TASK ORDER

This is Task Order No. 2024-CU03R,
consisting of 7 pages
Wastewater Treatment Facility Biosolids
Dewatering and Handling System Upgrade
Design Services

Task Order

In accordance with Paragraph 1.1 of the Master Professional Service Agreement between Columbus Utilities (CU) and Ruekert & Mielke, Inc. (R/M) for Professional Services – Task Order Edition, dated March 20, 2019 ("Agreement"), CU and R/M agree as follows:

1. Specific Project Data

A. This Task Order replaces Task Order 2024-CU03 with updates requested by Columbus Utilities.

Background - The purpose of this project is for the design and bidding of improvements to the Columbus Utilities Wastewater Treatment Facility (WWTF) biosolids dewatering and handling system as recommended by the previous study approved by the WDNR. The WWTF presently uses a belt filter press located in the upper level of the Solids Building, to dewater the liquid biosolids stored in the existing aerobic digester/thickener from approximately 2.5% solids to a solids cake. The belt filter press achieves 14% solids in the biosolids cake it produces. It is recognized that the press is at the end of its service life.

The cake from the belt filter press is stored in the existing Biosolids Storage Building which was constructed in 1996. With biosolids cake of only 14% solids, approximately one week after placement in the building, the cake slumps down and becomes gelatinous in consistency. With this consistency, it cannot be stored more than 2.5 feet high. This greatly reduces the effective storage volume of the building. Presently, the facility struggles to meet the 180-day storage requirement in Wisconsin Administrative Code (WAC).

In 2023, Columbus Utilities (CU) completed a Biosolids Study recommending the addition of a volute press and dryer to upgrade its biosolids dewatering and management process. In addition, CU pilot tested the recommended equipment from the study during a three-week period in the summer of 2023. The equipment performed well, and it met expectations defined in the study. The City also coordinated with area farmers to share with them the plan for the new equipment and the biosolids product from the pilot exercise. The farmers reacted positively to receiving a dryer product from the City. The Wisconsin Department of Natural Resources (WDNR) approved the Biosolids Study in November of 2023.

In early 2024 CU determined that a dryer was no longer needed in the short term and that the dryer could be deferred to a future project if needed. CU conducted a pilot study introducing an enzyme in the biosolids digester/thickener upstream of the belt filter press dewatering process. The results of the study indicated that the solids content from the digester/thickener and from the belt press could be marginally improved with the enzyme and providing a decrease in the volume of solids.

Recently, CU analyzed the type of dewatering equipment recommended in the original study and pilot tested in 2023. Two other different types of biosolids dewatering equipment were considered. CU reviewed equipment proposals and attended presentations prepared by the equipment manufacturers representatives. At the end of the process, the original biosolids dewatering device – the volute press was confirmed as the desired dewatering equipment largely due to its the built-in redundancy and expandability.

In addition, CU is adding several components to the design.

CU would like to replace the existing biosolids transfer pumps from the aerobic digester/thickener. The pumps are at the end of their service life.

CU would like to add an external piping connection between the north and south tanks of the aerobic digester/thickener structure. A return pipe from the belt press back to the aerobic digester/thickener structure will also be provided. With these additions, biosolids can be continually recirculated through the structure when the new volute press is not in operation.

A biosolids collection container will be purchased as part of the project. The collection container would be in the existing Solids Building to collect the biosolids in cake form as they are discharged from the dewatering operation. The container would then be transported to the Biosolids Storage Building for unloading. The container allows cake to be staked in an appropriate 8 ft. x 8 ft. x 8 ft. cubed arrangement. It allows water to drain through the walls and floor of the structure while the solids are retained.

CU has requested the project includes a used front-end loader. This will be used to help transport the cake and stack the cake in the biosolids storage building. Presently a truck is used. The truck is at the end of service life.

Several updates will be made to the Biosolids Storage Building. A new overhead and service door will be provided, ventilation will be improved, lighting will be improved, a heat lamp may be installed, and solar panels will be installed on the south portion of the roof to offset some energy use. These improvements will help with the cake biosolids drying. A new steel roof will be provided for the Biosolids Storage Building. The building is due for a new roof as the existing shingles are well over 20 years old. The steel roof will negate any future roof maintenance under the proposed solar panels.

A dry polymer/bentonite blend will be investigated for backup use at the volute press. The primary system will be the liquid polymer system that comes from the manufacturer. R/M will design the system with assistance from CU who has previous experience with this system. This system would supplement the standard wet polymer make-down equipment that would be provided with the volute press equipment.

B. This Task Order is for the design and public bidding services of the WWTF Biosolids Dewatering and Handling System Upgrade project. The recommended plan from the Biosolids Study will be implemented without the dryer and include some of the recent changes requested from CU. Our scope includes preparing detailed plans and specifications, obtaining regulatory approvals, administering public bidding services, and writing a Letter of Recommendation for the lowest responsive bidder. The plans and specifications will include the requirements for architectural, mechanical, structural, electrical, and control disciplines. The project also includes application to the WDNR Clean Water Fund program for a low-interest rate loan and potential principal forgiveness. Our detailed Scope of Services is included below.

2. Scope of Services for R/M

A. The Scope of Services are as follows:

1) Meet with the Utility in-person to confirm design requirements and project approach. Conduct detailed site inspection. Organize notes and photographs.
2) Survey the area in the vicinity of the new biosolids piping.
3) Conduct environmental screening.
4) Conduct preliminary design (30%) for equipment sizing. Use facilities modifications study as a reference.
5) Conduct preliminary design for electrical distribution system.
6) Conduct preliminary design for incorporation of controls, automation, and SCADA.
7) Organize drawing sheets.
8) Drafting Site Plan, Structural, Architectural, Mechanical, and Electrical sheets for preliminary design. Include demolition sheets.
9) Meet with Utility in-person to discuss predesign drawings.
10) Conduct intermediate and final design for site plan.
11) Conduct intermediate and final design for structural components of building modifications. Coordinate with subconsultant.
12) Conduct intermediate and final design for mechanical components.
13) Develop equipment identification system.
14) Conduct intermediate and final design for electrical distribution system.
15) Conduct intermediate and final design for incorporation of controls, automation, and SCADA.
16) Conduct intermediate and final design for plumbing.
17) Conduct intermediate and final drafting for site plan.

18) Conduct intermediate and final drafting for structural components.
19) Conduct intermediate and final drafting for mechanical components.
20) Conduct intermediate and final drafting for electrical distribution system.
21) Conduct intermediate and final drafting of controls, automation, and SCADA.
22) Write technical specifications.
23) Submit Biosolids Storage Building solar panel design to Plan Commission. Coordinate to achieve approval. Design new steel roof.
24) Coordinate with subconsultant for structural review for solar panels.
25) Have review meetings with Utility at 60% and 90% completion.
26) Incorporate Utility comments at 60% and 90% completion.
27) Develop Engineer's Opinion of Probable Construction Cost.
28) Write WDNR submittal design report, complete WDNR forms, and submit project approval package to the WDNR. Coordinate with WDNR on change of approved plan to install a dryer.
29) Complete application for WDNR Clean Water Fund Program (CWF).
30) Answer questions and address comments from the WDNR. Achieve WDNR approval for project.
31) Write front end of project manual including contract, insurance, and bidding requirements. Project manual will be in format of Engineer's Joint Contract Documents Committee.
32) Conduct QA/QC.
33) Make final design changes.
34) Assemble drawings and specifications for public bidding. Upload to Quest.
35) Answer bidder questions.
36) Issue needed addenda.
37) Attend bid opening.
38) Review bids for accuracy.
39) Write Letter of Recommendation and Notice of Award.
40) Coordinate WDNR CWF Loan Closing and Financial Agreement.

3. Columbus Utilities Responsibilities

The CU shall have those responsibilities as set forth in Section II of the Agreement, subject to the following:

A. Answer design question.

B. Attend design review meetings.

C. Provide design review comments.

D. Attend Bid Opening.

4. Items Excluded

The following items are excluded from the Scope of Services:

A. Anything not specifically identified in the Scope of Services above.

B. Permit fees.

C. CWFL Loan administration (to be completed in construction services scope).

D. Additional meetings not listed in scope.

E. Redesign or add of services.

F. Change of conditions from information known at time of this Task Order.

G. Contract execution with the low bidder (to be done in a subsequent phase).

H. Construction services (to be done in a subsequent phase).

5. Times for Rendering Services

Schedules are subject to change due to activities beyond the control of R/M. In general, the tentative schedule is as follows:

A. Start design– December 20, 2024.

B. Submit plans and specifications and the CWF package to the WDNR – August 30, 2025.

C. Receive WDNR approval of project – November 30, 2025 (Estimated).

D. Complete public bidding – December 31, 2025.

6. Payments to R/M

A. The CU shall pay R/M for services rendered on a Lump Sum Basis as follows:

Category of Services	Estimate of Compensation for Services
Completion of Design and Bidding Services	$229,319.00
TOTAL =	$229,319.00

B. The terms of payment are set forth in Section III and Exhibit A of the Agreement.

C. Detailed breakdown of hours for the WWTF Biosolids Upgrade project is attached as Exhibit B.

7. Subconsultants

A. R/M proposes to use a subconsultant for structural, plumbing, HVAC, and solar system design services.

TASK ORDER

TASK ORDER NO. 2024-CU03R
WASTEWATER TREATMENT FACILITY
BIOSOLIDS DEWATERING AND HANDLING SYSTEM UPGRADE DESIGN SERVICES
Between Columbus Utilities
and
Ruekert & Mielke, Inc.
Dated December 2, 2024

Terms and Conditions: Execution of this Task Order by Columbus Utilities and R/M shall make it subject to the terms and conditions of the agreement (as modified above), which Agreement is incorporated by this reference. R/M is authorized to begin performance upon its receipt of a copy of this Task Order signed by Columbus Utilities.

The Effective Date of this Task Order is December 19, 2024.

OWNER:	ENGINEER:
Columbus Utilities	Ruekert & Mielke, Inc.
Signature: _____	Signature: Jason P. Lietha Digitally signed by Jason P. Lietha Date: 2024.12.02 10:58:57 -06'00'
Name: _____	Name: Jason P. Lietha, P.E.
Title: _____	Title: Vice President
Date: _____	Date: December 2, 2024

DESIGNATED REPRESENTATIVE FOR TASK ORDER

Name: _____	Name: David W. Arnott, P.E.
Title: _____	Title: Team Leader/Senior Project Manager
Address: _____	Address: W233 N2080 Ridgeview Parkway
_____	Waukesha, WI 53188
Email: _____	Email: darnott@ruekert-mielke.com
Phone: _____	Phone: 262-953-3080

PROFESSIONAL FEE ESTIMATE

DATE: 10/29/2024

PREPARED BY: DWA

Exhibit B

COST BREAKDOWN

SCOPE OF SERVICES	2024 Hourly Rate	$227	$206	$206	$171	$160	$149	$133	$97	TOTAL HRS	TOTAL LABOR COST
	Position	E7	E6	E6	EC 2/Envir	E3	ET3	Survey	AA		
	Initials	DWA	DJH/ADB	EAW/DCB	BAG	EJB	WCB				
Biosolids Upgrade Design and Bidding Services											
1	Meet with Utility in-person to confirm design requirements and project approach. Conduct detailed site inspection. Organize notes and photographs.	8	8	8		8				32	$6,392
2	Survey the area in the vicinity of the new biosolids piping.					2		20		22	$2,980
3	Conduct environmental screening.				8					8	$1,368
4	Conduct preliminary design (30%) for equipment sizing. Use facilities modifications study as a reference.	2	4			4				10	$1,918
5	Conduct preliminary design for electrical distribution system.		6	10						16	$3,296
6	Conduct preliminary design for incorporation of controls, automation and SCADA.	4	5	25						34	$7,088
7	Organize drawing sheets.	3	3	3			15			24	$4,152
8	Drafting Site Plan, Structural, Architectural, Mechanical, and Electrical sheets for preliminary design. Include demolition sheets.	4	4	6			30			44	$7,438
9	Meet with Utility in-person to discuss predesign drawings.	6								6	$1,362
10	Conduct intermediate and final design for site plan.									0	$0
11	Conduct intermediate and final design for structural components of building modifications. Coordinate with subconsultant.	2	4			8				14	$2,558
12	Conduct intermediate and final design for mechanical components.	6	25			30				61	$11,312
13	Develop equipment identification system		4			4				8	$1,464
14	Conduct intermediate and final design for electrical distribution system.		3	25						28	$5,768
15	Conduct intermediate and final design for incorporation of controls, automation, and SCADA.		4	30						34	$7,004
16	Conduct intermediate and final design for plumbing.		2			4				6	$1,052
17	Conduct intermediate and final drafting for site plan.		2			2	4			8	$1,328
18	Conduct intermediate and final drafting for structural components.		2			3	12			17	$2,680
19	Conduct intermediate and final drafting for mechanical components.	2	4			4	40			50	$7,878
20	Conduct intermediate and final drafting for electrical distribution system.		2	6			28			36	$5,820
21	Conduct intermediate and final drafting of controls, automation and SCADA.		2	4			16			22	$3,620
22	Write technical specifications.	2	20	35		30			35	122	$19,979
23	Submit Biosolids Building solar design to Utility Plan Commission. Coordinate to achieve approval.	1	2			8	3		3	17	$2,657
24	Coordinate with subconsultant for structural review for solar panels. Design new steel roof.	1	2	6						9	$1,875
25	Have review meetings with Utility at 60% and 90% completion. Meetings in-person for Waukesha staff and remote for Green Bay staff.	12	8	8						28	$6,020
26	Incorporate Utility comments at 60% and 90% completion.	2	10	6		8	10		6	42	$7,102
27	Develop Engineer's Opinion of Probable Construction Cost.	3	4	10		20				37	$6,765
28	Write WDNR submittal design report, complete WDNR forms and submit project approval package to the WDNR. Coordinate with WDNR on change of approved plan to install a dryer.		6	3		10			2	21	$3,648
29	Complete application for WDNR Clean Water Fund Program (CWF).	5			25	25				55	$9,410
30	Answer questions and address comments from the WDNR. Achieve WDNR approval for project.	1	3	3		6	4		3	20	$3,310

PROFESSIONAL FEE ESTIMATE

Exhibit B

DATE: 10/29/2024

PREPARED BY: DWA

COST BREAKDOWN

SCOPE OF SERVICES										TOTAL HRS	TOTAL LABOR COST
	2024 Hourly Rate	**$227**	**$206**	**$206**	**$171**	**$160**	**$149**	**$133**	**$97**		
	Position	**E7**	**E6**	**E6**	**EC 2/Envir**	**E3**	**ET3**	**Survey**	**AA**		
	Initials	**DWA**	**DJH/ADB**	**EAW/DCB**	**BAG**	**EJB**	**WCB**				
Biosolids Upgrade Design and Bidding Services											
31	Write front end of project manual including contract, insurance, and bidding requirements. Project manual will be in format of Engineer's Joint Contract Documents Committee.	3	6			20			14	43	$6,475
32	Conduct QA/QC.	13	7	4			8		4	36	$6,797
33	Make final design changes.	2	4	4		4	8		4	26	$4,322
34	Assemble drawings and specifications for public bidding. Upload to Quest.								4	4	$388
35	Answer bidder questions.		3	3		6			3	15	$2,487
36	Issue needed addenda.		8	6		6	6		4	30	$5,126
37	Attend bid opening.	3								3	$681
38	Review bids for accuracy.	1								1	$227
39	Write Letter of Recommendation and Notice of Award.					2			1	3	$417
40	Coordinate WDNR CWF Loan Closing and Financial Agreement.	4			10					14	$2,618
41	Administration										$27,000
	Sum	90	167	205	43	214	184	20	83	1006	$203,782
	Reimbursables										
	Printing/Copying										$1,800
	Mileage										$600
	Subconsultant - Strass McGuire (Solar Installation).										$2,512
	Subconsultant - Axiom (Structural and HVAC)										$11,000
	Subconsultant - Arch Solar										$9,625
	Total Fee										**$229,319**