

Amendment 1

Missoula WWTP Digester 2 Mixer Replacement

Design Phase

Background

The City of Missoula (City) is replacing the mixing system in Digester 2 with a new pump and nozzle style mixing system. The City has contracted with Jacobs (City project number 25-011) to provide engineering services for the replacement mixing system. The original scope of work included a pre-design analysis and selection of the replacement mixing system. The pre-design evaluation recommended implementation of a pump and nozzle system. This amendment will add design tasks to the previously approved scope of work to develop Contract Documents for bidding. Construction phase tasks will not be included in this amendment.

The original scope of work includes three tasks (to remain unchanged):

Task 1: Digester Data Review

Task 2: Mixing System Evaluation and Selection

Task 3: Documentation

This amendment adds the following new tasks:

Task 4: Design Management

Task 5: Preliminary Design

Task 6: Final Design

Task 7: Bid Phase Services

Task 8: Additional Services

Task 4: Project Management

Project management will be conducted by Jacobs and will include coordination with the City, internal Jacobs schedule and resource management, development of project Health, Safety, and Environment (HSE) plan, implementation of quality control reviews, progress reporting and invoicing, and project administration. Upon notice to proceed (NTP), Jacobs will coordinate with the City to begin work.

Assumptions:

- Jacobs will manage the overall project budget at the project level rather than at the task level.
- Project management level of effort is based on the assumed project schedule.
- Effort is estimated as 3 hours per month.
- Invoices and status reports will be provided monthly.

Task 5: Preliminary Design

The replacement mixing system will consist of the following improvements:

- Mechanical
 - One 1750 GPM mixing pump, with 25 HP motor, to be located in the digester control building.
 - Suction and discharge pipes, isolation gate valves, pipe supports, pressure gauges, and other standard appurtenances.
 - Mixing nozzles mounted on stands within the digester, including foam breaker nozzle.
- Structural
 - Three new wall penetrations in the digester.
 - Pump and electrical equipment pads.
- Electrical
 - A VFD external to MCC-1.
 - Possible conduit and conductor from MCC-1 to the pump.
 - A Class 1 Division 1 rated local control station at the pump.
 - Possible pump starter modification and local disconnect replacement.
- Instrumentation and Control
 - Standard pump protection alarms and switches and instrumentation.

The scope of this task includes the following key components:

- **50% Design Plans** - Prepare drawings that are approximately 50% complete describing the work based on the scope of work and assumptions listed herein. Deliverable will be one electronic, searchable, and bookmarked PDF of the drawings. 50% drawings will not be stamped or signed.
- **50% Design Specification List** – Prepare a preliminary list of specifications that will be used for the contract documents.
- **50% Design Estimate** - Class 3 (+30% / -20%) Opinion of Probable Construction Cost as defined by the AACE International.
- **Preliminary Design Review Meeting** - A hybrid virtual/in-person review meeting will be held to review each drawing and solicit comments from the City.

Assumptions:

- City will pre-purchase the pump and nozzle mixing system, variable frequency drive (VFD), and gate valves; therefore, these items will not be included in the Contract Documents.
- Jacobs will provide approximately 6 hours of support with pre-purchase coordination activities including review of one submittal and one resubmittal each for the pump system, VFD, and gate valves, and review of the computation fluid dynamics (CFD) report. Review time of approximately 1.5 hours per submittal. Jacobs will not produce a specification or other deliverables.
- Heating loads and cooling requirements for the new pump are expected to be minor, so no HVAC analysis will be conducted and no modifications to the HVAC system will be required.

- Record drawings from previous project will be used as backgrounds for new plans. No survey or detailed modeling of existing conditions will be conducted.
- City will coordinate integration work directly with their contract integrator to accommodate scheduled PLC changes and develop process controls. Jacobs contract documents will provide for manual operation of pumps and installation of monitoring equipment. Jacobs work will be limited to creating a P&ID showing all system components with the future PLC and related signals identified.
- Jacobs will complete Quality Assurance/Quality Control reviews ahead of completing the deliverables.
- Deliverables will be provided electronically only, in PDF format.
- Up to three (3) Jacobs staff will attend the two (2) hour 50% Design Review Meeting. The meeting will be held at the WWTP and attended in person by local Jacobs staff, with a virtual meeting option for Jacobs staff not located in Missoula.

Task 6: Final Design

The scope of this task includes the following key components:

- **90% Design Plans** - Prepare drawings that are approximately 90% complete describing the work based on the scope of work and assumptions listed herein. Deliverable will be one electronic, searchable, and bookmarked PDF of the drawings. Drawings will not be stamped or signed.
- **90% Design Specification** – Prepare project specifications that will be used for the contract documents that are approximately 90% complete describing the work based on the scope of work and assumptions listed herein. Deliverable will be one electronic, searchable, and bookmarked PDF of the specifications. 90% specifications will not be stamped or signed.
- **90% Design Review Meeting** – A hybrid virtual/in-person review meeting will be held to review each drawing and solicit comments from the City.
- **Final Plans** - Prepare final drawings for bidding. Deliverable will be one electronic, searchable, and bookmarked PDF of the drawings. Final drawings will be stamped and signed by a professional engineer registered in the state of Montana.
- **Final Specifications**- Prepare final specifications for bidding. Deliverable will be one electronic, searchable, and bookmarked PDF of the specifications. Final specifications will be stamped and signed by a professional engineer registered in the state of Montana.

Assumptions:

- Jacobs will coordinate DEQ submittal and comment response with support from and coordination with the City.
- Up to 6 hours of DEQ comment response and updates to plans and specifications.
- City standard Division 00 Specifications will be used as a starting point, as provided in 2024 for the RAS Valve Replacement project. Updated template sections, if any, will be provided by the City. Jacobs will make minor updates for items specific to this project.
- Engineers Joint Contract Documents Committee (EJCDC) General Conditions and Supplemental General Conditions will be used.
- Jacobs will complete Quality Assurance/Quality Control reviews ahead of completing the deliverables.

- Final plans are expected to consist of 20 sheets total.
- Final specifications are expected to consist of 25 standard Division 00 and Division 01 specifications requiring only minor updates, and 25 project specific technical specifications.
- Deliverables will be provided electronically only, in PDF format.
- Up to three (3) Jacobs staff will attend the two (2) hour 90% Design Review Meeting. The meeting will be held at the WWTP and attended in person by local Jacobs staff, with a virtual meeting option for Jacobs staff not located in Missoula.

Task 7: Bid Phase Services

The scope of this task includes the following key components:

- **Bid Management** - Set up and manage bidding through QuestCDN using City-provided username and password.
- **Bider Questions** - Receive and respond to bidder questions.
- **Pre-bid Meeting** - Lead an on-site pre-bid meeting.
- **Addendum** - Prepare one addendum.
- **Bid Review, Bid Recommendation, and Notice of Award** – Review bids for completeness, provide Bid Recommendation letter to City, provide Notice of Award to City.

Assumptions:

- The City will arrange and pay for advertisement in the Missoulian.
- Potential bidders will obtain procurement documents via QuestCDN, and planholders list will be generated by QuestCDN.
- City will conduct online bid opening. Jacobs will set up a Teams meeting to host the meeting.
- One addendum will be prepared to respond to up to five bidder questions. The addendum will be distributed via QuestCDN.
- There will be a single bidding round. Services related to bid rejection and re-bidding are not included.
- One (1) Jacobs staff will attend the one (1) hour Pre-Bid Meeting. The meeting will be held at the WWTP and attended in person by local Jacobs staff, with a virtual meeting option for Jacobs staff not located in Missoula.

Task 8: Additional Services

This task provides additional project budget to be used for design services on an as-needed basis. This task will only be used for work which is approved in writing by the City.

Schedule

A preliminary schedule is shown below:

Milestone	Start Date	Duration (Calendar Days)	End Date
Notice to Proceed	12/17/2025	1	12/17/2025
Preliminary Design	12/17/2025	56	2/11/2026
City Review	2/11/2026	7	2/18/2026
50% Design Review Meeting	2/18/2026	1	2/18/2026
90% Design	2/18/2026	27	3/17/2026
City Review	3/17/2026	7	3/24/2026
90% Design Review Meeting	3/24/2026	1	3/17/2026
Final Design	3/24/2026	14	4/7/2026
DEQ Review	4/7/2026	60	6/6/2026
Bid Period	5/22/2026	21	6/12/2026

Compensation

Compensation for services and expenses for this project shall be on a Time and Materials Not-to-Exceed basis with budgets between task being interchangeable as needed.

Table 1. Projected Level of Effort and Cost

		Court Harris (PIC)	Cameron Clark (Process)	Jeff Moss (Process)	Jodie Binger (Project Management)	Wayne Kohler (Structural)	Katie Klacik (I&C)	Dallas Anderson (Electrical)	Wojciech Domagala (Drafting)	Tyler Boswell (HSE)	Michael Omane-Achamfuor (Estimator)	Caleigh Butts (Document Processing)	Sub-Total Hours	Total Fee
Task 4	Design Management	1		8	8					4			17	\$ 3,708
Task 5	Preliminary Design	1	12	40	8	8	4	12	60		6	20	171	\$ 29,433
Task 6	Final Design	1	16	40	8	8	4	16	60			30	183	\$ 31,760
Task 7	Bid Phase Services	1		20	4								25	\$ 5,039
Task 8	Additional Services	1	6	12	2	2	2	2	20			10	57	\$ 9,679
													TOTAL	\$ 79,619