



**TASK ORDER 4A TO
CONTINUING PROFESSIONAL SERVICES AGREEMENT
Between Heart of the Valley Metropolitan Sewerage District (Owner) and
Donohue & Associates, Inc. (Donohue)
Date of Original Executed Agreement: Sep 13, 2019**

TASK ORDER NAME/DESCRIPTION

Name Effluent Filtration Design and Bidding Services

Description **Planning Phase**

Submit planning documents to the Wisconsin Department of Natural Resources (WNR) to satisfy WPDES Permit compliance schedule requirements related to the total phosphorus (TP) water quality based effluent limits (WQBELs).

Preliminary Design Phase

The purpose of the Preliminary Design Phase is to advance the concepts developed during the Planning Phase to enhance understanding of those concepts in terms of configuration (layout), functionality, performance, cost, and value. The secondary purpose is to refine concepts or consider others that might provide the necessary functionality and performance at a lower cost or greater value.

Produce and submit to the Owner solicitation or procurement documents for the cloth-media disk filtration system.

Produce and submit to the Owner a Design Basis Report for the cloth-media disk effluent filtration system. This system will allow the Owner to comply with the WQBELs for TP and total suspended solids (TSS).

Produce and submit to the Owner Preliminary Design Documents defining the Work required to implement cloth-media disk filtration and associated improvements: preliminary layout drawings, process schematic or preliminary process and instrumentation drawings (PIDs), operating strategies, outline specifications, and a detailed, take-off-based cost opinion. Use the Preliminary Design Documents to facilitate a project refinement evaluation, in the context of the detailed cost opinion, to either refine or validate the design and the associated Work.

Final Design Phase

The purpose of the Final Design Phase is to further advance the concepts developed during the Planning and Preliminary Design Phases to produce Bidding Documents.

Produce and submit to the Owner and WNR public Bidding Documents that define the Work required to implement cloth-media disk filtration and associated

improvements: drawings, specifications, and a detailed, take-off-based cost opinion. Respond to WDNR comments and questions for the purposes of obtain WDNR approval and authorization to proceed with Construction.

Bidding Phase

Assist with public Bidding.

Funding Phase

Submit a Clean Water Fund Loan Program (CWFLP) Intent to Apply and Application on behalf of the Owner.

A. SCOPE OF SERVICES

General Matters

1. Provide monthly Status Reports. Topics of the Status Reports will include Activities This Period, Near-Term Activities, Outstanding Issues, Budget Position, and Schedule.
2. Provide Meeting Notes that document discussions, decisions, District comments, and District direction.
3. Conduct periodic informal meetings and conference calls with Owner to review progress, get direction, and enhance coordination in advance of Workshops.
4. Submit District-review drawings in 11" x 17" reduced-scale format. Provide intermediate and final deliverables as PDF (electronic) documents.
5. Develop Bidding Documents using the Engineers Joint Contract Documents Committee (EJCDC) format and Division 0 documents.
6. Perform quality reviews throughout the duration of the Project.

Final Planning and Preliminary Design Phase

Project Development

1. Develop and submit to the Owner and WDNR phosphorus-related reports that satisfy the compliance schedule requirements for total phosphorus (WPDES Permit).
2. Develop and submit a Request for Information. Work on site to help the Owner collect and provide the requested information. This information may include the following: record drawings; recent historical wastewater data, effluent data, and/or treatment facility operating data; operating records; maintenance records; subsurface conditions information; hazardous materials information (e.g., paint and asbestos); and/or operation and maintenance manuals.
3. Perform a topographic survey of relevant areas of the site.
4. Perform a LIDAR scan of relevant structures to capture the existing configuration of structures and the equipment internal to those structures.
5. Develop AutoCAD drawings representing relevant existing structures and areas of the site using available record drawings and field measurements collected during the topographic survey and LIDAR scan.
6. [Design Workshop 1](#) – Prepare for, conduct, and document Design Workshop 1. Attendees will review and discuss the Project Work Plan. The Project Work Plan will outline the Project

background, objectives, Scope of Services, key personnel for the Owner and Donohue, communication protocols, schedule, deliverables, and other information relevant to the implementation of the Project. During this Workshop, attendees will begin to establish fundamental requirements for the various design disciplines (e.g., material preferences, manufacturer preferences, operating strategies, equipment tagging conventions, and naming conventions.)

❖ Deliverables

Project Work Plan
Meeting Materials
Meeting Notes

7. Perform a comprehensive site review to enhance the Design Team's understanding of existing conditions. All engineering disciplines will participate in this site review.
8. Develop a site plan incorporating site topographic survey data and structure drawings incorporating LIDAR scan data.
9. Develop an existing hydraulic profile model for relevant areas of the Facility (e.g., from BAF to receiving water). Perform limited field calibration of the hydraulic model to confirm it properly predicts water surface elevations. Calibration will involve discrete water surface elevations and corresponding flow measurements.
10. Develop process flow schematics for new and modified liquid treatment processes. These schematics will be modified and evolve throughout subsequent design phases and incorporated in the Bidding Documents.
11. Develop site plan configuration concepts showing the location of existing structures, existing site features, proposed structures, proposed site features, and proposed site feature modifications.
12. Develop hydraulic profiles for configuration concepts.
13. Develop schematic layout concepts for new and modified buildings/structures.
14. Identify candidate process equipment and manufacturers. Assemble related information for Owner review and discussion at subsequent Design Workshops.
15. **Design Workshop 2** – Prepare for, conduct, and document Design Workshop 2. Attendees will review and discuss the works-in-progress produced by the Tasks performed since the previous Workshop, including: hydraulic profile, unit process/equipment sizing, process schematics, site concept drawings, and schematic layout concept drawings.

❖ Deliverables

Workshop Materials
Meeting Notes

16. Visit other treatment facilities with the Owner to review candidate equipment and processes. These visits will provide the Owner an opportunity to discuss operating and maintenance performance directly with staff that operate and maintain the equipment.
17. Refine site plan, schematic layouts, hydraulic profile, and process schematics to reflect Owner direction and preferences.
18. **Design Workshop 3** – Prepare for, conduct, and document Design Workshop 3. Attendees will review and discuss the works-in-progress produced by the Tasks performed since the previous Workshop, including: hydraulic profile, unit process/equipment sizing, process schematics, site concept drawings, and schematic layout concept drawings.

❖ Deliverables

Workshop Materials

Meeting Notes

19. Conduct informal meetings and conference calls with Owner to review progress, get direction, and enhance coordination in advance of Workshops.
20. Produce and submit to the Owner solicitation or procurement documents for the cloth-media disk filtration system.
21. Assemble, organize, and summarize proposals. Review the proposals with the Owner to select the one the preferred cloth-media disk filters systems to advance to subsequent design tasks.

Process Design

1. Work closely with major equipment manufacturers to select and size process equipment, piping, valves, and hydraulic control equipment (e.g., gates and weirs).
2. Define process equipment requirements: dimensions, weights, lifting requirements, access requirements, and utilities.
3. Develop process operating and control strategies.
4. Develop unit process flow sheets (schematics). Each flow sheet will be limited to a single unit process and reflect the Owner's requirements and preferences provided previously.
5. [Design Workshop 4](#) – Prepare for, conduct, and document Design Workshop 4. Attendees will review and discuss the process design information produced during the previous Process Design Tasks.

❖ Deliverables

Workshop Materials
Meeting Notes

6. Refine selections and sizing of process equipment, piping, valves, and hydraulic control equipment (e.g., gates and weirs).
7. Refine process equipment requirements: dimensions, weights, lifting requirements, access requirements, and utilities.
8. Refine process operating and control strategies. Revise and resubmit operating and control strategies to incorporate mutually-agreed-to revisions.
9. Refine unit process flow sheets (schematics).
10. Develop the process motor list.
11. Coordinate with electric, natural gas, and water utilities.
12. [Design Workshop 5](#) – Prepare for, conduct, and document Design Workshop 5. Attendees will review and discuss the process design information produced during the previous Process Design Tasks.

❖ Deliverables

Workshop Materials
Meeting Notes

13. Prepare and submit a DRAFT Process Design Basis Report that documents the process design. The Report will incorporate the work products produced during the previous Process Design Tasks.

❖ Deliverables

DRAFT Process Design Report

14. Conduct a review meeting with the DNR to review the process design.
15. Prepare and submit a FINAL Process Design Basis Report that documents the process design. The Report will incorporate mutually-agreed-to Owner direction and preferences as well as DNR revisions, if any.

❖ Deliverables
FINAL Process Design Report

Preliminary Layout

1. Prepare initial preliminary layout drawings for all structures affected by the Work of the Project. In general, these drawings will show:
 - Major removals (structural and equipment) within each existing structure;
 - Channels with dimensions;
 - Tanks with dimensions;
 - Basins with dimensions;
 - Buildings with dimensions;
 - Rooms on each floor like process rooms, electrical rooms, control rooms, mechanical rooms, maintenance rooms, storage rooms, office spaces, laboratories, and meeting rooms;
 - Cross sections with elevations,
 - Stairwells and doors;
 - Process equipment outlines consistent with the process equipment sized and selected during the Process Design Phase;
 - Major process piping centerlines;
 - Equipment access requirements and provisions;
 - Site access requirements and provisions for each structure; and
 - Site plan showing all structures and major above-grade site features.
2. Using the process schematics and control strategies developed previously, prepare conceptual Process and Instrumentation Diagrams (PIDs).
3. [Design Workshop 6](#) – Prepare for, conduct, and document Design Workshop 6. Attendees will review and discuss the initial preliminary layout drawings and PIDs.

❖ Deliverables

Meeting Materials

Meeting Notes

4. Prepare preliminary layout drawings for all structures affected by the Work of the Project. These drawings will incorporate Owner preferences and requirements provided during Workshop 6, and be developed to a higher degree of completion than the previous version of the preliminary layout drawings. In general, these drawings will show the items listed below, which were not shown or provided on the previous version of the preliminary layout drawings:
 - Major structural features like wall thickness, slab thickness, beam sizes, and column sizes;
 - Major equipment access and removal devices like bridge cranes, monorails, and hoists;
 - Process piping and valves with pipe sizes, flow stream identifiers, and elevations;
 - Major electrical equipment like switchgear, emergency generators, MCCs, VFDs, transfer switches, and lighting panels;
 - Major controls equipment and panels;
 - Major HVAC equipment like boilers, make-up air units, furnaces, and air conditioners;
 - Major HVAC ductwork and piping;
 - Site plan showing all structures, major above-grade site features, major buried process piping, and major buried utilities; and
 - Overall electrical one-line diagram(s).

5. Prepare preliminary PIDs. These PIDs will incorporate Owner preferences and requirements provided during Workshop 6.
6. Develop a construction cost opinion reflecting the current version of the preliminary layout drawings and PIDs. The construction cost opinion will be take-off based and organized by specification division. Develop annual operating cost opinions.
7. **Design Workshop 7** – Prepare for, conduct, and document Design Workshop 7. Attendees will review and discuss the refined preliminary layout drawings and PIDs. This Workshop will include a review of the capital and annual cost opinions. The primary focus of this Workshop will be the costs. At this Workshop, attendees, armed with the detailed cost opinion, will explore alternatives that provide the necessary performance and functionality at a lower cost or greater value. Attendees will develop a list of cost-reduction alternatives worthy of further investigation.
 - ❖ **Deliverables**
 - Meeting Materials
 - Meeting Notes
8. Explore the performance and functionality associated with the list of cost-reduction design revisions produced during Workshop 7. Understanding Owner requirements and preferences, Donohue may develop other alternatives after Workshop 7. Where appropriate or necessary, develop refined layout drawings illustrating the implementation of the cost-reduction alternatives.
9. Develop cost opinions for the cost-reduction alternatives advanced from Workshop 7, and/or developed subsequently by Donohue, and found to sufficiently preserve the necessary performance and functionality.
10. **Design Workshop 8** – Prepare for, conduct, and document Design Workshop 8. Attendees will review and discuss the cost-benefit of the cost-reduction alternatives. The aim of this Workshop is to define, in the context of cost and user rates, the Work associated with this Project.
 - ❖ **Deliverables**
 - Meeting Materials
 - Meeting Notes
11. Produce the final preliminary layout drawings and PIDs that reflect the decisions made during Design Workshop 8.
12. Produce the final preliminary layout cost opinion consistent with the decisions made during Design Workshop 8.
13. Produce a Preliminary Design Report (PDR) that documents the process design, control strategies, electrical strategies, and HVAC strategies, and incorporates the preliminary layout drawings, preliminary PIDs, operating strategies, and Project construction budget summary. A detailed and itemized cost opinion will be provided separately as a stand-alone PDR Cost Opinion.
 - ❖ **Deliverables**
 - Preliminary Design Report (PDR)
 - Preliminary Construction Cost Opinion

Final Design Phase

Final Layout

1. Finalize size and location of major equipment. Refine process equipment requirements: dimensions, weights, lifting requirements, access requirements, and utility requirements.
2. Perform geotechnical investigation.
3. Develop final operating and control strategies.
4. Prepare one-line diagrams and elevations.
5. Using the process schematics and control strategies developed previously, prepare preliminary process and instrumentation diagrams (PIDs) and instrumentation plan drawings.
6. Prepare overall process control network diagram.
7. Prepare Work sequence and constraints and construction schedule.
8. Prepare complete motor list including HVAC, architectural, and structural motors.
9. Prepare final layout drawings for all structures affected by the Work of the Project. These drawings will incorporate Owner preferences, requirements, and cost-saving measures, and be developed to a higher degree of completion than the preliminary layout drawings. In general, these drawings will show the items listed below, which were not shown or provided on the preliminary layout drawings:
 - Site plan details such as yard piping; sidewalks and parking; discharge point; and grading plan
 - Process details such as sample sinks and equipment utility water connections
 - Structural details such as roof framing; wall and roof type; floor, roof, and wall openings; elevators, overhead doors, and lifting equipment; equipment pads; floor hatches; floor slopes; roof drain systems; hoisting equipment; framing; beams; and columns
 - HVAC equipment such as ducts; air handling equipment; windows, louvers, intakes, and grilles; fire protection system; and hazardous ratings
 - Electrical components such as electrical duct banks; generators; and building lighting
 - Plumbing components such as fixture dimensions and the floor drain system; eyewashes and emergency showers
 - I&C components such as I&C signals
10. Request from Owner insurance requirements and other front-end, construction contract, requirements.
11. [Design Workshop 9](#) – Prepare for, conduct, and document Design Workshop 9. Attendees will review and discuss the Final Layouts and other tasks performed since the previous Workshop.
 - ❖ [Deliverables](#)
 - Final Layouts
 - Work Sequence and Constraints
 - PIDs
 - One-Lines
 - Elevations
 - Workshop Materials
 - Meeting Notes
12. Revise documents to reflect Owner direction and preferences.

Construction Drawings

1. Continue to advance final layout drawings to achieve Construction-level Bidding Documents. Produce base sheets and release to non-Process disciplines.
2. Refine construction schedule and Work sequence and constraints.
3. Coordinate and critique design with the PIDs among disciplines.
4. Prepare Specifications.
5. Update construction cost opinion.
6. Perform regulatory-agency coordination services as necessary.
7. [Design Workshop 10](#) – Prepare for, conduct, and document Design Workshop 10. Attendees will review and discuss the Construction Bidding Documents (drawings and specifications) and the Final Opinion of Probable Construction Cost.
 - ❖ [Deliverables](#)
 - Reviewable Bidding Documents: Construction Drawings and Specifications
 - Opinion of Probable Construction Cost
 - Workshop Materials
 - Meeting Notes
8. Revise Construction Drawings and Specifications to reflect Owner direction and preferences.

Review and Coordination

1. Produce internally-reviewable Bidding Documents.
2. Perform an internal Designer Review and conduct internal Designer Review Meetings.
3. Conduct plans-in-hand review at the Facility for all disciplines to review drawings on site. Incorporate revisions as necessary.
4. Conduct internal PID coordination checklist meeting.
5. Perform final internal Quality Control reviews.
6. Produce and submit to Owner final Bidding Documents and construction cost opinion.

Bidding Phase

1. Advertise the Project.
2. Attend and conduct Pre-Bid Meeting. Attendance will be mandatory for prospective Bidders.
3. Respond to Bidder questions and prepare Addenda as necessary.
4. Assist Owner with and attend Bid Opening.
5. Submit to Owner a tabulation of Bid results.
6. Review Bids and submit to Owner a letter of recommendation for award.
7. Prepare and submit to Owner a Notice of Award.

Funding Phase

1. Submit to the Owner and WDNR a CWFLP Intent to Apply and CWFLP Application on behalf of the Owner.

B. PROJECT TIMING

Donohue shall be authorized to commence the Services set forth herein upon execution of this Agreement. The Services for this Task Order will be delivered to accommodate the schedule shown below. Donohue’s services under this Agreement will be considered complete when Donohue has delivered to Owner the deliverables defined under Scope of Services.

Time	2020	2021	2022	2023	2024	2025
Regulatory						
Phosphorus Compliance	↓	↓	↓	↓	↓	↓
Current WPDES Permit	Status 12/31	PCAP 12/31	FCAP 12/31	Design Status 12/31	Plans+Specs 12/31	End Construction 12/31
				Expires 12/31		
Design						
Preliminary Design		◀ CMDF system evaluation, procurement, and selection				
Final Design						
Bidding						
Funding						
ITA/Perf	↓					
CWFP Application						
CWFP Closing						
Construction						
Optimization						

C. COMPENSATION

Compensation for the work as defined in the Scope of Services (Part I) of this Agreement shall be a lump sum of \$666,675. See attached Level of Effort and Compensation Table for a detailed development of this fee. The listing below delineates the fee by Phase.

Phase	Fee
Final Planning and Preliminary Design	\$298,975
Final Design	\$329,150
Bidding	\$22,125
Funding	\$16,425
Total	\$666,675

APPROVED FOR OWNER

APPROVED FOR DONOHUE

By: _____

By: _____

Printed Name: _____

Printed Name: Michael W. Gerbitz

Title: _____

Title: Senior Vice President

Date: _____

Date: _____

