



## Legislation Details (With Text)

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**File created:** 4/5/2018      **In control:** Board of Directors  
**On agenda:** 4/25/2018      **Final action:** 4/25/2018

**Title:** GLWA-SCP-DB-112 Change Order No. 1  
Springwells Water Treatment Plant  
Emergency Grating and Structural Steel Replacement

**Sponsors:** Cheryl Porter

**Indexes:** Water Operations

**Code sections:**

**Attachments:** 1. GLWA-SCP-DB-112 CO 1 Procurement Report, 2. GLWA-SCP-DB-112 CO 1 Procurement Checklist

Date	Ver.	Action By	Action	Result
4/25/2018	1	Board of Directors	Approved	Pass
4/11/2018	1	Operations and Resources Committee	Recommended for Approval	Pass

### GLWA-SCP-DB-112 Change Order No. 1

### Springwells Water Treatment Plant

### Emergency Grating and Structural Steel Replacement

Agenda of: April 25, 2018

Item No.: **2018-689**

Amount: \$745,186.00

**TO:** The Honorable  
Board of Directors  
Great Lakes Water Authority

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

**DATE:** **April 4, 2018**

**RE:** **Contract No. GLWA-SCP-DB-112 Change Order No. 1**  
***Springwells Water Treatment Plant***  
***Emergency Grating and Structural Steel Replacement***

**Vendor: Barton Malow**

**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-SCP-DB-112 Change Order No. 1 “Emergency Grating and Structural Steel Replacement at the Springwells Water Treatment Plant” with Barton Malow Company for a time extension of 210 calendar days and additional cost of \$745,186.00**; and authorizes the CEO to take such other action as may be necessary to accomplish the intent of this vote.

**BACKGROUND**

The original scope of Contract No. GLWA-SCP-DB-112 included replacement of existing steel grating and supporting structural steel original to the 1930 plant construction that had deteriorated to the point where the safety of operators and continued water production at the Springwells Water Treatment Plant (SPW) were compromised if the grating and/or supporting structural steel experienced failure. The existing grating and supporting structural steel at five (5) locations (Locations A through E) had exceeded its useful life expectancy. These locations and associated work are described as follows:

Location A - replacement of all structural supporting structural steel beams and grating in the Low Lift Station at elevation 50'-0" and below. Additionally, the work included removal of existing tunnel dewatering pumps and removal and replacement of existing sump pumps. The new sump pump system includes increased redundancy to prevent the Low Lift Station from flooding.

Location B - replacement of steel access platforms and access hatch in the pipe chase and access shaft providing both access to Venturi Meter No. 5 and to the Low Lift Station intermediate floor at elevation 89'-8".

Location C - replacement of all structural supporting steel beams and grating covering the main sump on the south side of the High Lift Station in the Cable Vault area, including cleaning of the sump.

Location D - replacement of all structural supporting steel beams and grating covering the main sump on the north side of the High Lift Station in the Cable Vault area. Work also included cleaning of the sump at Location D, cleaning the drain piping connecting Location C to Location D, and replacement of sump pumps P5 and P6.

Location E - replacement of all structural supporting steel beams and grating over the sump housing a condensate receiving and pumping station in the basement of the Garage/Maintenance Building.

The structural steel supporting the grating in the Low Lift Station at EL. 42'-0", which supported the existing Low Lift Station sump pumps and dewatering pumps, was of particular concern. Structural beams showed signs of failure and collapse of the remaining steel could result in the Low Lift Station flooding. Flooding of the Low Lift Station would result in the total loss of water production at SPW.

The Design-Build method of contract delivery was selected to provide single source responsibility in one contract to complete the work as expeditiously as possible.

Contract GLWA-SCP-DB-112 started on May 1, 2017, and is currently on schedule for Final Completion on May 1, 2018.

During execution of Contract GLWA-SCP-DB-112, imminent structural failures and safety concerns were identified at three

(3) additional SPW locations. These additional locations relate to infrastructure original to the 1930 SPW plant construction and include the High Lift Station discharge header supports (Location F), Administration Building support columns (Location G) and the Drain Pump House (Location H). Structural failures at either of these three (3) locations compromises operator safety and continued SPW production. The work required to fix the failures at these three (3) locations is similar to that required to execute the original Contract GLWA-SCP-DB-112 scope of work.

### **JUSTIFICATION**

Using the current GLWA-SCP-DB-112 Contractor provides the most expeditious means to addressing emergency structural conditions at SPW to eliminate three (3) known structural problems. By using the existing Design Build Contract, the necessary improvements can be made without having to wait additional time to procure a design consultant and/or different Design Build Contractor. The additional areas where structural improvements are needed to avert failures and potential loss of service include:

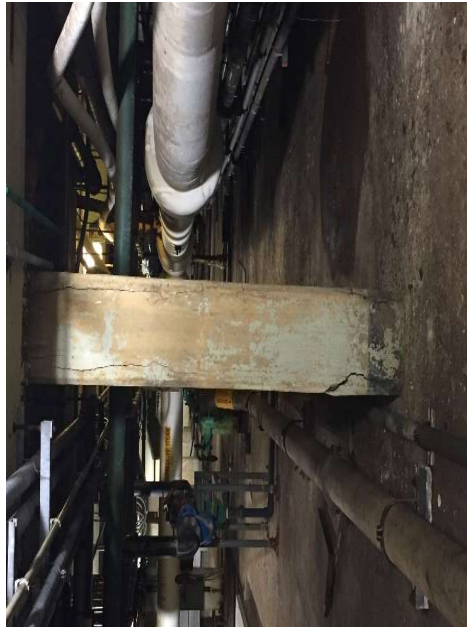
Location F - rehabilitation of discharge header supports. Photo No.1 shows an existing condition where the complete structural support section has deteriorated to the point that its structural integrity is lost and the support is in need of replacement.



*Photo 1: Compromised Discharge Header Support*

Location G - rehabilitation of a failed column supporting the Administration Building is necessary to prevent settling of the building superstructure. Photo No. 2 shows the failed concrete column in the 1930 Weir Chamber. Additional movement due to the failed column could cause damage to the Administration Building (above) and the 1930 Weir Chamber (below) that carries filtered water to the High Lift Station.

Structural failures at Locations F and G will compromise SPW production.



*Photo 2: Failed Concrete Column in Administration Building Basement*

Location H - replacement of exterior concrete slabs and hatches at the Drain Pump House is necessary for safety reasons. All filter waste wash water drains through the conduits beneath the slabs, and failure of the slabs would require shutting the entire plant down for cleaning. Photo No. 3 shows the condition of the concrete slabs and that the existing steel grating has deteriorated to the point where one can see through the checkered steel plate.



*Photo 3: Deteriorated Concrete Slabs and Hatches at Drain Pump House*

### **FINANCIAL PLAN IMPACT**

The proposed Change Order No. 1 for Springwells Water Treatment Plant Emergency Grating and

Structural Steel Replacement in the amount of \$745,186.00 is not included in the Board approved FY 2018-2022 Capital Improvement Plan. The proposed change order award of \$745,186.00 creates a budgetary shortfall in the project of \$745,186.00, which will be resolved by funding contributed from CIP 170100 Water Treatment / Pump Station Allowance. A budget amendment will be prepared to allocate funds as detailed below.

<b>CIP</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>Total</b>
CIP 114015: Board Approved Planned Spend Design Build Phase	\$500,000.00	\$2,000,000.00	\$0	\$2,500,000.00
CIP 170100: Fund Transfer	\$0.00	(\$200,000.00)	(\$545,186.00)	(\$745,186.00)
CIP 114015: Authorized Spend Design Build Phase	\$500,000.00	\$2,200,000.00	\$545,186.00	\$3,245,186.00

### **COMMITTEE REVIEW**

This item was presented to the Operations and Resources Committee at its meeting on April 11, 2018. The Operations and Resources Committee unanimously recommended that the GLWA Board adopt the resolution subject to receiving information on the allowances and how that impacts the budget.

### **SHARED SERVICES IMPACT**

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