



Legislation Details (With Text)

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Title: Proposed Amendment No. 1
GLWA-CS-168
Rehabilitation of Conveyance System Interceptors and Trunk Sewers
CIP# 260500

Sponsors: Cheryl Porter, Todd King

Indexes: Water Operations

Code sections:

Attachments:

Date	Ver.	Action By	Action	Result
5/27/2020	1	Board of Directors	Approved	Pass
5/13/2020	1	Operations and Resources Committee	Recommended for Approval	Pass

Proposed Amendment No. 1

GLWA-CS-168

Rehabilitation of Conveyance System Interceptors and Trunk Sewers

CIP# 260500

Agenda of: May 27, 2020

Item No.: **2020-131**

Amount:	Original Contract	\$2,999,986.00
	Proposed Amendment No. 1	1,509,950.00
	Total Revised Contract	\$4,509,936.00

TO: The Honorable
Board of Directors
Great Lakes Water Authority

FROM: Sue F. McCormick
Chief Executive Officer
Great Lakes Water Authority

DATE: May 1, 2020

RE: Proposed Amendment No. 1
Contract No. GLWA-CS-168
Rehabilitation of Conveyance System Interceptors and Trunk Sewers
Vendor: FK Engineering Associates

MOTION

Upon recommendation of Cheryl Porter, Chief Operating Officer - Water and Field Services, the Board of Directors (Board) of the Great Lakes Water Authority (GLWA), authorizes the Chief Executive Officer (CEO) to **enter into Contract No. GLWA-CS-168 Proposed Amendment No. 1 “Rehabilitation of Conveyance System Interceptors and Trunk Sewers” with FK Engineering Associates, at an increased cost of \$1,509,950.00 for a total cost not to exceed \$4,509,936.00, and an increased duration of 36 months for a total contract duration of 72 months;** and authorizes the CEO to take such other action as may be to accomplish the intent of this vote.

BACKGROUND

The GLWA Wastewater Conveyance System consists of over 180 miles of trunk sewers and interceptor and includes over 70 separate outfalls along the Rouge and Detroit Rivers. The trunk sewers and interceptors collect and transfer wastewater to the Water Resource Recovery Facility (WRRF). There are three major interceptors - Detroit River Interceptor (DRI), North West Interceptor (NWI), and North Interceptor East Arm (NIEA). The conveyance system generally consists of pipes ranging in diameter from 4 feet to 19 feet and composed of numerous materials, including pre-cast concrete cylinders, cast-in-place concrete, brick, stone, and more.

As part of general efforts to systematically inspect and address structural defects in the wastewater conveyance system, GLWA initiated GLWA-CS-168: Rehabilitation of GLWA Conveyance System Interceptor and Trunk Sewers. Under this contract, over 25 outfalls and several miles of the NWI have been investigated. Assessments have led to several CSO outfall rehabilitation construction projects, including CON-260 “CSO Outfalls Rehabilitation - Phase I” (completed), GLWA 1900796 “Rehabilitation CSO Outfalls - Phase 2” (ongoing), and GLWA 1902658 “CSO Outfall Rehabilitation - Phase IV” (upcoming).

There are three components of the conveyance system in particular that form the basis of this change order request: Outfall B-39, Outfall B-40, and the NWI between 8 Mile Road and Tireman Road. These are discussed in greater detail below.

Outfall B-39 was originally built in 1928 and consists of a 13-foot diameter concrete barrel extending from Jefferson to the Detroit River. The outfall is adjacent to the idled Mistersky Power Plant and under Waterfront Petroleum Terminal, a commercial marine fuels and bulk materials dock. The outfall is just upstream of the recently collapsed shoreline at Detroit Bulk Storage. The observed conditions in Outfall B-39 indicate the tunnel is in very poor condition, with significant open and offset cracking, crushing of the concrete lining, and pipe ovaling, indicating the initial stages of collapse. GLWA’s consultant under CS-168 completed an in-depth assessment and basis of design report, including 30% design drawings. In light of the critical condition of the outfall together with critical nature of the overlying infrastructure, together with the shoreline collapse along the adjacent property, immediate completion of the final design and subsequent major rehab of the outfall B-39 is recommended. Therefore, we are requesting that the Board approve additional work by this consultant to conduct the services during construction work to oversee construction of the design.

Outfall B-40 was originally constructed in 1887, extended in 1908, and modified several times over the 20th century. In 2005, a substantial portion of the outfall was reconstructed.

The outfall is located on the former Revere Copper and Brass site, which has a history of environmental contamination, though some site remediation was completed in the late 1980s. Following the November 26, 2019, shoreline collapse at the Detroit Bulk Storage facility, the final 100 feet of the outfall was dislodged, with the end of the outlet displaced multiple feet (some movement is still ongoing). GLWA's consultant under CS-168 immediately mobilized to provide emergency assessment and to begin site monitoring and short-term stabilization design. Consultant is currently working with EGLE and the property owner (and owner's consultants) to coordinate the short-term stabilization and long-term outfall repair with the emergency repair of the shoreline seawall. We are requesting the Board approve efforts to continue this work for continuity of the ongoing study and design efforts and to support GLWA for the oversight of the construction of the shore stabilization and repair of GLWA's outfall.

The NWI ranges in diameter from 4 feet to 13 feet, and periodically constricts in size to restrict downstream conveyance. The NWI has recently been the subject of two separate emergency repair efforts, both completed under CON-149, due to severe structural defects and near-collapse that were observed in those locations. GLWA's consultant under CS-168 completed an assessment of the NWI from 8 Mile to McNichols, but flow depths and velocities south of McNichols prevented further assessment. Some areas in this reach are suspected to have major deterioration based on partial remote camera inspections that could be completed in some limited areas. On this basis, GLWA directed consultant to design flow control structures at various locations to facilitate assessment and future rehabilitation efforts of the NWI in the areas that currently cannot be accessed without flow control. GLWA's consultant under CS-168 was authorized under the base scope of work to complete the design for rehabilitation of the NWI from 8 Mile to Tireman. We are requesting that the Board approve construction engineering services for this design, which will be critical to completing the flow controls and tunnel repairs and provide the best value to GLWA in terms of ongoing work.

This Amendment No. 1 is requested due to scope, duration, and budget changes for the finalization of the above items exceeding the original scope, duration, and budget under CS-168. A new completion date of August 23, 2023, and an amendment to the contract of \$1,509,950 (new contract amount of \$4,509,936) is requested to provide for the continuity of initial study and design services conducted by the consultant under CS-168 through the completion of the construction phase. This will allow for the designer of record to be available through the completion of the construction work and will minimize risk to GLWA for errors and omissions that could occur if a new consultant was assigned the work for these three tasks through construction.

JUSTIFICATION

In response to significant and ongoing structural concerns as observed in the NWI, Outfall B-39 and Outfall B-40 as described above, GLWA has directed its consultant to begin assessment and design efforts at the subject locations, subject to the budget and time constraints of the original contract. In order to complete the rehabilitation design and facilitate construction of the projects in a timely manner to address the observed conditions, we are requesting that the Board approve an additional 36 months of schedule and additional \$1,509,950 in budget to complete the work and oversee construction on behalf of GLWA.

PROJECT MANAGEMENT STATUS

Original Contract Time	36 Months
Proposed Amendment No. 1	36 Months
New Contract Time	72 Months

PROJECT ESTIMATE

Original Contract Price	\$2,999,986.00
Proposed Amendment No. 1	\$1,509,950.00
New Contract Total	\$4,509,936.00

FINANCIAL PLAN IMPACT

Summary: Sufficient funds are provided in the financial plan for this project.

Funding Source: Wastewater Construction Bond

Cost Center: Field Services Engineering (892411)

Expense Type: Construction (5421-892411.000-617950-2605XX)

Estimated Cost by Project and Related Estimating Variance: See table below.

Project	Estimated Cost	Expense Type
Northwest Interceptor	\$ 542,500	5421-892411.000-617950-260507
Outfall B-39	\$ 388,000	5421-892411.000-617950-260508
Outfall B-40	\$ 82,500	5421-892411.000-617950-260509
Outfall B-40 Allowance	\$ 300,000	5421-892411.000-616900-260500
Provisional Allowance	\$ 196,950	5421-892411.000-616900-260500
Proposed Total	\$ 1,509,950	

The award of this change order is funded in full from CIP Program 260500 - CSO Outfall Rehabilitation.

COMMITTEE REVIEW

This item was presented to the Operations and Resources Committee at its meeting on May 13, 2020. The Operations and Resources Committee unanimously recommended that the GLWA Board adopt the resolution as presented.

SHARED SERVICES IMPACT

This item does not impact the shared services agreement between GLWA and DWSD.