

# FY2022 Clean Water Revolving Fund Public Meeting May 26, 2021

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Connors Creek Sewer System (CCSS)  
Rehabilitation



# Topics

1. Overview
2. Existing Conditions
3. Project Needs
4. Analysis of Alternatives
5. Estimated Costs
6. Recommended Alternative
7. Implementation Schedule

# Overview

1. The CCSS begins at 8 Mile Road east of Van Dyke Avenue (See Map on next Slide).
2. The CCSS goes through Connors Creek Pump Station and ends at a gate structure at the Connors Creek CSO Facility along Detroit River.
3. The estimated current population in the CCSS service area is 120,000.

## 4. Land Use in the Study Area:

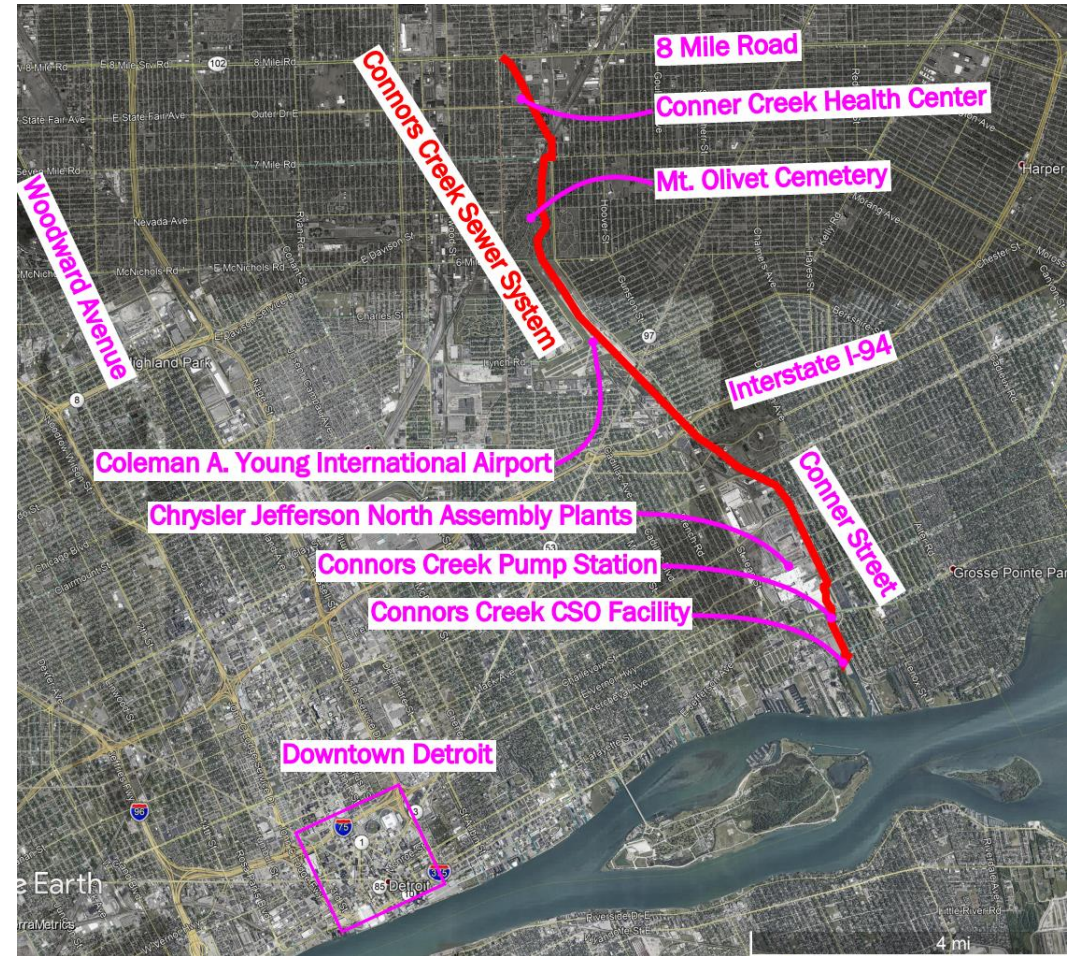
Land Use	Linear Feet along CCSS Corridor (LF)	Percentage (%)
Residential	5,200	14
Commercial	1,500	4
Cemetery	5,500	15
Airport	7,700	21
Park	4,600	12
Industrial	13,000	34

# Overview

## Study Area

The study area for CCSS includes:

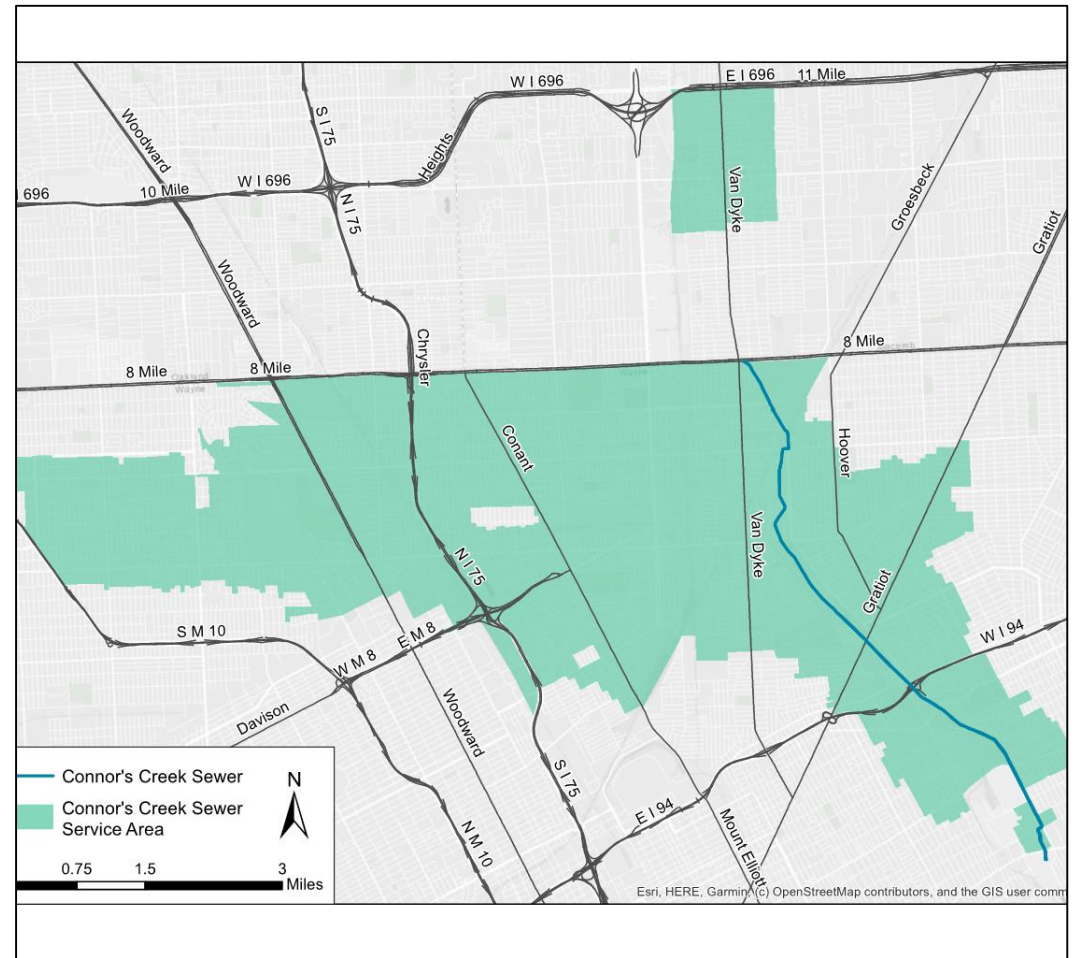
- potential ground disturbance
- above ground features
- This area is delineated using a 100 feet wide corridor along the existing horizontal alignment.



# Overview

## Service Area

The service area of the CCSS is defined using a sewershed where the subcatchments contribute flow to the CCSS during a 10-year, 24-hour storm.





# Existing Conditions

- The alignment of CCSS is 37,500 linear feet (LF) long.
- Most of the CCSS was constructed in the 1920s.
- Major defects identified in the inspections of 2018 and 2020:
  - Infiltration Drippers and Runners
  - Surface Damages with Visible Reinforcements
  - Holes in Sewer Wall



# Project Needs

Type of Defect	Potential Consequence(s) if no action is taken
Infiltration	Basement Backups Combined Sewer Overflows Structural Damage to Sewers and Manholes
Surface Damage with Visible Reinforcement	Cracks and Holes in Sewer Wall Accelerated Deterioration Sinkholes
Holes in Sewer Wall	Sinkholes Collapse of Sewers Service Interruptions for emergency repairs

## Critical Infrastructures and facilities could be impacted:

- Interstate Highway I-94
- Coleman A. Young International Airport
- Conner Creek Health Center
- Conner Street – Major Corridor
- Chrysler Jefferson North Assembly Plant
- Mt. Olivet Cemetery

# Analysis of Alternatives

## Alternative 1: No Action

- Monitor and maintain existing asset as-is
- Create schedules to inspect and perform routine maintenance
- Requires minimal capital costs and no construction
- Higher risk of asset failure that can cause sinkholes, service interruptions and negative impacts to public health

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**Estimated Capital Cost:**  
\$ 0

## Alternative 2: Defect Rehabilitation

- Targeted repairs to the sections with moderate and severe defects
- Removal of obstructions and heavy cleaning
- Create schedules to inspect and perform routine maintenance
- Requires extensive work, but is more cost effective than full replacement

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**Estimated Capital Cost:**  
\$ 39,996,600

## Alternative 3: Full Replacement

- Full replacement of entire asset
- Extension of asset's useful life
- Requires the most extensive work with large area of construction disturbance and temporary service interruptions to critical infrastructures
- Alternative with highest capital cost

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**Estimated Capital Cost:**  
\$ 804,143,000



# Estimated Costs<sup>(4)</sup>

Item	Alternative 1 <sup>(1)</sup>	Alternative 2	Alternative 3 <sup>(3)</sup>
Planning	-	\$471,656	-
Design	-	\$945,463	-
Construction Administration	-	\$1,014,941	-
Construction	-	\$39,996,662	\$804,143,000
Total Cost (Present Worth)	-	\$42,429,000	> \$804,143,000
Equivalent Annual Cost <sup>(2)</sup>	-	\$2,595,000	> \$49,179,000
User (Per Household) Cost Impact <sup>(2)</sup>	-	\$2.30/Year	> \$43.52/Year

Notes:

- (1) It is anticipated that there is no cost impact for Alternative 1. However, this does not consider the costs for potential emergency repairs and service interruptions in case of asset failure.
- (2) The Equivalent Annual Costs assume an interest rate of 2% and 20 years of loan term. It also assumes all residents within GLWA service area will be impacted.
- (3) Due to significant cost difference between Alternative 2 and 3, pre-construction costs (such as design and planning) were not estimated for Alternative 3.
- (4) After the issue of draft project plan, public hearing notice, and public hearing handout, cost estimation has been updated as the design progresses.

# Recommended Alternative: Rehabilitation

The recommended rehabilitation technologies include the following:

- Heavy Debris Cleaning
- Cured-in-Place Pipe Lining (CIPP)
- Sliplining
- Chemical Grouting
- Shotcrete Spot Repairs

Other Proposed Activities in the Project:

- Construction of two permanent Access Structures
- Temporary Flow Bypass
- Temporary Traffic Detours
- Soil Erosion and Sedimentation Control and other measures to minimize any adverse environmental impacts
- Restoration of any surface disturbance

# 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



**GLWA**

*Great Lakes Water Authority*