

Attachment A

AGREEMENT 20021 FOR ENGINEERING SERVICES

Des Plaines River WRF Dewatering Phase 1 Project

PART I

PROJECT DESCRIPTION/SCOPE OF SERVICES/TIMING

A. PROJECT DESCRIPTION

The intent of this project is to assist Lake County Public Works (LCPW) with the design of the Phase 1 improvements recommended in the Dewatering Evaluation Report for the Des Plaines River WRF prepared by Donohue. The following upgrades are included in the design services for the project:

1. The alum pumping skids utilized for dosing the mixed liquor for chemical phosphorus removal will be relocated in Structure 90 from the Polymer Room to the Truck Loading Area along with associated piping modifications. The alum storage tank located in the Truck Loading Area will become the primary storage and pumping location for alum feed. The alum storage tank located in the polymer room will be repurposed for polymer storage.
2. A new alum pumping skid will be added in the Truck Loading Area to dose the secondary effluent upstream of the tertiary filters for chemical phosphorus removal. If design sizing shows that the existing alum pumping skids dedicated to feeding the belt filter presses are sized properly, the existing alum pumping skids will be relocated instead of a designing a new skid.
3. New buried alum piping will be routed out of Structure 90 to the secondary effluent junction box to provide a new alum dosing point to the secondary effluent upstream of the tertiary filters.
4. A new polymer system for the current and future dewatering equipment will be installed. The system will include:
 - a. Repurposing the alum storage tank in the Polymer Room for bulk polymer storage
 - b. Addition of a second bulk polymer storage tank and a recirculation pump to keep the bulk polymer in the two tanks from separating
 - c. Two polymer mixing systems to prepare dilute polymer for dosing
 - d. Two aging tanks to properly age and activate the dilute polymer
 - e. Four polymer feed pumps for dosing the four belt filter presses (sized for compatibility with future dewatering units).
5. Site civil, process, structural, electrical, mechanical and I&C upgrades necessary for the upgrades described in items 1 through 4.

In addition, Donohue will assist LCPW with the design of gas monitoring and odor control improvements in the Dryer Building. The gas monitoring upgrades were identified in a technical memorandum prepared by Donohue in August 2020. The odor control upgrade was identified in the Top 9 Priority Projects Memo prepared by Baxter and Woodman, dated March 3, 2020. The following services are included in the design for the project:

1. Drying Room

- a. Communicate and coordinate with the dryer manufacturer to add CO monitoring in the dryer exhaust and material handling exhaust
- b. Add loss of room ventilation SCADA monitor and alarm with strobe
- c. Add exhaust gas compressor fail SCADA monitor and alarm with strobe
- d. Add dryer exhaust vacuum SCADA monitor and alarm with strobe
- e. Add CO sensors near dry product screening and southeast corner of room with SCADA alarm and strobe
- f. Modify thermal oil expansion tank pressure relief piping to route outside of building

2. Heater Room

- a. Add CO sensor with SCADA monitor and alarm with strobe

3. Cake Handling Room

- a. Add one H₂S sensor and one combustibles sensor near northwest corner of room near exhaust vent with SCADA monitor and alarm with strobe
- b. Add loss of room ventilation SCADA monitor and alarm with strobe
- c. Modify the condensate wetwell vent piping and sanitary drain piping to connect to a new odor control system
- d. Install a new odor control system for the condensate wetwell (location to be determined during design)
- e. Donohue assumes no structural isolation or HVAC upgrades will be required to comply with LCPW's interpretation of NFPA 820 requirements

B. SCOPE OF SERVICES

Basic Services to be provided by Donohue for this Project under this Agreement are as follows:

General

1. Construction bidding documents will be prepared for construction by a single prime Contractor.
2. Specifications will be prepared in general conformance with the 50-division format of the Construction Specifications Institute (CSI).
3. Drawings will be developed using Donohue's CAD standards.
4. Deliverables shall be in the form of .pdf electronic documents unless noted otherwise. Drawing deliverables shall be 11x17.
5. Project management activities shall include preparing a project work plan and providing monthly status reports, participating in bi-weekly conference calls to discuss near-term activities, and coordination of the project between Owner and Donohue design team.
6. Donohue assumes Owner will provide the front-end documents for the specifications and Donohue's specifications will start at Division 01.
7. No survey or geotechnical services are provided in this scope.
8. No construction related services are provided in this scope.
9. Conduct Kickoff Meeting – Conduct a Kickoff Meeting with the Owner to review the draft Project Work Plan. The Project Work Plan will contain the Project background, objectives, scope of services, key personnel, communication protocols, schedule, and other information relevant to the implementation of the Project.

Preliminary Design

1. Define process equipment requirements: dimensions, weights, lifting requirements, access requirements, and utilities.
2. Develop process operating and control strategies.
3. Develop unit process flow sheets (schematics). Each flow sheet will be limited to a single unit process.
4. Prepare design basis calculations identifying performance criteria, sizing criteria, and polymer dosing requirements for the systems.
5. Prepare preliminary layout drawings for Structure 60 and Structure 80. In general, these drawings will delineate:
 - a. Major removals (structural and equipment)
 - b. Tanks with dimensions
 - c. Building dimensions
 - d. Rooms on each floor
 - e. Cross sections with elevations
 - f. Stairwells and doors
 - g. Process equipment outlines
 - h. Equipment access requirements and provisions
6. Prepare a construction cost opinion based on the current version of the preliminary layout drawings. The construction cost opinion will be take-off based and organized by specification division.
7. Deliver a preliminary design package to the LCPW consisting of:
 - i. Major equipment listing and potential manufacturers
 - j. Operating and control strategy write-ups

- k. Flow sheets
 - l. Preliminary layout drawings
 - m. Construction cost opinion
8. Conduct a preliminary design package review meeting to receive comments and questions from LCPW. Document the meeting by preparing and delivering meeting notes.
 9. Conduct a site visit with the electrical, structural, site civil, and I&C disciplines. Prepare site visit notes to document required improvements for the upgrades.
 10. Prepare final layout drawings further refined to incorporate the identified revisions from the review meeting and discipline site visit. In addition to refinement of the preliminary layout drawings, this set will include draft electrical one-line diagrams and draft process and instrumentation diagrams.
 11. Update the construction cost opinion based on the final layout drawings.
 12. Deliver a final layout design package consisting of:
 - n. Major equipment listing of potential and selected manufacturers
 - o. Final layout drawings
 - p. Updated construction cost opinion
 13. Conduct a final layout design package review meeting to receive comments and questions from LCPW. Document the meeting by preparing and delivering meeting notes.
 14. Incorporate agreed-upon LCPW comments into the final layout design package.

Final Design

1. Prepare work sequence, constraints and construction schedule.
2. Produce internally-reviewable bidding documents (drawings and specifications).
3. Perform an internal designer review and conduct internal designer review meetings.
4. Conduct plans-in-hand review at DPR for appropriate disciplines to review drawings on site. Incorporate revisions as necessary.
5. Conduct internal P&ID coordination meeting.
6. Produce draft bidding documents (drawings and specifications).
7. Update construction cost opinion.
8. Conduct Workshop with Owner to review and receive comments on the draft Bidding Drawings, Specifications, and cost opinion.
9. Perform QA/QC review of drawings and specifications.
10. Incorporate review comments into Final Bidding Documents and provide Owner with the Final Bidding Documents in PDF format
11. Assist with preparation of IEPA construction and operating permit application for the project.

Bidding Assistance

1. Submit three sets of bidding documents to LCPW.
2. Bidding Documents – Deliver electronic bidding documents to LCPW. LCPW shall post the documents to their bidding website. Donohue shall answer bidders' questions, prepare addenda, and deliver addenda to the LCPW for posting.
3. Pre-Bid Meeting – Plan, conduct, and prepare notes for a pre-bid meeting with representatives of prospective bidders, Donohue, and the LCPW to review bidding requirements and tour the project site.
4. Bid Opening – Receive scanned PDF files of bids, review bids received, and prepare a bid tabulation. Prepare a letter of recommendation for the award of the contracts. Donohue assumes LCPW can conduct bid opening without Donohue in attendance.

5. Assemble the Contract Documents for execution by the Contractor and LCPW. After execution, furnish electronic PDF files of the executed Contract Documents to the LCPW and Contractor.

C. PROJECT TIMING

Donohue shall be authorized to commence the Services set forth herein upon execution of this Agreement. Donohue will complete the services included in this Agreement within the following project schedule:

Kickoff Meeting	1 week after Agreement execution
Preliminary Layout Drawings	6 weeks after Agreement execution
Draft Bidding Documents	16 weeks after Agreement execution
Final Bidding Documents	18 weeks after Agreement execution

PART II

OWNER RESPONSIBILITIES

- A. In addition to other responsibilities of Owner set forth in this Agreement, Owner shall:
 1. Identify a person authorized to act as the Owner's representative to respond to questions and make decisions on behalf of Owner, accept completed documents, approve payments to Donohue, and serve as liaison with Donohue as necessary for Donohue to complete its Services.
 2. Furnish to Donohue copies of existing documents and data pertinent to Donohue's Scope of Services, including but not limited to and where applicable: design and record drawings for existing facilities; property descriptions, land use restrictions, surveys, geotechnical and environmental studies, or assessments.
 3. Owner shall be responsible for all requirements and instructions that it furnishes to Donohue pursuant to this Agreement, and for the accuracy and completeness of all reports, data, programs, and other information furnished by Owner to Donohue pursuant to this Agreement. Donohue may use and rely upon such requirements, instructions, reports, data, programs, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations provided by Owner applicable to the furnished items.
 4. Provide to Donohue existing information regarding the existence and locations of utilities and underground facilities.
 5. Provide Donohue safe access to premises necessary for Donohue to provide the Services.
 6. Inform Donohue whenever Owner observes or becomes aware of a Hazardous Environmental Conditions, as defined in Part IV.3. of this Agreement, that may affect Donohue's Scope of Services or time for performance.

PART III

COMPENSATION, BILLING AND PAYMENT

- A. Compensation for the work as defined in the Scope of Services (Part I) of this Agreement shall be in accordance with Donohue's standard chargeout rates in effect at the time the Services are performed. Routine expenses will be billed at cost. The total cost for these Base Services will not exceed \$181,900 without prior written approval from Owner.
- B. Donohue will bill Owner monthly, with net payment due in 30 days.
- C. Donohue will notify Owner if Project scope changes require modifications to the above-stated contract value. Services relative to scope changes will not be initiated without authorization from Owner.

Attachment B
Des Plaines River WRF Dewatering Phase 1 Project
2021 Fee Estimate Summary
Donohue & Associates

Task Description	Cassity	Bergstrom	Heisel	Wood	Rivera	Jgrunwald	Gahagan	Halbach	Madrid	Koenig	Total Hours	Total Labor	Travel	Printing	Total Cost	Subtotals
	ENG VII	ENG V	ENG VII	ENG I	ENG II	ENG II	ENG III	ENG II	ENG III	Admin III						
	\$ 215	\$ 180	\$ 215	\$ 115	\$ 130	\$ 130	\$ 145	\$ 130	\$ 145	\$ 80						
Preliminary Design																\$ 90,130
1 Define process equipment requirements	2	4	2	16							24	\$ 3,420			\$ 3,420	
2 Develop process operating and control strategies	2	4	2	8		4					20	\$ 3,020			\$ 3,020	
3 Develop unit process flowsheets	2	4	2	16		4					28	\$ 3,940			\$ 3,940	
4 Prepare design basis calculations	2	4		16							22	\$ 2,990			\$ 2,990	
5 Prepare preliminary layout drawings	4	16	2	60	16	32	16	24	24	2	196	\$ 26,390			\$ 26,390	
6 Prepare construction cost opinion	2	4		10	8	8	4	4	4		44	\$ 6,060			\$ 6,060	
7 Deliver preliminary design package to Owner	2	2		4							8	\$ 1,250		\$ 50	\$ 1,300	
8 Conduct preliminary design package review meeting	4	4		8							16	\$ 2,500	\$ 200		\$ 2,700	
9 Conduct multi-disciplinary site visit	4	4		4	4	4	4	4	4		32	\$ 4,760	\$ 200		\$ 4,960	
10 Prepare final layout drawings	4	16	2	40	24	24	16	16	12	2	156	\$ 21,310			\$ 21,310	
11 Update construction cost opinion	2	2		4	2	2	2	2	2		18	\$ 2,610			\$ 2,610	
12 Deliver final layout design package	2	2		4							8	\$ 1,250		\$ 50	\$ 1,300	
13 Conduct final layout review meeting	4	4		8	4	4					24	\$ 3,540	\$ 200		\$ 3,740	
14 Refine final layout documents	2	2		16	8	8	4	4	4		48	\$ 6,390			\$ 6,390	
											-	\$ -			\$ -	
Final Design																\$ 81,840
15 Prepare work sequence, constraints and construction schedule	2	2		8	2	2	2	2	2		22	\$ 3,070			\$ 3,070	
16 Produce internally-reviewable bidding documents (drawings and specs)	2	8	2	60	40	40	16	24	24	2	218	\$ 28,680		\$ 100	\$ 28,780	
17 Perform internal designer review and conduct meeting	2	8	2	16	8	8	4	4	4		56	\$ 7,900			\$ 7,900	
18 Conduct plans-in-hand review on site				8	8	8		8			32	\$ 4,040	\$ 200	\$ 100	\$ 4,340	
19 Conduct internal P&ID coordination meeting		4		4	4	4					16	\$ 2,220			\$ 2,220	
20 Produce draft bidding documents	2	8	2	32	20	20	16	16	16	2	134	\$ 18,060		\$ 150	\$ 18,210	
21 Update construction cost opinion	2	2		2	2	2	2	2	2		16	\$ 2,380			\$ 2,380	
22 Conduct bidding documents workshop	4	4		8							16	\$ 2,500	\$ 200		\$ 2,700	
23 Perform internal QA/QC review of drawings and specifications	2		24								26	\$ 5,590			\$ 5,590	
24 Refine bidding documents and provide final bidding documents to Owner	2	4		8	8	8	4	4	4	2	44	\$ 5,990			\$ 5,990	
25 Assist Owner with IEPA approval	2			2							4	\$ 660			\$ 660	
											-	\$ -			\$ -	
Bidding Assistance																\$ 9,930
26 Submit documents to Owner	2	2		2							6	\$ 1,020		\$ 200	\$ 1,220	
27 Produce electronic bidding documents for Owner, respond to bidder questions	2	4		8	4	4	4	4	4		34	\$ 4,790			\$ 4,790	
28 Conduct pre-bid meeting	4	4									8	\$ 1,580	\$ 200		\$ 1,780	
29 Evaluate bids and prepare letter of recommendation	2	2									4	\$ 790			\$ 790	
30 Assemble contract documents for Owner and Contractor	2	2		4							8	\$ 1,250		\$ 100	\$ 1,350	
											-	\$ -			\$ -	
Total	70	126	40	376	162	186	94	118	106	10	1,288	\$ 179,950	\$ 1,200	\$ 750	\$ 181,900	\$ 181,900
Total Labor Dollars by Staff	\$ 15,050	\$ 22,680	\$ 8,600	\$ 43,240	\$ 21,060	\$ 24,180	\$ 13,630	\$ 15,340	\$ 15,370	\$ 800					USE =>	\$ 181,900