

Project Plan Summary

GLWA CON-2002655
Oakwood District Intercommunity Relief Sewer
Detroit, Michigan
Prepared for:



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Prepared by:



1.0 Project Summary

GLWA is responsible for the operations and maintenance of the 13-mile long Northwest Interceptor (NWI) from the Water Resource Recovery Facility (WRRF) to its northernmost point near the intersection of Hessel and Berg in northwest Detroit, servicing approximately 633,000 people in the area. The NWI was originally constructed between 1928 and 1950 to collect sewage from trunk and relief sewers, that previously ran to the Detroit and Rouge Rivers, and convey the flow to the WRRF. Currently, during extreme wet weather, the NWI experiences surcharging (more flow than capacity) that results in combined sewer

overflows and flooding. A concept for a connection from the NWI to the Oakwood CSO Control Facility was originally developed during the 2016 Oakwood District Analysis, and further developed as part of the 2018 Wastewater Master Plan (WWMP) project to better control flow levels and CSOs along the NWI.

2.0 Project Needs

Significant surcharging has been observed along the NWI during large wet weather events. This surcharging causes CSOs, sanitary sewer overflows, flooding a portion of the Southfield Freeway near Hubbard Road, and reduces the ability for GLWA customers to discharge their



Figure 1: Location of proposed Oakland District Intercommunity Relief Sewer



contract capacity flow rates into the NWI. This surcharging is caused by overloading of the NWI and by high wet well levels at Pump Station 1 and 2 at the WRRF. The concept for the Relief Sewer was originally developed to optimize the operation of the NWI and reduce negative effects as a result of the previously mentioned surcharging.

3.0 Proposed Improvements

This relief sewer project consists of the construction of a 3,500-foot-long tunnel between the NWI and the Oakwood CSO Control Facility. This tunnel will have a backwater gate on the NWI and four regulator gates that will divert wet-weather flows to the Oakwood CSO Facility where it can be treated and discharged into the Rouge River. Diverting flow to the Oakwood CSO Control Facility, which is currently being under-utilized and has the available capacity to receive additional flow from the NWI, is expected to have the following benefits:

- Reduce the frequency and volume of SSO at the Dearborn's Greenfield PS.
- Reduce flooding of the Southfield Freeway (M-39) near Hubbard Avenue.
- Allow the NWI pipe capacity downstream of the VR-9 gate (Warren-Pierson) to be available for upstream CSO control.
- Minimizes the need for Allen Park to pump its wastewater into the NWI.
- Minimizes the frequency and volume of untreated CSO discharges to the Rouge River from GLWA Discharge Point 054 (B50 on the NWI at Fort and Bayside).
- Provides additional wet weather capacity for the DRI and NIEA at the DWRRF.
- Provides an emergency relief connection from the NWI to the Oakwood PS if there is a siphon failure or failure at the DWRRF.

Multiple alignments were considered during the study phase of this project. The alignments were evaluated to minimize construction cost, minimize easement and property acquisition efforts, and avoid subsurface conflicts such as high-pressure gas mains, building foundations, and the piles supporting I-75 and Fort St. The preferred alignment has been chosen and starts at the NWI near the intersection of Bayside St. and Gale. The tunnel alignment then follows Stocker St, runs below I-75, and turns to connect to the southeast Side of the Oakwood CSO Control Facility.

4.0 Environmental Evaluation

Without this proposed relief sewer project, the surcharging of the NWI will continue, which results in SSO's, CSO's, and the inability of GLWA customers to discharge contract capacities in the NWI. Additionally, the population of the NWI service area is expected to increase over the next 20 years. This project is designed to address these issues for current and future GLWA customers in the NWI service area and ensure that they can discharge contract capacities without increasing the amount or frequency of SSOs and CSOs at certain locations.

Throughout the design of this project, the design team has evaluated environmental impacts that could occur from the construction or 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 result from the 3-year construction phase of the project. The majority of the construction areas will be below ground, and



above ground impacts are limited to settlement from tunneling activities. The tunnel-mining and excavation methods will be developed to minimize any long-term settlement. Three at-grade construction locations will generate short-term environmental impacts such as increased generation of noise and dust, potential traffic disruption, and potential odors from an open sewer during portions of the construction. These impacts will be minimized by limiting contractor working hours and the development of soil erosion and sedimentation plan and traffic control plans.

Long term impacts are limited to traffic disruption along Bayside St. between Ormond and Gale streets where the road will be permanently vacated and an at-grade flow-control structure will be constructed.

5.0 Estimated User Cost Impact

This proposed project is anticipated to directly impact approximately 464,900 GLWA customers and indirectly impact approximately 633,100 GLWA customers. The total project cost of \$75,000,000 will be distributed between the entire GLWA user-base of approximately 2.8 million residents in approximately 1.14 million households. The estimated cost per household annual user has been determined to be \$3.97.

6.0 Proposed Implementation Schedule

Project Schedule	
Design Notice to Proceed	November, 2021
60% Design	June, 2022
90% Design	August, 2022
100% Design	November, 2022
Bid Due	April, 2023
Construction Notice to Proceed	May 2023
Construction Final Completion	May, 2026