

Contract for Professional Architectural and Engineering Services

City of Billings W.O. 14-11; Wastewater Treatment Plant Nutrient Upgrade, Expansion and Improvements

In consideration of the mutual promises herein, City of Billings and HDR Engineering, Inc. 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 16 pages (Basic Services of Engineer);

Appendix B consisting of 1 pages (Methods and Times of Payment);

Appendix C consisting of 1 pages (Additional Services of Engineer);

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

Appendix E consisting of 1 pages (Project Schedule);

Appendix F consisting of 2 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/her designee.
- B. "Billings" means the City of Billings.
- C. "Engineer" and/or "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 Section 4.
- 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 Contractor shall provide hard copy as-built drawings and in digital format, 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.

- E. The Contractor shall provide certified construction payrolls to the Administrator stating in writing that the payrolls have been reviewed and are acceptable.

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, 2019.

Section 4. Compensation; Method of Payment.

- A. Subject to the Contractor's satisfactory performance, Billings shall pay the Contractor no more than Four Million, Five Hundred Ninety One Thousand Nine Hundred and no/100 dollars (\$4,591,900.00) in accordance with this Section and Appendix B.
- B. 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 the Engineer for all services provided not under dispute in the invoice. Billings will pay Contractor within 30 days of receiving an acceptable invoice.
- C. The Engineer is not entitled to any compensation under this Contract, other than is expressly provided for in this Section.
- D. As a condition of payment, the Engineer shall have paid all City taxes currently due and owing by the Engineer.

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 any deliverables prepared by the Engineer as defined in the Scope of Services 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 non-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 Deliverables 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 deliverables 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), e-mail, or mailed by prepaid first class registered or certified mail, return receipt requested to the following addresses:

Billings: City Engineer (Debi Meling)
City of Billings
Public Works Department
2224 Montana Avenue
Billings, Montana 59101

e-mail: melingd@ci.billings.mt.us
FAX: (406) 657-3097

Contractor: Craig Habben
HDR Engineering, Inc
2913 Millennium Circle
Billings, MT 59102

e-mail: craig.Habben@hdrinc.com
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 professional 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 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.

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 current and applicable statutes, ordinances, rules and regulations at the time of the execution of the Contract. 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 in 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: Area Manager
(title of position)

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 to the extent 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 to the extent 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 to the extent 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.

Billings shall indemnify, defend, save, and hold the Engineer 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 Billings or any agent, employee or subcontractor as a result of Billings' or any subcontractor's performance pursuant to this Contract.

- A. Billings shall not indemnify, defend, save and hold the Engineer 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 the Engineer 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 Engineer, Billings shall indemnify, defend, save, and hold the Engineer 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 Billings' or any subcontractor's wrongful or negligent acts occurring as a result from Billings' 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

THOMAS W. HANEL, Mayor

HDR Engineering, Inc.

Date: _____

Name: _____

ATTEST:

Title: _____

Date: _____

City Clerk

IRS Tax ID # 47-0680568

Date: _____

APPROVED AS TO FORM:

By _____
BRENT BROOKS, City Attorney

Date: _____

STATE OF MONTANA)
)
) :ss.
COUNTY OF _____)

On this ____ day of _____, 20__, 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 _____, Montana
My Commission Expires: _____

Note: Final contract documents will require the Contractor's signature to be notarized.

Appendix A

Basic Services of Engineer W.O. 14-11--Wastewater Treatment Plant Nutrient Upgrade, Expansion and 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, Amanda McInnis.

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, PE, working under the City Engineer, Debi Meling, PE.

Section 3. Scope of Work.

The project consists of engineering services for the design and bidding phases for the City of Billings Wastewater Treatment Plant (WWTP) Nutrient Upgrade and Expansion Project. Scope and fee for the construction administration, operation and maintenance manual, training, startup and plant operation assistance phases will be added by amendment at a later date. The project is based on recommendations from the Wastewater Treatment Facility Plan (WWTFP) (HDR, 2013). At the conclusion of the Design Report, the City and HDR will evaluate if there are any significant changes to the scope of the improvements recommended and determine if there are any appropriate changes that need to be made to the scope and fee.

The scope of work is summarized below.

- Design for 2028 projected flow and loadings including industries identified in WWTFP.
- Design for Tier I and Tier II criteria from the WWTFP.
- Design for nutrient removal upgrades to meet the Tier I and Tier II criteria using the A2O process. The secondary treatment will be designed so that two halves of the facilities can be operated separately, including separate electrical systems for each half. Upgrades specific to nutrient removal includes:
 - New Bioreactor Splitter Box – design to include provisions for future bioreactor expansion. Design splitter box to be redundant and operate half of secondary treatment. Each half of splitter box to accept one forcemain from Secondary Pumping Station and one RAS pipe. Splitter box to be cast-in-place concrete with no brick veneer. Flow split to be with manual weir gates.
 - Convert existing aeration basins and existing secondary clarifiers into bioreactors. Increase operating depth of the basins to meet required HRT for 2028. Provide bioreactor baffle walls and configuration as laid out in the WWTFP. Baffle walls to be cast-in-place concrete. Provide mixers for anaerobic and anoxic zones. Include maintenance access to each mixer. In Design Report

- evaluate use of submersible pumps versus pumps located in tunnel system for mixed liquor return. Use existing chase adjacent to Aeration Basin Effluent Channel for a Bioreactor Effluent Channel from Bioreactors 3 and 4. Provide a new launder for effluent from Bioreactors 1 and 2. Include provisions for expanding bioreactors to the west to meet 2038 flows.
- Expand blower capacity and air piping capacity for new air diffuser system and oxygen demand. Utilize existing Blower Room and air header where feasible. Replace existing blowers with higher efficiency blowers that meet 2028 flows. Add a second air header across existing bridge to bioreactors and piping to each aeration zone. Verify bridge can handle larger pipe than originally planned (new bridge or upgrade not included in scope). All piping to be overhead. Plan for future air requirements for 2038 flows and potential 5th Stage aeration zones. Each aeration zone to be automatically controlled by dissolved oxygen (DO) and/or ammonia levels when applicable. Blowers to be automatically controlled by pressure in discharge header. Evaluate diffuser options in Design Report. Demolish existing diffuser system.
 - Provide two new secondary clarifier complexes, each with three circular secondary clarifiers designed to be expandable to four clarifiers each. Clarifiers to be cast-in-place concrete with no brick veneer. Each complex to include a RAS/WAS/scum pump station. Pump stations will not be connected to existing tunnel system. Pump stations will include a superstructure to house electrical equipment and hoisting equipment for removal of equipment from lower level. Superstructure to utilize precast sandwich wall panels and precast ceiling panels. Provide RAS pipe from each pump station to each side of the Bioreactor Splitter Box. Provide a combined WAS and scum pipe from each complex to the air flotation thickener. Provide redundant pumping. Include provisions for future clarifier.
 - Provide influent piping and splitter box for each secondary clarifier complex. Splitter boxes to be cast-in-place concrete with no brick veneer. Flow split to be with manual weir gates. Include piping for future clarifiers to extent required for future constructability such as piping below new slabs that would be needed for the future clarifiers.
 - Provide secondary clarifier effluent piping to connect to existing UV disinfection system. Provide two effluent piping systems. Include provisions for future clarifiers and for potential tertiary treatment.
 - Provide a Chemical Building to house chemicals for initial project as well as planned future projects. Facility to include provisions for alum, acetate and polymer. Provide acetate components only as logical with other chemical provisions. i.e. buried piping banks. Two future chemicals in separate rooms will be provided for. Superstructure to utilize precast sandwich wall panels and precast ceiling panels. Determine building location during preliminary design. Separate rooms to be provided to isolate chemicals. Cast-in-place concrete containment areas will be below ground for containing potential chemical spills.
 - Provide new chemical feed points for alum ahead of centrifuges and alum and polymer ahead of secondary clarifiers. Relocate existing polymer system to Chemical Building. To meet Tier II requirements, provide acetate feed points to anoxic zones. Also provide alum feed points to Headworks ahead of primary clarifiers.

- Design for meeting ammonia criteria defined in Tier I of the WWTFP
 - Provide centrate equalization – in preliminary design evaluate rehabilitating existing Decant Tanks and associated pump station. Centrate will be pumped into existing pipe to the Headworks or Secondary Pumping Station.
 - Provide swing zones in A2O process which can be operated as either anoxic zones or aerated zones for nitrification. Provide DO control of air supply in swing zones.
- Design upgrades for existing facilities with Priorities 1, 2A and 2B as identified in the WWTFP. Include any issues similar to Priority 2B that have developed since the evaluation for the WWTFP. This includes improvements recommended in the Electrical Master Plan Update (HDR, 2011). Major new facilities include:
 - Corrosion and odor control facilities for preliminary treatment, primary treatment, secondary pumping station wetwell, and residuals handling. Facilities to include point source collection and ducting from each process to treatment. Provide one or two treatment systems based on efficiency of ducting. Evaluate treatment type in Design Report. Construction of corrosion and odor control facilities will not be a separate project, but will be required to be completed at the beginning of the overall project.
 - Sludge holding tank with floating gasholder cover and centrifuge feed pump station. Sludge holding tank to be cast-in-place or pre-stressed concrete with no brick veneer. Pump station to be cast-in-place concrete below ground and precast sandwich wall panels and precast roof panels for superstructure. Provide option to bypass sludge storage tank and pump directly out of primary digesters.
 - Grease Handling Facility. Grease to be processed and injected directly into a Primary Digester or the Sludge Holding Tank. Evaluate equipment options and combining facility with Centrifuge Pump Station.
- Design for Priority 2C and 2D items listed in the WWTFP as bid alternates. Include any issues similar to these priorities that have developed since the evaluation for the WWTFP.
- Provide peak flow facilities identified in the WWTFP that are required to meet the projected 2028 peak flow of 67 mgd. Project when additional facilities would be required to be completed. Facilities include:
 - Influent piping to the Headworks – include redundancy of siphons and ability to isolate Special Manholes 2 and 3 for repair. Include provisions for future interceptor replacement.
 - Additional Headworks equipment – new screen and vortex grit unit.
 - Primary influent piping – upsize piping and connect directly to vortex grit unit effluent channel.
 - Add fifth secondary pump in Secondary Pumping Station. Add second forcemain to Bioreactor Splitter Box.
 - Additional UV trains. Provide UV units in existing channel and add a fourth channel for additional UV units.
 - Add second outfall pipe and expanded outfall including provisions to isolated outfalls.
- Provide site piping, paving and grading improvements associated with the improvements described above including:
 - New access road around new secondary clarifiers.

- Adequate access to Chemical Building for deliveries and Grease Facility for unloading grease loads.
- Provide further evaluation of resource recovery options developed in WWTFP as part of the Design Report. Provide recommendations for biosolids, biogas and nutrient resources.
- Provide layouts for future facilities to meet nutrient criteria up to the limits of technology for nitrogen and phosphorous. Where applicable include provisions for expansion or connection to future facilities. Future facilities would include tertiary treatment and 4th and 5th stages for secondary treatment for a 5-Stage Bardenpho process.
- Provide architectural design services:
 - Include repairs and improvements to existing facilities as outlined in the detailed tables by facility in Chapter 5 of the WWTFP.
 - Provide architecture of new facilities similar to existing plant architecture.
- Provide structural design services:
 - Include repairs and improvements to existing facilities as outlined in the detailed tables by facility in Chapter 5 of the WWTFP.
 - Provide structural services for new facilities.
- Provide mechanical design services:
 - Include mechanical upgrades described in the existing treatment plant evaluation in the detailed tables by facility in Chapter 5 of the WWTFP.
 - Provide heating and ventilation of new facilities.
 - Provide plumbing systems for new facilities.
- Provide electrical design services:
 - Include electrical improvements identified in the Electrical Master Plan Update that have not been completed. Recommended improvements include additional plant backup power and replacement of transformers to secondary treatment. New transformers to be in a new location to avoid conflict with future expansion of bioreactors.
 - Remove motor controls centers (MCCs) along west side of aeration basins. Provide new MCC(s) for blowers in blower room.
 - Provide electrical systems for new facilities
- Instrumentation and controls to support identified upgrades and new facilities as well as improvements to existing facilities.
 - Replace plant PLCs not recently replaced or that will be not be replaced by new PLCs for new processes.
 - Provide new PLCs for new facilities including one for each secondary sludge pump station, one for the aeration system, one for the chemicals facilities/centrate equalization and one for corrosion/odor control.
 - Provide software integration and software programming preliminary coordination for automatic operation of all new facilities. Software development and programming will be completed in services added by amendment.
- Existing Administration Building modifications including conversion of an existing Chlorine Room into a new Control Room and access enhancements to the new control room area.
 - Remove unused programming.
 - Complete conversion to an all Ethernet network.
- Landscaping

- Provide new landscaping along the south and southwest corner of the site.
- Provide assistance in development of application and submittal materials for the City's use in obtaining the following permits:
 - US Army Corps of Engineers 404 Permit
 - Building Permit
 - Montana Department of Environmental Quality (DEQ) Air Permit for Construction
- Provide bidding services
 - Bidding services based on one bid package.
- Items not include in scope of work:
 - Detailed design of any resource recovery recommendations
 - New Administration/Laboratory Building
 - Levee evaluation or design of any levee modifications
 - Pre-purchasing of equipment
 - SRF assistance
 - Public education assistance
 - Discharge permit assistance
 - River diffuser

DETAIL SCOPE OF SERVICES

The scope of services that will be utilized on the Wastewater Treatment Plant Nutrient Upgrade and Expansion Project is presented in the summaries for Tasks 100 through 900. The scope of services is organized as follows:

<u>Task Series</u>	<u>Description</u>
100	Project Initiation, Coordination and Management
200	Early Out Project (not included)
300	Preliminary Design Phase
400	Final Design Phase
500	Bid Phase
600	Construction Phase (scope and fee to be added by amendment)
700	Startup, Training and O & M (scope and fee to be added by amendment)
800	Operations Assistance (scope and fee to be added by amendment)
900	Application Software Programming Services (scope and fee to be added by amendment)

TASK SERIES 100

101 – Project Initiation

The purpose of this task is to kick off the project externally and internally. A project guide 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 project guide 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 – Half day meeting with City, agenda and meeting minutes.

102 – Meetings with City Staff

During the preliminary design and final design phases of the project, key members of the Consultant design team will meet with the City staff to review the project. Meeting minutes will be prepared and distributed to all parties attending the meeting. During preliminary design meetings will be approximately twice a month with a review meeting at the completion of the draft Design Report. During final design meetings will occur about every other week. 40 total meetings are planned for. Meetings to normally be held at the WWTP Conference Room.

- Deliverables – Meeting minutes and decision log updated for each meeting

103 – Montana Department of Environmental Quality Coordination

As part of this task, Consultant will coordinate the project and project deliverables with DEQ. DEQ has a copy of the WWTFP. Variances will be requested from DEQ during preliminary design for clarifier criteria on both the primary clarifiers and the new secondary clarifiers. A variance will also be requested for having a backup screen available for the Headworks but not installed to provide firm capacity with the largest unit out of service. Design will be reviewed with DEQ prior to the 95% submittal and completion of the design.

- Deliverables – Variance paperwork and two hard-copy review contract document sets to DEQ.
- Assumptions – Two trips to Helena including the Engineer's Project Manager and designated representative from the City.

104 – Design and Bidding Services 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 – EARLY OUT PROJECT (Not included in Original Contract)

TASK SERIES 300 – PRELIMINARY DESIGN PHASE

This task series will further develop recommendations from the WWTFP. The tasks associated with the preliminary design include the following:

301 – Geotechnical Investigations

A soils consultant will perform geotechnical investigations to determine the structural design requirements and limitations for new structures at the plant site. A portion of the investigation will occur at the beginning of preliminary design and the remainder of the investigation will occur at the start of final design when all new facility locations and requirements are known. A total of 15 borings are included for new facilities.

- Deliverable – Geotechnical Report

302 – Perform Design Surveys

The overall scope is to provide topographic survey of the entire WWTP site. The topographic survey will verify the location of structures and above ground appurtenances. The survey will provide topographic data for the area of new construction.

- The existing datum of the WWTP will not be continued.
- The horizontal coordinates will be Montana coordinate system NAD 83 and the vertical will be NAVD 88.
- The existing control provided by the City will be verified
- Control will be densified to accommodate topographic survey with robotic total station.
- Provide differential level thru all control points
- Provide differential level thru existing structures where existing elevations are listed.
- Robotic total station will be used on all hard surface topographic shots and structure locations.
- GPS will be used on the natural ground surface areas if more economical than the robotic total station.
- The underground utilities will be protracted by previous as-constructed drawings into the ground model.
- The determination of utility locates pot-holed by City will be completed over two site visits and will be done during the final design process to determine key tie-in locations or utility locations. The City will provide the pot-holing.
- Topographic survey to extend to the base of the rims and reflectorless shots along the rim face will be provided.
- City responsibility – provide utility locates and pertinent GPS information.

303 – Wetlands Delineation Report

This task consists of all services necessary to complete the wetland delineation for the Project. The delineation will be for a Project Area of approximately 5 acres in two separate areas. Waters of the U.S. are present within the identified Project Area. A formal delineation needs to be completed to confirm the presence and boundaries of wetlands and other waters of the U.S. The following items are included with the preparation of the wetland delineation report:

- *Field Visit.* A wetland delineation will be conducted utilizing the US Army Corps of Engineers (USACE) current methodology in order to determine the waters of the U.S. and determine the wetland boundaries within the designated Study Area. A GPS unit with sub-meter accuracy will be utilized to capture the boundaries.
- *Prepare Wetland Delineation Report.* The delineation report will consist of a narrative discussing wetland delineation methodology and information regarding the findings of the field investigation. Figures will be developed that utilize the electronic file of the wetland area boundaries collected in the field. The wetland delineation report containing methodology and findings of the wetland delineation will be provided in pdf format. The findings of the delineation include identification of the type, size, and location of all potential waters of the U.S. USACE data forms will be provided for all areas of investigation.
- Deliverables: Wetland Delineation Report

304 – 404 Permit Application

Prepare the 404 permit application for the 404 permit. HDR will prepare the 404 permit application utilizing design information to identify the impacts to Waters of the U.S.

- Deliverables: 404 Permit Application

305 – Prepare a Design Report

Prepare a design report that describes the project and the planned improvements. Preliminary drawings will be developed showing plan views of proposed improvements and key sections. Chapters included and some of the key items the chapters will cover include:

- Introduction
- Summary of Recommend Plan
- Design Objectives and Criteria
- Construction Implementation Plan
 - Construction sequencing
 - Construction constraints
 - Construction staging
- Codes, Regulations and Discharge Permit
- Liquid and Solids Balance
- Process Selection Review
- Hydraulic Profile
 - Hydraulic calculations for recommended facilities
- Expanded Peak Capacity - Determine based on flow projections when components would need to come on-line.
 - Influent piping – size gates and identify horsepower (Hp) requirements. Provide details of gate operation and control.
 - Headworks – identify equipment manufacturers with equipment that can fit in existing concrete channels and vortex grit chamber and begin discussions with manufacturers if sole sourcing is chosen.
 - Primary influent piping – provide piping layout.
 - Secondary Pumping Station and forcemain – determine acceptable pump manufacturers that meet design criteria of existing pumps and begin discussions with manufacturers if sole sourcing is chosen.
 - UV disinfection – begin discussions with Trojan (Vendor of existing equipment) and include equipment information.
 - Outfall – develop preliminary drawings of outlet from UV, pipe routing and outfall expansion. Describe construction sequencing options.
- Headworks
 - Develop means for collection of screenings washer/compactor effluent and pumping it back to the inlet box ahead of the screens.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Primary Clarifiers and Sludge Pumping
 - Computational fluid dynamics (CFD) modeling of clarifiers to determine if additional weir length is required.
 - Replace all sludge pumps, scum pumps, piping and valves.
 - Evaluate sludge pumping criteria. Determine if sludge should be stored in primary clarifiers with intermittent pumping or continuous pumping.
 - Evaluate type of pumps based on criteria developed above.
 - Provide layout of pumps and piping.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Bioreactors (secondary influent, bioreactors, blowers, aeration)
 - Use Biowin model developed in WWTFP to run dynamic simulations to finalize anaerobic, anoxic and aerobic zone sizing for nutrient removal for Tier I and

- Tier II requirements. Determine anoxic and aerobic zone sizing for ammonia criteria.
 - Determine size requirements for blowers and air piping.
 - Provide preliminary plan view drawing from BIM model of facilities and sections where appropriate. Include piping, valves, equipment, structure and baffle wall layouts.
 - Include diffuser evaluation and recommendation of allowable type diffusers to bid.
 - Provide summary of control and operation of air system.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Secondary Clarifiers (clarifier influent, clarifiers, RAS/WAS/Scum Pump Station)
 - Provide CFD modeling to determine optimum size for clarifiers.
 - Provide layout of clarifier complex from BIM model and pumping area. Provide section through a clarifier and pump station.
 - Provide summary of equipment maintenance access and removal.
 - Provide summary of control and operation of pumping systems.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Residuals
 - Update the EnVision model from the WWTFP to evaluate residuals quantities for all components.
 - Update WWTFP analysis of existing facilities to meet 2028 criteria and 2038 criteria.
 - Provide recommendations for residuals facilities.
- Sludge Holding Tank and Pump Station
 - Size and locate new sludge holding tank and centrifuge feed pump station.
 - Determine most cost effective construction method for walls.
 - Provide plan drawing and section from BIM model.
 - Operation and control to be the same as existing.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Grease Handling Facility
 - Locate grease handling facility. Evaluate combining with centrifuge pump station.
 - Evaluate options for process grease prior to pumping in to primary digester and/or sludge holding tank.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Biosolids Dewatering
 - Pilot test two screw press manufacturers to determine ability to dewatering Billings' biosolids and polymer requirements. HDR will coordinate contract, pay for pilot and provide pilot protocol (City will reimburse HDR for pilot costs). City to provide utility connections for pilot unit. Results will be summarized in the Chapter.
 - Provide sizing and layout of new dewatering unit. Cut plan and section from BIM model.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Centrate Equalization
 - Determine criteria and size requirement for centrate equalization.
 - Determine requirements to rehabilitate Decant Tanks and Pump Station for use as centrate equalization.

- Provide plan and section of centrate equalization tank(s) and pump station.
- Provide preliminary list of equipment manufacturers and equipment information.
- Chemical Building
 - Determine chemical feed rates for alum, acetate and polymer for Phase I improvements.
 - Estimate chemical feed rates for future facilities based on WWTFP.
 - Evaluate Chemical Building sized for immediate requirements versus potential future needs. Determine costs of a building for immediate needs versus projected future needs. Provide recommendation for building size.
 - Move polymer system from East Mechanical Building to new Chemical Building.
 - Provide summary of operation and controls of chemical system.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Administration Building
 - Rehabilitate abandoned Chlorine Room to become new Control Room.
 - Provide layout of new Control Room.
 - Provide ADA access to building.
 - Provide access from new lab area to break room/conference room area on the main floor.
 - Summarize additional improvements identified in WWTFP.
- Corrosion and Odor Control
 - Develop corrosion and odor control preliminary design
 - Discuss and recommend treatment alternatives. Locate recommended treatment facility(ies).
 - Recommend covers or other means to capture foul air.
 - Provide preliminary routing of foul air to treatment.
 - Provide preliminary list of equipment manufacturers and equipment information.
- Instrumentation and Control
 - Develop P&IDs for improvements
 - Where not covered in individual chapters provide description of instrumentation and control for new or modified facilities.
 - Summarize any new SCADA architecture.
- Electrical
 - Verify items from Electrical Master Plan that have not been completed are still appropriate. Update items in the master plan pertinent the nutrient upgrade and customize them to meet the requirements of the recommend facilities.
 - Provide summary of new major electrical infrastructure.
 - Develop strategy for additional backup power and provide recommendation.
 - Provide one-line drawings of new recommended electrical facilities.
- Site Civil
 - Develop plan for access roads around new clarifiers, to new RAS/WAS/scum pump stations, Chemical Building and Grease Handling Facility.
 - Provide site plan for access roads – including new facilities.
 - Provide site plan for new piping requirements – including new facilities
- Landscaping
 - Summarize criteria and scope of landscaping.
 - Identify limits of landscaping.
 - Identify general items included in landscaping.
- Miscellaneous Facility Improvements

- Summarize facility upgrades identified in the WWTFP. Update any new items or items that have been taken care of or are planned to be taken care of prior to the construction of Phase I. An additional evaluation will not be completed as part of the preliminary design but will be conducted with the final design.
- Resource Recovery
 - The alternatives shortlisted in the WWTFP Chapter 7 will be further evaluated to determine a recommended alternative for biosolids, biogas and nutrients. The recommended alternative will be developed only to the extent necessary to determine layout requirements and location on the site. No detailed design will be provided.
- Plant Operations
 - Plant operations will be discussed in terms of seasonal operation for nutrient removal versus ammonia removal. Discussion will include anticipated time and requirements to move operations in and out of nutrient removal.
 - Operation costs will be compared for nutrient removal versus non-nutrient removal.
- Updated Cost Estimate
 - Costs estimated in the WWTFP will be updated based on information and drawings developed in the preliminary design. A breakdown similar to the WWTFP will be included.
- Provisions for Future – facilities projected to meet lower nutrient criteria and higher design flows will be updated from the WWTFP as needed, summarized and shown on a site plan. Facilities include:
 - Bioreactor expansion.
 - 5-Stage Bardenpho (Stages 4 and 5).
 - Tertiary treatment.
 - Fermenter.
 - Chemicals – additional chemicals or Chemical Building expansion.
 - Sidestream treatment.
 - Nutrient recovery recommendation.
 - Residuals – third Primary Digester and Digester Building expansion.
 - Biogas recommendation.
- Figures
 - Extract drawings from the models and develop into figures for inclusion in the report.
- Appendix
 - DEQ requirements per facility and response on design meets or will meet requirement.
 - Equipment summary.
 - Piping materials.
 - Cost estimate details.
- Abbreviations
- Deliverable – Draft Design Report (electronic copies of chapters as completed).

306 – Review Design Report (30% Review)

Conduct internal reviews of Design Report chapters. Incorporate review comments and submit to City for review. Submit chapters as they are completed. As part of the review process determine any changes to the facilities to be provided or upgraded that were identified in the WWTFP and scope above. The changes would be a result of the more complete evaluations in the Design Report.

- Deliverable – Final draft chapters

307 – Finalize Design Report

Incorporate City review comments and finalize design report.

- Deliverable – Final Design Report (5 hard copies and one electronic copy).

308 – Internal Team Meetings

Regular conference calls will be conducted to coordinate between team members and to communicate information received from the City as well as obtain questions or decisions needed from the City.

TASK SERIES 400 – FINAL DESIGN

In this task, the Preliminary Design will be developed into more detailed engineered project elements. The Building Information Management (BIM) model will be developed to the 30% design level, 60% design level and then 95% level before being finalized for bid documents. The BIM model will be regularly shared with project staff and the City in digital format using Navisworks™ reader software for model communication. Specifications will be prepared for 95% review and then finalized for bid. Specific tasks will include the following:

401 – Prepare 30% BIM Model and Drawings

The BIM models will be developed for all new facilities and major process facilities for each discipline to provide basic layouts of the facilities. The BIM models developed to this level will be used for the figures in the Design Report.

- Deliverable – BIM model to the City for review of basic layouts of new facilities at the 30% level.

402 – Prepare 60% BIM Model and Drawings

The BIM models will be further developed for all disciplines providing structural sizing, equipment location, piping routing and major electrical facility location. Existing facility improvements to be shown on 2D drawings utilizing photos as much as possible to indicate repairs and upgrades. 2D site drawings, P&IDs drawings and electrical one-line drawings will be updated from preliminary design.

- Deliverable – See Task 403.

403 – Internal and External 60% Review

BIM models and 2D drawings will be reviewed internally. Review comments will be resolved and applicable comments incorporated in City review set. BIM model will be reviewed with City as well as the improvements developed on 2D drawings. City review comments will be resolved and applicable comments will be carried forward into the 95% review.

- Deliverables – BIM model and 2D drawings (6 half sized sets) for review. List of City review comments and how the comments were resolved.
- City responsibility – Provide one set of review comments

404 – Prepare 95% BIM Model and Drawings

The BIM models for all disciplines will be fully developed showing all details necessary for construction. Plan and section drawings will be extracted from the Building Information Model. Notes will and additional details will be added to the drawings to complete the design. Existing facility 2D drawings will be further detailed. 2D site drawings, P&IDs drawings and 2D electrical drawings will be detailed for construction.

- Deliverable – See Task 406.

405 – 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 – See Task 406.

406 – Internal and External 95% Review

BIM model, 2D drawings and specifications will be reviewed internally. Review comments will be resolved and applicable comments incorporated in City review set. BIM model will be reviewed with City as well as the 2D drawing set. 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.

- Deliverables – BIM model, 2D drawing set and specifications for review. List of City review comments and how the comments were resolved.
- City responsibility – Provide one set of review comments

407 – Finalize Design

Based on review comments, update BIM model and finalize 2D drawings and specifications.

- Deliverable – Bid Documents for advertisement. 4 sets (half-sized drawings) for the City and one set for each plan room.

408 – Air Permit

Prepare a permit application for the City of Billings to submit to the Montana Department of Environmental Quality for approval and issuance of a revised air permit. The scope for air permit modification for the activities related to the nutrient modifications at the Billings Wastewater Treatment Plant are as follows.

- Conduct an air permit applicability review to confirm the only portion of the nutrient modification that will require an air permit is the new diesel fired emergency generator and to define the parameters of the air permit application.
- Estimate maximum annual emissions according to Montana DEP protocol using emission factors provided by the vendor(s) based on limited use for a generator dedicated to emergency use. Coordinate with the preferred vendor to obtain emissions specifications for the engine.
- Prepare a State Best Available Control Technology Review as required by Montana.

- Review Montana air dispersion modeling requirements for NOx to confirm modeling is not required.
- Review applicable air quality regulations, specifically NSPS and NESHAP that apply to diesel-fired engines and address the applicability in the application.
- Provide a substantially complete air quality permit application to the City of Billings for submittal to Montana DEQ.
- Includes up to 8 hours of follow-up for response to questions from the Montana DEQ and review of a draft permit prior to issuance.
- Assumptions:
 - The diesel-fired emergency generator is the only source of air emissions that will be constructed as part of the nutrient modification; no other equipment will be added or modified as part of this project (e.g. no sources of particulate matter, volatile organic compounds, NOx, SOx, GHG).
 - The diesel-fired emergency generator will be used for emergency situations and required readiness testing, only. The facility will accept permitted limits on hours of operation for these purposes if required by Montana DEQ.
 - Emission factors guaranteed by the vendor(s) will satisfy NSPS/NESHAP requirements; to be confirmed.
 - The proposed diesel-fired emergency generator will satisfy Montana BACT requirements.
 - Air permit or air compliance review of the existing sources is not anticipated as part of this project; the Montana DEQ will not re-open the existing permit to revise portions of the permit not related to this emergency generator.
 - The source is an existing minor source for Title V and will maintain its Title V status.
 - The source is an existing minor source for Prevention of Significant Deterioration (PSD) and no PSD review is anticipated for this air permit.
 - Air emission modeling is not anticipated to be required.
 - The facility is located in an attainment area for all pollutants.
 - No meetings are anticipated.
 - There may be fees associated with agency processing or public notice requirements that are not included in this estimate for professional fees. These fees will be paid directly by the City of Billings.
- Deliverable – Draft and Final Air Permit Applications.

409 – Building Permit

Assist the City in submitting building permit.

- Deliverables – Building permit application and backup information.

410 – Construction Cost Estimate

The estimated capital costs for the project will be updated from the preliminary design.

- Deliverable – Summary of Cost Estimate by facility.

411 – Internal Team Meetings

Regular conference calls will be conducted to coordinate between team members and to communicate information received from the City as well as obtain questions or decisions needed from the City.

TASK SERIES 500 – BID PHASE

501 – Contractor Qualifications

Assemble qualification criteria to be included on bid form to determine contractors experience in doing similar projects in size, construction methods and plant work as well as architectural/structural repair. Evaluate contractors' qualifications as part of the bid review process.

- Deliverable – Qualifications for Bid Form.

502 – 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.

- Deliverable – Bid Documents, Advertisement, Pre-Bid Meeting Minutes and Addendums.

503 – Post-Bid Administrative Assistance

Receive, evaluate and tabulate bids. Assess completeness of bids. Review qualifications of bidders. Check references for two lowest bidders. Make recommendations to the City on award of contract.

- Deliverable – Summary of Bidder Qualifications and Recommendation of Award.

TASK SERIES 600 – 900

Scope details to be added by amendment.

Appendix B

Methods and Times of Payment W.O. 14-11--Wastewater Treatment Plant Nutrient Upgrade, Expansion and 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.

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 under Appendix A of this Agreement, the Engineer shall be paid based upon actual time accrued, but not to exceed the following amounts:

1. Project Initiation, Coordination and Management	\$243,200.00
2. Preliminary Design Phase	\$561,000.00
3. Final Design	\$3,714,200.00
4. Bid Phase	\$73,500.00

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 the services to be performed under Appendix A 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 W.O. 14-11--Wastewater Treatment Plant Nutrient Upgrade, Expansion and Improvements

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

- A. Field and laboratory testing of materials and reports.
- B. 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 W.O. 14-11--Wastewater Treatment Plant Nutrient Upgrade, Expansion and Improvements

Not Used

Appendix E

Project Schedule W.O. 14-11--Wastewater Treatment Plant Nutrient Upgrade, Expansion and Improvements

Based on a notice to proceed by Billings dated no later than June 9, 2014, the completion date for the Engineer's work shall be:

- A. Preliminary Design Phase
 - A. Final Design Report: December 2014
- B. Final Design
 - A. 60% Review: August 2015
 - B. 95% Review: March 2016
 - C. Final Bid Document: June 2016
- C. Bid Phase
 - A. Advertising: July – August 2016.

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.

Appendix F

**Certificate(s) of Insurance
W.O. 14-11--Wastewater Treatment Plant Nutrient Upgrade,
Expansion and Improvements**

(Attach Certificate(s) of Insurance)