

BILL NO. 2023-27

RESOLUTION 2023-27

A RESOLUTION OF THE CITY OF WEST PLAINS, MISSOURI AUTHORIZING THE CITY ADMINISTRATOR TO EXECUTE AN AGREEMENT WITH BURNS & McDONNELL FOR PHASE I WASTEWATER TREATMENT FACILITY IMPROVEMENTS.

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF WEST PLAINS, MISSOURI AS FOLLOWS:

Section 1: The City Administrator is authorized and directed to execute an agreement with Burns & McDonnell for Phase I of the Wastewater Treatment facility improvements for the City of West Plains.

Section 2: This Resolution shall be in full force and effect from and after the date of its passage and approval.

PASSED AND APPROVED THIS 18th DAY OF SEPTEMBER, 2023.

CITY OF WEST PLAINS, MISSOURI

BY: Michael Topliiff
MAYOR MICHAEL TOPLIFF

ATTEST:

Allison Skinner
CITY CLERK ALLISON SKINNER

Executive Summary

The City is requesting approval of the capital fund allocation for the Wastewater Treatment Facility (WWTF) Phased Improvements, including: site investigation, conceptual design, permitting support and State Revolving Loan Fund (SRF) support. These improvements are based on the Wastewater Treatment Plant Evaluation (Burns & McDonnell, 2021). Both Phase I and Phase II improvements will be advanced to Conceptual Design to support the City's decision on how to proceed with project design and delivery as well as support the requirements of the SRF application. This project will provide a foundation of understanding for the City when determining how to proceed with required WWTF upgrades to meet the Abatement Order on Consent (AOC) schedule of compliance by December 31, 2047.

Discussion

Over the past four years, the City has invested capital planning dollars in an effort to make a data-driven, affordable plan that will allow the WWTF to meet final permitted effluent limitations during wet weather events. As stated in the AOC, the City must meet compliance during wet weather events as soon as practicable, but no later than December 31, 2047. This project will allow the City to develop a cost-conscious plan based on current market target pricing for the required upgrades at the facility. Further, this project will allow the City to be evaluated for SRF program grant opportunities and get included on the SRF Intended Use Plan (IUP). Once on the SRF IUP, the City will understand the fiscal requirements for future bond elections to support the detailed design and construction for this project. As stated in the 30-year Integrated Management Plan (IMP), Phase I (as described below), must be designed, constructed and in-use to meet full compliance.

Phase I WWTF Required Upgrades:

- Influent Screening
- Influent Pump Station & Valve Vault
- Existing Aeration Basin Improvements
- Proposed Aeration Basin
- Intermediate Pump Station
- Filtration & Chemical Feed
- UV disinfection

Upon Council approval, this project will allow Burns & McDonnell to proceed through conceptual design for the entire WWTF. Subsequent capital investments required to fully complete Phase I design and construction may include: preliminary design, final design, project loan and administrative support, project bid and construction. Efficiencies in capital investment and project schedule for the remaining scope required to complete this project may be available pending the project delivery method.

Fiscal Impact

The initial cost for FY2023 is \$1,210,000. This includes the engineering services related to the aforementioned tasks. Subsequent task orders will be required to meet the full compliance as stated in the IMP and complete the Phase I WWTF upgrades.



**TASK ORDER FOR
ENGINEER-OWNER AGREEMENT**

Task Order No. 5

This Task Order is entered into and authorized by Owner this day of September, 2023, by and between City of West Plains, Missouri (hereinafter called OWNER) and Burns & McDonnell Engineering Company, Inc. (hereinafter called ENGINEER).

The parties agree that the ENGINEER shall perform the following Services in accordance with the terms of the Engineer-Owner Agreement dated July 20, 2020:

Scope of Services:

- A. Conceptual engineering services related to Wastewater Treatment Facility Improvements-Phase 1 as described in Exhibit B.
- B. Final design and construction services will be provided under separate authorization.

Compensation:

- A. Amount of Payment
 - 1. For services performed for Exhibit B, OWNER Shall pay ENGINEER as follows:
 - a. OWNER shall pay ENGINEER on a lump sum basis and billed on a percent complete basis of one million two hundred ten thousand dollars (\$1,210,000).

Statements:

- A. Monthly statements and progress reports will be submitted by ENGINEER to OWNER.

Time of Service:

- A. ENGINEER will proceed with providing the services set for herein with approximately 10 days of the execution of this Task Order.
- B. Scope of Services to be completed by ENGINEER set forth herein will be completed within 400 days from the effective date of this task order.

Other Terms:

- A. The terms of this Task Order supersede any contrary terms of the Engineer-Owner Agreement.



IN WITNESS WHEREOF, the parties have made and executed this TASK ORDER as of the day and year first above written.

OWNER: City of West Plains, Missouri

**ENGINEER: Burns & McDonnell
Engineering Company, Inc.**

By: Michael Topliff
Name: MICHAEL TOPLIFF
Title: MAYOR

By: _____
Name: Breck R. Washam, P.E.
Title: Senior Vice President



Exhibit B
Task Order No. 5

Wastewater Treatment Facility Phase I Improvements Scope of Work

The following is the Scope of Services to be provided by Burns & McDonnell Engineering Company, Inc., (Engineer) for the City of West Plains, Missouri (Owner):

Wastewater Treatment Facility Phased Improvements based on the *Wastewater Treatment Plant Evaluation* (Burns & McDonnell, 2021). Phase I and Phase II improvements will be advanced to Conceptual Design to support the future task order of preliminary design efforts of the Phase I improvements. Phase I and II include improvements to the following major ancillary systems and structures for proper functioning of the following:

Phase I

- Influent Screening
- Influent Pump Station & Valve Vault
- Existing Aeration Basin Improvements
- Proposed Aeration Basin
- Intermediate Pump Station
- Filtration & Chemical Feed
- UV disinfection

Phase II

- Grit Removal
- Sludge Storage
- Aerobic Digesters
- Dewatering
- Supernatant Storage

1.0 Project Management and Coordination

- 1.1 Monthly Progress Reporting – ENGINEER to prepare a monthly summary of scope of services complete and include a progress report or monthly progress meeting based on the OWNER’s preference as the project progresses.
- 1.2 Work Task Coordination – ENGINEER to provide general project management activities, including oversight and coordination of the contract and budget, schedule, quality tracking, and monthly invoice preparation.

2.0 Site Investigation and Owner-Provided Data Review

- 2.1 ENGINEER will obtain services from Others with respect to both the Survey and Geotechnical scope of work, as follows:



2.1.1 ENGINEER to complete boundary and topographic survey of the OWNER site located at Howell Creek Road, West Plains, Missouri. Survey area to be approximately an 25.5-acre area surrounding the existing treatment facility. Topographic survey to include but not limited to the following: 1-ft site contour elevations, buried and overhead utilities sizes, finished floor elevations, pavement areas perimeters and material, and building and structure locations. Buried yard piping from OWNER provided drawings and as-builts are to be included in the topographic survey. Survey will be initiated during Conceptual Design.

2.1.2 ENGINEER to complete geotechnical investigation including five (5) soil borings to a depth of up to thirty (30) feet below existing grade. At least one (1) boring to extend to rock to confirm the expected site rock depth. A geotechnical report will be prepared documenting existing soil types and groundwater levels. Laboratory tests will be completed to classify soils. The report will contain recommendations for construction considerations including dewatering, foundation type and depth, backfill materials, and compaction requirements. Basis for fee development is shallow foundations. Additional scope, fee, and schedule will be necessary if deep, or special, foundations are required. Geotechnical Investigation will be initiated during Conceptual Design.

2.2 ENGINEER will evaluate the condition of assets at the WWTP Facility and perform a single visit evaluation of the treatment, power, structural, architectural, and HVAC assets at the site to inform the feasibility of reuse of existing infrastructure.

3.0 Wastewater Treatment Facility Improvements Conceptual Design (Phase I and II)

The following includes a summary level description of the planned conceptual design improvements for each unit process based on the *Wastewater Treatment Plant Evaluation* (Burns & McDonnell, 2021). Phase I and II improvements are to be included in conceptual design to inform the future implementation of Phase II improvements.

Phase I

- Yard Piping – Existing yard piping throughout the facility is to be upsized to improve hydraulic conditions between processes.
- Influent Screening Facility – New influent screening facility consisting of one (1) mechanical, ¼” bar screen, and one (1) manual bypass screen. Mechanical screen to include a washer/compactor for screenings dewatering. The existing influent screening channel and screen will be repurposed as a peak flow screening channel.
- Influent Pump Station & Valve Vault – New influent pump station with three (3) submersible pumps and adjacent valve vault. A new influent force main will be routed to the existing anaerobic selector cell 1.

- Secondary Treatment – Anaerobic Basin cell modifications, such as increasing side wall elevations, to alleviate overtopping issues. Existing oxidation ditch improvements including the removal of the existing brush rotors, and installation of a diffused aeration grid and five (5) blowers for air supply. A new oxidation ditch with diffused aeration and submersible mixers with the implementation of cyclic aeration to promote BOD, ammonia, and TN removal.
- Intermediate Pump Station – a new intermediate pump station with five (5) submersible pumps and adjacent valve vault to pump final clarifier effluent and peak clarifier effluent to the filtration and disinfection processes.
- Filtration & Chemical Feed – Retrofitting of two (2) cloth media disc filters within the existing sand filter building channels. A new chemical feed building with bulk storage and pump metering skids for dosing in the clarifier splitter box to promote additional phosphorus removal.
- UV disinfection – Retrofitting of two (2) closed vessel disinfection systems within the existing sand filter building.

Phase II

- Grit Removal – Provisions for a future new grit removal system including grit dewatering prior to disposal.
- Sludge & Supernatant Storage – Provisions for the future repurposing of the existing aerobic digestion tankage for sludge holding and supernatant storage.
- Aerobic Digestion – Provisions for a future aerobic digester to replace the existing aerobic digester tankage.
- Sludge Dewatering – Provisions for a new sludge dewatering building with two (2) screw presses and associated sludge pumping, piping, polymer feed, and conveyance.

The conceptual design will be prepared consistent with a targeted Wastewater Treatment Plant nominal capacity of 3 million gallons per day (MGD) for average day conditions and targeted nominal capacity of 7 MGD for peak flow conditions, per the *Wastewater Treatment Plant Evaluation* (Burns & McDonnell, 2021).

ENGINEER to complete Conceptual Design Services as follows:

- 3.1 A budgetary opinion of probable construction cost for Phase I and II Improvements will be developed and reviewed with the Owner prior to the start of Conceptual Design based on the *Wastewater Treatment Plant Evaluation* (Burns & McDonnell, 2021).
- 3.2 Engineering for Conceptual Design Services will include a Basis of Design report that documents the basis of design for each unit process and a codes and standards review. During conceptual design, the Engineer will establish a Contract Drawing and Specification list for the Preliminary design. The following engineering discipline deliverables will be included as part of the conceptual design:

- 3.2.1 Civil Site: Establish general location of new facilities, identify laydown areas, preliminary grading plan, and basic stormwater elements.
 - 3.2.2 Structural: Identify structural design requirements for the facility and recommended materials of construction. Develop preliminary foundation plans, preliminary framing plans, and preliminary roof plans.
 - 3.2.3 Architectural: General arrangement and footprint of major structures, occupancy code, major materials of construction, elevation and section drawings.
 - 3.2.4 Mechanical: Identify classification of key areas of the facility per NFPA 820.
 - 3.2.5 Process: Develop capacity and process design criteria, develop process flow diagrams for liquid and solid stream process, include process-level process and instrumentation diagrams (showing equipment, lines/valves (material, type and size), and instruments), establish hydraulic profile, and develop general site layout and yard piping corridors.
 - 3.2.6 Electrical/Instrumentation: Prepare site layout with electrical distribution, develop conceptual one-line diagrams, prepare preliminary load calculations, prepare preliminary control system architecture, develop preliminary process instrumentation diagram (PID) based on process flow diagram, and size major electrical equipment.
- 3.3 An opinion of probable construction cost (OPCC) will be developed and reviewed with the Owner at the end of Conceptual Design.
- 3.4 Deliverables will include the following:
- 3.4.1 Three (3) half-sized printed and bound sets of conceptual design documents.
 - 3.4.2 PDF files of conceptual design documents, Basis of Design Report, and opinion of probable construction cost.
 - 3.4.3 Printed and electronic sets of conceptual design documents as required for submittal to MDNR. Fees for permit are to be paid by OWNER.
- 3.5 Engineer will lead an in-person meeting with the Owner to review conceptual design documents and review the Owner provided comments.

4.0 Permitting Support

- 4.1 ENGINEER will perform Environmental Permitting Desktop Evaluation that will include the following:
- 4.1.1 Meet with Howell County Environmental Division and, if required, draft a construction within a floodplain development permit application. It is assumed that a hydraulic analysis for No-Rise Certification will be required for construction of proposed improvements within a Zone A Floodplain.
 - 4.1.2 Coordinate the above listed Environmental Permitting work and prepare and update a Permitting Matrix for the project.

- 4.1.3 Assumption: ENGINEER will not have to file for any Owner permits for construction or occupying Owner Right of Way, project will qualify for a Nationwide Permit 58, the Project would only result in temporary impacts to WOTUS and would not cross any Section 10 Navigable Streams, project will be covered under 401 water quality certification, no Environmental Assessment required, and tree removal will occur between November 15 and April 1.

5.0 State Revolving Loan Fund (SRF) Support

5.1 ENGINEER will provide Grant and Loan Assistance as follows (all permit fees will be paid by Owner):

- 5.1.1 Support OWNER on Clean Water State Revolving Loan Fund (SRLF) Application Form (MO 780-1951) including application sections listed below:
- Parts 1-13
 - “Energy Conservation Plan” in part 15
 - “Green Project Reserve (MO 780-2530)” form

Responsibilities of the OWNER:

The parties agree that the OWNER will provide the following:

1. Assistance by placing at ENGINEERS’s disposal all available information pertinent to the Scope of Services on this Project, including previous reports, drawings, and any other data relative thereto. ENGINEER shall rely on information made available by OWNER as accurate without independent verification.
2. Existing survey and geotechnical files, if available.