

TASK ORDER NO. 11281

Pursuant to the

MASTER AGREEMENT FOR PROFESSIONAL SERVICES BETWEEN

CITY OF MERIDIAN (OWNER) AND STANTEC (ENGINEER)

This Task Order is made this ____ day of October 1, 2021 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 “City”, 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 FILTRATION FACILITIES

1.0 PROJECT UNDERSTANDING SUMMARY

The City of Meridian (City) Water Resource Recovery Facility (WRRF) is in year four of a ten-year NPDES compliance schedule to reduce phosphorus effluent loadings to Five Mile Creek as required in the 2017 EPA administered NPDES permit. The City has previously completed a Wastewater Resource Recovery Facility Plan (WRRFP) in December 2018 per the facility planning process identified in the Idaho Administrative Procedures Act (IDAPA), section 58.01.16. As part of that effort, a comprehensive Capital Improvement Plan was identified to address the various treatment challenges and regulatory updates. In order to address more stringent phosphorus removal requirements, the need for additional tertiary filtration was identified as part of that effort.

The City has tasked Stantec Consulting Services Inc. (Stantec) to further evaluate and progress those concepts. Accordingly, this project consists of engineering services to implement tertiary filtration improvements. These services are for the preliminary and final design, bidding support, and engineering services during construction for a new 22.3 million gallon per day (mgd) peak hour filtration facility, plus supporting ancillary improvements. The design of the tertiary filtration facility improvements will allow for expandability in the future to reach buildout flows, which are anticipated to be 42 mgd (peak hour) by 2074. Design will incorporate elements to allow future expansion to this capacity, such as larger diameter piping and space within buildings, pump stations, etc. for future equipment. No tertiary equipment or support systems will be designed to meet flows that exceed 22.3 mgd as part of this project.

It is assumed that this will be a membrane facility consistent with the WRRFP, subject to additional evaluations and recommendations to be made within this project during preliminary design.

PHASES OF WORK

Preliminary Design – This work is generally described as review of existing information, identification of design criteria, alternatives analysis, and preliminary design (30%). These services are included in this TO 11281 (TO1).

Technology Selection – This work involves bench scale and pilot/full-scale testing to determine characteristics of the tertiary filtration influent water quality, as well as the preferred technology for accomplishing WRRF effluent water quality goals. These services will be included in TO 2, NOT included in this Task Order.

Final Design – This work is generally described as progressing the design through bidding including 60%, 90% (permitting set), and bid documents along with providing bidding services to assist the City in awarding the construction contract. These services will be included as part of future TO 3, NOT included in this Task Order.

Construction Phase Services – This work is generally described as services to assist the City during construction including submittal reviews, response to contractor questions, clarifications and change items. These services also generally include field observations, final inspections, record drawings and startup and commissioning services. These services will be included as part of future TO 4, NOT included in this Task Order.

Specific Project Requirements

Stantec has identified several requirements for this project that will be used as a framework for establishing the preliminary and final design guidelines and expectations for the work. These project requirements include schedule, criteria, and facility design elements.

Preliminary schedule requirements:

- Preliminary Design start October 2021
- Final Design to start by October 2022
- Bid award by November 2023
- Substantial completion by June 30, 2025
- Startup and commissioning complete by June 30, 2026
- NPDES compliance date June 30, 2027 (expected to be administered by State of Idaho)

Preliminary design criteria requirements:

- Total Phosphorus - 8.5 lb/day (May-Sep monthly average)

- Total Phosphorus – 29.8 lb/day (Oct-Apr monthly average)
- Flows (2040) – 14.2 MGD (peak month)
- Flows (2040) – 22.3 MGD (peak hour)
- Maintain Class A Reuse Permit

The following project elements in Table 1 are anticipated to be designed and constructed under this project. These serve as the basis for scoping and engineering services fee (fee). The outcome of the preliminary design (TO 1) will determine the final project approach and may modify these assumptions.

Table 1. Project Design Elements.

Element / Process / Facility	Description	Major Equipment Type Assumed
Sitework	Civil sitework	n/a
	Utilities and Yard Piping	n/a
	Electrical sitework	New load center anticipated, buried ductbanks
	Landscape architecture	n/a
Tertiary Influent Pumping Station	Above-grade PS	Vertical turbine or vertical mixed flow pumps
	Concrete wetwell	n/a
Tertiary Pretreatment Building	Chemical Coagulation	TBD. Anticipated to be in line with passive/static mixing, or via flash mixing, flocculation, and sedimentation
	Fine Screening	TBD. Anticipated to be 0.5 to 1 mm strainers or fine screens.
	Equalization	TBD pending evaluation.
	Parallel Treatment for Peak Flow Management	TBD pending evaluation.
Tertiary Membrane and Ancillary Process Building	Membrane based treatment	Micro or ultra- filtration. Configuration (pressure vessel or submerged cassette) TBD.
	Ancillary equipment	Feed and backwash/reverse flow pumps, air scour blowers, membranes, tote-based chemical cleaning systems
	SCADA/Operations Center	Dedicated operations room with PLC/HMI, limited workstations, sample and analysis benchtop. MCCs and ancillary power system components.
	Electrical room	
Chemical Storage and Feed Building	Bulk storage and feed pumps	TBD. May be retrofit expansion of existing facility, or new dedicated tertiary chemical complex.

Residuals Handling	Transfer Pumping Station (secondary recovery not anticipated) Waste Washwater Equalization / Wetwell	Vertical turbine pumps n/a
Odor Management	None anticipated	n/a

1.2 General Project Approach

The following describes assumptions and conventions that were used in developing this scope of services:

1.2.1 Codes, Regulations, and Design Standards

City design standards, as applicable, will be used. The facilities will be designed in accordance with standards, codes, and regulations in effect as of October 2021 including compliance with Idaho Department of Environmental Quality (DEQ) regulations.

Changes in codes and regulations which occur after the project start will be considered a change in scope. Stantec will be using specifications suited specifically for the design-bid-build delivery method based on its standard documents. The City will be responsible to provide front-end procurement documents (Division 00 and 01) for the construction bid. Stantec will be responsible to provide all technical specification sections.

1.2.2 Design Approach

The design will be performed using Stantec's internal design standards and approaches, including digital delivery methodologies: 3D design, building information models (BIM), and intelligent P&IDs. BIM models will be produced to a level of development (LOD) 300. This LOD provides an accurate model where elements are defined with specific assemblies, precise quantity, size, shape, location and orientation are detailed. Drawings will be produced from these models for City review.

CAD and BIM software:

- Physical models for structures: Revit family of products
- Civil: Civil 3D (The Revit model is fixed in space in this platform)
- Instrumentation and Control: Bentley Open Plant Modeler
- Drawings will be prepared in ANSI D format (22 by 34 inches).

1.2.3 Opinions of Probable Construction Cost

Stantec will prepare opinions of probable construction cost (OPCC) using the appropriate estimate classes, standard of care, and employing pertinent guidelines as established by the Association for the Advancement of Cost Estimating (AACE).

OPCCs will be prepared for each set of construction documents identified in the detailed scope that follows.

City acknowledges that Stantec has no control over costs of labor, materials, competitive bidding environments and procedures, unidentified field conditions, financial

and/or market conditions, or other factors likely to affect the OPCC of this project, all of which are and will unavoidably remain in a state of change, especially in light of the high volatility of the market attributable to Acts of God and other market events beyond the control of the parties. City further acknowledges that this is a “snapshot in time” and that the reliability of this OPCC will inherently degrade over time. City agrees that Stantec cannot and does not make any warranty, promise, guarantee, or representation, either express or implied that proposals, bids, project construction costs, cost of operating, or cost of maintenance will not vary substantially from Stantec’s good faith OPCC.

1.2.4 Land Acquisition

It is anticipated this project does not include any form of land acquisition.

1.2.5 Project Delivery Model

This scope of services is structured for a conventional design-bid-build project delivery model.

1.2.6 Project Staging and Sequencing

These requirements are always project specific and will be defined through development of the Preliminary Engineering Report (PER).

Task 1 - Preliminary Design

2.0 Stantec will prepare a series of technical memoranda to supplement previous planning efforts. These memoranda will be further developed into a Preliminary Engineering Report (PER) to document technical and engineering decisions, which will be used as the basis for development of detailed design documents.

It is anticipated that this document will not reiterate work previously performed in the master planning phase of this project, but in a concise and complete way summarize updates to design criteria and intent since the completion of the facility plan. The PER defines the contractual basis for remaining design deliverables, schedule, and cost associated with the Meridian WRRF.

The PER will present a text and table summary of equipment comparisons, selection process, system operating concepts and maintenance requirements, technical memoranda, general site plan, process schematics and flow diagrams, design criteria for each process, hydraulic profile, preliminary P&ID’s, process unit layout drawings, architectural concepts, utilities and electrical single-line diagrams. Copies of pertinent meeting minutes will be contained in an appendix.

The main activities to be performed by Stantec as part of preliminary design are as follows:

- Project management and coordination with external and internal team members (Section 2.1)
- Data collection and review of existing field conditions to prepare for design efforts (Section 2.2)
- Permitting support for upgrades and expansion of the tertiary filtration facilities (Section 2.3)

- Documentation of design constraints, design criteria, and design direction in the PER and supporting documentation (Sections 2.4 and 2.5)
- Preparing preliminary design documents based on design constraints and project objectives in accordance with City and Stantec design standards and this scope of services (Section 2.6)

2.1 Project Management and Coordination

The project management and coordination work for this task order will include:

2.1.1 Project Management Plan

Stantec will develop a general workplan or project execution plan (PXP) that defines the delivery approach, staffing, responsibilities, schedule, risks, and project deliverables that will be a baseline guide and a working document throughout the project. The PXP will be reviewed and update on a quarterly basis.

The PXP will also include a Quality Management Plan (QMP) which will define the specific processes and procedures to be used for this project.

2.1.2 Progress Reporting Meetings

Stantec will keep the City advised of the status of the design progress. This coordination will include monthly project management meetings with the City with on average three Stantec staff to communicate and document identified project risks, action items, change of conditions, schedule updates, financial status, and general project status. The meetings are expected to be 60 minutes in duration, and Stantec will coordinate and submit meeting notes within two working days of the meeting. Separate technical workshops will be scheduled outside of these monthly progress meetings.

2.1.3 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.

2.1.4 Progress Tracking and Reporting

Stantec will prepare and maintain tracking tools for monthly reporting and invoicing to the City. The invoicing will include monthly status updates on a task-by-task basis, physical percent complete status and any changes or new risks identified in the billing period.

2.2 Data Collection and Field Investigations

Stantec will need to obtain various data from the City and collect baseline information to being our preliminary design.

- Survey - It is expected that site survey information will be needed for the preferred locations for the improvements. Stantec will use existing survey

data provided by the City for preliminary design efforts and engage the services of a surveyor during future final design efforts.

- Geotechnical – Stantec will request from the City and review the existing geotechnical information. If inadequate geotechnical information is available at the preferred site(s) for the new tertiary filtration facilities and improvements, Stantec will subcontract with a local geotechnical firm for the needed information during future final design efforts.

Stantec shall be entitled to reasonably rely upon the information and data provided by the City or obtained from generally acceptable sources within the industry without independent verification except to the extent such verification is expressly included herein.

2.2.1 Existing Data Collection and Review

As part of the scoping effort, Stantec has already requested:

- Historical and anticipated flow and load data (updated since the 2018 Facility Plan)
- Plant performance data electronically from 2017 – present
- Previously completed phosphorus speciation study
- Secondary effluent particle size distribution study.

Stantec shall review the above background documents and information provided by the City. The following additional documents will be requested:

- Previous additional relevant reports and supporting background files
- Current and historical water quality and flow data
- Current and historical SCADA data for existing facilities
- Current and historical power consumption data for the entire WRRF
- Staff input and observations
- Preferred City staff contact information
- Facility record information as needed
- Available record drawings of the existing facilities (preferably dgn or dwg format).
- O&M manuals related to the existing operating controls.
- Available utility information in GIS format (for the City or known utilities owned by others within the project area)
- Available design standards, standard details, and specifications; and
- Other pertinent information as determined during this project

2.2.2 Survey – Not Used

Stantec will use existing survey information provided by the City for documentation and design drawings.

2.2.3 Geotechnical – Not Used

If required will be subcontracted during future contracts.

2.2.4 Dewatering Investigation – Not Used

It is not anticipated that a site-specific dewatering investigation will be required. If the geotechnical investigation demonstrates the need for dewatering, a preliminary dewatering investigation can be authorized as supplemental services.

2.2.5 Subsurface Investigation – Not Used

If required will be subcontracted during future contracts.

2.2.6 Closed Circuit Television – Not Used

It is not anticipated that closed circuit television will be required for any existing utilities on the site, or at the points of interconnection. If during preliminary design need for these services arises, they can be authorized as supplemental services.

2.2.7 Water Quality Sampling and Analysis – Not used

It is not anticipated that additional sampling and water quality analysis will be required, other than what is specifically described as part of a bench or pilot testing activity, which is scoped per TO 2.

2.3 Permitting Support

Stantec will support the City in while the City identifies necessary design phase permits for activities related to the project and detail the requirements for application for the permits, permit deadlines, contact persons, and processing time. It is assumed that the City will lead permitting efforts for this project, while Stantec will provide support and coordination with design activities and deliverables. Stantec will be available to meet with the City and the Idaho DEQ as part of this coordination effort. Stantec will submit the Preliminary Engineering Report and preliminary design drawings to Idaho DEQ for agency review.

2.4 Studies and Technical Memoranda

The following studies and technical memoranda described in Section 2.4 will be initiated as part of the preliminary design phase. Draft technical memoranda will be produced in advance of the PER. Final memoranda will be submitted as chapters of the PER.

2.4.1 Flow and Load Confirmation – Not used

It is anticipated that the 2018 WRRFP flow and load projections will be used for this project for establishing relevant tertiary filtration criteria. Per discussion with the City, the WRRFP will be updated by others under a separate contract, and any updates to water quality or criteria will be evaluated when available. Changes in flow will be addressed in collaboration with City staff to ensure that the design incorporates flexibility to add or remove process trains as needed to achieve the required treatment capacity.

2.4.2 Bench Testing and Water Quality Evaluation

Under this task, Stantec will evaluate the City's relevant historical information for:

- Phosphorus speciation data
- Secondary effluent particle size distribution

- Current performance data for cloth media filtration

Per discussion with the City, it is understood that these historical data sources were provided prior to the last secondary process upgrades and that new supplemental data may be needed to predict future tertiary influent water quality.

Evaluation efforts are based on the following supplemental bench testing and water quality evaluations recommended by Stantec:

- Coagulant Jar Testing – Modeling and bench testing to select appropriate coagulant(s), dose(s), mixing energy, and contact time for definition of reactive and nonreactive phosphorus fractions, and optimization of phosphorus removal and filter performance. These recommendations would be used to establish pilot and preliminary design bases, as appropriate
- Phosphorus Speciation and Filterability – Bench testing using the coagulant(s) selected from jar testing, to confirm secondary effluent phosphorus speciation and theoretical filterability and process performance potential. These outcomes would be used to inform the filter technology evaluation and recommendations
- Particle Size Distribution - Bench testing using the coagulant(s) selected from jar testing to predict filter loading, prescreening needs, and filter performance. These outcomes would be used to inform the filter technology evaluation and recommendations

It is assumed that City staff will provide all laboratory and analytical work for bench testing and water quality evaluation efforts. Stantec will oversee testing and provide guidance on the type of tests and data to be gathered but will not be involved with day-to-day efforts of the testing. The objectives for sampling, quantity, frequency, and type of tests will be documented in a testing plan, which will be prepared by Stantec.

Stantec will also evaluate the need for pilot or full-scale testing (e.g., chemical coagulation upstream of existing cloth media filters) throughout Task 2.4.2. Upon completion of this task, Stantec will provide a recommendation for additional experimental testing in the draft technical memorandum for this task. Using the recommendations presented in the draft technical memorandum, Stantec will revise the scope of work for TO 2, which is included in preliminary draft form as Sections 3 through 5. Revisions for TO 2 will be completed concurrently with Task 2.4.3 efforts.

2.4.3 Filter Technology Evaluation

Based on the outcomes of Task 2.4.2, Stantec will revisit and update filter technology selection. This task would address three key areas of focus:

- Candidate filter process identification and evaluation
- Filtration enhancement schemes (e.g., parallel treatment, equalization), and
- Ancillary impacts and plant integration

The following technologies and applications are assumed for evaluation under this task:

- Conventional chemical coagulation for filtration pretreatment

- Electro-coagulation for filtration pretreatment
- Hollow fiber membrane filtration (using either submerged or pressure vessel configurations) as a full flow process
- Deep bed dual media filtration as a full flow process
- Cloth media filtration (either via retrofit or replacement of existing facilities) as a pretreatment to membranes
- Cloth media filtration (either via retrofit or replacement of existing facilities) as a parallel treatment process to provide peak flow management and filter capital and O&M cost optimization
- Peak flow equalization of secondary effluent (either inline or offline to main flow) to provide peak flow management and filter capital and O&M cost optimization

2.4.4 Siting

Stantec will investigate both greenfield and retrofit siting options for the recommended process and infrastructure improvements per Table 1.

2.4.5 Hydraulics

Stantec will assess the existing hydraulics between secondary treatment and the final outfall and make recommendations to address any challenges under the flows for two scenarios: planned 2040 and the buildout flow condition in 2074. Stantec will also assess return flow management needs and potential impacts to the existing plant operation.

This task will be dependent on the outcomes of Tasks 2.4.3 and 2.4.4. This task will also include development of preliminary tertiary filtration and filtration backwash return flow hydraulic profiles.

Stantec will also assess the risk of unsteady flow effects and maldistribution of flows among parallel treatment trains and make recommendations for more detailed design investigations (e.g., computational fluid dynamic or physical models) as needed.

2.4.6 Control Narrative TM

Stantec will coordinate with the City of Meridian to develop a preliminary system control narrative (philosophy).

A preliminary workshop will be held to:

- Discuss current tertiary filtration and plant control philosophy as it is anticipated to be relevant to the new infrastructure being developed
- Establish high-level approaches for new systems at the WRRF
- Review a preliminary overall control system architecture
- Review and finalize a draft outline for the Control Narrative TM

It is anticipated that the Control Narrative TM will present basic control philosophy for:

1. Interfacing with (but not replacing the controls for) existing infrastructure and conveyance
2. Establishing new tertiary filtration process control requirements

3. Establishing/updating final effluent water system monitoring and control requirements for permitting requirements
4. Equipment/asset numbering conventions

Meridian WRRF process control narratives as described above will address the following elements:

- Overall water system control intent
- Influent flow and quality monitoring and control
- Influent feed tanks and influent pumping systems
- Tertiary filtration pretreatment systems and ancillary components
- Tertiary filtration systems and ancillary components
- Chemical storage and feed
- Miscellaneous systems (i.e., access control and monitoring, HVAC integration, fire system integration, and sump pumps)
- Critical process alarms and interlocks
- Final effluent system monitoring and control

This memorandum will be preliminary in nature and is meant to establish system-wide intent; it will be a supplement to the PER and preliminary design documents summarized later in this scope of work. Asset data forms required by the City will also be provided as a supplement to the Control Narrative TM. Additional control system detail and elements will be addressed during final design for plant startup and shutdown requirements.

The Control Narrative TM will be superseded by final design documents including control system architecture diagrams, specifications, control strategies, and Piping and Instrumentation Drawings (P&IDs).

Following submission of the draft TM, a review workshop will be held with City staff to finalize approach and allow further development of the PER.

2.5 Preliminary Engineering Report (PER)

The PER will be executed in accordance with IDAPA, section 58.01.16. Through this process, the intent is to make all significant project design decisions before the start of Final Design (TO 3). At the end of Preliminary Design (TO 1), major design elements shall be fixed, and major equipment, footprints, major structural elements, and pipeline alignments shall be well-defined and established. The extent of the design, the number and type of drawings, and the number of construction packages shall be established. Stantec will develop the preliminary design to the point where the feasibility is confirmed, the scope is well defined, and costs can be accurately estimated.

Considerations related to filter technology expandability and oversizing for rapid adaptability to flow and water quality changes will also be addressed in the PER.

The PER is anticipated to consist of a compendium of previously prepared TMs, with expanded content to meet requirements as stated above. The report organization is expected to follow:

EXECUTIVE SUMMARY

1.0	INTRODUCTION
2.0	WATER QUALITY PROJECTIONS
3.0	PROCESS DESCRIPTION AND DESIGN CRITERIA
4.0	PLANT HYDRAULICS
5.0	ELECTRICAL POWER SYSTEM
6.0	UTILITIES AND CONNECTIONS
7.0	FUNCTIONAL ASPECTS
8.0	CONTROL NARRATIVES
9.0	PROJECT IMPLEMENTATION
10.0	REFERENCES

LIST of TABLES

LIST of FIGURES

APPENDICES

Recommendations for approaches to equipment procurement, updates to final design schedule, and updates to construction schedule will be documented under Section 9 – Project Implementation.

2.6 Preliminary Design Documents (30% Design)

The preliminary design will consist of the PER and supporting drawings, lists, and elements as described herein. Drawings and other elements as described below will be appended to the PER. Refer to Exhibit C for the preliminary list of drawings. The list of drawings will be updated as part of the PER as described in Section 2.6.1.

2.6.1 Drawing and Design Development

This list presents the drawings, technical information, and preliminary design documentation that are anticipated during preliminary design. Design activities for each item listed in the following list will occur during TO 1. However, not all items will be presented in a deliverable. Project deliverables are noted separately within this document.

General:

- Preliminary Building Information Models (BIM); submitted as PDFs
- Preliminary drawings
- Updated list of remaining drawings anticipated
- Updated list of specifications anticipated
- Preliminary equipment list (major equipment)

Process-Mechanical:

- Process design criteria
- Design flow rates

- Influent quality
- Effluent quality requirements
- Phasing, sequencing, schedule, and expansion requirements
- Process and major equipment selection
- Redundancy requirements
- Overall process flow diagram
- Process narratives (brief descriptions)
- Mass balances
- Estimate of consumable quantities (energy, chemicals) and residuals
- Define process flow streams, legends, and abbreviations
- Hydraulic profiles
- Pipe materials and valve types
- Coating and lining requirements
- Equipment material selection
- Vendor drawings and information

Civil:

- Site civil and site utility plans
- Updates, site drainage concepts, if required by City reviewers
- Define limits of flood plain/ issues
- Zoning and local site development requirements
- Identify environmentally sensitive areas such as wetlands and hazardous waste areas
- Roadway and paving sketches and preliminary traffic plan
- Defined survey, mapping and geotechnical needs for final design, if necessary

Landscape Architecture:

- Define landscaping expectations
- Develop draft list of preferred plants and groundcover
- Draft site plan

Instrumentation & Control:

- Equipment and area tagging convention
- Control philosophy description
- Control system block diagram, including integration with SCADA System
- P&IDs with pipe and valve sizes and materials
- Onsite communication system requirements
- Define or recommend control system procurement methods and software development.
- Document City's control system philosophy/architecture and other information needs

Architectural:

- List of applicable codes and life safety issues for the building classification

- List of controlling regulatory agencies and contacts
- Building floor plans showing rooms and major equipment
- Building elevations, building finishes and architectural details
- Building classification list and HVAC R-values

Structural:

- Structural design concept and design criteria
- Structural steel sketches and details
- Structural concrete plan sketches
- Structural foundation sketches and details
- Document existing building or structures requiring upgrade or modifications.
- Document structural problems associated with existing plant facilities to be modified in the project
- Identify local building codes and local design criteria

Building Mechanical Services:

- Plumbing design concepts, sanitary sewer design, etc.
- Fire protection and security system requirements
- Establish ambient design conditions
- Document local building codes and requirements
- Document odor system requirements
- Air Flow Schematic
- Conceptual Equipment Arrangements

Electrical:

- Electrical/communications/security design concepts
- Preliminary electrical single lines
- Electrical equipment location plan
- Plan to bring existing facilities into code compliance where necessary
- Any new structures will include LED lighting. Existing facilities that will remain will be considered for LED lighting under TO 3.
- Schedule of hazardous and corrosive locations
- Document the need and sizing for onsite standby and/or emergency power
- Define modes of generator operating, interconnection requirements and load shedding
- Document redundancy requirements for power supplies and power distribution
- Preliminary site plans showing major equipment locations and duct bank route
- Preliminary electrical room plans including electrical equipment, instrumentation and controls, and special system panel locations
- Electrical load list

2.6.2 Quality Control

Stantec will perform internal technical review prior to submittal to the City, per the approved Quality Management Plan. Stantec's engineers of record will review and approve all deliverables and critical calculations prior to sending for internal independent reviews by a qualified senior engineer or technician. In addition, all documents requiring multiple disciplines will be reviewed for interdisciplinary coordination. All Stantec reviews will have documented review comment and responses. Only upon the completion of this level of quality control will deliverables be sent to the City or permitting agencies for review. City and other review comments will be addressed, formally responded to and documented.

2.6.3 Review Workshops

Stantec will hold a preliminary project kickoff meeting with the City and five additional review workshops with City Staff at the end of the City's review of the memoranda, PER, and preliminary design documents. These workshops will be held to discuss staff review comments, clarify elements in the submittal, and confirm approach to allow the report to be finalized. There shall be an initial kickoff meeting, plus a total of five review workshops.

2.7 Construction and O&M Cost Updates

2.7.1 Progressive Cost Model

Stantec will develop an initial cost model following project initiation and the development of design criteria to establish baseline project cost expectations. This model will be trended during preliminary design. Changes in cost expectation will be tracked and shared with the City at progress meetings, to allow for efficient design and cost management. The focus will be to avoid cost over-run and achieve budgeted project goals. It is anticipated that this estimate will be Class 5 per AACE.

Note that a Class 5 OPCC is generally prepared based on limited information, and subsequently have fairly wide accuracy ranges. Class 5 estimates have typical accuracy ranges of -20% to -50% on the low side, and +30% to +100% on the high side, depending on the technological complexity of the project, appropriate reference information, and the inclusion of an appropriate contingency determination.

Stantec will also prepare a preliminary Operations and Maintenance (O&M) cost evaluation for the preliminary design. This estimate will include chemical, power, staff, maintenance and other factors for compilation into an annual O&M budget expectation for the new facilities. This estimate will be delivered with the OPCC. Note that staffing and labor requirements will be budgeted based on industry normal practices, as informed by current City practices for similar facilities, where available.

2.7.2 30% Cost Opinion

At the completion of the PER and Preliminary Design Documents, Stantec will perform a bottom-up estimate to replace the previous Class 5 estimate and trend log. Stantec will provide a Class 3 OPCC, which will form the basis for subsequent bottom-up estimates.

Class 3 estimates have typical accuracy ranges of -10% to -20% on the low side, and +10% to +30% on the high side.

Deliverables

- **Existing Data Collection and Review (Section 2.2.1)** – No deliverables included; if necessary, additional information requests will be submitted
- **Survey Deliverables (Section 2.2.2)** – Not included, survey and related design efforts will be performed during final design (future TO3)
- **Geotechnical Deliverables (Section 2.2.3)** – Not included, geotechnical investigation and related design efforts will be performed during final design (future TO3)
- **Subsurface Investigation (Section 2.2.4)** – Not included, subsurface investigation, potholing, and related design efforts will be performed during final design (future TO3)
- **Permitting Support (Section 2.3):**
 - Draft permitting memorandum with a table of the permits, technical deliverables required, contact person from the permitting authority, estimated schedule, and permit fees.
 - Final permitting memorandum
- **Bench Testing and Water Quality Evaluations (Section 2.4.2):**
 - Testing plan
 - Draft technical memorandum
 - Final technical memorandum will be submitted as part of the Final PER
- **Filter Technology Evaluation (Section 2.4.3):**
 - Draft technical memorandum
 - Final technical memorandum will be submitted as part of the Final PER
- **Siting (Section 2.4.4):**
 - Draft technical memorandum
 - Final technical memorandum will be submitted as part of the Final PER
- **Hydraulics (Section 2.4.5):**
 - Preliminary hydraulic profiles
 - Draft technical memorandum
 - Final technical memorandum will be submitted as part of the Final PER
- **Control Narrative TM (Section 2.4.6):**
 - Preliminary overall control system architecture
 - Draft outline for the Control Narrative TM
 - Initial workshop notes

- Draft Control Narrative TM
- Final TM will be submitted as part of the PER
- Asset data forms for major equipment
- **Preliminary Engineering Report (PER) (Section 2.5):**
 - Draft PER
 - Final PER with attachments
- **Preliminary Design Documents (Section 2.6):**
 - Design documents will serve as attachments to PER (see Section 2.5)
- **Quality Control (Section 2.6.2):**
 - Responses to City comment response log
- **Review Workshops (Section 2.6.3):**
 - Meeting notes following each workshop
 - Updates to Owner Comment Log following each workshop
 - Updates to Design Decisions Log following each workshop
 - Anticipated Workshops:
 - (1) Project Kickoff Meeting
 - (2) Design Criteria Review Workshop
 - (3) Bench Testing and Water Quality Evaluation Review Workshop
 - (4) Filter Technologies Review Workshop
 - (5) Facility Siting Workshop
 - (6) Control Narrative Review Workshop
- **Progressive Cost Model (Section 2.7.1):**
 - Initial OPCC, Class 5
- **30% Cost Opinion (Section 2.7.2):**
 - Preliminary Design OPCC, Class 3

ASSUMPTIONS

While preparing our scope of services and fee schedule, we have made the following assumptions:

General Project Approach (Section 1.2):

- The scope of services for TO 1 is based on a maximum of three separate buildings: Tertiary Pretreatment Building, Tertiary Membrane/Ancillary Process Building, and Chemical Storage/Feed Building. The two pump stations for influent to the tertiary process and residuals handling transfer will either be housed within one of the three buildings as a separate room or will be exterior pump stations.

- Buildings will be industrial type masonry and premanufactured metal buildings as needed to match existing site architectural standards.
- Site drainage study results will be shown on a Grading and Drainage Plan notes sheet. No report will be submitted.
- Extent of existing facility decommissioning/demolition activities to be determined during final design under TO 3.
- Electrical conduit routing will not be shown on plan sheets.
- Deep foundation systems will not be required.
- Additional backup power generator is not assumed to be part of this project.

Progress Tracking and Reporting (Section 2.1.4):

- Invoicing will be performed monthly unless otherwise coordinated with the City due to inactivity
- Technical review meetings and workshops are not part of the Task 1 services
- Progress reporting meetings are assumed to be virtual or with local Stantec staff travelling to Meridian unless otherwise requested or coordinated for external staff to attend
- Change logs and other documentation requested by the City will be kept and maintained on a Stantec MS Teams SharePoint site and reviewed in the monthly progress meetings. The SharePoint site will be available for the City and Stantec staff and be used for shared and transfer documents

Permitting Support (Section 2.3):

- The City will pay all permit fees and lead permitting efforts.
- Two Stantec staff will be available for up to three meetings with either DEQ or City staff. It is assumed that meetings will be 60 minutes in duration.

Bench Testing and Water Quality Evaluation (Section 2.4.2):

- Based upon results and recommendations presented in the draft technical memorandum for Task 2.4.2, Stantec will revise the Task Order 2 scope and fee.
- Stantec will not perform any laboratory or analytical testing associated with Task 2.4.2 but will provide direction to the City on what testing methods are required. Stantec has not included any fee for third-party laboratory sampling.

Filter Technology Evaluation (Section 2.4.3):

- Hollow fiber membranes will be required for low-level phosphorus removal, as either full or partial tertiary flow
- Conventional chemical coagulation will be used for phosphorus pretreatment

Siting (Section 2.4.4):

- Stantec will evaluate up to five potential site locations and shortlist three for evaluation.
- The evaluation and shortlisted locations will be included in a draft technical memorandum. Stantec will provide a selection for a preferred site alternative in the memorandum.

- The City will review comments regarding the preferred location and provide comments on the technical memorandum. City comments will be discussed at a siting workshop.
- One site location will be selected at the workshop, and a final technical memorandum prepared to document the preferred site location. The preferred site location will be used as the basis for all preliminary design documents.

Hydraulics (Section 2.4.5):

- Modeling will be for the recommended infrastructure from Task 2.4.3 and 2.4.4.
- Computational fluid dynamic modeling and physical modeling is not included.

Control Narrative TM (Section 2.4.6) – Narratives will be for the recommended infrastructure from Tasks 2.4.3 and 2.4.4

Preliminary Engineering Report (Section 2.5)

- The Draft PER will be submitted to the City for review
- Stantec will submit the PER to Idaho DEQ for review
- The City review period will be 14 calendar days
- A workshop will be conducted to review the PER, supporting preliminary design documents, and comments with the City
- Final PER will form the basis for the final design scope of work (future TO 3)
- The Final PER will define the contractual basis for remaining design deliverables, schedule, and cost associated with the WRRF creating a design freeze for process, equipment, and general arrangements. Modifications to the Final PER will be evaluated for schedule and cost impacts prior to implementing under the TO 3.
- The Final PER will include City and Idaho DEQ review comments
- The PER and supporting preliminary design documents will be submitted concurrently for City Review

Construction and O&M Cost Updates (Section 2.7)

- City shall provide feedback for both the Class 5 OPCC and Class 3 OPCC within 14 calendar days of the deliverable being issued by Stantec
- City feedback from the Class 5 OPCC estimate will be included in updates to the cost model and in the updated Class 3 OPCC estimate. The Class 5 OPCC estimate will not be issued as a deliverable more than once
- Stantec will include revisions to the Class 3 OPCC estimate per City comments as a part of final design (TO 3 efforts)

Other Assumptions:

- The City will lead agency coordination with Stantec assistance
- The City will lead any public involvement efforts unless otherwise requested
- Stantec assumes that the City will require no more than 14 calendar days for deliverable review

- Stantec assumes that Idaho DEQ will require no more than 40 calendar days for deliverable review
- The flow and loadings projections from the 2018 Facility Plan will be used for planning and design purposes
- Stantec standard drawing symbols as applicable to local City standards and abbreviations will be used
- Stantec standards and approaches will be implemented in preparing the drawings using the City's standard borders. Any elements that are changed to suit City long term standards developments will be assessed for impacts to scope, schedule, and budget, and if necessary authorized as supplemental services
- 2D plans will be prepared in ANSI D, 22 by 34-inch format. CAD drawings will be created in the BIM packages defined above.
- The City will provide review comments on drawings and Stantec will provide responses using a Bluebeam Studio session.
- Design calculations for the project will only be submitted when required by permitting agencies
- No LEED or ENVISION requirements are anticipated for the facility
- All design reports, plans, specifications, and engineering calculations will be stamped and signed by a registered Professional Engineer in the State of Idaho
- No energy code compliance is anticipated
- No restrooms or finished office spaces are anticipated.

TIME OF COMPLETION and COMPENSATION SCHEDULE

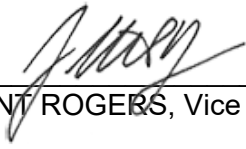
COMPENSATION AND COMPLETION SCHEDULE			
Task	Description	Estimated Completion Date	Compensation
1	Preliminary Design	▪ September 30, 2022 (Exhibit A)	\$797,946.00
TASK ORDER TOTAL:			\$797,946.00

The Not-To-Exceed amount to complete all services listed above for this Task Order No. 11281 is seven hundred ninety-seven thousand nine hundred forty-six dollars (\$797,946.00). No compensation will be paid over the Not-to-Exceed amount without prior written approval by the City 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, Procurement Manager

STANTEC

BY:  _____
CLINT ROGERS, Vice President

Dated: _____

Dated: 9/28/2021

Council Approved

Dated: _____

City Project Manager:
Clint Dolsby

EXHIBIT B - FEE SCHEDULE, WRRF Tertiary Filtration Preliminary Design



		Total Fee
Description		\$797,946
Task	Task Name	Total
2	Preliminary Design	
2.1	Project Management and Coordination	\$95,168
2.2	Data Collection and Field Coordination	\$13,668
2.3	Permitting Support	\$4,346
2.4	Studies and Technical Memoranda	\$181,834
2.5	Preliminary Engineering Report	\$47,042
2.6	Preliminary Engineering Design Documents	\$426,072
2.7	Construction and O&M Cost Updates	\$29,816

EXHIBIT A - PRELIMINARY SCHEDULE

