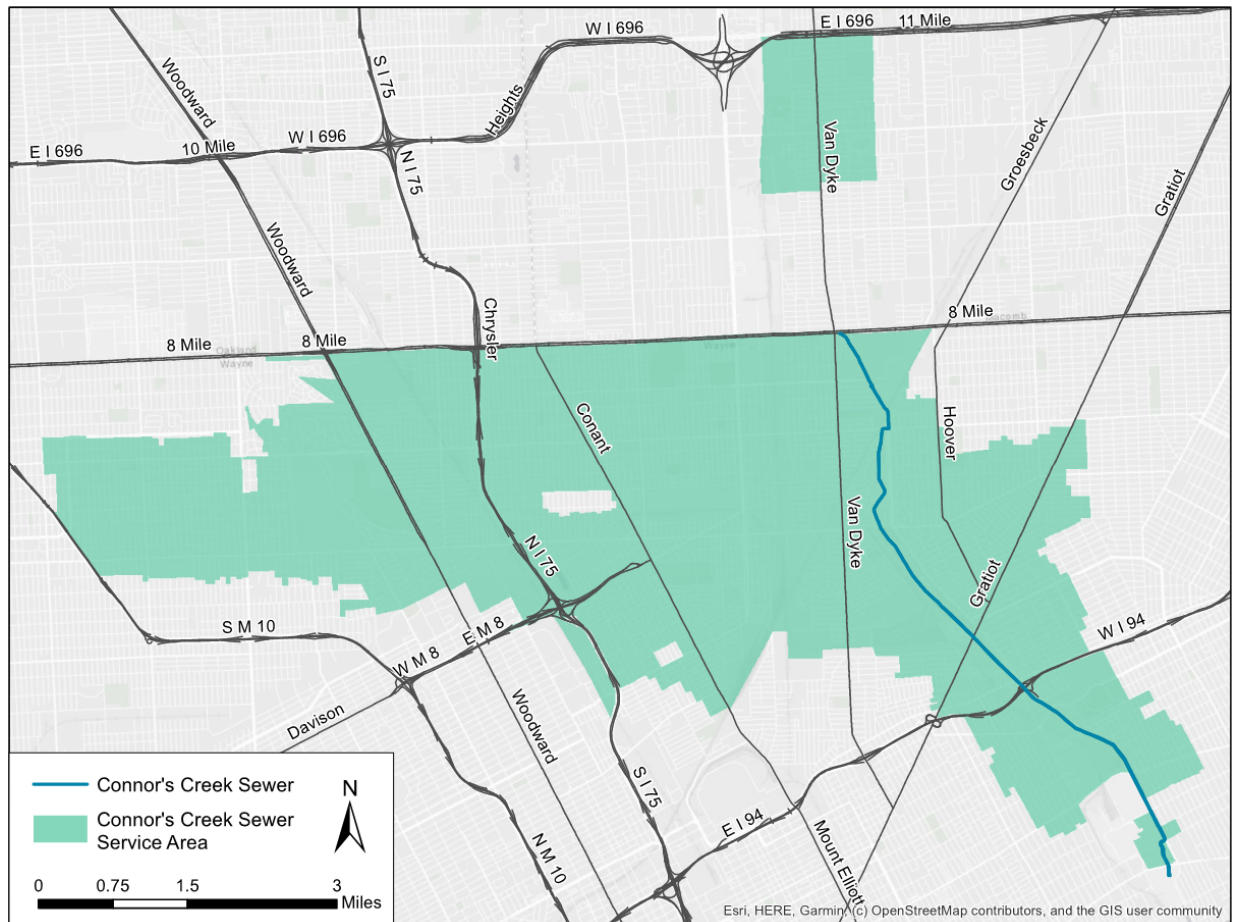


GREAT LAKES WATER AUTHORITY

Connors Creek Sewer System Rehabilitation Project

Project Plan
May 26, 2021





Proposed Improvements

Starting at 8 Mile Road east of Van Dyke Avenue and ending at a gate structure at the Connors Creek Pump Station, the Connors Creek Sewer System (CCSS) is a major sewer system in the City of Detroit, servicing a population of 120,000. The CCSS was inspected in 2018 and 2020. The inspections identified numerous defects throughout the system.

The primary defect within the CCSS is infiltration of varying severity. Based on this finding, most of the sewer segments will receive chemical grout as the baseline rehabilitation method. For smaller pipes in the system, Cured-in-Place Pipe (CIPP) lining and sliplining are considered as the preferred way to eliminate infiltration plus structurally rehabilitating the sewer to extend its useful life. In larger pipes with structural defects where CIPP is not viable and sliplining will not be cost effective,

either continuous or spot repairs using shotcrete is recommended. In addition, heavy cleaning of the debris will be performed in several segments of the CCSS.

Summary of project needs

Most of the CCSS was constructed in the 1920s. The defects are expected to worsen if no action is taken, which will increase the risk of failure of this 100-year aged sewer system. There are several critical transportation infrastructures and hospitals in the study area of this project, including Interstate I-94, Coleman A. Young International Airport and Conner Creek Health Center. The Chrysler Jefferson North Assembly Plant, which is also located in this area, employs thousands of workers; and the Mt. Olivet Cemetery, which is located on top of a portion of the CCSS, is of great importance to local and regional residents. The direct consequences of sewer failure include the development of sinkholes and service

interruptions. During the service interruptions and emergency repairs, the transportation, medical, and working access of the residents may be limited. Depending on the time required to restore normal services, there may be increasing negative impacts to public health.

Potential Alternatives

Three alternatives are analyzed in the project plan. The no-action alternative (Alternative 1) is required to be evaluated by the preparation guidance of this project plan. Alternative 2 is to repair the identified defects before they worsen and become more costly to fix. Alternative 3 is a full replacement of the CCSS.

As stated in the previous section, the CCSS was originally constructed about 100 years ago; and defects of varying severity have been identified in recent inspections. The CCSS services an area of approximately 25 square miles with approximately 120,000 residents; and the consequences of its failure are significant, including the development of sinkholes, service interruptions and negative impact to public health. Therefore, the alternative of no-action is not recommended. A full replacement is also not recommended, considering (1) significantly higher cost, (2) the large demand for, but very limited, space for construction, (3) unavoidable service interruptions to critical infrastructures, and (4) unavoidable relocation of scores of graves located over the existing CCSS in the Mt. Olivet Cemetery.

Environmental Evaluation

Short-term impacts due to construction activities such as noise, dust and minor traffic disruption cannot be avoided. However, most of the work will be performed within the sewer underground and which will mitigate most short-term construction impacts to the community and business along the majority of the project corridor.

In areas where there will be construction activities above ground, efforts will be made to minimize the adverse impacts by use of thoroughly designed and well-planned construction sequencing. Noise from equipment cannot be avoided, but hours of work will be controlled. Dust and soil deposits on the streets will be controlled through watering and frequent street sweeping. Construction area footprints will be minimized, and traffic control measures will be necessary. Site restoration will minimize the adverse impacts of construction, and the implementation

of a Soil Erosion and Sedimentation Control program will minimize the impacts due to ground disturbance, when such disturbance is found to be necessary. Specific techniques will be specified in the construction contract documents.

Estimated Project Cost

Item	Estimated Cost (\$)
Design	\$ 945,463
Planning	\$ 471,656
Construction Administration	\$ 1,014,914
Construction (*)	\$ 34,377,700
Total	\$ 36,809,760

(*) Note construction cost is a Class 3 cost estimate for budgetary purposes as defined by American Association of Cost Engineering International. The cost carries an expected accuracy range of (-) 20 to (+) 30 percent.

Estimated User Cost Impact

Assuming a funding term of 20 years and a loan interest rate of 2 percent, the total project cost has an equivalent annual cost of \$2,251,164. According to the 2020 GLWA Wastewater Master Plan, there is approximately 2.8 million residents between 2018 and 2045 in the GLWA regional service area. The number of persons per household in Michigan was estimated by the U.S. Census Bureau as 2.47 in 2019. The estimated number of households that will be impacted by this project is estimated to be 1.13 million.

The per household user cost is \$1.99 per year.

Proposed Implementation Schedule

Item	Date
Design Notice to Proceed	06/10/2020
50% Design	05/03/2021
90% Design	08/02/2021
100% Design	10/04/2021
Bid Opening	01/03/2022
Construction Notice to Proceed	03/22/2022
Construction Substantial Completion	03/11/2024
Construction Final Completion	04/05/2024



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