

TASK ORDER NO. 11281.D

Pursuant to the

MASTER AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN

**CITY OF MERIDIAN (OWNER) AND
STANTEC CONSULTING SERVICES, INC. (ENGINEER)**

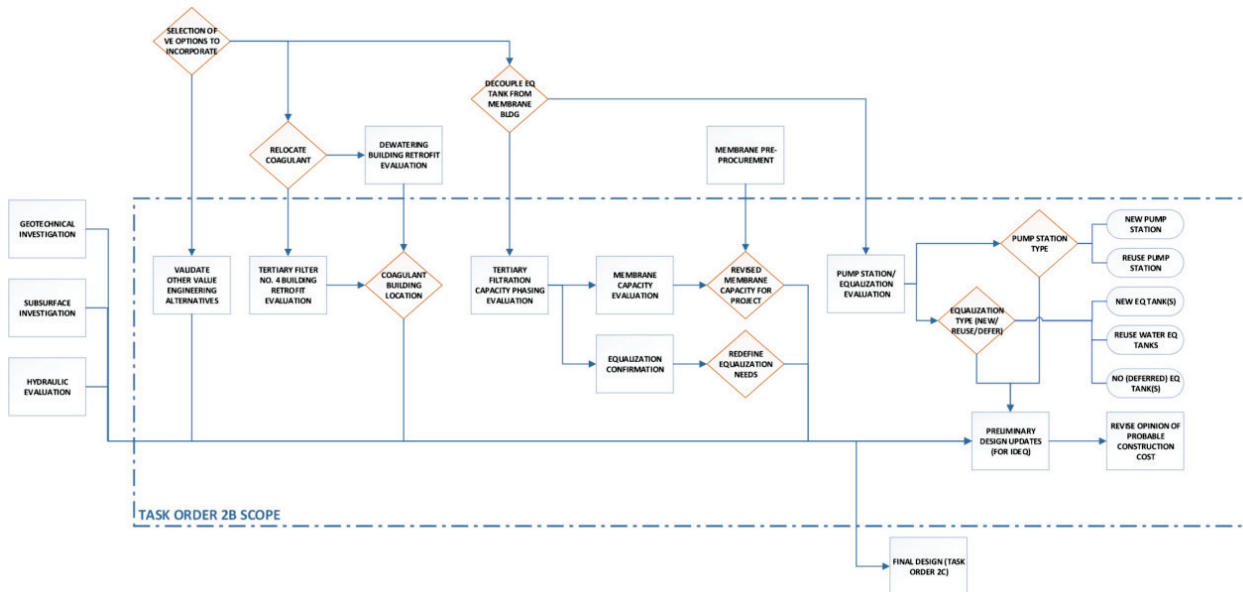
This Task Order is made this 7th day of February, 2023 and entered into by and between the City of Meridian, a municipal corporation organized under the laws of the State of Idaho, hereinafter referred to as “Owner”, and accepted by STANTEC CONSULTING SERVICES, INC., hereinafter referred to as “Engineer” pursuant to the mutual promises, covenant and conditions contained in the Master Agreement (Category 2a) between the above-mentioned parties dated October 1, 2020. The Project Name for this Task Order is as follows:

WRRF TERTIARY FILTER VE VALIDATION & REVISED PRELIMINARY DESIGN

PROJECT UNDERSTANDING

The Engineer’s scope of services, time of completion and compensation shall be as set forth herein. This Task Order details ongoing design efforts for the City of Meridian’s (City’s) Wastewater Resource Recovery Facility (WRRF) Tertiary Filtration Facilities Project (Project). This TO will validate the recommendations of value engineering (VE) efforts previously conducted to reduce Project capital costs. Once VE recommendations have been confirmed and evaluated in accordance with this Task Order, Stantec will revise the preliminary drawings, Preliminary Engineering Report, and the cost estimate that were previously developed as part of TO 11281.

For visual purposes, a decision flowchart (shown below) was developed to convey the work being fed into, and the deliverables of this Task Order. Efforts preceding TO 11281.D were either completed or in progress as contracted as part of TO 11281 and TO 11281.B.



SCOPE OF WORK

Task 1: VE Validation and Revised Preliminary Design

1.1 Project Management and Coordination

The project management and coordination task for this TO 11281.D is generally assumed to cover the duration of this TO only and will be merely a supplement to the ongoing TO 11281.B effort. This task will include:

1.1.1 Internal Team Coordination

Stantec will meet with design team leads on a bi-weekly basis to coordinate discipline status, identify risks, and provide a forum for issues or questions that need to be communicated or coordinated with the City or that need further attention within the design team.

1.1.2 Progress Tracking and Reporting

Only minimal additional effort needed.

Assumptions:

- Additional progress reporting meetings and notes are not needed and are as scoped in TO 11281.B.
- Change logs and other documentation requested by the City will be kept and maintained on a Stantec Microsoft Teams SharePoint site. The SharePoint site will be available for the City and Stantec staff and be used for shared and transfer documents.

1.2 Validation of Preferred VE Alternatives

The services to validate the City's preferred VE alternatives are as identified below.

1.2.1 Filtration Capacity Phasing Evaluation

A phasing analysis of future filtration capacity will be conducted and will examine WRRF projected flows between 2023 and 2040. This activity is intended to determine how much capacity can be deferred by the City as a cost savings measure. Stantec will look at a range of flow scenarios. These scenarios will be bounded by flow projections from the 2018 Facility Plan (lower flow boundary) and flow projections based on a sustained annual growth in flow of 4.7 percent (upper flow boundary). The annual flow growth rate of 4.7 percent is based on observed WRRF flow data between 2016 and 2021.

Based on the projected flows, Stantec will assess required membrane system capacity. Stantec will consider the design implications of constructing a membrane system that does not meet 2040 design flow conditions, and the triggers for future membrane system upgrade(s) that would be required to increase membrane system capacity in later years. Stantec will look at these improvements both with and without equalization to optimize system sizing on a cost basis for this current Project.

Finally, Stantec will look at permit risks that are related to membrane system capacity. This risk analysis will be limited to the City's potential to exceed the NPDES phosphorus limits. Inputs for determining risk will include the assumed annual rate of WRRF flow growth, sizing of the membrane system, timing of future membrane capacity expansion, and the sizing of the equalization tank to mitigate peak flow events.

Outcomes and recommendations from the evaluation will be presented by Stantec to the City at a workshop. At this workshop, Stantec will outline methodology, capacity phasing model inputs, and the permit-related risks associated with the variability of these inputs. It is assumed that the City will decide the annual growth rate for future WRRF flow and confirm if equalization will be excluded or deferred from the initial design. Stantec will document the decisions in meeting minutes with presentation information included as attachments. The evaluation will be summarized in a draft technical memorandum (TM), which Stantec will finalize after City review.

1.2.2 Reuse Pump Station Evaluation

During the VE effort, an alternative was proposed to repurpose the existing reuse facilities (existing reuse tanks and pump station). Existing reuse tanks could be used for equalization during peak flows, and the existing reuse pump station could be used to convey secondary flows to the new tertiary filtration system and feed the equalization tanks if and when constructed. This Task 1.2.2 will include a condition assessment and evaluation of the existing reuse pump station, with a feasibility analysis and retrofit cost estimate and comparison to the existing pump station layout and cost should the retrofit be deemed feasible. The evaluation effort for the existing reuse tanks is included as Task 1.2.3.

The pump station condition assessment will include review of record drawings, interview of operators, site inspections/observations of existing structures, and review of existing equipment to determine general remaining useful life expectations. It is assumed that the review of existing structures will take a maximum of one-half day with two Stantec staff conducting the onsite evaluation. The condition assessment will not include an invasive structural inspection.

If the existing reuse pump station retrofit is deemed infeasible or is not lower in capital costs in comparison to a new pump station, Stantec will evaluate and prepare cost estimates for up to two siting locations for the new pump station. The siting locations will either be adjacent to the new Tertiary Filtration Membrane Building (Membrane Building) or adjacent to future equalization tanks.

Stantec will also prepare life cycle considerations for the City to reference when making these decisions for either new or repurposed pump station selection. The evaluation will be summarized in a draft TM along with a review meeting prior to TM finalization; decisions from the review meeting will be documented in the meeting notes. It is assumed that this meeting will be combined with the Task 1.2.3 review meeting.

1.2.3 Reuse Tank Equalization Evaluation

The preliminary design documents delivered to the City in Fall 2022 include a below-grade concrete equalization tank located under the new Membrane Building. The purpose of the equalization tank is to shave peak secondary effluent flows to the tertiary filtration system, thereby reducing required membrane capacity. The City has decided to decouple the equalization tank from the new Membrane Building and potentially defer any equalization to a future project. If the reuse pump station evaluation (Task 1.2.2) determines the reuse pump station will not be retrofitted, it is assumed that the existing reuse steel tanks will not be used for equalization and new tanks will be needed in the future. This task will then focus on siting new tanks. If the existing reuse pump station can be repurposed to feed the new membrane tertiary filtration system, this evaluation will consider either repurposing the existing 500,000-gallon reuse storage tanks or providing greenfield above-grade storage tanks for equalization. As part of any consideration to use the reuse storage tanks, Stantec will conduct site work to observe tank conditions. It is assumed that Stantec's site assessment will include visual observations of the tank's exterior and interior components only, and the condition assessment will require two Stantec staff. It is also assumed that the City will fully drain the tanks to allow Stantec staff to perform inspection activities. For the remainder of the evaluation, Stantec will combine field data with the following: City-provided record drawings, other historical tank operation and maintenance records, and City staff interview information about the tanks. If more data or investigation activities are required to determine tank integrity, this will be completed under a separate future contract.

For all scenarios, Stantec will evaluate the financial costs and benefits of providing equalization as part of this Project or deferring to a later (future) project. Alternatives will be evaluated in terms of both Class 5 capital cost along with general life cycle cost expectations. Stantec will couple the cost analysis efforts with an evaluation of the technical advantages and disadvantages of each option. Stantec will also consider

varying capacities and build upon the recommendations presented in the capacity phasing evaluation (Task 1.2.1). A recommendation for the preferred equalization alternative will be provided to the City and summarized in a draft TM. A review meeting will be held as part of the decision-making process and held prior to TM finalization. It is assumed that this meeting will be combined with the Task 1.2.2 review meeting.

1.2.4 Coagulant Storage Relocation Evaluation

Stantec will evaluate the option to repurpose the existing Tertiary Filter Building No. 4 for coagulant storage in lieu of Chem. Building No. 3. This evaluation will consider retrofit potential, chemical system space requirements, construction staging, chemical code requirements, demolition, and future operations and maintenance along with a Class 5 cost estimate for comparison to two other alternatives (expansion of the existing Dewatering Facility or construction of a new Chemical Building No. 3) as presented in the design drawings in the existing preliminary design. The evaluation will be summarized in a draft TM. Prior to TM finalization, Stantec will hold a review meeting with the City where the City will select the preferred alternative for chemical coagulant storage. It is assumed that the review will be part of the pump station and equalization review meeting.

1.2.5 Validation of Other VE Recommendations

The VE analysis identified other recommendations that will reduce capital costs for the Project. The following revisions will be confirmed and incorporated into the final design:

- Transformer Relocation
- Use of Pre-engineered Metal Buildings (PEMBs); for this confirmation, Stantec will validate cost by acquiring PEMB cost estimates from qualified vendors.

The confirmation of these cost savings alternatives will be summarized in a draft TM. A review meeting will be held as part of the decision making and prior to TM finalization. It is assumed that the review will be part of the pump station and equalization review meeting.

1.3 Revised Preliminary Design

Stantec will take the City's decisions from the VE validation effort and update the preliminary design drawings to a level that is sufficient for an updated submittal to Idaho Department of Environmental Quality (DEQ) and so that the OPCC can be revised. The assumed changes to the design include:

- Eliminate concrete equalization tank below the Membrane Building with considerations for future equalization connection (retrofitted reuse tanks or new above-grade tanks); it is assumed that equalization will be deferred and not included in this Project.
- Update the design of the Membrane Feed Pump Station (dimensions of wet well, number of pumps, etc.). For design effort, it is assumed that the Membrane Feed Pump Station will be a part of the Membrane Building as shown in the preliminary design documents.

- Reduce thickness of the Membrane Building concrete floor from the elimination of the subsurface equalization tank.
- Revise Membrane Building to be a pre-engineered metal building.
- Resize the Membrane Building to adjust for below grade piping, electrical conduit routing, and other building adjustments associated with VE efforts and outcomes of this Task Order.
- Eliminate Chemical Building No. 3.
- Retrofit the Tertiary Filter No. 4 building for coagulant storage (including demolition of existing AquaDiamond cloth media filters and addition of chemical storage and feed system).

Revised Preliminary Design Assumptions:

- All drawings impacted by the revised preliminary design will be updated.
- Draft revised drawings will be prepared and submitted to the City for review.
- A meeting will be held with the City to review the revised drawings prior to moving forward with final design drawings.

1.4 Update OPCC

Stantec will take the updated preliminary design drawings and revise the Class 3 Opinion of Probable Construction Cost (OPCC) that was developed as part of the Preliminary Design effort. This update to the OPCC will be based on the revised drawings developed during Task 1.3.

1.5 Update PER and DEQ Coordination

Upon completion and confirmation of the VE alternatives and associated design changes, Stantec will meet with the DEQ to determine procedures for amending the Preliminary Engineer Report (PER) that was developed by Engineer previously and has been previously approved by DEQ. It is assumed that this PER revision is not a comprehensive revision, but rather a standalone amendment to the original PER. The amendment will identify what design criteria have changed and how these changes impact the phasing of the tertiary filter improvements. The amendment will be submitted with revised preliminary drawings to confirm continued DEQ approval.

ASSUMPTIONS

- Project management tasks will generally be covered through TO 11281.B services with only minor PM effort needed as part of TO 11281.D.
- This work will be performed in parallel to the tertiary filter pre-purchase effort
- These efforts will precede Final Design.
- Flow projections by others from past planning efforts will be used for this evaluation; Stantec will not validate these projections. The tertiary filtration sizing, capacity

analysis, and the anticipated dates where projected flows necessitate future expansion are best estimates only. Stantec will base evaluation efforts on provided data, the 2018 Facility Plan, and future flow estimates. The City will make the ultimate decision on filtration expansion phasing and the level of risk the City is willing to accept to achieve short-term capital cost reductions.

- The evaluation efforts of this Task Order will address deferrals and design changes from Engineers previous work that may reduce WRRF capacity. The validity of these evaluations relies heavily on construction scheduling and City growth rates. This is an element of risk for items that are largely outside the control of both the City and Engineer.
- Engineer and the City will prepare and negotiate the Final Design task order prior to the revised preliminary design (Task 1.3) being complete to keep the design progressing. This will allow for Final Design to be complete to allow contractor bidding in late 2023.

TIME OF COMPLETION and COMPENSATION SCHEDULE

COMPENSATION AND COMPLETION SCHEDULE			
Task	Description	Due Date (estimated)	Compensation
1.1	Project Management and Coordination	▪ May 9, 2023	\$10,017
1.2	Validation of Preferred VE Alternatives	▪ May 9, 2023	\$108,107
1.3	Revised Preliminary Design	▪ April 25, 2023	\$127,486
1.4	Update OPCC	▪ May 9, 2023	\$13,523
1.5	Update PER and DEQ Coordination	▪ March 14, 2023	\$9,676
TASK ORDER TOTAL:			\$268,809.00

The Not-To-Exceed amount to complete all services listed above for this Task Order is Two Hundred Sixty-Eight Thousand, Eight Hundred Nine Dollars (\$268,809). No compensation will be paid over the Not-to-Exceed amount without prior written approval by the Owner in the form of a Change Order. No travel or expenses will be reimbursed through this agreement. All costs must be incorporated in the individual tasks within the Compensation and Completion Schedule above.

CITY OF MERIDIAN

BY: _____
KEITH WATTS, Purchasing Manager

Dated: _____

Approved by Council: _____

STANTEC CONSULTING SERVICES, INC.

BY: **Nick Smith** Digitally signed by Nick Smith
Date: 2023.01.19 10:21:08 -07'00'
NICK SMITH, P.E., Principal Project Manager

Dated: 1/19/2023

City Project Manager:
David Briggs