

**AGREEMENT
For
PROFESSIONAL ENGINEERING SERVICES
Between
THE CITY OF COLUMBIA, MISSOURI
And
HDR ENGINEERING, INC.**

THIS AGREEMENT by and between the City of Columbia, Missouri (hereinafter called "CITY"), and **HDR Engineering, Inc.** (hereinafter called "ENGINEER"), is entered into on the date of the last signatory noted below (the "Effective Date").

WITNESSETH, that whereas CITY intends to make improvements as described below, hereinafter called the PROJECT, consisting of the following:

**Design of upgrades to the McBaine Water Treatment
Plant, a 32MGD lime softening facility, located at 6851 W.
Rte. K, Columbia, MO. 65203.**

(Description of Project)

NOW, THEREFORE, in consideration of the mutual covenants set out herein the parties agree as follows:

ENGINEER shall serve as CITY's professional engineering contractor in those assignments to which this Agreement applies, and shall give consultation and advice to CITY during the performance of the services. All services shall be performed under the direction of a professional engineer registered in the State of Missouri and qualified in the particular field.

SECTION 1 - AUTHORIZATION OF SERVICES

1.1 ENGINEER shall not undertake to begin any of the services contemplated by this agreement until directed in writing to do so by CITY. CITY may elect to authorize the PROJECT as a whole or in parts.

1.2 Authorized work may include services described hereafter as Basic Services or as Additional Services of ENGINEER.

SECTION 2 - BASIC SERVICES OF ENGINEER

2.1 General

2.1.1 Perform professional engineering services as set forth in Exhibit A - "Scope of Basic Services," dated **July 2, 2020** (hereinafter referred to as "Scope of Basic Services").

2.1.2 ENGINEER will designate the following listed individuals as its project team with responsibilities as assigned. ENGINEER shall dedicate whatever additional resources are necessary to accomplish the PROJECT within the specified time frame but will not remove these individuals from the assigned tasks for any reason within the control of ENGINEER without the written approval of CITY.

<u>Name and Title</u>	<u>Assignment</u>
Trent Stober, Senior Technical Specialist	Project Oversight
Ryan Saffels, Senior Project Manager	Project Management
Pete D'Adamo, Senior Technical Specialist	Pilot Oversight

All of the services required hereunder will be performed by ENGINEER or under its supervision and all personnel engaged in the work shall be fully qualified and authorized or permitted under state and local law to perform such services.

None of the work or services covered by this Agreement shall be subcontracted without the prior written approval of CITY and any work or services so subcontracted shall be subject to the provisions of this Agreement.

2.2 ENGINEER shall furnish such periodic reports as CITY may request pertaining to the work or services undertaken pursuant to this Agreement, the costs and obligations incurred or to be incurred, and any other matters covered by this Agreement.

2.3 ENGINEER shall maintain accounts and records, including personnel, property and financial records, adequate to identify and account for all costs pertaining to the Agreement and any other records as deemed necessary by CITY to assure proper accounting for all project funds. These records must be available to CITY or its authorized representatives, for audit purposes, and must be retained for three (3) years after expiration or completion of this Agreement.

SECTION 3 - ADDITIONAL SERVICES OF ENGINEER

3.1 General

If authorized in writing by CITY, and agreed to in writing by ENGINEER, ENGINEER shall furnish or obtain from others Additional Services of the following types which are not considered normal or customary Basic Services. The scope of Additional Services may include:

3.1.1 Financial Consultation

Consult with CITY's fiscal agents and bond attorneys and provide such engineering data as required for any bond prospectus or other financing requirements.

- 3.1.2 Property Procurement Assistance
Provide consultation and assistance on property procurement as related to professional engineering services being performed.
- 3.1.3 Obtaining Services of Others
Provide through subcontract the services or data set forth in Scope of Basic Services. ENGINEER is prohibited from holding a retainage on any payment to a subcontractor that provides any services or work on this Project.
- 3.1.4 Preliminary or final engineering design of capital facilities except as specifically identified herein.
- 3.1.5 Preparation of reports, data, application, etc., in connection with modifications to FEMA floodplain definition and/or mapping.
- 3.1.6 Extra Services
Services not specifically defined heretofore that may be authorized in writing by CITY.

SECTION 4 - RESPONSIBILITIES OF CITY

- 4.1 Provide full information as to CITY's requirements for the PROJECT.
- 4.2 Assist ENGINEER by placing at ENGINEER's disposal available information pertinent to the assignment including previous reports and other data relative thereto, including the items outlined in Scope of Basic Services.
- 4.3 Guarantee access to and make all provisions for ENGINEER to enter upon public and private property as required for ENGINEER to perform ENGINEER's services under this Agreement.
- 4.4 Examine all studies, reports, sketches, estimates, Bid Documents, Drawings, proposals and other documents presented by ENGINEER and render in writing decisions pertaining thereto.
- 4.5 Provide such professional legal, accounting, financial and insurance counseling services as may be required for the PROJECT.
- 4.6 Designate **Shawn Carrico**, as CITY's representative with respect to the services to be performed under this Agreement. Such person shall have complete authority to transmit instructions, receive information, interpret and define CITY's policies and decisions with respect to materials, equipment, elements and systems to be used in the PROJECT, and other matters pertinent to the services covered by this Agreement. The CITY's designated representative may be changed during the duration of this Agreement by written notice from the City Manager, or City Manager's designee, to ENGINEER.

4.7 Give prompt written notice to ENGINEER whenever CITY observes or otherwise becomes aware of any defect in the PROJECT.

4.8 Furnish approvals and permits from all governmental authorities having jurisdiction over the PROJECT and such approvals and consents from others as may be necessary for completion of the PROJECT.

4.9 Furnish ENGINEER data such as probings and subsurface explorations, with appropriate professional interpretations; property, boundary, easement, right-of-way, topographic and utility surveys; zoning and deed restriction; and other special data or consultations, all of which ENGINEER may rely upon in performing his services under this Agreement.

SECTION 5 - PERIOD OF SERVICE

5.1 This Agreement will become effective upon the first written notice by CITY authorizing services hereunder.

5.2 This Agreement shall be applicable to all work assignments authorized by CITY subsequent to the date of its execution and shall be effective as to all assignments authorized.

5.3 Services shall be started within 10 calendar days of Notice to Proceed and completed within **550** calendar days from the issuance of the Notice to Proceed. CITY shall have the right to establish performance times for individual phases or elements of the PROJECT by delivering a written schedule setting out the performance times to the ENGINEER.

SECTION 6 - PAYMENTS TO ENGINEER

6.1 Amount of Payment

6.1.1 For services performed, CITY shall pay ENGINEER the sum of amounts determined as follows:

6.1.1.1 For time spent by personnel, payment at the hourly rates indicated in the "Schedule of Hourly Labor Billing Rates" (attached). Such rates include overhead and profit. The schedule may be revised annually if the term of this Agreement exceeds one (1) year. To be effective, any revision in the Schedule of Hourly Labor Billing Rates shall be provided by ENGINEER to CITY as least thirty (30) days prior to work performed under this Agreement to which such rates apply.

6.1.1.2 For outside expenses incurred by ENGINEER, such as authorized travel and subsistence, commercial services, and incidental expenses, the cost to ENGINEER.

6.1.1.3 For reproduction, printing, long-distance telephone calls, company vehicle usage, testing apparatus, computer services and computer-assisted drafting (CAD), amounts will be charged according to the ENGINEER's standard rates in effect at the time service is provided.

6.1.1.4 For professional services rendered by others as subcontractor(s) to ENGINEER such as surveying, real property descriptions, soil borings, subsurface investigations, laboratory testing, field quality control tests, progress photos, or other activities required or requested by CITY, will be billed at the cost to ENGINEER.

6.1.1.5 For time spent by outside individual professional consultants employed by ENGINEER in providing services to CITY, the cost to ENGINEER. Expenses incurred by such outside consultants in service to CITY shall be reimbursable in accordance with 6.1.1.2 above.

6.1.1.6 Total payment for Scope of Basic Services and all other expenses and costs to CITY under this Agreement and described herein **shall not exceed \$2,966,080**.

6.2 Payments

6.2.1 ENGINEER shall submit an invoice for services rendered to CITY not more than once every month. Upon receipt of the invoice and progress report, CITY will, as soon as practical, pay ENGINEER for the services rendered, provided CITY does not contest the invoice.

SECTION 7 - GENERAL CONSIDERATIONS

7.1 Insurance

7.1.1 ENGINEER'S INSURANCE: ENGINEER agrees to maintain, on a primary basis and at its sole expense, at all times during the life of this contract the following insurance coverages, limits, including endorsements described herein. The requirements contained herein, as well as CITY's review or acceptance of insurance maintained by ENGINEER is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by ENGINEER under this contract.

Commercial General Liability ENGINEER agrees to maintain Commercial General Liability at a limit of liability not less than **\$2,000,000** combined single limit for any one occurrence covering both bodily injury and property damage, including accidental death. Coverage shall not contain any endorsement(s) excluding nor limiting Contractual Liability or Cross Liability. If the contract involves any underground/digging operations, the general liability certificate shall include X, C and U (Explosion, Collapse and Underground) coverage.

Professional Liability ENGINEER agrees to maintain Professional (Errors & Omissions) Liability at a limit of liability not less than **\$2,000,000** per claim and **\$2,000,000** aggregate.

For policies written on a "Claims-Made" basis, ENGINEER agrees to maintain a Retroactive Date prior to or equal to the Effective Date of this contract. In the event the policy is canceled, non-renewed, switched to an Occurrence Form, retroactive date advanced; or any other event triggering the right to purchase a Supplemental Extended Reporting Period (SERP) during the life of this contract, ENGINEER agrees to purchase a SERP with a minimum reporting period not less than two (2) years. The requirement to purchase a SERP shall not relieve ENGINEER of the obligation to provide replacement coverage.

Business Automobile Liability ENGINEER agrees to maintain Business Automobile Liability at a limit of liability not less than **\$2,000,000** combined single limit for any one occurrence and not less than \$150,000 per individual, covering both bodily injury, including accidental death, and property damage, to protect themselves from any and all claims arising from the use of the ENGINEER's own automobiles, and trucks; hired automobiles, and trucks; and automobiles both on and off the site of work. Coverage shall include liability for Owned, Non-Owned & Hired automobiles. In the event ENGINEER does not own automobiles, ENGINEER agrees to maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Workers' Compensation Insurance & Employers' Liability ENGINEER agrees to take out and maintain during the life of this contract, Employers' Liability and Workers' Compensation Insurance for all of their employees employed at the site of the work, and in case any work is sublet, the ENGINEER shall require the subcontractor similarly to provide Workers' Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the ENGINEER. Workers' Compensation coverages shall meet Missouri statutory limits. Employers' Liability minimum limits shall be \$500,000 each employee, \$500,000 each accident and \$500,000 policy limit. In case any class of employees engaged in hazardous work under this contract is not protected under the Workers' Compensation Statute, the ENGINEER shall provide and shall cause each subcontractor to provide Employers' Liability Insurance for the protection of their employees not otherwise protected.

Excess/Umbrella Liability The above liability limits may be satisfied by any combination of primary and excess/umbrella liability policies.

Additional Insured ENGINEER agrees to endorse CITY as an Additional Insured with a CG 2026 Additional Insured – Designated Person or Organization endorsement, or similar endorsement, to the Commercial General Liability. The Additional Insured shall read "City of Columbia."

Waiver of Subrogation ENGINEER agrees by entering into this contract to a Waiver of Subrogation for each required policy herein except professional liability. When required by the insurer, or should a policy condition not permit ENGINEER to enter into a pre-loss agreement to waive subrogation without an endorsement, then ENGINEER agrees to notify the insurer and request the policy be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or its equivalent. This Waiver of Subrogation requirement shall not apply to any policy, which includes a condition specifically

prohibiting such an endorsement, or voids coverage should ENGINEER enter into such an agreement on a pre-loss basis.

Certificate(s) of Insurance ENGINEER agrees to provide CITY with Certificate(s) of Insurance evidencing that all coverages, limits and endorsements required herein are maintained and in full force and effect. Said Certificate(s) of Insurance shall include a minimum thirty (30) day endeavor to notify due to cancellation or non-renewal of coverage. The Certificate(s) of Insurance shall name the City as additional insured in an amount as required in this contract and contain a description of the project or work to be performed.

Right to Revise or Reject CITY reserves the right, but not the obligation, to review and revise any insurance requirement, not limited to limits, coverages and endorsements based on insurance market conditions affecting the availability or affordability of coverage; or changes in the scope of work / specifications affecting the applicability of coverage. Additionally, CITY reserves the right, but not the obligation, to review and reject any insurance policies failing to meet the criteria stated herein or any insurer providing coverage due of its poor financial condition or failure to operating legally.

7.1.2 **HOLD HARMLESS AGREEMENT:** To the fullest extent not prohibited by law, ENGINEER shall indemnify and hold harmless the City of Columbia, its directors, officers, agents and employees from and against all claims, damages, losses and expenses (including but not limited to attorney's fees) arising by reason of any negligent act or failure to act, or willful misconduct, of ENGINEER, of any subcontractor (meaning anyone, including but not limited to consultants having a contract with ENGINEER or a subcontractor for part of the services), of anyone directly or indirectly employed by ENGINEER or by any subcontractor, or of anyone for whose acts ENGINEER or its subcontractor may be liable, in connection with providing these services except as provided in this Agreement. This provision does not, however, require ENGINEER to indemnify, hold harmless or defend the City of Columbia from its own negligence, except as set out herein.

7.2 Professional Responsibility

7.2.1 Missouri Licensure & Certificate of Authority

ENGINEER certifies that it is currently in compliance, and agrees to maintain compliance for the duration of this Agreement, with all licensure requirements of the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Professional Landscape Architects (hereinafter "APEPLSPLA") to practice in Missouri as a professional engineer as provided under chapter 327 of the Missouri Revised Statutes. To the extent required by Section 327.401 of the Missouri Revised Statutes, ENGINEER understands and agrees that the person personally in charge and supervising the professional engineering services of ENGINEER under this Agreement shall be licensed and authorized to practice engineering in Missouri, and that ENGINEER will keep and maintain a valid certificate of authority from APEPLSPLA.

7.2.2 ENGINEER will exercise reasonable skill, care, and diligence in the performance of its services and will carry out its responsibilities in accordance with customarily accepted good professional engineering practices. If ENGINEER fails to meet the foregoing standard, ENGINEER will perform at its own cost, and without reimbursement from CITY, the professional engineering services necessary to correct errors and omissions which are caused by ENGINEER's failure to comply with above standard, and which are reported to ENGINEER within one year from the completion of ENGINEER's services for the PROJECT.

7.2.3 In addition, ENGINEER will be responsible to CITY for damages caused by its negligent conduct during its activities at the PROJECT site or in the field.

7.2.4 Professional Oversight Indemnification

ENGINEER understands and agrees that CITY has contracted with ENGINEER based upon ENGINEER's representations that ENGINEER is a skilled professional and fully able to provide the services set out in this Agreement. In addition to any other indemnification set out in this Agreement, ENGINEER agrees to defend, indemnify and hold and save harmless CITY from any and all claims, settlements and judgments whatsoever arising out of CITY's alleged negligence in hiring or failing to properly supervise ENGINEER. ENGINEER agrees to provide CITY with Certificate(s) of Insurance evidencing that all coverages, limits and endorsements are maintained and in full force and effect.

7.3 Estimates and Projections

Estimates and projections prepared by ENGINEER relating to construction costs and schedules, operation and maintenance costs, equipment characteristics and performance, and operating results are based on ENGINEER's experience, qualifications and judgment as a design professional. Since ENGINEER has no control over weather, cost and availability of labor, material and equipment, labor productivity, construction contractor's procedures and methods, unavoidable delays, construction contractor's methods of determining prices, economic conditions, competitive bidding or market conditions and other factors affecting such estimates or projections, ENGINEER does not guarantee that actual rates, costs, performance, schedules, etc., will not vary from estimates and projections prepared by ENGINEER.

7.4 On-Site Services

PROJECT site visits by ENGINEER during construction shall not make ENGINEER responsible for construction means, methods, techniques, sequences or procedures; for construction safety precautions or programs; or for any construction contractor(s') failure to perform its work in accordance with the plans and specifications.

7.5 Changes

CITY shall have the right to make changes within the general scope of ENGINEER's services, with an appropriate change in compensation and/or schedule, upon execution of a mutually acceptable amendment or change order signed by an authorized representative of CITY and the President or any Vice President of ENGINEER.

7.6 Suspension of Services

Should CITY fail to fulfill its responsibilities as provided under Section 4 to the extent that ENGINEER is unduly hindered in ENGINEER's services or if CITY fails to make any payment to ENGINEER on account of its services and expenses within ninety (90) days after receipt of ENGINEER's bill therefor, ENGINEER may, after giving seven (7) days' written notice to CITY, suspend services under this Agreement until CITY has satisfied his obligations under this Agreement.

7.7 Termination

Services may be terminated by the CITY at any time and for any reason, and by ENGINEER in the event of substantial failure to perform in accordance with the terms hereof by CITY through no fault of ENGINEER, by ten (10) days' notice. If so terminated, CITY shall pay ENGINEER all uncontested amounts due ENGINEER for all services properly rendered and expenses incurred to the date of receipt of notice of termination.

7.7.1 In the event of CITY's termination of this Agreement pursuant to the above section, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared under this Agreement, shall at the option of CITY become its property.

Further, ENGINEER shall not be relieved of any liability to CITY for any damages sustained by CITY by virtue of any breach of this Agreement by ENGINEER and CITY may withhold any payments due ENGINEER for the purpose of set-off until such time as the exact amount of damages to CITY, if any, is determined.

7.8 Publications

Recognizing the importance of professional development on the part of ENGINEER's employees and the importance of ENGINEER's public relations, ENGINEER may prepare publications, such as technical papers, articles for periodicals, and press releases, pertaining to ENGINEER's services for the PROJECT. Such publications will be provided to CITY in draft form for CITY's advance review. CITY will review such drafts promptly and will provide comments to ENGINEER. CITY may require deletion of proprietary data or confidential information from such publications but otherwise will not unreasonably withhold its approval. The cost of ENGINEER's activities pertaining to any such publication shall be paid entirely by ENGINEER.

7.9 Nondiscrimination

During the performance of this Agreement, ENGINEER agrees to the following:

7.9.1 ENGINEER shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin, ancestry, marital

status, disability, sexual orientation, or gender identity. ENGINEER shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, age, national origin, ancestry, marital status, disability, sexual orientation, gender identity or expression, or any other protected category designated by local, state, or federal law. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. ENGINEER agrees to post notices in conspicuous places, available to employees and applicants for employment.

7.9.2 ENGINEER shall, in all solicitation or advertisements for employees placed by or on behalf of ENGINEER, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, national origin, ancestry, marital status, disability, sexual orientation, gender identity or expression, or any other protected category designated by local, state, or federal law.

7.9.3 ENGINEER shall comply with all provisions of local, state and federal laws governing the regulation of equal employment opportunity including Title VI of the Civil Rights Act of 1964.

7.10 Successor and Assigns

CITY and ENGINEER each binds themselves and their successors, executors, administrators and assigns to the other party of this Agreement and to the successors, executors, administrators and assigns of such other party, in respect to all covenants of this Agreement; except as above, neither CITY nor ENGINEER shall assign, sublet or transfer his interest in the Agreement without the written consent of the other.

7.11 Rights and Benefits

ENGINEER's services will be performed solely for the benefit of the CITY and not for the benefit of any other persons or entities.

7.12 Compliance with Local Laws

ENGINEER shall comply with all applicable laws, ordinances and codes of the state and city.

7.13 Law; Submission to Jurisdiction Governing

This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of Missouri and/or the laws of the United States, as applicable. The venue for all litigation arising out of, or relating to this Agreement, shall be Boone County, Missouri or the United States Western District of Missouri. The parties hereto irrevocably agree to submit to the exclusive jurisdiction of such courts in the State of Missouri and waive any defense of forum non conveniens.

7.14 Employment of Unauthorized Aliens Prohibited

7.14.1 ENGINEER agrees to comply with Missouri State Statute section 285.530 in that they shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri.

7.14.2 As a condition for the award of this Agreement, ENGINEER shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. ENGINEER shall also sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services.

7.14.3 ENGINEER shall require each subcontractor to affirmatively state in its contract with ENGINEER that the subcontractor shall not knowingly employ, hire for employment or continue to employ an unauthorized alien to perform work within the state of Missouri. ENGINEER shall also require each subcontractor to provide ENGINEER with a sworn affidavit under the penalty of perjury attesting to the fact that the subcontractor's employees are lawfully present in the United States.

7.15 No Waiver of Immunities

In no event shall the language of this Agreement constitute or be construed as a waiver or limitation for either party's rights or defenses with regard to each party's applicable sovereign, governmental, or official immunities and protections as provided by federal and state constitutions or laws.

7.16 Agreement Documents

This Agreement includes the following exhibits, which are incorporated herein by reference:

<u>Exhibit</u>	<u>Description</u>
A	Scope of Work
B	Hourly Fee Schedule
C	Work Authorization Affidavit

In the event of a conflict between the terms and conditions of this Agreement and any exhibit hereto, the terms contained in this Agreement shall prevail and the terms contained in any exhibit shall subsequently prevail in the order attached hereto.

7.17 Entire Agreement

This Agreement represents the entire and integrated Agreement between ENGINEER and CITY relative to the Scope of Basic Services herein. All previous or

contemporaneous agreements, representations, promises and conditions relating to ENGINEER's services described herein are superseded.

[SIGNATURES ON FOLLOWING PAGE]

CITY OF COLUMBIA, MISSOURI

By: _____
City Manager

Date: _____

ATTESTED BY:

Sheela Amin, City Clerk

APPROVED AS TO FORM:

Nancy Thompson, City Counselor *AK*

CERTIFICATION: I hereby certify that the above expenditure is within the purpose of the appropriation to which it is charged, Account No. **27188331-604992 Project W0236**, and that there is an unencumbered balance to the credit of such appropriation sufficient to pay therefor.

By: _____
Director of Finance

HDR ENGINEERING, INC.

By: *Joseph E. Drimmel*

Joseph E. Drimmel, Sr. Vice President

Date: 7/6/2020

ATTEST:

By: *Elizabeth C. Drimmel*

Name: Elizabeth C. Drimmel, Assistant Secretary

EXHIBIT "A"

CONSULTANT'S SCOPE OF SERVICES

DESIGN
MCBAINE WATER TREATMENT PLANT
IMPROVEMENT PROJECT

SCOPE OF SERVICES
July 2, 2020

PROJECT DESCRIPTION, TASK LIST, AND SCOPE OF SERVICES

PROJECT DESCRIPTION

The work will generally consist of the design of upgrades to the City's McBaine Water Treatment Plant, a 32MGD lime softening facility, located at 6851 W. Rte K, Columbia, MO 65203. Design of water treatment improvements is anticipated to include the following:

- A. Restoration of plant capacity including elimination of hydraulic restrictions
- B. Replacement of aerators
- C. Replacement of primary basin equipment
- D. Chemical feed improvements
- E. Addition of recarbonation
- F. Filter and high service pump modifications to establish constant rate filtration
- G. Electrical upgrades including a new service entrance
- H. SCADA upgrades including automation of the City's water system
- I. Replacement of instrumentation
- J. Replacement of HVAC
- K. Roof Replacement
- L. Other cosmetic improvements

TASK LIST

Basic Design Services

Task 1 – Project Administration, Management, and Quality
Task 2 – Field Surveys and Investigations
Task 4 – Easement Drawings and Encroachment Assistance
Task 5 – Design Document Preparation
Task 6 – Permitting
Task 7 - Bid Phase Services

Alternative Analysis & Public Outreach

Task 3 – Alternative Treatment Analysis
Task 8 – Stakeholder Involvement and Public Outreach

By Future Amendment

Task 9 – Construction Phase Services
Task 10 – Supplemental Services

SCOPE OF SERVICES

Task 1- Project Administration, Management, and Quality

The Engineer will provide project administration and management activities such as staffing, sub-consultant coordination, budget management, schedule management, and coordination with City staff. Engineer will provide the following:

- A. Project Initiation, Tracking, Scheduling, and Budgeting:
 - i. Engineer will prepare a Project Guide including our internal Project Management Plan, Quality Management Plan, and BIM Execution Plan. These documents define a clear roadmap for project execution and include an internal budgeting plan, staffing plan, safety plan, and schedule.
- B. Project Management
 - i. Engineer will prepare a Process Approach and Resource Review (PARR). This is a review of our project approach and internal resource plan by national experts to verify project delivery efficiencies and quality.
 - ii. Invoicing. The Engineer's Project Manager (PM) and accounting staff will prepare monthly invoices, through the project schedule duration.
 - iii. Prepare and submit monthly status reports including current status of project tasks and project financials, with percent complete for major scope tasks.
- C. Internal Meetings and Coordination
 - i. The Engineer's PM and design manager (DM) will coordinate with internal staff on a weekly basis.
- D. City Kickoff Meeting
 - i. Conduct a kickoff meeting in Columbia with City staff to discuss previous work and confirm project objectives, approach, goals, scope, schedule, communications, and deliverables; and identify potential risks to the project's success and develop mitigating strategies.

Task 2- Field Surveys and Investigations

A detailed field and boundary survey will be conducted on the site between State Highway K and Perche Creek.

- A. Boundary, Topographic and Planimetric Survey
 - i. Engineer will provide boundary, planimetric and topographic survey work and create a topographic base file for use in the project design, permitting, and contract document preparation. Surveying will generally encompass:
 - Field survey the project site.
 - Coordination for the location of underground utilities marked by a Missouri One Call utility locate and indication of the type and location of both underground and above ground utilities based on available information.
 - Obtain current title information from a local title company
 - Location of property corners adjacent to or within the survey site.
 - Location of drainage and sanitary sewer information (ditch bottoms, storm drain top elevations, invert elevations, sizes, and connections), including elevations of storm or sanitary

- pipes extending to the opposite side of the road.
- Topographic survey of the site with two foot contour intervals.
- Establishment of right-of-way and property lines for the preparation of easements for land acquisition.
- Location of roadway features including, edge of pavement, curb and gutter and roadway centerline.
- Labeling of road names and property owners on drawing.
- Location of permanent structures within the survey site including above grade water treatment facility infrastructure.
- Location of below grade process piping and electrical/control duct banks as documented in existing water treatment plant record drawings.
- Location of trees > 8 inches in diameter indicating diameter and species.
- Location of driveways.
- Location of creek centerlines, waterline elevation and the bottom/top of banks within the survey site.

B. Geotechnical Investigations

- i. Engineer will conduct a geotechnical investigation at the treatment plant site. Geotechnical scope will be included in the proposal and generally consist of the following minimum requirements:
 - 5 Soil borings using hollow stem augers and mud rotary/wash boring techniques. Borings will extend to 80 feet or bedrock whichever is encountered first.
 - Geotechnical report for the treatment plant site as necessary for design of the treatment plant improvements.
 - Borings and geotechnical report for rock, ground water and other constructability concerns at locations of concern or critical nature.

C. Condition Assessment and Non-Destructive Testing

- i. Review existing studies and past recommendations to establish a baseline prior to conducting site visits.
- ii. Conduct site visits with Project Management and Multi-discipline Design Leads including process, structural, architectural, mechanical, plumbing, electrical, and instrumentation and controls. Discuss performance and condition issues with plant personnel in order to confirm necessary improvements.
- iii. Process survey will include an evaluation of water treatment unit processes and chemical feed systems and will give consideration to performance, age, condition, safety and operational history.
- iv. Structural Evaluation will include structural material integrity and cracking. Non-destructive structural testing includes site observations, chain drags, hammer tests, and other simple nondestructive testing that can be accomplished by HDR personnel. It excludes any third party testing required to determine strength of existing concrete below grade or that requires samples to be taken and tested by a 3rd party.
- v. Mechanical survey will include an evaluation of existing HVAC ventilation and duct work.
- vi. Electrical survey will include an evaluation of electrical components, switchgear, transformers, cabinets, control panels, PLCs, and associated electrical gear.
- vii. Plumbing survey will include an evaluation of water supply lines, valves, visible drain lines, and gas supply lines.

D. 3D LiDAR Scanning

- viii. Provide the necessary scanning services for scanning the existing water treatment components.
- ix. Engineer will visit the site to capture and digitally archive the as-built condition of the existing facilities. A scanning pattern will be planned and discussed prior to arriving on site and should have no impact to the operations of the facility. Laser scanning will capture onsite conditions in 3D format that will assist with the generation of a three-dimensional, computer generated BIM file for design.

E. Field Investigation Technical Memorandum

- i. Engineer to provide a Technical Memorandum summarizing the results of the field reconnaissance and other preliminary considerations for review and approval by City.

Task 3- Alternative Treatment Analysis

A. Background Data Collection and Review

- i. Review of background water quality data and prepare a summary.

B. Water Quality Goal Development

- i. Establish draft water quality goals.
- ii. Conduct workshop to select project water quality goals and candidate technologies identified in previous studies for additional analysis and testing at the bench, pilot scale and full-scale.
- iii. Develop detailed draft and final testing plan including description of bench, pilot and full-scale testing protocols, objectives, testing frequency, water quality analyses, safety plan and data management plan.

C. Bench scale testing will include:

- iv. Working with City staff to collect water for bench scale testing
- v. Ozone demand/decay testing of raw and softened water including bromate formation analysis
- vi. Granular Activated Carbon (GAC) Rapid Small-Scale Column Testing (RSSCT) testing of filter effluent to determine GAC performance with respect to TOC removal and DBP formation under simulated distribution system testing as well media change-out frequency.
- vii. Air stripping analysis of chlorinated filtered water to assess impact on Total Trihalomethane (TTHM) formation under simulated distribution testing.

D. Pilot-scale Testing

- i. Identify pilot testing location, equipment procurement needs, and specific site requirements (supply, waste, power). Anticipated pilot testing duration is six months with the following scenarios to be evaluated:
 - Post-filtration GAC
 - Ozone/biofiltration of aerated water and softened water.
 - Filter column testing to evaluate high-rate filtration rates.
- ii. Design and procure pilot facilities.
- iii. Provide field support associated with equipment delivery, installation and start-up
- iv. Engineer will provide day-to-day operation of the pilot facilities including sampling and coordination with an external laboratory for sample analysis with assistance from City operations staff.
- v. Provide analytical services associated with bench and pilot testing.
- vi. Analyze pilot data and provide operational and sampling adjustments.
- vii. Provide monthly pilot, bench and full-scale testing updates.
- viii. Prepare draft and final pilot report and conduct workshop to review results. Gain

- regulatory approval of pilot results
- E. Full-scale testing including:
- i. Develop testing protocol for evaluating full-scale testing of enhanced lime softening.
 - ii. Work with City staff to conduct full-scale testing.
 - iii. Conduct laboratory analysis of key water quality parameters associated with enhanced lime softening including pH, calcium hardness, magnesium hardness, total hardness, alkalinity, DBP Simulated Distribution System (SDS) testing.
 - iv. Evaluate residuals generation impacts.
 - v. Provide monthly updates of testing results.
 - vi. Prepare draft and final report TM of full-scale testing results
- F. Alternative Analysis
- i. Identify viable technologies and conduct conceptual design of each technology including developing the following for viable alternative:
 - Site plan layouts
 - Hydraulic analysis
 - Preliminary design data including sizing and loading rates, equipment requirements, preliminary electrical demands, anticipated performance relative to water quality goals, operational requirements and MOPO impacts.
 - Capital, operating and life cycle cost estimates
 - ii. Conduct a workshop to review alternatives and identify options for implementation including implementation timeline.
 - iii. Prepare draft and final report summarizing Alternatives Analysis including recommendations.
- G. Water System Modeling
- i. Coordinate with City staff to verify typical system operations during winter and average demands.
 - ii. Develop estimated water age and temperature in tanks and pipes within the water distribution system under current operational controls using the City's InfoWater hydraulic model.
 - iii. HDR will coordinate a workshop with relevant City staff to verify current operation controls of the water distribution system under winter and average demands. This includes typical tank level targets, pump cycling, pump speeds and other controls typically used by City staff under normal (non-emergency) conditions.
 - iv. Workshop will also discuss tank mixing assumptions of model and get feedback from City staff as to which types of mixing can be expected in each of the water distribution system tanks.
 - v. HDR will use the City's existing InfoWater hydraulic model to develop estimated water age and temperature of the system under winter and average demand conditions using the operational controls discussed during the workshop. Output will consist of water age graphs for tanks (Stephens, Hillsdale, Shepard, Walnut, South Pump Station Reservoir and West Ash Pump Station Reservoir) and maximum age and estimated temperature maps of the systems water mains.
 - vi. The model outputs will be used to identify parts of the system that have the highest estimated water age and temperature for current and one future climate scenarios.
 - vii. Develop operational control alternatives to reduce water age within the water distribution system.
 - viii. Analyze effectiveness of control alternatives on system water age and temperature.
 - ix. HDR will coordinate a workshop with relevant City staff to develop up to four alternative operational control scenarios for water age and temperature analysis (up

to three current climate and one future climate scenarios). The intent of the alternative controls is to minimize water age in the areas identified as having the highest water age and/or temperature from the previous task. The operational controls may also include capital improvements to distribution system.

- x. HDR will use the City's InfoWater hydraulic model to develop estimated water age and temperature of the system under winter and average demand conditions for the four operational control scenarios developed during the workshop. Output will consist of water age graphs for tanks (Stephens, Hillsdale, Shepard, Walnut, South Pump Station Reservoir and West Ash Pump Station Reservoir) and maximum age map and estimated temperature of the systems water mains for up to one future climate scenario.
- xi. The model outputs will be used to evaluate effectiveness of the proposed operation changes on system water age.
- xii. HDR will develop summary report of the water age analysis with estimated capital cost of operational control alternatives if system improvements are required.

Task 4- Easement Drawings and Encroachment Assistance

Engineer will provide easement drawing exhibits for City use in obtaining necessary property and easements adjacent to the treatment plant site. Engineer will coordinate with City staff on project related questions during the easement procurement process. Engineer will prepare encroachment documentation as necessary for the City to obtain necessary MoDOT permits.

Task 5- Design Document Preparation

The detailed design will consist of the preparation of drawings and specifications for permitting and construction of the proposed treatment plant improvements in accordance with City standards and Missouri Department of Natural Resources requirements. The design will include the following:

- Replacement of primary basin equipment
- Replacement of aerators and flow meters
- Chemical feed improvements
- Addition of recarbonation
- Electrical upgrades including a new service entrance
- SCADA upgrades including automation of the City's water system
- Replacement of instrumentation
- Replacement of HVAC
- Roof Replacement
- Other cosmetic improvements
- Filter and high service pump modifications to establish constant rate filtration
- Additional Electrical upgrades
- Additional SCADA upgrades and instrumentation replacement

A. Preliminary Engineering Report.

- i. The Engineer will develop a Preliminary Engineering Report for approval by MDNR. The PER will include detailed cost estimates for total estimated construction costs.

Engineer will provide pdf's for review and coordinate and conduct workshop meetings at the 30%, 60% and 90% design milestones to review the design documents and City comments.

- A. The 30% Preliminary Engineering design will consist at a minimum of the following:
 - Base drawings utilizing field survey data
 - Preliminary Treatment Plant Layout
 - Preliminary opinion of probable construction cost
 - Permitting and easement requirements based on field delineation and survey results
- B. The 60% design will address comments received at the 30% phase and consist at a minimum of the following:
 - Treatment Plant Site Plan
 - Mechanical Plan
 - Electrical Plan
 - Erosion and sedimentation control plan and details
 - Technical specifications
 - Bid Form
 - Updated opinion of probable construction cost
- C. The 90% design will address comments received at the 60% phase and consist of a full set of plans, details, and specifications. It is anticipated 90% drawings will be utilized for project permitting.
- D. The 100% design will include the resolution of City review comments and incorporation of regulatory agency comments. The final design documents will be utilized for bidding the project for construction.

Task 6- Permitting

In preparation for bidding and construction of the project, Engineer will prepare and coordinate submittals, address comments, and obtain necessary permits including but not limited to the following:

- A. MoDOT right-of-way construction permit
- B. Missouri Department of Natural Resources coordination
 - i. The Engineer will coordinate MDNR meetings and design document reviews, comments, and responses to facilitate MDNR approvals.
 - ii. Participate in three (3) meetings at MDNR offices in Jefferson City, MO one at 30% deliverable; one at the Alternative Treatment Analysis deliverable, and one at Construction Permit.
- C. City of Columbia land disturbance permit
- D. City of Columbia construction permit
- E. Flood Plain Development Permit

Task 7- Bid Phase Services

- A. Bid Advertisement:
 - i. Excluded from Engineers Scope. City will prepare bid advertisement, establish the bid opening date, and distribute project contract drawings and specifications.
- B. Pre-Bid Conference:
 - i. Engineer will attend pre-bid conference. City will schedule and conduct the pre-bid conference. City will prepare and distribute meeting minutes and list of attendees.
- C. Respond to Bid Inquiries:

- i. Engineer will answer bidder questions as directed by the City. City will document all bid inquiries and incorporate Engineer responses as required.
- D. Issue Addenda:
 - i. Excluded from Engineers Scope. City will prepare and issue Addenda to MDNR and Bidders.
- E. Bid Opening and Tabulation:
 - i. Excluded from Engineers Scope. City will schedule and conduct the bid opening. City will prepare the bid tabulation.
- F. Review Contractor Bids and Recommend Award:
 - i. Engineer will assist the City in reviewing the bids for completeness, responsiveness, and acceptability. City will select recommended contractor or successful bidder.
- G. Assemble Conformed Contract Documents:
 - i. Engineer will incorporate addenda into contract documents and supply the city with fully conformed contract drawings and specifications.
- H. Process Contract Documents:
 - i. City will review the successful bidder's insurance certificates and bonds, compile the final set of conformed contract documents (front end, technical specifications, and drawings) for City and Contractor execution, and issue with the Notice of Award and Notice to Proceed.

Task 8 - Interested Parties Involvement and Public Outreach

- A. Community Outreach Program
 - i. Engineer will develop a draft and final Community Outreach Plan to outline the roles and responsibilities of the project team, including City staff, project messaging, stakeholder list and schedule. Engineer will schedule a one-hour conference call to review the draft Plan with the City. The Plan will include the Interested Party topics such as project updates, water quality goals, and alternative analysis cost and benefits. The Plan will be provided electronically.
- B. Project Website Content
 - i. Engineer will support the City by creating a draft and final project website content and providing supporting graphics to the City. The mock-up will be used by the City staff to update the City's website with the project information. Up to 3 content revisions are included.
- C. Social Media Campaign
 - i. Engineer will support the City by drafting up to six social media campaign recommendations documents – including messages, graphics and schedule strategy – to provide information to the Columbia residents and notify them of upcoming engagement opportunities. The existing City social media channels will be used to share messages. Analytics for the social media campaigns will be shared back to the Engineer. Engineer will provide a monthly snapshot of social media conversations.
- D. Interested Parties Meeting Assistance
 - i. Engineer will plan, lead and summarize up to three (3) interested parties meetings. Each meeting will include the following:
 - Notification materials
 - Meeting plan and summary
 - Up to three Engineer staff at each workshop

- E. Assist with City Council and Water & Light Advisory Committee Meetings
 - i. Engineer Assist with City Council and Water & Light Advisory Board Meetings including:
 - Up to two Engineer staff at up to four (4) meetings
 - Per meeting materials include one handout and PPT slides

Task 9 - Construction Phase Services – pending future contract amendment

Task 10 – Supplemental Services

An allowance in the amount of \$200,077 has been included and established for supplemental services not yet authorized by the City that may be required during the course of the work. This allowance amount shall not be utilized by the Engineer unless specifically authorized in writing by the City to perform supplemental design services. Supplemental design services that may be needed based on the decisions made during the design phase include, but are not limited to, those listed below. The allowance may be utilized for these tasks or other supplemental services requested by the City which may be required during the project.

- Additional Design Workshops
- Evaluate and pilot up to two (2) additional emerging technologies that were not included in previous studies.
- Pilot Operation Assistance
- Long Range Capital Planning Estimates

Assumptions and Exclusions:

- Structural scope includes rehabilitation and material patching work typical of a facility of this age. It does not include serious deficiencies or damage to existing structure or tankage that may be discovered during structure or tank inspections.
- Excludes hazardous material surveys, sampling and analysis.
- Assumes a single design phases with 30, 60, 90% design progress reviews with a total 12 months of design and preparation of on (1) set of bid packages
- Assumes 2 week review periods for City to review design documents.
- Assumes pilot will be operated for 6 months. ESS will operate pilot 1 day per week for 6 months. The City operations staff will provide assistance.
- Pilot study assumes two (2) skid rentals (1 filter skid and 1 ozone skid) for 28 weeks (26 weeks of operation 2 weeks for start-up and shutdown). The filter skid will include BAF and GAC.
- Environmental studies or impact statements, environmental clearances, cultural resource assessments, wetland mitigation, NEPA, and NPDES are excluded.
- Preparation of funding applications are excluded.
- Additional services not otherwise provided for in this scope.

EXHIBIT B - HOURLY FEE SCHEDULE

HDR Engineering, Inc. 2020-2021 Hourly Billing Rates

Enclosed are the 2020-2021 Hourly Billable Rates for HDR Engineering, Inc. These billing rates shall be adjusted annually to reflect any salary adjustments incurred by employees. The rates listed below do not include reimbursable direct expenses as defined below.

Description	Billing Rate/Hour
Senior Technical Specialist/Senior Project Manager III	\$275
Technical Specialist/Senior Project Manager II	\$250
Senior Project Manager I	\$225
Project Manager III	\$195
Project Manager II	\$160
Project Manager I	\$135
Engineer V	\$225
Engineer IV	\$195
Engineer III	\$160
Engineer II	\$135
Engineer I	\$110
Cadd/GIS Technician V	\$165
Cadd/GIS Technician IV	\$140
Cadd/GIS Technician III	\$130
Cadd/GIS Technician II	\$110
Cadd/GIS Technician I	\$95
Environmental/Water Quality Scientist III	\$190
Environmental/Water Quality Scientist II	\$175
Environmental/Water Quality Scientist I	\$145
Senior Land Surveyor	\$160
Survey Technician III	\$120
Survey Technician II	\$80
Survey Technician I	\$65
Construction Manager	\$160
Construction Engineer	\$120
Construction Inspector	\$110
Project Accountant II	\$110
Project Accountant I	\$95
Project Assistant	\$95
Admin Assistant	\$80

Direct Expenses

Mileage	CURRENT IRS RATE
Printing	AT COST
Travel	AT COST
Subconsultants	AT COST

NOTICE TO VENDORS

Section 285.525 – 285.550 RSMo Effective January 1, 2009

Effective January 1, 2009 and pursuant to RSMo 285.530 (1), No business entity or employer shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri.

As a condition for the award of any contract or grant in excess of five thousand dollars by the state or by any political subdivision of the state to a business entity, or for any business entity receiving a state administered or subsidized tax credit, tax abatement, or loan from the state, the business entity shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. Every such business entity shall sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services. [RSMO 285.530 (2)]

An employer may enroll and participate in a federal work authorization program and shall verify the employment eligibility of every employee in the employer's hire whose employment commences after the employer enrolls in a federal work authorization program. The employer shall retain a copy of the dated verification report received from the federal government. Any business entity that participates in such program shall have an affirmative defense that such business entity has not violated subsection 1 of this section. [RSMO 285.530 (4)]

For vendors that are not already enrolled and participating in a federal work authorization program, E-Verify is an example of this type of program. Information regarding E-Verify is available at:
http://www.dhs.gov/xprevprot/programs/gc_1185221678150.shtm.

**CITY OF COLUMBIA, MISSOURI
WORK AUTHORIZATION AFFIDAVIT
PURSUANT TO 285.530 RSMo
(FOR ALL CONTRACTS IN EXCESS OF \$5,000.00)**

County of Jackson)
) ss.
State of Missouri)

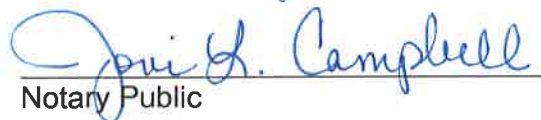
My name is Joseph E. Drimmel. I am an authorized agent of HDR Engineering, Inc. (Bidder). This business is enrolled and participates in a federal work authorization program for all employees working in connection with services provided to the City of Columbia. This business does not knowingly employ any person who is an unauthorized alien in connection with the services being provided.

Documentation of participation in a federal work authorization program is attached to this affidavit.

Furthermore, all subcontractors working on this contract shall affirmatively state in writing in their contracts that they are not in violation of Section 285.530.1 RSMo and shall not thereafter be in violation. Alternatively, a subcontractor may submit a sworn affidavit under penalty of perjury that all employees are lawfully present in the United States.


Affiant
Joseph E. Drimmel
Printed Name

Subscribed and sworn to before me this 6th day of July, 2020


Notary Public

