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MEMORANDUM

Date: April 26, 2022

To: Water Utility Board

From: Joe Grande, Water Quality Manager
Adam Wiederhoeft, Interim Chief Engineer
Joe Demorett, Water Supply Manager

Subject: Amendment of the 2022 Water Utility Capital Budget and authorization to proceed with sole source award of engineering services to AECOM

RECOMMENDATION

Authorize amendment of the 2022 Water Utility Capital Budget to include $425,000 of additional budget authority for engineering services in support of bench-scale pilot testing, an alternatives analysis, and preliminary and final design for Well 15 PFAS Treatment Facility project and authorization to proceed with sole source award of engineering services to AECOM, in an amount not to exceed $375,000.

BACKGROUND

Madison Water Utility (Utility) took Well 15 offline in 2019, due to community concerns about PFAS chemicals found at the well. Since then, the Utility has remained committed to testing, monitoring and openly communicating with the community as we build an understanding and identify potential mitigation strategies in response to these emerging contaminants. The Utility has publicly committed not to return Well 15 back to service without the addition of a treatment system, as the PFAS levels at Well 15 exceed the WI Department of Health Services Hazard Index (HI).

The Utility is also committed to identifying the best, most cost-effective treatment strategy for Well 15, and initiated that process through the Utility's Well 15 Feasibility Study for PFAS Removal, completed in 2021. The study concluded that addition of a granular activated carbon (GAC) system would effectively remove PFAS, PCE and TCE from the source water. This preemptive early action by the Utility puts us in a position where we are now ready and able to evaluate site specific treatment systems and potentially be the first Utility in the state to implement a municipal PFAS treatment system.

Three approaches to PFAS removal from water include (1) capture, (2) separation and (3) newer destructive technologies involving advanced oxidative processes that break down PFAS. Granular activated carbon (GAC), anion exchange (AIX), and other novel synthetic sorbents are examples of specialized media that capture trace organic contaminants like PFAS as water passes through them. On the other hand, membrane technology including reverse osmosis and ultrafiltration allows water to pass through the membrane, isolating the chemical contaminants in a concentrated brine for subsequent disposal. The developing destructive technologies are most effective with highly concentrated PFAS waste streams and, therefore, are not directly applicable to drinking water systems, which typically have trace PFAS levels.

PFAS water treatment facilities in other states utilize GAC, AIX, or membranes. The chosen technology depends on the PFAS mixture and concentrations, the presence of co-contaminants, and other impurities that can prematurely foul the selected treatment system. The Utility's initial Feasibility Study found GAC to be effective at reducing the specific PFAS mixture found at Well 15. Testing during this next phase will refine the design parameters and optimize the long-term operating costs of the selected treatment system.

Bipartisan Infrastructure Law (BIL)

The recently passed BIL contains specific funding opportunities for treatment of PFAS. The allocation to Wisconsin under the 'Drinking Water Emerging Contamination' program is $12.8 million annually for five years, beginning in2022. This program has an attractive provision for 100% principal forgiveness. The availability of BIL funding creates a unique opportunity for the Utility to align the treatment objectives at Well 15 with potential for 100% principal forgiveness on the capital investment.

Utility staff received confirmation from the WI Department of Natural Resources (DNR) – the state funding agency responsible for disbursing BIL funds earmarked for PFAS treatment –that they will be finalizing the regulations in the coming weeks and months. Utility staff is also aware that the cutoff date for submitting applications under the State Revolving Fund (SRF) program is generally October 31, 2022. This provides the Utility with a tight window of opportunity for submitting the funding application to the DNR. It will be a very competitive program and with no particular guarantee for acceptance. The competitiveness stems from the fact that many communities in WI are facing PFAS contamination in their drinking water and the funding under the 'Drinking Water Emerging Contaminants' is 100% forgivable.

A factor that will weigh heavily with the DNR staff when making BIL funding decisions will be whether the funded project is 'shovel-ready'. One of the ways to demonstrate the Utility's commitment and sufficient readiness with a 'shovel-ready' project is to submit a preliminary design report for the proposed Well 15 PFAS Treatment Facility along with our SRF funding application by October 31, 2022. Some of the steps we have taken/proposing to take are to increase the chances for acceptance of our application for funding by the DNR.

Engineering Design - Consultant Selection Process

With the objective of getting a preliminary design report prepared by October 31, 2022, Utility staff structured a direct consultant evaluation process to expeditiously contract with a nationally reputed engineering services firm with proven experience in designing PFAS water treatment facilities. Some of the key considerations incorporated into the selection process are:

- Recent regional, municipal PFAS treatment plant design experience, their approach to Pilot Testing, and understanding of the existing Feasibility Study for PFAS Removal
- Experience, reliability and confidence in scheduling and estimating costs, including contaminated waste (media) disposal, for PFAS treatment facilities and the specific challenges the firms identified that relate directly to the Utility's proposed PFAS treatment facility project
- Diversity equity and inclusivity of project team and overall DEI philosophy of the firm

Utility's project team proceeded with a thorough, objective, and competitive consultant selection process by conducting multiple rounds of interviews and presentation reviews with eight nationally known qualified and experienced engineering consulting firms. The objective for the Utility was to identify directly through this selection process the most experienced consulting firm capable of successful design and implementation of a PFAS water treatment system for Madison Water Utility.

The Utility project team conducted initial telephone interviews with **eight** consultants nationwide (AECOM, Baxter Woodman, Black & Veatch, BTS Squared, Greeley and Hansen, Strand Associates, Suez / Veolia, and TRC Companies). **Five** of the firms proceeded to round two with detailed presentations and extended interviews with the Utility's project team.

One firm – AECOM – stood out above the rest based on its proven experience and expertise in designing PFAS treatment facilities. The AECOM project team will be led by Angel Gebeau, PE, out of Stevens Point, WI. Angel and her AECOM team previously worked with the Utility on the implementation of the Utility's first iron & manganese treatment plant at Well 29 in 2009.

Engineering Design Contract – Cost Structure

As shown in Table 1 on page – 4, the total cost for the proposed contract with AECOM for engineering services through permitting and final design of the Well 15 PFAS Treatment Facility is $336,764, with a contingency of $38,236 for a total not to exceed amount of $375,000.

Table – 1 AECOM Engineering Services Scope of Work and Budget	
Task Description	**Budget**
Task – 1 Bench-scale pilot testing & alternatives analysis: evaluate GAC and AIX for PFAS removal; identify selected media or combination; and refine treatment system design to optimize long-term operating costs	$52,964
Task – 2 Preliminary design: incorporate information from the alternatives analysis to develop up to three layout and design alternatives for Utility consideration, and through direct consultation with the project team, identify a selected alternative to proceed to final design	$104,688
Task – 3 City review and permitting approval: lead project presentations at City committee and council meetings to obtain approval and building permits necessary for the project to proceed to construction	$53,514
Task – 4 Final design: incorporate input from project team, community preferences identified at public meetings, and feedback from City review and permitting committees. Prepare engineering design report and project cost estimate to submit with Environmental Loan application	$125,598
TOTAL	$336,764
Allowances	$38,236
Total Not-to-exceed Amount	**$375,000**

Uncertainty with Funding Approval from DNR

The main impetus to fast track the design consultant contract award is for the Utility to complete the following tasks by October 31, 2022, the funding application deadline – pilot testing, alternatives analysis, and preliminary design report & construction cost estimate. This is critical for the Utility to submit "Intent to Apply (ITA") to the DNR, including data for Priority Evaluation and Ranking Formula (PERF). A well-documented application material and demonstrated elements of a 'shovel ready' project is one of the more effective ways to enhance the chance of funding approval with the DNR. Task 1 and 2 included in Table – 1 will accomplish that goal for an estimated cost of $157,652.

The Utility leadership anticipates a high probability for obtaining funding for this project, particularly given the status of Well 15. Keeping in mind, the unlikely chance of non-acceptance of the Utility's funding application by the DNR, the proposed engineering services contract will include a provision that AECOM will suspend work after completing Task 1 and 2 and will proceed further only after receiving specific written direction from the Utility to do so. The Utility will give the go ahead only after knowing the fate of our funding application with the DNR. The Utility will reevaluate its options in April 2023 after DNR releases its Project Priority List (see Table – 2).

Project Milestones

The estimated project Milestones are shown in Table – 2.

Table – 2 **Well 15 PFAS Treatment Facility – Estimated Project Milestones**	
1. Obtain approval from Water Utility Board and Common Council, and execution of the engineering services contract with AECOM 2. Hold a community meeting post approval	April/May 2022
3. Complete pilot testing services, alternatives analysis, and preliminary design report & construction cost estimate 4. Submit Intent to Apply (ITA) to the DNR, including data for Priority Evaluation and Ranking Formula (PERF)	October 2022
Anticipated Release of Project Priority List (PPL) by the DNR	**April 2023**
5. Complete final construction design documents, specifications and obtain permitting approvals 6. Submit formal environmental loan application for funding to the DNR, along with completed engineering design report and estimated project cost	June 2023
7. Construction	Spring 2024 to Spring 2025

Fiscal Impact

Staff is seeking authorization to amend the 2022 Water Utility Capital Budget to include $425,000 of additional budget authority for engineering services contract with AECOM ($375,000) and other related expenditures including staff time ($50,000). Project costs will be funded through the Utility construction fund balance.

ATTACHMENTS:

1. Common Council Resolution No. 70887