

Contract for Professional Architectural and Engineering Services

Project W.O. 20-44: WRF Nutrient Recovery Improvements

In consideration of the mutual promises herein, City of Billings and HDR Engineering agree as follows. This Contract consists of:

Part I, consisting of 15 Sections of Special Provisions;

Part II, consisting of 11 Sections of General Provisions;

Appendix A consisting of 8 pages (Basic Services of Contractor);

Appendix B consisting of 2 pages (Methods and Times of Payment);

Appendix C consisting of 1 page (Additional Services of Contractor);

Appendix D consisting of 1 page (Schedule of Professional Fees);

Appendix E consisting of 1 page (Project Schedule);

Appendix F consisting of __ pages (Certificate(s) of Insurance); and

PART I SPECIAL PROVISIONS

Section 1. Definitions.

In this Contract:

- A. "Administrator" means the City Engineer of the Engineering Division of the Public Works Department or his designee.
- B. "Billings" means the City of Billings.
- C. "Contractor" means HDR Engineering, Inc.

Section 2. Scope of Services.

- A. The Contractor shall perform professional services in accordance with Appendix A, which is attached hereto and incorporated in this Section by reference.
- B. Billings shall pay the Contractor in accordance with the Schedule of Professional Fees attached as Appendix D and incorporated herein by reference for services actually performed under this Contract.

- C. Billings shall not allow any claim for services other than those described in this Section. However, the Contractor may provide, at its own expense, any other services that are consistent with this Contract.
- D. The Engineer shall provide as-built drawings as approved by the City of Billings, to the Administrator within 30 days after the project completion date. Final payment will be withheld until the as-built drawings are received by the City of Billings. Requirements for submitting as constructed documents of completed Private Contracts, Work Orders, Special Improvement Districts and Site plans involving any City of Billings infrastructure: a point file; 1 (*.asc, *.txt, comma delimited; point number, northing, easting, elevation and description) / 2 (*.csv, with headings for; point number, northing, easting, elevation and description), with northings and eastings to the nearest tenth of a foot, elevations to the nearest hundredth of a foot, representing new, updated or relocated City of Billings infrastructure features such as, but not limited to Sanitary Sewer Manholes, Storm Drain Manholes, Water Valves, Water Bends, Signals, Street Light, etc., in the coordinates of Montana State Plane, Zone 2500 using NAD83(2011), Horizontal and NAVD88 Vertical, Horizontal units and Vertical units will be International feet, one half size paper copy to scale, one full size paper copy to scale, two CD's or DVD's with PDF files being half size to scale and full size to scale and AutoCAD DWG files as-constructed / as-built, Version 2016, or equivalent.

Section 3. Time for Performance.

- A. This Contract becomes effective when signed on behalf of Billings.
- B. The Contractor shall commence performance of the Work described in Section 2 on receipt of written Notice to Proceed and complete that performance in accordance with the schedule set forth in Appendix E.
- C. This Contract shall terminate at midnight on December 31, 2021.

Section 4. Compensation; Method of Payment.

- A. Each month, or at the conclusion of each phase of the Work for which payment is due, as negotiated on a per-task basis, the Contractor shall present a bill to the Administrator describing the Work for which it seeks payment and documenting expenses and fees to the satisfaction of the Administrator. If any payment is withheld because the Contractor's performance is unsatisfactory, the Administrator must, within ten (10) days of the payment denial, notify the Contractor of the payment denial and set forth, with reasonable specificity, what was unsatisfactory and why. Billings will pay Contractor within 30 days of receiving an acceptable invoice.
- B. The Contractor is not entitled to any compensation under this Contract, other than is expressly provided for in this Section.
- C. As a condition of payment, the Contractor shall have paid all City taxes currently due and owing by the Contractor.

Section 5. Termination of the Contractor's Services.

The Contractor's services under Section 2 of this Part may be terminated:

- A. By mutual consent of the parties.
- B. For the convenience of Billings, provided that Billings notifies the Contractor in writing of its intent to terminate under this paragraph at least 10 days prior to the effective date of the termination.
- C. For cause, by either party where the other party fails in any material way to perform its obligations under this Contract. Termination under this Subsection is subject to the condition that the terminating party notifies the other party of its intent to terminate, stating with reasonable specificity the grounds therefor, and the other party fails to cure the default within 30 days after receiving the notice.

Section 6. Duties Upon Termination

- A. If Billings terminates the Contractor's services for convenience, Billings shall pay the Contractor for its actual costs reasonably incurred in performing before termination and Billings shall pay for services rendered prior to termination. Payment under this Subsection shall never exceed the total compensation allowable under Section 4 of this Part. All finished and unfinished documents and materials prepared by the Contractor shall become the property of Billings.
- B. If the Contractor's services are terminated for cause, Billings shall pay the Contractor the reasonable value of the services satisfactorily rendered prior to termination, less any damages suffered by Billings because of the Contractor's failure to perform satisfactorily. The reasonable value of the services rendered shall never exceed ninety percent (90%) of the total compensation allowable under Section 4 of this Part. Any finished or unfinished documents or materials prepared by the Contractor under this Contract shall become the property of Billings at its option.
- C. If the Contractor receives payments exceeding the amount to which it is entitled under Subsections A or B of this Section, he shall remit the excess to the Administrator within 30 days of receiving notice to do so.
- D. The Contractor shall not be entitled to any compensation under this Section until the Contractor has delivered to the Administrator all documents, records, Work product, materials and equipment owned by Billings and requested by the Administrator.
- E. If the Contractor's services are terminated for whatever reason the Contractor shall not claim any compensation under this Contract, other than that allowed under this Section.
- F. If a final audit has not been performed before the Contractor's services are terminated, Billings may recover any payments for costs disallowed as a result of the final audit.
- G. Except as provided in this Section, termination of the Contractor's services under Section 5 of this Part does not affect any other right or obligation of a party under this Contract.

Section 7. Insurance.

- A. The Contractor shall maintain in good standing the insurance described in Subsection B of this Section. Before rendering any services under this Contract,

the Contractor shall furnish the Administrator with proof of insurance in accordance with Subsection B of this Section.

- B. The Contractor shall provide the following insurance:
1. Workers' compensation and employer's liability coverage as required by Montana law.
 2. Commercial general liability, including contractual and personal injury coverage's -- \$1,500,000 per occurrence.
 3. Commercial automobile liability -- \$1,500,000 per accident.
 4. Professional liability in the amount of \$1,500,000 per claim.
- C. Each policy of insurance required by this Section shall provide for no less than 30 days' advance notice to Billings prior to cancellation.
- D. Billings SHALL be listed as an additional insured on all policies except Professional Liability and Worker's Compensation Policies. In addition, all policies except Professional Liability and Worker's Compensation shall contain a waiver of subrogation against Billings.

Section 8. Assignments.

Unless otherwise allowed by this Contract or in writing by the Administrator, any assignment by the Contractor of its interest in any part of this Contract or any delegation of duties under this Contract shall be void, and an attempt by the Contractor to assign any part of its interest or delegate duties under this Contract shall give Billings the right immediately to terminate this Contract without any liability for Work performed.

Section 9. Ownership; Publication, Reproduction and Use of Material.

- A. Except as otherwise provided herein, all data, documents and materials produced by the Contractor under this Contract shall be the property of Billings, which shall retain the exclusive right to publish, disclose, distribute and otherwise use, in whole or in part, any such data, documents, or other materials. Exclusive rights shall not be attributed to portions of such materials presently in the public domain or which are not subject to copyright. Contractor shall retain rights to pre-existing proprietary property including but not limited to interactive models. The Contractor shall have the right to include photographic or artistic representations of the design and construction of the Project among the Contractor's promotional and professional materials. The Contractor's materials shall not include Billings' confidential or proprietary information regardless of whether Billings has previously advised the Contractor in writing of the specific information considered by Billings to be confidential and proprietary.
- B. Equipment purchased by the Contractor with Contract funds: See Appendix A, Section 3. Scope of Work.
- C. Should Billings elect to reuse Work products provided under this Contract for other than the original project and/or purpose, Billings will indemnify and hold harmless the Contractor from any and all claims, demands and causes of action of any kind or character arising as a result of reusing the documents developed under this contract. Additionally, any reuse of design drawings or specifications provided under this Contract must be limited to conceptual or preliminary use for adaptation,

and the original Contractor's or subcontractor's signature, professional seals and dates removed. Such reuse of drawings and specifications, which require professional seals and dates removed, will be signed, sealed, and dated by the professional who is in direct supervisory control and responsible for adaptation.

Section 10. Notices.

Any notice required pertaining to the subject matter of this Contract shall be either sent via facsimile (FAX) or mailed by prepaid first class registered or certified mail, return receipt requested to the following addresses:

Billings: Randy Straus, PE
City of Billings
Engineering Division
2224 Montana Avenue
Billings, MT 59101

FAX: (406) 237-6291

Contractor: Craig Habben, PE
HDR Engineering, Inc.
970 South 29th St. W
Billings, MT 59102

FAX: (406) 652-2758

Notices are effective upon the earlier of receipt, proof of good transmission (facsimiles only), or 5 days after proof of proper posting.

Section 11. Contract Budget.

In connection with its performance under this Contract, the Contractor shall not make expenditures other than as provided in line items in the Contract budget.

Section 12. Force Majeure.

- A. Any failure to perform by either party due to force majeure shall not be deemed a violation or breach hereof.
- B. As used in this Contract, force majeure is an act or event of substantial magnitude, beyond the control of the delayed party, which delays the completion of this Contract, including without limitation:
 - 1. Any interruption, suspension or interference resulting solely from the act of Billings or neglect of Billings not otherwise governed by the terms of this Contract.
 - 2. Strikes or Work stoppages.
 - 3. Any interruption, suspension or interference with the project caused by acts of God, or acts of a public enemy, wars, blockades, insurrections, riots, arrests or restraints of governments and people, civil disturbances or similar occurrences.
 - 4. Order of court, administrative agencies or governmental officers other than Billings.

Section 13. Financial Management System.

The Contractor shall establish and maintain a financial management system that:

- A. Provides accurate, current, and complete disclosure of all financial transactions relating to the Contract;
- B. Maintains separate accounts by source of funds for all revenues and expenditures and identifies the source and application of funds for the Contractor's performance under this Contract, including information pertaining to subcontracts, obligations, unobligated balances, assets, liabilities, outlays and income;
- C. Effectively controls and accounts for all municipal funds and Contract property;
- D. Compares actual expenditures with budgeted amounts and relates financial information to performance or productivity data including unit cost information where applicable;
- E. Allocates administrative costs to direct service delivery units;
- F. Minimizes the time between receipt of funds from Billings and their disbursement by the Contractor;
- G. Provides accounting records supported by source documentation; and
- H. Provides a systematic method assuring the timely and appropriate resolution of audit findings and recommendations.

Section 14. Funding Requirements.

In the event that any funding source for this Contract should impose additional requirements upon Billings for the use of those funds, the Contractor agrees to abide by those additional requirements immediately upon receipt of written notice thereof from Billings.

Section 15. Subcontracts.

The Contractor may enter into subcontracts for the purchase of goods and services necessary for the performance of this Contract, provided:

- A. Every subcontract shall be reduced to writing and contain a precise description of the services or goods to be provided and the nature of the consideration paid therefor.
- B. Every subcontract under which the Contractor delegates the provision of services shall be subject to review and approval by the Administrator before it is executed by the Contractor.
- C. Every subcontract in an amount exceeding \$1,000 shall require reasonable access to business records of the subcontractor relating to the purchase of goods or services pursuant to the subcontract.

PART II GENERAL CONTRACT PROVISIONS

Section 1. Relationship of Parties.

The Contractor shall perform its obligations hereunder as an independent Contractor of Billings. Billings may administer the Contract and monitor the Contractor's compliance with its obligations hereunder. Billings shall not supervise or direct the Contractor other than as provided in this Section.

Section 2. Nondiscrimination.

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, age, sex, or marital status or who is a "qualified individual with a disability" (as that phrase is defined in the Americans With Disabilities Act of 1990). The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, or mental or physical impairment/disability. Such action shall include, without limitation, employment, upgrading, demotion or transfer, recruitment or recruiting advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The Contractor agrees to post, in conspicuous places available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.
- B. The Contractor shall state, in all solicitations or advertisements for employees to Work on Contract jobs, that all qualified applicants will receive equal consideration for employment without regard to race, color, religion, national origin, ancestry, age, sex or marital status, or mental or physical impairment/disability.
- C. The Contractor shall comply with any and all reporting requirements that may apply to it which the City of Billings may establish by regulation.
- D. The Contractor shall include the provisions of Subsections A through C of this Section in every subcontract or purchase order under this Contract, so as to be binding upon every such subcontractor or vendor of the Contractor under this Contract.
- E. The Contractor shall comply with all applicable federal, state, and city laws concerning the prohibition of discrimination.
- F. The Contractor and subcontractor shall abide by the requirements of 41 CFR 60-300.5(a) and 41 CFR 60-741.5(a), which prohibit discrimination against qualified protected veterans and/or qualified individuals on the basis of disability, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans and individuals with disabilities.

Section 3. Permits, Laws, and Taxes.

The Contractor shall acquire and maintain in good standing all permits, licenses and other entitlements necessary to its performance under this Contract. All actions taken by the

Contractor under this Contract shall comply with all applicable statutes, ordinances, rules and regulations. The Contractor shall pay all taxes pertaining to its performance under this Contract.

Section 4. Nonwaiver.

The failure of either party at any time to enforce a provision of this Contract shall in no way constitute a waiver of the provision, nor in any way affect the validity of this Contract or any part hereof, or the right of such party thereafter to enforce each and every provision hereof.

Section 5. Amendment.

- A. This Contract shall only be amended, modified or changed by a writing, executed by authorized representatives of the parties, with the same formality as this Contract was executed.
- B. For the purposes of any amendment modification or change to the terms and conditions of this Contract, the only authorized representatives of the parties are:

Contractor: Jared Harris (Area Manager) or Authorized Signatory

Billings: City Council or Authorized Designee

- C. Any attempt to amend, modify, or change this Contract by either an unauthorized representative or unauthorized means shall be void.

Section 6. Jurisdiction; Choice of Law.

Any civil action rising from this Contract shall be brought in the District Court for the Thirteenth Judicial District of the State of Montana, Billings. The law of the State of Montana shall govern the rights and obligations of the parties under this Contract.

Section 7. Severability.

Any provision of this Contract decreed invalid by a court of competent jurisdiction shall not invalidate the remaining provisions of the Contract.

Section 8. Integration.

This instrument and all appendices and amendments hereto embody the entire agreement of the parties. There are no promises, terms, conditions or obligations other than those contained herein; and this Contract shall supersede all previous communications, representations or agreements, either oral or written, between the parties hereto.

Section 9. Liability.

The Contractor shall indemnify, defend, save, and hold Billings harmless from any and all claims, causes of action, lawsuits, damages, judgments, liabilities, and litigation costs and

expenses including reasonable attorneys' fees and costs, arising from any wrongful or negligent act, error or omission of the Contractor or any agent, employee or subcontractor as a result of the Contractor's or any subcontractor's performance pursuant to this Contract.

- A. The Contractor shall not indemnify, defend, save and hold Billings harmless from claims, causes of action, lawsuits, damages, judgments, liabilities, and litigation costs and expenses or attorneys' fees and costs arising from wrongful or negligent acts, error or omission solely of Billings occurring during the course of or as a result of the performance of the Contract.
- B. Where claims, lawsuits or liability, including attorneys' fees and costs arise from wrongful or negligent act of both Billings and the Contractor, the Contractor shall indemnify, defend, save, and hold Billings harmless from only that portion of claims, causes of action, lawsuits, damages, judgments, liabilities, and litigation costs and expenses including attorneys' fees and costs, which result from the Contractor's or any subcontractor's wrongful or negligent acts occurring as a result from the Contractor's performance pursuant to this Contract.

Section 10. Inspection and Retention of Records.

The Contractor shall, at any time during normal business hours and as often as Billings may deem necessary, make available to Billings, for examination, all of its records with respect to all matters covered by this Contract for a period ending three years after the date the Contractor is to complete performance in accordance with Section 2 of the Special Provisions. Upon request, and within a reasonable time, the Contractor shall submit such other information and reports relating to its activities under this Contract, to Billings, in such form and at such times as Billings may reasonably require. The Contractor shall permit Billings to audit, examine and make copies of such records, and to make audits of all invoices, materials, payrolls, records of personnel, and other data relating to all matters covered by this Contract. Billings may, at its option, permit the Contractor to submit its records to Billings in lieu of the retention requirements of this Section.

Section 11. Availability of Funds.

Payments under this Contract may require funds from future appropriations. If sufficient funds are not appropriated for payments required under this Contract, this Contract shall terminate without penalty to Billings; and Billings shall not be obligated to make payments under this Contract beyond those which have previously been appropriated.

IN WITNESS WHEREOF, the parties have executed this Contract on the date and at the place shown below.

City of Billings

Contractor

City Council or Designee

Date: _____

Name: _____

Title: _____

Date: _____

ATTEST:

IRS Tax ID # _____

City Clerk

APPROVED AS TO FORM:

Date: _____

By _____

BRENT BROOKS, City Attorney

STATE OF MONTANA)
)ss.
COUNTY OF YELLOWSTONE)

On this ____ day of _____, 2020, before me, the undersigned, a Notary Public for the State of Montana, personally appeared _____, known to me to be the _____ of _____, and acknowledged to me that they executed the foregoing instrument on behalf of said corporation having first been authorized to do so.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

Notary Public for the State of Montana
Residing at Billings, Montana
My Commission Expires: _____

Appendix A

Basic Services of Engineer City of Billings W.O. 20-44: WRF Nutrient Recovery Improvements

Section 1. Engineer's Rights and Duties.

- A. To furnish all labor, materials, equipment, supplies, and incidentals necessary to conduct and complete the Engineer's portion of the project as defined in the scope of work and to prepare and deliver to Billings all plans, specifications, bid documents, and other material as designated herein.
- B. Ascertain such information as may have a bearing on the work from local units of government, utility companies, and private organizations and shall be authorized to procure information from other authorities besides Billings, but shall keep Billings advised as to the extent of these contacts and the results thereof.
- C. Prepare and present such information as may be pertinent and necessary in order for Billings to pass critical judgment on the features of the work. The Engineer shall make changes, amendments or revisions in the detail of the work as may be required by Billings. When alternates are being considered, Billings shall have the right of selection.
- D. Engineer's work shall be in accordance with the standards of sound engineering and present City, State, and National standards and policies currently in use.
- E. Conform to the requirements of the Montana Code Annotated Title 18 "Public Contracts" and more particularly Sections 18-2-121 and 18-2-122, and all other codes of the State of Montana applicable to providing professional services including codes and standards nationally recognized.
- F. The Engineer shall certify with the submission of final plans that the plans are in conformance with applicable sections of Title 69, Chapter 4, Part 5, of the Montana Code Annotated as pertaining to existing utilities.
- G. To perform professional services in connection with the project and will serve as Billings' representative in those phases of the project to which this agreement applies.
- H. Where Federal funds are involved, the necessary provisions to meet all requirements will be complied with and documents secured and placed in the bidding documents.
- I. Submit an estimated progress schedule as to time and costs at the beginning of the work, and monthly progress reports thereafter until complete. The reports will include any problems, potential problems, and delays as foreseen by the Engineer. Reports will be submitted in a timely manner to permit prompt resolution of problems.
- J. Contract administration duties will include review of contractor certified payrolls for wage rate compliance. Discrepancies in certified payrolls will be resolved with the Contractor. A signed Engineer's Payroll Check Sheet (included in the Standard

Modifications to MPWSS) will be submitted as proof of this review with one copy of each payroll.

- K. Name a Task Director who shall be the liaison between Billings and the Engineer. For this project the Task Director designated for the Engineer is Craig Habben working under the Principal-in-Charge, Jared Harris.

Section 2. Billings Rights and Duties.

- A. To furnish all labor, materials, equipment, supplies, and incidentals necessary to conduct and complete Billings' portion of the project as designated in the scope of work.
- B. Name a Task Director who shall be the liaison between the Engineer and Billings. For this project, the Task Director designated is Randy Straus, working under the City Engineer, Debi Meling.

Section 3. Scope of Work.

The project consists of engineering services for the City of Billings W.O. 20-44: Nutrient Recovery Improvements Project. In general, the project includes a thickened waste activate sludge (TWAS) dewatering system to remove phosphorus from the Water Reclamation Facility (WRF) via the resultant TWAS dewatered cake. The City plans to use the TWAS dewatered cake in compost at the landfill facility, thereby providing a beneficial reuse opportunity for the phosphorus recovered from the WRF. A pilot study of dewatering equipment will help determine which dewatering technology to use. If a centrifuge is chosen the equipment would be added in the Solids Processing Building. If a different type of technology other than a centrifuge is chosen it is assumed it would be located in the Gravity Thickener Building.

Piloting, Preliminary Design, Procurement, Final Design, Bidding, Construction and Programming services will be provided based on the scope of the proposed improvements as summarized below.

- Assist the City with determining desired dewatering equipment by providing piloting, preliminary design and procurement services.
- Provide final design of selected equipment. Design to be based on either installing a centrifuge in the Solids Processing Building or another dewatering equipment type in the Gravity Thickener Building.
 - Solids Processing Building/Centrifuge Design Components
 - New TWAS pumps in the lower level of the Air Flotation Thickener (AFT) Building.
 - Piping to the aerated TWAS storage tank.
 - TWAS storage tank with diffused aeration system
 - Blower for diffused aeration system.
 - Centrifuge feed pumps and piping to centrifuge.
 - Add one new centrifuge in spare location in the upper level. Convert a second centrifuge for dewatering TWAS.
 - Expand existing electrical room for new control and power panels.
 - Assumptions: Existing polymer system will be used. Existing dewatered cake conveyor system will be used. No HVAC upgrades required.

- Gravity Thickener Building Design Components
 - New TWAS pumps and piping to dewatering equipment.
 - Add one dewatering unit in the upper level. Provide permanent access opening/doors in upper level wall for installation and removal of equipment.
 - Provide penetration in floor and a chute for dewatered cake to drop directly into dumpster below.
 - Provide odor control collection and connect into existing odor control system.
 - Provide an enclosed electrical room for new control and power panels and around existing electrical panels and control panel.
 - Provide new polymer system in the lower level of the Gravity Thickener Building.
 - Provide HVAC upgrades.
- Miscellaneous
 - Provide means to bypass TWAS dewatering system.
 - Provide programming/screens for new or existing PLCs, OITs and HMIs. Provide new control panels or modify existing control panels to facilitate operation and monitoring of new components.
 - Provide power for new components.
- Assumptions
 - No new or expanded buildings.
 - Building permit is not required.

DETAIL SCOPE OF SERVICES

The Basic Services of the Engineer that will be utilized on the City of Billings W.O. 20-44: WRF Nutrient Recovery Improvements Project is presented in the summaries for Tasks 100 through 800. The scope of services is organized as follows:

| <u>Task Series</u> | <u>Description</u> |
|--------------------|-----------------------|
| 100 | Project Management |
| 200 | Piloting |
| 300 | Preliminary Design |
| 400 | Equipment Procurement |
| 500 | Final Design |
| 600 | Bidding Services |
| 700 | Construction Services |
| 800 | Programming Services |

TASK 100 – PROJECT MANAGEMENT

101 – Project Initiation

The purpose of this task is to kick off the project both externally and internally. A Project Management Plan (PMP) and all the support paperwork will be developed for all team members to have available to understand the project, the project team and the project requirements. The PMP is updated with significant changes in the project. The project will be kicked off with the

City with pertinent staff from the City and HDR to review the project components and the process for completing the design.

- Deliverables – Agenda and meeting minutes.

102 – Project Management

As part of this task, the Engineer's Project Manager will lead coordination of the design team with the City as well as supervise the design team. Project Manager and Accountant will monitor project status, maintain project schedule and prepare financial documents.

- Deliverable – Monthly invoices

TASK SERIES 200 – PILOTING

201 – Preliminary TWAS Sampling and Testing

Obtain TWAS samples and send to all perspective vendors to obtain preliminary equipment performance information, equipment sizing/cost and polymer usage/cost.

- Deliverable – Summary of results from vendors.

202 – Determination of Equipment to Pilot

Conduct a meeting with HDR dewatering experts and City staff to review dewatering equipment options and results of preliminary testing. Determine up to 4 types of equipment to pilot test.

- Assumptions – One of the equipment types to pilot test will be an existing centrifuge.
- Deliverable – Meeting minutes and documentation of selected equipment

203 – Prepare Piloting Protocol

Develop the piloting protocol to outline the requirements for equipment vendors and to determine requirements/utilities to operate the pilot units.

- Deliverable – Protocol Report and summary of utilities required for each pilot.

204 – Coordinate Pilot Testing

Coordinate with vendors to line up times to operate the pilot units. Work with vendor equipment operators during testing to assist with decisions on TWAS feed, polymer and operation. HDR will pay for any vendor pilot fees.

- Deliverable – Payment of vendor fees
- City Responsibilities – Assist with utility connections, sludge cake collection and disposal, and supply City's dry polymer as needed for pilot testing runs.

205 – Third Party Dewaterability Testing of Sludge

During piloting of each unit, HDR will obtain TWAS samples and send to third party (Dr. Julia Kopp) testing to determine dewaterability of the TWAS. This will be used for comparison of dewaterability of TWAS. The comparison will facilitate evaluating pilot equipment dewatering capabilities equally and validating equipment performance at startup due to the potential of variable sludge feeds from piloting to startup.

- Deliverable – Dewaterability testing results.

206 – Dewatering Equipment Installation Research

Tour with the City wastewater plants with dewatering equipment of interest that are located in the region and/or provide contact information of facilities for each type of equipment being piloted for the City to contact and discuss advantages and disadvantages with the staff at the dewatering facilities.

- Deliverable – List of locations to tour and/or list of facilities with pertinent dewatering equipment to contact.

207 – Prepare Pilot Report

Prepare a piloting report that summarizes the pilot setups, piloting results, full-scale equipment recommended by the vendor and any associated additional components required for the specific equipment. Discuss impacts of sludge dryness for composting. Summarize the dewaterability testing for the TWAS at the time of each pilot test and discuss any differences in dewaterability between the testing periods. Review a draft report with the City and then finalize the report.

- Deliverable – Draft and Final Report

TASK SERIES 300 – PRELIMINARY DESIGN

301 – Shortlist Dewatering Equipment

Based on results from the piloting and observed operation of the equipment, shortlist to two types of equipment. A meeting will be held with the City and HDR including dewatering experts.

- Deliverable – Meeting minutes and documentation of selection of shortlisted equipment.

302 – Update 3D Laser Scans

For pertinent facilities, update 3D laser scans that were completed prior to the Nutrient Project.

- Deliverable – 3D laser scan information

303 – Prepare Preliminary Drawings

For the shortlisted equipment prepare 20% (layout only, no notes or details) process drawings and 3D model as appropriate for all required components for each equipment type. Prepare P&IDs for each equipment system.

- Deliverable – Navisworks models, process plans and section drawings, and P&ID drawings.

304 – Update Cost Estimates

Using the cost estimates in the Nutrient Recovery Evaluation, update costs of all required facilities for each equipment option. Costs to include capital costs and operation and maintenance costs.

- Deliverable – Cost Estimate

305 – Determine Equipment for Procurement

Based on preliminary design, operation observations and research, and cost estimates determine equipment to proceed with procurement. Procurement can include both shortlisted equipment types.

- Deliverable – Meeting minutes and documentation of results.

TASK SERIES 400 – EQUIPMENT PROCUREMENT

401 – Document Preparation

Prepare bid documents for equipment procurement including front-end specifications, technical specifications and drawings that represent the equipment installation. Provide review set for the City, conduct QC, City review and finalize bid documents. Development a 20-year present worth formula to include in bid documents to assist with determining the lowest cost Bidder.

- Deliverables – Review set. Three hard copies and one pdf.

402 – Bidding

Produce and distribute bid documents to owner and equipment vendors. Answer bidder questions and prepare addendums as needed.

- Deliverable – Bid Documents, Advertisement and Addendums.

403 – Bid Recommendation

Receive, evaluate and tabulate bids. Assess completeness of bids. Make recommendations to the City on award of contract.

- Deliverable – Bid summary and Recommendation of Award.

TASK SERIES 500 – FINAL DESIGN

501 – 60% Design

Based on the procured equipment, develop the design to a 60% level including site plans, building plans and sections, electrical one-lines and control one lines. Update P&IDs.

- Deliverable – 60% Drawings (Navisworks model for buildings, 2D for site plans, one-lines and P&IDs).

502 – 60% City Review

Meet with City and review Navisworks model and 2D drawings. City review comments will be resolved and applicable comments will be carried forward into the 95% Design.

- Deliverable – List of City review comments and how the comments were resolved.
- City responsibility – Provide one set of review comments

503 – Prepare 95% Drawings

The drawings for all disciplines will be fully developed showing all details necessary for construction. Notes and additional details will be added to the drawings to complete the design.

- Deliverables – 95% Drawings (3 half sized sets and one pdf) for review.

504 – Prepare Detailed Specifications

Final detailed specifications suitable for bidding and construction will be developed. These detailed specifications will be incorporated with the City's front-end documents.

- Deliverable – 3 Sets of Specifications including one pdf.

505 – Internal and External 95% Review

Drawings and specifications will be reviewed internally. Review comments will be resolved and applicable comments incorporated in City review set. Drawings will be reviewed with the City. Key components for the specifications will be reviewed with the City. City review comments will be resolved and applicable comments will be carried forward into the final bid set.

- Deliverable – List of City review comments and how the comments were resolved.
- City responsibility – Provide one set of review comments

506 – Finalize Design

Based on review comments, update and finalize drawings and specifications.

507 – Construction Cost Estimate

The estimated capital costs for the project will be updated during final design.

- Deliverable – Summary of Cost Estimate.

508 – Montana Department of Environmental Quality Permit to Construct

Prepare a design memo to describe the project. Prepare any necessary variance requests. Submit design memo and any variances with Issue for Bid documents to the Billings MDEQ office.

- Deliverables – Design Memo and any variance requests.
- City Responsibility – Pay for MDEQ review fee.

TASK SERIES 600 – BID PHASE

601 – Bidding Administrative Assistance

Produce and distribute bid documents to owner, prospective bidders and plan rooms. Answer bidder questions and prepare addendums as needed. Conduct pre-bid meeting. Attend Bid Opening.

- Deliverable – Bid Documents, Advertisement Notice, Pre-Bid Meeting Minutes and Addendums.
- City Responsibility – Advertise project for prospective bidders.

602 – Post-Bid Administrative Assistance

Receive, evaluate and tabulate bids. Assess completeness of bids. Make recommendations to the City on award of contract.

- Deliverable – Bid summary and Recommendation of Award.

TASK SERIES 700 – CONSTRUCTION AND STARTUP SERVICES

Construction Phase scoping is based on a 26 week active construction period after which time only minor punch list items would need to be completed.

701 – Construction Initiation Services & Conformed Drawings

After award of the construction contract, the Consultant shall prepare Contracts, Conformed Documents and conduct a preconstruction conference.

- Deliverable – 4 sets of Construction Contracts, 4 sets of “For Construction” ½ size plans and specifications for the Contractor, 3 sets and one .pdf file of “For Construction” ½ size plans and specifications for the City. Pre-bid meeting agenda and minutes.

702 – Office Assistance and Administration

During the construction phase of the project, HDR will provide office assistance to the City on the administration of the project. This effort will include review and preparation of change orders, shop drawing review, interpretation of drawings and specifications, monitoring of compliance with procedural requirements on the project, coordinating with the contractor, preparation of pay estimates, confirmation of certified payrolls, conducting construction meetings, and preparing and distributing meeting minutes.

703 – Field Services

HDR will provide on-site construction observation services. A resident project representative will be provided based on half-time field observation plus daily paperwork (5 hours per day). The resident project representative will monitor the project for compliance with project plans and specifications. No testing services are included as these will be provided by the contractor.

703 – eO&M

HDR will update the Electronic Operations Manual (eOM) developed in previous projects to include all new processes, equipment and pertinent drawings.

704 – Startup Services

Work with manufacturers and contractor to verify proper installation of new equipment. Coordinate startup of equipment with Contractor, manufacturer representative and the City. Verify new systems are functioning properly.

705 – Third Party Dewaterability Testing of Sludge

During dewatering equipment startup, HDR will obtain TWAS samples and send to a third party (Dr. Julia Kopp) testing to determine dewaterability of the TWAS during startup in comparison of dewaterability of TWAS during piloting. The comparison will facilitate determining if the equipment is adequately performing.

- Deliverable – Dewaterability testing results and recommendation on equipment performance.

706 – Construction Wrap-Up and Acceptance

Upon completion of the construction of the improvements, HDR will schedule and hold a final project walk-through and assist the City in the final wrap-up of the project, including preparing record drawings, preparation of a punch list, preparation of Certificate of Substantial Completion, information review and recommendation of final acceptance.

- Deliverable – Record Drawings, Punch list, Certificate of Substantial Completion

707 – Post-Construction Warranty Services

Upon final acceptance, HDR will provide warranty item consultation, will assist in the eleven-month warranty inspection, and provide warranty follow-up.

TASK SERIES 800 – APPLICATION SOFTWARE PROGRAMMING

801 – Programming

Provide programming for new equipment and instrumentation.

802 – Workshops and Meetings

Conduct one workshop to review programming requirements and one workshop to review programming.

- Deliverable – Meeting Minutes

803 – Testing and Commissioning

Provide factory testing of new control panel(s) and on-site services for commissioning of new programming and screens.

Appendix B

Methods and Times of Payment City of Billings W.O. 20-44: Nutrient Recovery Improvements

Section 1. Payments for Basic Services.

Billings shall authorize payment to the Engineer for services performed under Appendix A of this Agreement. Partial payment shall be due the Engineer upon receipt of the Engineer's pay estimate, said estimate being proportioned to the work completed by the Engineer.

Partial payment shall be made to the Engineer upon receipt of the Engineer's pay estimate, said estimate being proportioned to the work completed by the Engineer. Billings shall deduct five percent (5%) from each monthly pay estimate to be held until the completion of the final scope of work. The final payment shall be made only after acceptance of final documents by Billings, and determination that the scope of work has been satisfactorily completed.

A. For services rendered prior to construction, Appendix A, the Engineer shall be paid based upon actual time accrued, but not to exceed the following amounts:

| | |
|--------------------------------------|--------------|
| 1. Project Management | \$24,400.00 |
| 2. Piloting | \$96,900.00 |
| 3. Preliminary Design | \$27,100.00 |
| 4. Equipment Procurement | \$11,400.00 |
| 5. Final Design | \$194,300.00 |
| 6. Bidding Services | \$11,300.00 |
| 7. Construction and Startup Services | \$200,600.00 |
| 8. Application Software Programming | \$72,300.00 |
| Total | \$638,300.00 |

B. Final payment shall be the above stated basic fee less all previous payments.

Section 2. Payments for Extra Services when Authorized by Billings.

Requests made or conditions identified by interested groups at the agency or public meetings, which are beyond the scope and intent of this study shall be paid for based on a negotiated fee.

Section 3. Corrections.

Costs of Billings work that is required for corrections to the Engineer's work which requires redoing by Billings shall be deducted from any payments due the Engineer, if the Engineer fails to make the required corrections.

Section 4. Fee Increases

For contracts and services that are expected to require more than one (1) year to complete, the above stated basic services payments may be reviewed and adjusted annually by mutual agreement of the parties, based upon documented evidence that the Engineer's costs have increased for all comparable clients.

Appendix C

Additional Services of Engineer City of Billings W.O. 20-44: WRF Nutrient Recovery Improvements

Extra Services of the Engineer will be paid only with written prior authorization by Billings.

- A. Requests made or conditions identified which are beyond the scope and intent of the services identified under Appendix A.

Appendix D

Schedule of Professional Fees City of Billings W.O. 20-44: Nutrient Recovery Improvements

Not used on this Contract.

Appendix E

Project Schedule City of Billings W.O. 20-44: WRF Nutrient Recovery Improvements

Based on a notice to proceed by Billings dated no later than June 22, 2020, the completion date for the Engineer's work shall be on or before April 30, 2022 based on the following estimated schedule for major deliverables:

- A. Final Piloting Report – November 2020
- B. Preliminary Design – December 2020
- C. Final Equipment Procurement Contract – February 2021
- D. Final Design Plans and Specifications – April 2021
- E. Award of Construction Contract – May 2021
- F. Project Completion and Startup – February 2022

Delays affecting the completion of the work within the time specified of more than ninety (90) days, not attributable to or caused by the Parties hereto, may be considered as cause for the renegotiation or termination of this Contract.

If the Engineer is behind on this Contract due to no fault of Billings, then the Engineer hereby acknowledges the right of Billings to withhold future Contracts to the Engineer in addition to any other remedy until this Contract is brought back on schedule or otherwise resolved.

Based on the results of the Alternatives Analysis, Engineer will reassess remainder of project schedule and revise accordingly with City's concurrence.

Appendix F

Certificate(s) of Insurance City of Billings W.O. 20-44: WRF Nutrient Recovery Improvements

(Attach Certificate(s) of Insurance)