DEPARTMENT OF
UTILITIES

Department of Utilities
Wastewater Treatment Plant
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MEMORANDUM

Date: February 19, 2025

To: Chairperson Brad Firkus and Members of the Finance Committee

CC: Ryan Rice, Deputy Director of Utilities
Kelli Rindt, Enterprise Accounting Fund Manager

From: Chris Stempa, Director of Utilities

Subject: **Action: Sole Source Engineering & Construction Services Contract to Donohue for AWWTP Anaerobic Digester Inspection, Maintenance, and Improvements Project in the amount of $293,755 with a 10% contingency of $29,376 for a total not to exceed $323,130**

BACKGROUND:

The Appleton Wastewater Treatment Plant (AWWTP) operates two 2.2-million gallon (Mgal) Egg-Shaped Digesters (ESDs) that produce methane and carbon dioxide through the biological conversion of organic material under anaerobic conditions present in the ESDs. The ESDs are the primary treatment process that stabilizes and reduces volume of the following solids waste streams: raw sludge (RS), primary scum (PSC), thickened waste activated sludge (TWAS), and hauled-in, high-strength waste (HSW). These waste streams are co-mingled in the Raw Sludge Blending Tank (RSBT) before being pumped to the ESDs by Digester Feed Pumps (DFP). The ESDs operate in the mesophilic range (85 - 100°F), typically at 95°F. Digester gas (DG) generated by the anaerobic process is collected at the top of the ESDs. Each digester is 113.56-feet tall and 80-feet in diameter at the girth. The nominal liquid height is 105.5 ft. The two ESDs are designed to operate in parallel, providing a total digestion volume of 4.4-Mgal.

The ESDs were originally commissioned in 1993 and were last taken offline in 2010 and 2011 as part of an inspection, maintenance, and improvements project lead by the engineering firm Donohue. Donohue was approved for a sole source contract (September 4, 2024) because of their experience with the 2010 through 2012 AWWTP Digester Maintenance Project. AWWTP staff have worked with Donohue over the past few months to develop a comprehensive documentation of the strategy, along with an evaluation of alternative approaches, that was presented in a pre-design report titled “The Scope of and Strategies for the Work to Inspect and Improve the Egg-Shaped Anaerobic Digesters" (February 2025). This preliminary engineering scope of work established the most effective and time sensitive approach to perform inspections along with anticipated maintenance, repairs, and improvements. The report recommendations include but are not limited to the following:

1. Inspection of the interior of the ESDs to evaluate the condition of the carbon steel, assess the state of the coatings, and provide a qualitative analysis of the coating deterioration rate.

2. Installation of an electrical resistance (ER) probe or a corrosivity probe within the ESD contents to measure and record the corrosion rate.
3. Installation of an impressed current cathodic protection (ICCP) system (pending inspection and corrosion data from no.1 and 2 above). This system will use controlled electrical currents to prevent further corrosion of the ESD's metal structure.
4. Make physical improvements to address various maintenance needs and enhance the safety, maintainability, mixing efficiency, level monitoring, and overall performance of the ESDs.
5. Implement targeted repairs to address any corrosion damage identified during the inspections.

DONOHUE PROPOSAL

Following completion of the pre-design report, Donohue was asked to provide a proposal for engineering services for final design, bidding, and construction management services. The proposal is outlined below for reference.

Phase 1 Scope of Services – Lower-Level ESD Inspection

Produce Bidding Documents for a qualified Contractor to clean one of the ESDs so it is suitable to enter the lower level of the ESD and perform a condition assessment of the ESD.

Specific tasks:

1. Conduct and document an on-site project initiation meeting with the City and Donohue.
2. Produce and submit to the City DRAFT Bidding Documents suitable for City review and comment.
3. Conduct and document an on-site meeting to review and discuss the DRAFT Bidding Documents.
4. Incorporate and address City comments. Produce and submit to the City Quality Control Bidding Documents suitable for a final review and comment.
5. Incorporate and address City comments. Produce and submit to the City FINAL Bidding Documents suitable for either public bidding or invitation-only bidding.
6. Provide bidding support including responding to questions, issue addenda, reviewing bids, and providing a letter of recommendation.

Phase 2 – Corrosivity Probe Setup and Data Analysis

Assist AWWTP staff to select and procure a corrosivity probe, install the probe, gather corrosivity data, and analyze the corrosivity data.

Specific Tasks:

1. Coordinate the purchase of a corrosivity probe by working with one or several probe manufacturers to select a probe that is appropriate for the application.
2. Assist the City with the installation of the selected probe in the 8-in line exiting the bottom of one of the ESDs. The probe will likely be installed in an existing fitting.
3. Review and analyze the corrosivity probe data to assess the potential steel corrosion rate inside the ESDs. Jeff Mattson, a Donohue coatings and corrosion expert, will participate in this review and analysis.

Phase 3 – Engineering Services during the Lower-Level ESD Inspection

Retain a qualified third-party corrosion and coatings inspector to review the condition of the coating and steel inside the ESD. The third-party corrosion and coatings expert and Jeff Mattson, a Donohue coatings and corrosion expert, will perform physical inspections of the lower level of the ESDs. Document inspection findings.

Specific Tasks:

1. Retain third-party coatings and corrosion inspector.
2. Produce and provide conformed-to-contract (CTC) Contract Documents. Assist the City with contract award and execution of the Contract Documents.
3. Prepare for, conduct, and document a pre-construction conference with the City, Contractor, and Donohue. Issue the Notice to Proceed.
4. Provide remote coordination assistance to the City and Contractor by responding to Requests for Information, reviewing submittals (if any), and coordinating the Work of the Contractor with the City and the third-party inspector.
5. Perform a physical review of the lower level of the ESD. This review will be performed by the City, Donohue (field staff as well as coatings and corrosion expert), and the third-party coatings and corrosion expert. Use the strategy developed during Phase 2 to identify the location of any areas that require repairs. The repairs may be conducted during a subsequent Phase in 2026 or, if deemed necessary, immediately.
6. Produce and provide a report documenting the methods and findings of this ESD inspection. Produce and submit a DRAFT report for City review and comment. Incorporate and address City comments. Produce and submit a FINAL report.

Phase 4 – Produce Bidding Documents for Top-to-Bottom ESD Inspections and Other ESD Work

Produce Bidding Documents for a qualified Contractor to clean both ESD so they are suitable for a thorough inspection throughout their entire height: from top to bottom. The Bidding Documents will also define the Work to [1] install an impressed current cathodic protection (ICCP) system if the previous Phases find it warranted; [2] make physical improvements to address various maintenance needs and enhance the safety, maintainability, mixing efficiency, level monitoring, and overall performance of the ESDs; and [3] implement targeted repairs to address corrosion damage identified during the inspections.

Specific Tasks:

1. Conduct and document an on-site project initiation meeting with the City and Donohue.
2. Collect site measurements sufficient to define the Work.
3. Retain a third-party corrosion firm to guide the design of the ICCP system. Coordinate the design of the ICCP system with the third-party corrosion firm.
4. Produce and submit to the City 30%-complete Bidding Documents suitable for City review and comment. At this level of completion, the documents will be limited to drawings and an opinion of probable construction cost (OPCC).
5. Conduct and document an on-site meeting to review and discuss the 30%-complete Bidding Documents.
6. Incorporate and address City comments. Produce and submit to the City 60%-complete Bidding Documents. At this level of completion, the documents will include drawings, specifications, and an updated OPCC.
7. Conduct and document on on-site meeting to review and discuss the 60%-complete Bidding Documents.
8. Incorporate and address City comments. Produce and submit to the City 90%-complete Bidding Documents.
9. Conduct and document on on-site meeting to review and discuss the 90%-complete Bidding Documents.
10. Incorporate and address City comments. Produce and submit to the City FINAL Bidding Documents.
11. Provide bidding support including responding to questions, issue addenda, reviewing bids, and providing a letter of recommendation.

Schedule and Compensation

The anticipated schedule for the various phases including proposed compensation is summarized below.

Phase	Timeline	Compensation
Phase 1	February 2025 – May, 2025	$42,370
Phase 2	February 2025 – August 2025	$15,970
Phase 3	August 2025 – September 2025	$84,660
Phase 4	June 2025 – January 2026	$150,755
	TOTAL	**$293,755**

JUSTIFICATION

Taking these ESDs offline for an interior inspection involves several complex considerations outside of the carefully curtailing aspect of treatment operations for an extended period of time to facilitate the planned work. The scope of work also presents a unique set of challenges that go with managing explosive gas and elevated pressure hazards, complex cleaning processes within a large egg-shaped confined space, the potential for increased costs (e.g. labor, equipment, energy, and loss of hauled waste revenue), and elevated risk to regulatory compliance. The Donohue team assembled to lead this project were involved with the previous inspection work from 2010 to 2012. They have also completed numerous other capital projects since that involved digester and biogas systems related improvements.

The total compensation of $293,755 described in Donohue's proposal is not trivial to Utilities Department Management. However, Donohue is the only firm uniquely qualified and trusted to lead this work. This contract would be funded by the $485,150 allocated in the 2025 budget for engineering services ($316,200 within the "Digester Improvements" CIP and $168,950 within O&M).

RECOMMENDATION:

I am recommending the approval of a sole source engineering service contract to Donohue as part of the AWWTP Anaerobic Digester Inspection, Maintenance, and Improvements Project in the amount of $293,755 with a 10% contingency of $29,376 for a total not to exceed $323,130.

If you have any questions regarding this project, please contact Chris Stempa at 920-832-5945.

Encl: Finance Department Sole Source Request Form

SOLE SOURCE REQUEST

The undersigned certifies that the commodity/service shown below qualifies as a sole source request and meets one or more of the following requirements. The department has demonstrated, and the Purchasing Manager concurs that only one source exists, the price is equitable, and/or noncompetitive negotiation is in the best interests of the City.

☒ **Unique, proprietary, or one-of-a-kind**: Specific commodity/service is required and available from only one source, giving the City a superior and necessary benefit that cannot be obtained from other sources.

☐ **Inadequate competition:** Purchasing solicitation (bid, proposal, or quote) did not result in any qualified vendor responses and competition is determined to be inadequate.

☐ **Health or Safety Concern:** When a health or safety concern exists that is ***not*** an immediate threat but needs to be addressed in a period that does not allow for formal competitive procurement procedures.

☐ **Continuity of design:** Consistency with current commodity or service.

☐ **Emergency procurement:** A risk of human suffering or substantial damage to real or personal property exists requiring immediate attention.

☐ **Cooperative purchase:** Purchase from another governmental unit contract or state approved purchasing association.

☐ **Other:** Description provided below

PROPOSED DETAILS
Requesting dept: Wastewater Treatment Plant
Product/service : Anaerobic digester inspection, maintenance, & improvement project
Vendor name: Donohue & Associates, Inc.
Total cost: $293,755 with a 10% contingency, not to exceed $323,130

Justification and price quotation provided by the department, for the items to be considered and approved as a sole source purchase attached for review.

Purchasing Manager

2/17/2025
Date