



AECOM 215 399 4348 tel  
1700 Market Street 215 388 4371 fax  
Suite 1600  
Philadelphia PA, 19103  
www.aecom.com

2/22/2020

Stephen Repasch, Executive Director  
Bethlehem Authority  
Room B-311  
10 East Church Street  
Bethlehem, PA 18018

Re: Change Order Request  
Project Name: Emergency Water Supply Interconnection Evaluation  
AECOM Design Engineering Services Agreement 60637597 (dated 7/30/2020)

Dear Mr. Repasch:

AECOM has been progressing with the interconnect evaluation study and has conducted detailed meetings with all participating authorities that adjoin the Bethlehem water distribution system. During the course of our discussions, the scope of the field verification efforts have expanded as both Bethlehem and the adjoining Authorities have requested that the interconnects remain offline during testing. As a result, AECOM will need to conduct more tests to evaluate the condition of the existing piping on either side of the proposed interconnect locations for validation of existing hydraulic models in each Authority. Additional interconnections were also identified for ESWA which has increased the field effort, hydraulic modeling and interconnection analysis. Below is a description of the services that the Authority requested AECOM to provide which are beyond the scope described in AECOM's proposal:

### Task 1- Flow Testing Work Plan

AECOM's proposal assumed that flow test witnessing would require two 8 hour days from one AECOM Staff Professional and would include flow test witnessing of 3 existing interconnections with LCA, 2 existing and 2 potential interconnections with ESWA and 1 existing interconnection with NBMA. **A third 8 hour field day and field coordination time was required for additional interconnections and the need for testing on both sides of each interconnect. An additional flow test plan was also required for the additional interconnections. The additional work was completed by an AECOM Principal Professional and Staff Engineer at a cost of \$4,151.** Future additional rounds of flow test witnessing are not included and would require additional funding.

AECOM's proposal assumed that all equipment used for testing will be supplied by Bethlehem and/or the neighboring utility and the equipment would be recently calibrated. **Bethlehem and its neighboring water authorities requested AECOM to supply flow test equipment and disposables like dechlorination mats and tabs. AECOM estimates a total cost of \$1,334 for rental of 2 telog hydrant pressure recorders, 1 hose monster hydrant flow tester, and 1 hydrant diffuser, pressure gauges and hydrant caps, equipment shipping and disposables such as dechlorination mats and tabs.**



## **Task 2 - Interconnection Analysis and Hydraulic Modeling**

AECOM's proposal assumed that hydraulic modeling would be required for 3 existing interconnections with LCA, 2 existing and 2 potential interconnections with ESWA and 1 existing interconnection with NBMA. **Two additional interconnections were added to the scope. As a result, AECOM conducted hydraulic modeling and interconnection analyses at two additional locations which will require additional effort for a Staff Engineer, Senior Professional, Senior Principal Professional at a total cost of \$3,967.**

## **Task 3 - Conceptual Design of Interconnections and Booster Stations**

**Two interconnections were added to the scope. As a result, AECOM developed Conceptual Designs for two additional interconnections including piping layout sketches between transmission mains and more detailed sketches of flow meters and pumping and/or pressure regulating stations which requires additional effort for a Staff Engineer, Senior Professional, Senior Principal Professional at a total cost of \$2,384.**

Based on the additional services described above, AECOM requests that Bethlehem Authority authorize a **\$11,836** change order for a total value of **\$67,336** under AECOM Design Engineering Services Agreement 60637597.

If you have any questions, please contact me at the following telephone number (610) 291-1172.

Sincerely,

A handwritten signature in black ink, reading "Zachary Keegan", is written over a horizontal line.

Zachary Keegan, PE.  
AECOM Project Manager

A handwritten signature in blue ink, reading "Chris Curran", is written over a horizontal line.

Christopher Curran, PE.  
AECOM Contract Manager