



Board of Aldermen Request for Action

MEETING DATE: 9/24/2024

DEPARTMENT: Public Works

AGENDA ITEM: Res 1404 – Authorize mayor to sign Authorization No. 102 with HDR for the Wastewater Treatment Plant Facility Plan

REQUESTED BOARD ACTION:

A motion to approve Resolution 1404, authorizing and directing the Mayor to execute Authorization No. 102 with HDR for the Wastewater Treatment Plant Facility Plan.

SUMMARY:

The City completed the Wastewater Master in January 2021. The purpose of a master plan is to assess the entire wastewater collection and treatment system. The plan has several recommendations with respect to the collection system including reduction of the number of lift stations and installing more gravity mains. Staff is currently working on several projects including the McDonalds and Central Bank, Day Care and Hills of Shannon lift stations. The plan also recommends two phases for plant expansion. Phase I includes the addition of an SBR (Sequential Batch Reactor and upgrades to the influent valve vault, effluent valve vault and sludge storage. A plant expansion project takes years to develop, design, get permitted and then construct. The Wastewater Treatment Plant Facility Plan will be the design document that we will send to the Missouri Department of Natural Resources (DNR) to receive their approval for the next plant expansion project. The wastewater treatment plant expansion is planned in the CIP. This plan will include a regulatory review and forecasting, Antidegradation review and report, land disturbance permit, and environmental information document. The facility plan will look at and evaluate current flows and treatment processes, predict future needs and develop a basis for design document/report that will be reviewed by our regulatory agency (DNR) for future treatment requirements (i.e. phosphorus limits). This project is planned in the CIP for design in 2027 with construction in 2029. Staff will continue to review the growth of the community, new treatment requirements and new developments to ensure the correct timing of this project.

PREVIOUS ACTION:

Master Plan completed January 2021

POLICY ISSUE:

Environmental stewardship, facilities maintenance / improvements

FINANCIAL CONSIDERATIONS:

This project is included in the Combined Water and Wastewater System (CWWS) CIP.

ATTACHMENTS:

- ☐ Ordinance
- ☒ Resolution
- ☐ Staff Report
- ☒ Other: agreement

- ☐ Contract
- ☐ Plans
- ☐ Minutes

RESOLUTION 1404

A RESOLUTION AUTHORIZING AND DIRECTING THE MAYOR TO EXECUTE AUTHORIZATION NO. 102 WITH HDR ENGINEERING FOR A WASTEWATER TREATMENT PLANT FACILITY PLAN

WHEREAS, the City provides sanitary sewer services including the collection and treatment of the City's wastewater; and

WHEREAS, the city completed the Wastewater Master Plan in 2021; and

WHEREAS, the wastewater treatment plant facility plan is the basis for the design for the expansion of the treatment plant; and

WHEREAS, HDR has provided engineering services for the City's wastewater system including the development of the master plan and has submitted Authorization No. 102 for the completion of the facility plan.

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMEN OF
THE CITY OF SMITHVILLE, MISSOURI:**

THAT the Mayor is hereby authorized to execute Authorization No. 102 for the Wastewater Treatment Plant Facility Plan in the amount of \$144,700.

PASSED AND ADOPTED by the Board of Aldermen and **APPROVED** by the Mayor of the City of Smithville, Missouri, the 24th day of September, 2024.

Damien Boley, Mayor

ATTEST:

Linda Drummond, City Clerk

AUTHORIZATION No. 102
TO
AGREEMENT BETWEEN
CITY OF SMITHVILLE, MISSOURI
AND
HDR ENGINEERING, INC. (FORMALLY E.T. ARCHER CORPORATION)
FOR
PROFESSIONAL ENGINEERING SERVICES

WASTEWATER TREATMENT PLANT FACILITY PLAN (2024)

In accordance with Section 1.A. of the December 18, 2003, Agreement, ENGINEER is hereby authorized to assist the City with developing a Wastewater Treatment Plant Facility Plan. The facility plan will generally consist of a project kickoff with preliminary evaluations, permitting and regulatory reviews, rapid condition assessment, facility plan development and project management. The Scope of Services will more specifically include the following project tasks.

SCOPE OF SERVICES

Task 1 – Project Kickoff and Preliminary Evaluations

Subtasks:

1. Conduct Workshop #1 as the project kickoff with City staff including Public Works Director, Planning Director, Utilities Supervisor, and other utilities staff familiar with City's wastewater infrastructure. Workshop will be held virtually.
 - a. Review objectives, schedule, communication protocols, and discuss available information to be utilized during the development of the Facility Plan.
 - b. Discuss and prepare for rapid condition assessment.
 - c. Discuss anticipated project funding and funding requirements.
 - d. Prepare and distribute meeting summary.
2. Identify and submit project requests for information.
3. Prepare preliminary overall project schedule.
4. Conduct Workshop #2 to review and finalize preliminary overall project schedule and alternatives to be evaluated. Workshop duration not to exceed one hour. Prepare and distribute meeting summary.
5. Develop planning period flows and loads.

Key Understandings:

- A total of two planning periods will be evaluated including one existing and one future condition.
- It is assumed special sampling period will be required and performed by plant staff for up to 12 months.
- Flows and loadings evaluation to include data for a maximum period of five years. City will provide data set in a spreadsheet format that does not require editing for project use.

Meetings:

- Workshops #1 and #2.
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Deliverables:

- Meeting summaries (Workshop #1, Workshop #2).

Task 2 – Permitting and Regulatory

Subtasks:

1. Regulatory Review and Forecasting:
 - a. Identify existing and future regulatory drivers that may impact permit limits over the next 10-20 years. Outcomes from this review and forecasting will be documented in the Facility Plan.
 - b. Outline potential permit limits over the facility planning period.
 - c. Summarize regulatory review results.
2. Assist with project permitting requirements and submit applicable permit applications. Assumes the following permits will be required:
 - a. Land disturbance permit.
 - b. SRF required environmental clearance letters and associated Environmental Information Document (EID).
 - c. Floodplain development permit.
 - d. City building permit.
3. Schedule and conduct public hearings as required for EID.
4. Antidegradation review and report.
 - a. Develop framework document, present to MDNR in a meeting format.
 - b. Develop draft and final Antidegradation report. Assume two (2) meetings with City and two (2) with MDNR.
 - c. Support City with operating permit development through public notice process for improved WWTP. Services assumed to include comment letter, redline comments, and one (1) meeting with MDNR.

Key Understandings:

- Assume up to three (3) public hearings.
- The following items are not included in this project scope:
 - Cultural survey.
 - Coordination of cultural reviews and State Historic Preservation Office are anticipated to be provided by MNDNR.

Meetings:

- Public hearings
- Antidegradation meetings (up to five total).

Deliverables:

- Comment letter and redline comments (Antidegradation report).

Task 3 – Rapid Condition Assessment

Subtasks:

1. Data Collection and Review:
 - a. Request and review relevant background data.
2. Rapid Condition Assessment:
 - a. Conduct rapid condition assessment as one site visit with Project Manager and Multi-discipline Design Leads including process, structural, architectural, fire

and life safety, mechanical, electrical, instrumentation and controls. Discuss performance and condition issues with plant personnel to confirm extent of issues and necessary improvements.

- b. Characterize condition assessment findings based upon a rating criterion. Rating system to be agreed upon by City.
- c. Develop list of recommended improvements necessary for the planning periods.

Key Understandings:

- City to verify equipment that will not be included in rapid condition assessment.
- City to provide access to existing facilities, accompany HDR during assessment, and be available to discuss historical experience with the facility, operational issues, deficiencies, and potential optimizations.
- Assessment will document compliance with MDNR standards (10 CSR Division 20, Chapter 8) and the implementation plan shall incorporate deficiencies identified.
- The process evaluation will include a high-level evaluation of wastewater treatment unit processes, pumps, and chemical feed systems regarding age, condition, functionality, performance, and operational history. City to provide age of existing equipment.
- Structural evaluation will be visual only and will consider the structural condition, deterioration level, and capacity of visible components. It excludes sampling and third-party testing for determination of concrete strength, wood condition, corroded material thickness, or other hidden conditions. Structure access and architectural features will be documented.
- Mechanical survey will include a visual evaluation of existing HVAC ventilation equipment and duct work, and a visual inspection of plumbing and drainage components. It excludes any evaluation of potentially-asbestos-containing materials associated with the HVAC and plumbing systems.
- Electrical survey will include a visual inspection only of utility service equipment, switchgear, transformers, power distribution gear, power cabinets, lighting equipment, control panels, PLC panels, and network or telemetry equipment at the plant. Age, condition, reliability, and capacity of equipment will be evaluated.
- Fire and Life Safety will include evaluation of NFPA 820 compliance and NEC area classification compliance.
- Condition assessment findings will be summarized in the Facility Plan.

Meetings:

- None.

Deliverables:

- None.

Task 4 – Facility Plan Development

Subtasks:

1. Develop preliminary calculations and associated planning level Engineer's opinion of probable construction costs (EOPCC) to support the below general WWTP improvements:

- a. Influent Pump Station: Includes the addition of permanent metering on the existing north force main influent, upgrades to the influent valve vault, and a pre-screening structure.
 - b. Headworks: Rehabilitation or replacement of corrosion on miscellaneous metals.
 - c. Sequencing Batch Reactor Basins: Includes the addition of a fourth conventional style SBR basin with similar internal equipment to the existing basins.
 - d. UV Disinfection and Effluent Basins: Includes upgrades to the effluent valve vault.
 - e. Sludge Storage Basins (Biosolids Digestion/Storage): Includes the addition of an additional sludge storage tank, and improvements to temporary pumping/piping at Digester #1.
 - f. Outfall: Discharge piping and outfall to the Little Platte River.
 - g. Land Application: Assumes no improvements necessary.
 - h. SCADA: Includes replacement of SCADA system.
2. Perform a hydraulic analysis of the plant to identify potential future restrictions of a plant expansion.
 3. Review existing WWTP incoming electrical service and determine suitability to meet anticipated and potential future electrical loads. Assumes no site potable water, non-potable water, sanitary sewer, storm sewer, or natural gas service improvements are needed.
 4. Update summary of recommended project improvements.
 5. Refine Engineer's Opinion of Probable Construction Cost (EOPCC). Develop estimated impact to Operations and Maintenance (O&M) costs for proposed WWTP improvements. Provide information to City's Financial Consultant for debt instrument evaluation purposes.
 6. Refine overall project schedule.
 7. Conduct Workshop #3 with City to receive / review City comments and update Facility Plan.
 8. Determine the permitting requirements related to the FEMA designated floodplain limits for the Little Platte River on WWTP improvements.
 9. Submit draft Facility Plan to MDNR.
 - a. Hold Facility Plan review meeting with MDNR and City staff. Prepare and distribute meeting summary.
 10. Address MDNR Facility Plan comments and resubmit document. Submit up to four (4) hard copies and one (1) PDF electronic copy for City records.

Key Understandings:

- The City will provide the hydraulic profile of the existing plant. An intermediate pump station is not anticipated to be required by the plant expansion.
- Additional items may be included in the EOPCC upon written request by the City.
- No floodplain permitting is included with this Facility Plan.
- The following items are not included in this project scope:
 - Geotechnical analysis and site survey are not included in this scope:
 - Evaluation of "no discharge" and "regionalization" options; and
 - Draft SRF funding application.

Meetings:

- Workshop #3.
- Optional Services:
 - Review meeting with MDNR.

Deliverables:

- Meeting summary (Workshop #3).
- Optional Services:
 - Environmental clearance letters.
 - Meeting summary (review meeting with MDNR).
- EOPCC (Draft, Final)
- Facility Plan (Draft, Final)

Task 5 - Project Management

Subtasks:

1. Prepare project instructions, management plan and safety plan.
2. Provide project management and administration.
3. Provide a progress report to accompany each invoice. The progress report shall include a summary of work for the period and potential scope adjustments.

Deliverables:

- Invoices with progress reports.

TASKS TO BE PERFORMED BY CITY

1. Identify and provide additional relevant prior studies, reports, and drawings prepared by others within 10 working days of this Authorization.
2. Provide and make arrangements for site visits.
3. Provide assistance with access to treatment plant facilities.
4. Provide input and feedback on both current and future desired system operations.
5. Review and provide comments on Facility Plan report within ten working days.

SCHEDULE

Project deliverables including the Final Facility Plan shall be submitted to the City within 180 days of this Authorization.

FEE

The CITY shall compensate ENGINEER for the Wastewater Master Plan project an amount not to exceed \$144,700.00.

This AUTHORIZATION shall be binding on the parties hereto only after it has been duly executed and approved by the CITY and ENGINEER.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this AGREEMENT in duplicate on the respective dates indicated below.

CITY: SMITHVILLE, MISSOURI

By: _____

Damien Boley

Type or Print Name

Title Mayor

Date September 24, 2024

ENGINEER: HDR Engineering, Inc. (formally
E.T. ARCHER CORPORATION)

By:  _____

Cory Imhoff, P.E.

Title Senior Vice President

Date Sep 13, 2024

Scope and Fee Estimate - 9/10/2024

| | |
|---------------------|-----------|
| Estimated Project I | \$144,700 |
|---------------------|-----------|

HDR Engineering, Inc.
2024 Hourly Billing Rates
Effective through 12/31/2024

Billing rates will be updated on an annual basis. Employees may move within categories at any time throughout the year based on any salary adjustments incurred by employees. The rates listed below do not include reimbursable expenses.

| Description | Billing Rate/Hour |
|--|--------------------------|
| Technical Specialist II/Senior Project Manager III | \$325 |
| Technical Specialist I/Senior Project Manager II | \$300 |
| Senior Project Manager I | \$280 |
| Project/Design Manager IV | \$235 |
| Project/Design Manager III | \$210 |
| Project/Design Manager II | \$185 |
| Project/Design Manager I | \$165 |
| Engineer/Architect/Designer VIII | \$275 |
| Engineer/Architect/Designer VII | \$260 |
| Engineer/Architect/Designer VI | \$235 |
| Engineer/Architect/Designer V | \$205 |
| Engineer/Architect/Designer IV | \$180 |
| Engineer/Architect/Designer III | \$155 |
| Engineer/Architect/Designer II | \$140 |
| Engineer/Architect/Designer I | \$130 |
| Cadd/BIM Manager | \$225 |
| Model Manager/Cadd/GIS Technician VI | \$195 |
| Cadd/GIS Technician V | \$175 |
| Cadd/GIS Technician IV | \$155 |
| Cadd/GIS Technician III | \$140 |
| Cadd/GIS Technician II | \$115 |
| Cadd/GIS Technician I | \$100 |
| Environmental/Water Quality Scientist/Modeler V | \$250 |
| Environmental/Water Quality Scientist/Modeler IV | \$210 |
| Environmental/Water Quality Scientist/Modeler III | \$180 |
| Environmental/Water Quality Scientist/Modeler II | \$140 |
| Environmental/Water Quality Scientist/Modeler I | \$120 |
| Survey Manager | \$190 |
| Construction Manager | \$220 |
| Survey Technician/Construction Inspector V | \$185 |
| Survey Technician/Construction Inspector IV | \$160 |
| Survey Technician/Construction Inspector III | \$140 |
| Survey Technician/Construction Inspector II | \$120 |
| Survey Technician/Construction Inspector I | \$100 |
| Public Involvement/Communications/Graphic Designer IV | \$210 |
| Public Involvement/Communications/Graphic Designer III | \$175 |
| Public Involvement/Communications/Graphic Designer II | \$150 |
| Public Involvement/Communications/Graphic Designer I | \$125 |
| Engineering Support Staff III | \$165 |
| Engineering Support Staff II | \$130 |
| Engineering Support Staff I | \$105 |
| Admin Assistant | \$90 |
| Direct Expenses | |
| Personal Vehicle Mileage | CURRENT IRS RATE |
| Fleet Vehicle Mileage | \$0.75/mile |
| Printing | AT COST |
| Travel | AT COST |
| Subconsultants | AT COST |