sewers are damaged beyond the rehabilitation capabilities of either

SCIPP or CIPP liners such that only the OCRR method will be sufficient to address the structural defects (i.e., there is no viable alternative to OCRR).

**2. Alternative B2:
Open-Cut Removal and Replacement Only**

Alternative B2 would be to utilize the OCRR method to address each and every structural integrity problem regardless of whether CIPP or SCIPP liners would be sufficient to resolve the defects.

Alternative B1 – ‘CIPP/SCIPP lining and select OCRR’ and Alternative B2 – ‘OCRR Method Only’ were evaluated through a present worth analysis to assess the cost of these options to address the same need. Table I below shows that Alternative B1 is cost-effective when compared with Alternative B2; so it was selected for this project.

Table I City of Fraser Present Worth Analysis of Structural Integrity Defects Alternatives		
	<u>Alternative B1</u> ‘CIPP/SCIPP lining and select OCRR’	<u>Alternative B2</u> ‘OCRR Method only’
Capital Cost	\$2,090,157	\$10,077,673
Present Worth of Salvage Value	\$423,097	\$2,039,956
Interest During Construction	\$48,335	\$233,046
Present Worth of OM&R*	---	---
Total Present Worth	\$1,715,395	\$8,270,763

*Since the alternatives address the same pipes, they have the same present worth of OM&R; so, present worth of OM&R was removed from the analysis.

C. Selected Alternative

The selected alternative consists of the combination of Alternative A1 (i.e., cost-effective I/I removal by rehabilitating manholes and eliminating direct storm connections to the sanitary sewer through the repair of bulkheads, pipes, and joints, along with separating two catch basin connections) and Alternative B1 (i.e., correction of structural defects by CIPP and SCIPP linings, as well as open-cut repairs where there is no other option).

The total project consists of the following (see Figures 1 and 2 for the affected streets):

- Rehabilitation of 830 sanitary manholes: 338 for infiltration and 492 for inflow
- Elimination of 20 direct storm connections with the sanitary sewer, which are associated with bulkheads, pipes, joints, and/or catch basins
- Rehabilitation of an estimated 17,600 linear feet of sanitary sewer pipe through CIPP liners, ranging from 10 to 24 inches in diameter
- Rehabilitation of 43 sections of sanitary sewer pipe through SCIPP liners, varying from 3 to 15 linear feet in length and 8 to 36 inches in diameter

- Open-cut removal and replacement of an estimated 24 digs of sanitary sewer pipe, ranging in size from 8 to 24 inches in diameter

V. ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

A. Primary Impacts

All work will take place in a fully developed urban area within the road rights-of-way and easements for land disturbed when the original sewer was built. Sewer service will be maintained, and work hours will be from 7 a.m. to 7 p.m., Monday through Saturday, to limit noise. Residents with service connection to any impacted sewer section will be given advance notice for limiting non-essential water use. Traffic control measures will maintain local access. Those whose driveways are affected will be notified in advance if primary parking will be temporarily unavailable. Excavation is not anticipated to uncover any contaminated soils, and with the proper use of dust, soil erosion, and sedimentation control methods, surface water quality should not be impacted either. The county will issue a permit pursuant to Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

No suitable wildlife habitat for either state or federally listed species is present, and the work will be limited to existing structures. There are no anticipated impacts to the state regulated resources of floodplains, inland lakes and streams, or wetlands. The State Historic Preservation Office determined that no historic properties will be impacted (File No. ER-08-203). Federally recognized tribes identified for Macomb County were contacted, but none provided comments anticipating any impact on tribal historic, religious, or cultural resources. The Southeast Michigan Council of Governments found no conflict with area-wide plans or population figures.

B. Secondary Impacts

No adverse secondary impacts are anticipated as a result of this project since the city is fully developed and the work will not increase sewer capacity.

VI. PUBLIC PARTICIPATION

On May 11, 2015, the SRF public hearing notice was published in the *Macomb Daily* and the draft project plan was made available for review. The formal public hearing was held on June 10, 2015, at Fraser City Hall. Questions addressed at the hearing concerned the estimated customer rate increase and the needs related to the project. The Fraser City Council passed a resolution immediately following the hearing, unanimously adopting the project plan and agreeing to implement the selected alternative.

VII. REASONS FOR CONCLUDING NO SIGNIFICANT IMPACT

The project will reduce wet weather flows as required by the current contract capacity agreement and address problems of structural integrity in the collection system. All appropriate cross-cutter agency review clearances were obtained. Secondary growth impacts are not anticipated. Proper mitigation techniques will minimize any short-term adverse construction impacts such as noise, dust, fumes, traffic, and soil erosion.

Questions regarding this Environmental Assessment should be directed to:

Ms. 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
E-Mail: butlers2@michigan.gov

City of Fraser

Sanitary Sewer Collection System Improvements

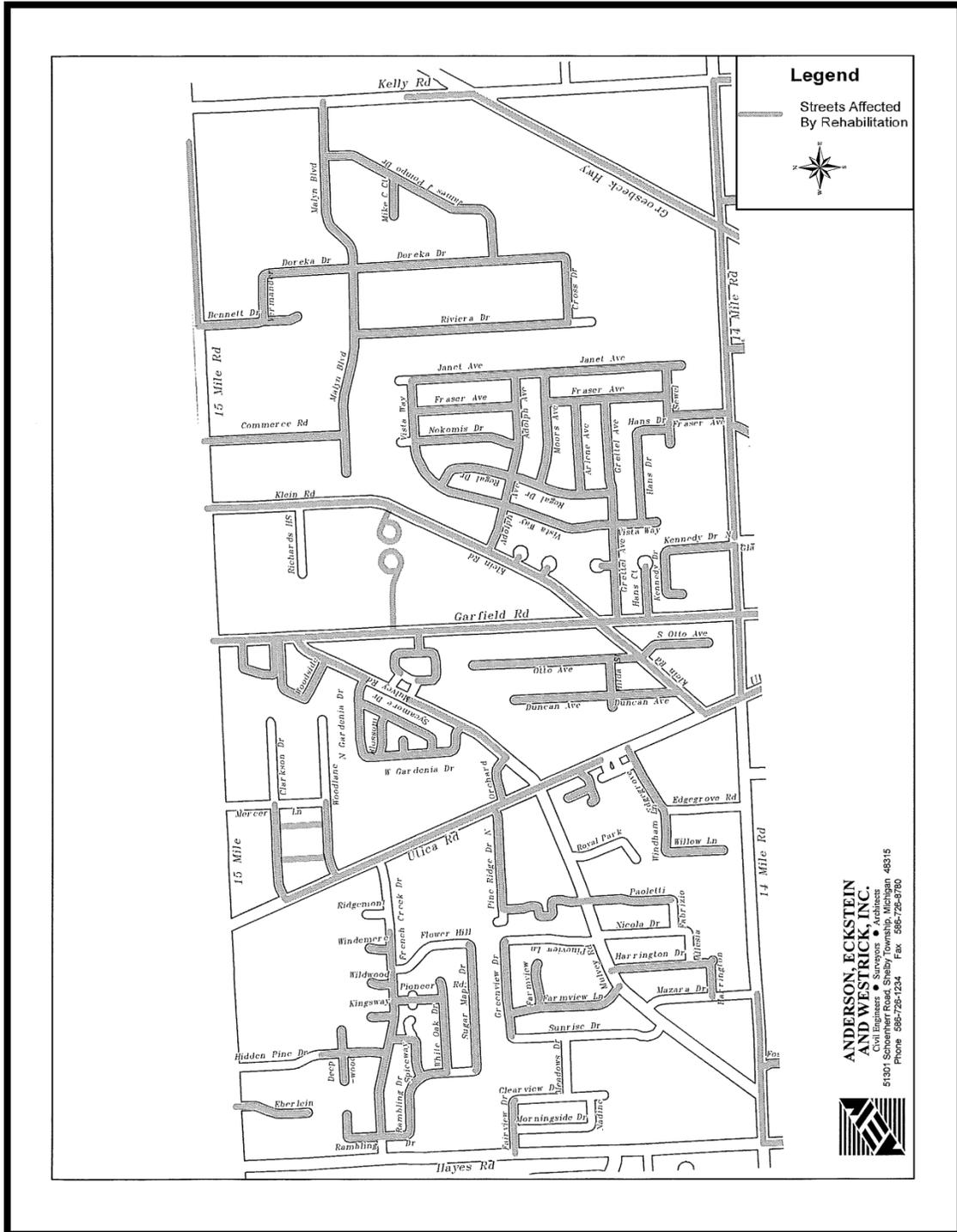


FIGURE 1

