

City of Fayetteville Staff Review Form

2021-0293

Legistar File ID

5/4/2021

City Council Meeting Date - Agenda Item Only
N/A for Non-Agenda Item

Tim Nyander

4/15/2021

WASTEWATER TREATMENT (730)

Submitted By

Submitted Date

Division / Department

Action Recommendation:

Staff recommends approval of a Memorandum of Agreement with the University of Arkansas in an amount not to exceed \$37,631.00 for the collection and analysis of various water samples upstream and downstream of the Pump Station Dam to determine the water quality prior to the dam removal, and approval of a project contingency in the amount of \$3,763.10.

Budget Impact:

5400.730.5800-5314.00

Water and Sewer

Account Number

Fund

13018.1

Wastewater Treatment/Water Quality
Improvements

Project Number

Project Title

Budgeted Item? Yes

Current Budget \$ 1,004,634.00

Funds Obligated \$ 159,456.49

Current Balance **\$ 845,177.51**

Does item have a cost? Yes

Item Cost \$ 41,394.10

Budget Adjustment Attached? No

Budget Adjustment \$ -

Remaining Budget **\$ 803,783.41**

V20180321

Purchase Order Number: _____

Previous Ordinance or Resolution # _____

Change Order Number: _____

Approval Date: _____

Original Contract Number: _____

Comments:



MEETING OF MAY 4, 2021

TO: Mayor and City Council

THRU: Susan Norton, Chief of Staff
Water & Sewer Committee

FROM: Tim Nyander, Utilities Director

DATE: April 15, 2021

SUBJECT: **Water Quality Sampling for Pump Station Dam Removal on the West Fork of the White River (WFWR)**

RECOMMENDATION:

Staff recommends approval of a Memorandum of Agreement with the University of Arkansas in an amount not to exceed \$37,631.00 for the collection and analysis of various water samples upstream and downstream of the Pump Station Dam to determine the water quality prior to the dam removal, and approval of a project contingency in the amount of \$3,763.10.

BACKGROUND:

Prior to the removal of the pump station dam, the City desires to understand the physical, chemical, and biological differences in the water quality at the WFWR upstream and downstream from the future restoration site. The purpose of this project is to address certain aspects of water quality changes along the WFWR.

DISCUSSION:

This project will involve the collection of at least 13 water samples at five locations along the WFWR, analyze for select water quality parameters at the Arkansas Water Resources Center (AWRC) water quality lab, and evaluate difference between sites along the WFWR with proximity to the Pump Station Dam. A final report detailing the project will be prepared for the City, providing details on water sample collection, water-quality analysis, and statistical evaluations of the data.

BUDGET/STAFF IMPACT:

Funds are available in the Wastewater Treatment – Water Quality Improvements account within the Water & Sewer Fund.

Attachments:

Memorandum of Understanding
Statement of Work

**MEMORANDUM OF AGREEMENT
BETWEEN
BOARD OF TRUSTEES OF THE UNIVERSITY OF ARKANSAS (UA)
ON BEHALF OF THE DIVISION OF AGRICULTURE (UADA)
AND CITY OF FAYETTEVILLE, ARKANSAS (CITY)**

The Board of Trustees of the University of Arkansas (UA) ON BEHALF OF THE DIVISION OF AGRICULTURE (UADA) and CITY are mutually interested in research and development relating to agriculture.

To advance such research and development, CITY agrees to make available to UADA for use by the Arkansas Water Resources Center, a unit of the UA Agricultural Experiment Station, a grant-in-aid in the amount of \$ 37,631.00 for the period extending from 6/1/2021 to 12/31/2022. Invoices can be submitted quarterly based on work completed and CITY shall remit payment within thirty (30) days of receipt of valid invoices.

UADA agrees to accept the funds and use them for the support of research and development in the general field of water quality. UA further agrees to furnish one (1) final progress report which will include a report summary and recommended action plan.

CITY shall have the right to publish any of the research data for any non-commercial purpose. In the event that CITY wishes to publish any of the research data, CITY shall furnish to UA a copy of the material to be published in its final form at least two weeks prior to publication, in order to permit UA the opportunity to review and comment.

Authorship of publication will be determined by established professional procedures. Cooperation and assistance rendered by CITY will be acknowledged in publications resulting from the joint effort. CITY understands and accepts the University

patent and copyright policy <https://www.uasys.edu/wp-content/uploads/sites/16/2016/03/0210.1-Patent-Copyright-Policy-1.pdf> . This is a fixed cost agreement.

Date

Jean-Francois Meullenet, Assoc. Sr. VP for Agriculture
For the Board of Trustees, University of Arkansas

Date

Mayor Lioneld Jordan
For the City of Fayetteville, Arkansas

ATTEST:

By: _____
Kara Paxton, City Clerk-Treasurer

1371 West Altheimer Drive
DTAS 107, Fayetteville AR, 72704
479.387.5547

Project Title: Water sampling, lab analysis and data comparisons at the West Fork of the White River near Pump Station Dam
Project Director: Brian Haggard, Professor and Director, Arkansas Water Resources Center
University of Arkansas System Division of Agriculture
Funding Agency: City of Fayetteville
Project Timeline: June 1, 2021 through December 31, 2022

Project Tasks and Budget

Need: The City of Fayetteville will be removing the Pump Station Dam on the West Fork of the White River (WFWR) and restoring this river to its natural flow regime and improving habitat. The City desires to understand the physical, chemical and biological differences in water quality at the WFWR upstream and downstream from future restoration site. The purpose of this project is to address certain aspects of water quality changes along the WFWR, excluding stream macroinvertebrates and fish.

Objectives: Collect at least 13 water samples at five locations along the WFWR, analyze for select water quality parameters at the Arkansas Water Resources Center (AWRC) water quality lab, and evaluate difference between sites along the WFWR with proximity to the Pump Station Dam.

Task 1. Site Selection

The AWRC, in cooperation with City of Fayetteville, will select five locations to collect water samples along the WFWR. The proposed sites include the WFWR at Black Oak Road Bridge, WFWR at Pump Station Dam both upstream and downstream, and WFWR at Dead Horse Mountain Road Bridge; an additional site in the back water from the dam will be chosen near Combs Park or the Fayetteville Fire Training Center depending on access. Site selection will be finalized in June 2021 with the City, where the logistical constraint will be public access or private access with permission.

Deliverables: (1) *Site map with sampling locations, 6/30/2021.*

Task 2. Water Sample Collection and Analysis

Water samples will be collected at least 13 times over the project period at the selected sites, and the AWRC will target seasonal base flow conditions on each sampling event. These water samples will be

spread out over the project period with at least five samples during the critical season (May through October, two critical seasons, n=5 per season) and three samples between November and April (n=3, one season). Upon return to the AWRC water-quality lab, the water samples will be analyzed for chlorophyll a (i.e. anions (fluoride, chloride, nitrate and sulfate), dissolved nutrients (ammonia, nitrate plus nitrite, and soluble reactive phosphorus), total nutrients (phosphorus and nitrogen), total organic carbon, turbidity, and dissolved micro elements (aluminum, arsenic, cadmium, cobalt, chromium, copper, iron, manganese, molybdenum, nickel, and zinc). Water samples will be collected in sterile containers for the analysis of bacteria (i.e., E coli) during the growing season, in this case June through October. The analytes will be measured using approved methodology (Standard Methods for the Analysis of Water and Wastewater) and performed at the AWRC water quality labs which are certified by the Arkansas Department of Environmental Quality. The routine sampling will include field measurements of water temperature, pH, dissolved oxygen, and conductivity; these data will be recorded on the field services sheet and reported in the quarterly data reports.

Deliverables: (1) *Quarterly water quality data and field services sheets reported to the City.*
(2) *Quarterly quality assurance report to the City, detailing any issues with water sampling and analysis.*

Task 3. Data Analysis and Statistics

The collected water-quality data will be analyzed for variability between sites, where the data will be log-transform (if needed) and means separated using analysis of variance (ANOVA) and least significant difference (LSD). The goal will be to evaluate which sites are significantly different from each other along the run of the river, as well as which sites potentially show that constituent concentrations are changing seasonally. These data will provide the baseline for water quality and future comparisons.

Deliverables: *Updates via graphics and or PowerPoint presentations to the City may be requested.*

Task 4. Reporting

A final report detailing the project will be prepared for the City, providing details on water sample collection, water-quality analysis, and statistical evaluations of the data.

This report will be archived in the AWRC digital library.

Deliverables: A final report in AWRC MSC format archived in the digital library, December 31, 2022.

Budget: \$37,631