



CITY OF ANN ARBOR, MICHIGAN

Public Services Area/Administration
301 East Huron Street, P.O. Box 8647
Ann Arbor, Michigan 48107

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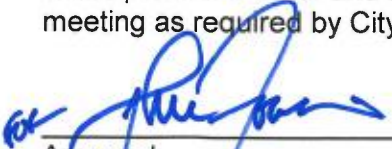
TO: Howard S. Lazarus, City Administrator
FROM: Craig Hupy, Public Services Area Administrator
DATE: September 25, 2018
SUBJECT: Request for Emergency Purchase Orders for Barton Dam Right Embankment Boil Repair to ET MacKenzie (\$30,000.00)

The purpose of this memorandum is to request an Emergency Purchase Order to repair the Right Embankment Boil at the Barton Dam. The proposed repair requires assistance from multiple parties. The request for an Emergency Purchase Order is described in further detail in the table below.

| Company | Scope of Work | Estimated NTE Fee | Contract Vehicle |
|-------------------------------------|---|-------------------|--|
| NTH | Provide consultation and geotechnical design of the blanket filter, prepare sketches to FERC, assist with questions from FERC | \$17,000 | Existing Professional Services Agreement |
| Stantec | Provide daily observation of the boils (since August 27), prepare records for FERC, provide inspection during construction, assist with project closeout for FERC | \$25,000 | Existing Professional As-Needed Services Agreement |
| ET MacKenzie | Construction of blanket filter estimated at 1,400 SF | \$30,000 | Requesting Emergency Purchase Order |
| Total Estimated Project Cost | | \$72,000 | |

Note: Please note that the Fees above are Not-To-Exceed estimates and that the City is concurrently procuring detailed proposals.

Public Services requests the authorization of an Emergency Purchase Order to execute the repairs to ET MacKenzie (\$30,000.00). Funding for this purchase order and the additional was not included in either the approved FY19 Water Supply System Operating and Maintenance Budget or the FY19 General Fund Operating Budget. Staff will prepare the appropriate resolution for approval of the purchase order and a budget appropriation for Council consideration at the next available meeting as required by City Code.


Approval
Howard S. Lazarus
City Administrator

Background

On August 27, 2018, a sand boil was observed on the Barton Dam right embankment. A sand boil is a condition caused by seepage occurring in an upward direction resulting in liquefaction and internal erosion. The City notified the Federal Energy Regulatory Commission (FERC) of this situation. In response, FERC has required daily inspection and measurements of the boil.

Since the discovery of the boil on August 27, three additional boils have manifested themselves in the same vicinity. The flow of water from beneath the embankment continues to transport sand material to the surface. Conditions continue to change and have not yet stabilized. See attached photographs at the end of this memorandum.

FERC considers this condition to be a potential failure mode of the embankment. Failure of the embankment could lead to a breach of the pond, and represents a danger to life and property.

Scope of Work

The City and its Consultants (NTH and Stantec) met on September 19, 2018 to discuss corrective measures. The following is a description of the Scope of Work.

- Construct a blanket filter over the boil areas. A blanket filter is a sand layer, topped with a geotextile fabric, topped with stone. These layers are specifically designed to allow the water to continue to flow, but restrict the sand migration, thereby avoiding further loss of material beneath the dam. The area proposed for repair is approximately 20'W x 70'L.
- Stockpile additional material on-site for immediate repairs should the condition present itself again and worsen at any time.

Att: Photographs 1-3



Photo 1: Location of boils. Arrow indicates the location of the throat.



Photo 2: Close up of boil and sand accumulation



Photo 3: Close up of Boil



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TO: Mayor and City Council
FROM: Howard S. Lazarus, City Administrator
John Fournier, Assistant City Administrator
Craig Hupy, Public Services Area Administrator
DATE: September 26, 2018
SUBJECT: Request for Emergency Purchase Orders for Barton Dam Right Embankment Boil Repair to ET MacKenzie (\$30,000.00) and Budget Allocation (\$72,000)

The purpose of this memorandum is to inform you of an Emergency Purchase Order to repair the Right Embankment Boil at the Barton Dam. The proposed repair requires assistance from multiple parties. The request for an Emergency Purchase Order is described in further detail in the table below.

| Company | Scope of Work | Estimated NTE Fee | Contract Vehicle |
|-------------------------------------|---|-------------------|--|
| NTH | Provide consultation and geotechnical design of the blanket filter, prepare sketches to FERC, assist with questions from FERC | \$17,000 | Existing Professional Services Agreement |
| Stantec | Provide daily observation of the boils (since August 27), prepare records for FERC, provide inspection during construction, assist with project closeout for FERC | \$25,000 | Existing Professional As-Needed Services Agreement |
| ET MacKenzie | Construction of blanket filter estimated at 1,400 SF | \$30,000 | Requesting Emergency Purchase Order |
| Total Estimated Project Cost | | \$72,000 | |

Note: Please note that the Fees above are Not-To-Exceed estimates and that the City is concurrently procuring detailed proposals.

Public Services will request the confirmation of an Emergency Purchase Order to execute the repairs to ET MacKenzie (\$30,000.00). Additional budget allocation of \$72,000 will also be requested. The funding of the work is split 50%/50% between the Water Supply Fund and the General Fund. Funding for this work was not included in either the approved FY19 Water Supply System Operating and Maintenance Budget or the FY19 General Fund Operating Budget. Staff will prepare the appropriate resolution for Council consideration at the next available meeting as required by City Code.