

# PROJECT PLAN SUMMARY

## CSO Outfall Rehabilitation Phase VI



**Detroit, Michigan**

**April 24, 2024**





## 1.0 Introduction

The purpose of this Project Plan Summary is to provide an overview of the Great Lakes Water Authority (GLWA) CSO Outfall Rehabilitation Phase VI Project. The following sections provide a project summary, project needs and proposed improvements, environmental evaluations, estimated user cost impact, and proposed project schedule. The formal Project Plan document is in process and will be presented under separate cover.

## 2.0 Project Summary

The Great Lakes Water Authority (GLWA) is responsible for the operation and maintenance of numerous sewer outfalls located along the Rouge River starting near the Water Resource Recovery Facility (WRRF) and extending north to the Seven Mile Retention Treatment Basin (RTB) Facility. The outfalls function as the interface between collector sewers throughout the City of Detroit and the Northwest Interceptor (NWI).

In general, the outfalls and their components including regulator gates, dams, and connecting gravity mains, serve to redirect dry weather flow from the collector sewers to the NWI. Dry weather flow in the NWI then continues to the WRRF located in southwest Detroit. In the event of a wet weather event of sufficient size to cause surcharging of the NWI, the outfalls are designed and maintained to redirect a portion of the wet weather flow past the surcharged NWI through the outfall and to the Rouge River, resulting in a combined sewer overflow (CSO).

As part of the GLWA CSO Outfall Rehabilitation Phase VI project, nineteen (19) Rouge River Outfalls including B-46, B-49, B-50, B-54, B-56/57/58, B-60/61/62, B-63, B-64, B-65, B-67/68, B-69/70, B-71, B-72, B-77, B-79, B-80/81, B-82, B-85, and B-87 are planned to be rehabilitated using various repair methods. The outfalls are located along the Rouge River in Detroit, Michigan, beginning furthest downstream near Carbon Street and furthest upstream to Bert Road at nineteen

distinct and separate locations. Rehabilitation of the outfalls is necessary to ensure the proper function of these assets in relieving the NWI and preventing negative upstream hydraulic impacts such as basement flooding.

## 3.0 Project Needs

The current condition of the nineteen outfalls is generally poor to fair, with risk of failure at certain locations. Maintaining and repairing the outfalls is necessary in relieving the NWI and preventing negative upstream hydraulic impacts such as basement flooding. Structural rehabilitation of the outfalls will extend their service lives by an additional 25 to 30 years and allow them to continue to provide relief to the NWI and other GLWA and City of Detroit assets during wet weather events.

## 4.0 Proposed Improvements

This outfall rehabilitation project consists of repairing nineteen distinct and separate outfalls along the Rouge River in Detroit, Michigan. Sewer repairs will extend along the length of each outfall starting where each outfall meets the collector sewer and then extending downstream to the Rouge River. Repairs are also planned to be conducted within the outfall backwater gate chambers, regulator chambers, and associated gravity mains and siphons. Sewer repairs are proposed to consist of the following:

- Isolation, dewatering, and engineer inspection of submerged portions of the outfalls.
- Sewer reconstruction and replacement using both open cut excavation and trenchless methods.
- Reinforced spray lining.
- Backwater gate hatch replacement.
- Debris/sludge and concrete removal.
- Manhole frame and cover replacement.
- Spot repairs consisting of deep concrete repair, open joint repair, epoxy crack repair, tuckpointing, deteriorated brick repair, chemical



grouting of leaks, removal of mineral deposits and roots, and rough tap repairs.

- Cleaning, CCTVing, and repair of all siphons.

As previously stated, rehabilitation and/or replacement of the select Rouge River Outfalls will extend the services lives of the sewers by another 25 to 30 years and allow them to continue to provide relief to the NWI and upstream communities. Multiple structural repair alternatives were considered during the study phase of this project. The repair options were evaluated to minimize construction costs and disruptions to the ground surface, traffic, adjacent utilities, nearby wetlands, and the environment.

## 5.0 Environmental Evaluation

Throughout the design of this project, the engineering team has evaluated environmental impacts that could occur from the operation of this project. The review included cultural and historical resources in the project area and the natural environment which includes air quality, wetlands, sensitive floodplains and high-risk erosion areas, rivers and surface waters, recreational facilities, agricultural resources, and the presence of rare and endangered species of plants and animals. It has been determined that any negative environmental impacts are short-term and will be limited to the anticipated 2-year construction phase of the project.

The majority of the construction areas will be below ground, although some work at the ground surface is planned, such as manhole frame and cover replacements, replacement of backwater gate hatches, reconstruction of two outfall sewers, and placement of riprap at the Rouge River. Excavation

methods and trenchless tunneling efforts will be developed to minimize any disturbances to the area. Short-term environmental impacts such as increased noise or dust and potential traffic disruption will be minimized by limiting the contractor working hours and the development of soil erosion and sedimentation plans and traffic control plans.

Two environmental impacts that are also expected to be encountered include disturbance to existing floodplains, wetlands, and to nearby species. A majority of the Rouge River Outfalls are located in existing floodplains and wetlands, specifically those located throughout Rouge Park. During construction, the use of mats for construction equipment may be required to limit excessive rutting to the area, and effective soil control measures will be necessary. There are several at-risk species and/or natural communities within 0.5 mile of the project location, including Indiana Bats, Snuffbox, Northern Riffleshell, Rayed Bean Mussel, and Round Hickorynut. Therefore, construction methods will be required that minimize disturbance to the area. No long-term negative impacts are expected to occur from this project.

## 6.0 Estimated User Cost Impact

This proposed project is anticipated to directly or indirectly impact 640,510 wastewater customers in the GLWA service area. The estimated total project cost of \$10,000,000 will be incorporated into the regional system revenue requirement and allocated to all member partners through the Sewer charges methodology process. GLWA serves approximately 2.9 million residents in approximately 1.16 million households. The estimated cost per household has been determined to be less than \$0.55 per year.

## 7.0 Proposed Implementation Schedule

| Proposed Project Schedule      |               |
|--------------------------------|---------------|
| Design Notice to Proceed       | June 2021     |
| 30% Design                     | December 2022 |
| 60% Design                     | March 2023    |
| 90% Design                     | July 2024     |
| Bid Due                        | November 2024 |
| Construction Notice to Proceed | April 2025    |
| Construction Final Completion  | May 2027      |