Contract for Professional Engineering Services

City of Billings W.O. 12-15
INTEGRATED WATER PLAN IMPLEMENTATION
Wastewater Treatment Facility Plan

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 11 pages (Basic Services of Engineer);

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

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

Appendix D consisting of 3 pages (Schedule of Professional Fees);

Appendix E consisting of 1 page (Project Schedule);

Appendix F consisting of 5 pages (Certificate(s) of Insurance)

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 the designee.
B. "Billings" means the City of Billings.
C. "Engineer" means HDR Engineering, Inc.
D. "Contractor" means the third party responsible for the physical construction of the project.

Section 2. Scope of Services.

A. The Engineer 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 Engineer 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 Engineer may provide, at its own expense, any other services that are consistent with this Contract.

D. The Engineer shall provide as-built drawings as specified hereafter, 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 Engineer 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 Engineer 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, 2013.

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 Engineer 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 Engineer's performance is unsatisfactory, the Administrator must, within ten (10) days of the payment denial, notify the Engineer of the payment denial and set forth, with reasonable specificity, what was unsatisfactory and why. Billings will pay Engineer within 30 days of receiving an acceptable invoice.
B. The Engineer 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 Engineer shall have paid all City taxes currently due and owing by the Engineer.

Section 5. Termination of the Engineer's Services.

The Engineer'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 Engineer 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 Engineer's services for convenience, Billings shall pay the Engineer 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 Engineer shall become the property of Billings.

B. If the Engineer's services are terminated for cause, Billings shall pay the Engineer the reasonable value of the services satisfactorily rendered prior to termination, less any damages suffered by Billings because of the Engineer'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 Engineer under this Contract shall become the property of Billings at its option.
C. If the Engineer 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 Engineer shall not be entitled to any compensation under this Section until the Engineer has delivered to the Administrator all documents, records, Work product, materials and equipment owned by Billings and requested by the Administrator.
E. If the Engineer's services are terminated for whatever reason the Engineer 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 Engineer'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 Engineer'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 Engineer shall maintain in good standing the insurance described in Subsection B of this Section. Before rendering any services under this Contract, the Engineer shall furnish the Administrator with proof of insurance in accordance with Subsection B of this Section.
B. The Engineer 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 occurrence.

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 Engineer 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 Engineer 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 Engineer 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. The Engineer shall retain rights to pre-existing proprietary property including but not limited to interactive models. The Engineer shall have the right to include photographic or artistic representations of the design and construction of the Project among the Engineer's promotional and professional materials. The Engineer's materials shall not include Billings' confidential or proprietary information regardless of whether Billings has previously advised the Engineer in writing of the specific information considered by Billings to be confidential and proprietary.
B. Equipment purchased by the Engineer 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 Engineer 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 Engineer'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: City Engineer (Debi Meling)
City of Billings
Public Works Department
2224 Montana Avenue
Billings, Montana 59101 FAX: (406) 237-6291 / PHONE : (406) 657-3097

Engineer: HDR Engineering, Inc.
Craig Habben, PE, Senior Project Manager
6300 S Old Village Pl, Suite 100
Sioux Falls, SD 57108 CELL: (406) 698-4271 / OFFICE: (605) 782-8101

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 Engineer 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 Engineer 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 Engineer'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 Engineer;
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 Engineer agrees to abide by those additional requirements immediately upon receipt of written notice thereof from Billings.

Section 15. Subcontracts.

The Engineer 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 Engineer delegates the provision of services shall be subject to review and approval by the Administrator before it is executed by the Engineer.
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 Engineer shall perform its obligations hereunder as an independent Engineer of Billings. Billings may administer the Contract and monitor the Engineer's compliance with its obligations hereunder. Billings shall not supervise or direct the Engineer other than a provided in this Section.

Section 2. Nondiscrimination.

A. The Engineer 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 Engineer 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 Engineer 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 Engineer 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 Engineer shall comply with any and all reporting requirements that may apply to it which the City of Billings may establish by regulation.
D. The Engineer 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 Engineer under this Contract.
E. The Engineer shall comply with all applicable federal, state, and city laws concerning the prohibition of discrimination.

Section 3. Permits, Laws, and Taxes.

The Engineer 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 Engineer under this Contract shall comply with all applicable statutes, ordinances, rules and regulations. The Engineer 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:

Engineer: Craig Habben, PE, Senior Project 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 Engineer 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 Engineer or any agent, employee or subcontractor as a result of the Engineer's or any subcontractor's performance pursuant to this Contract.

A. The Engineer 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 Engineer, the Engineer 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 Engineer's or any subcontractor's wrongful or negligent acts occurring as a result from the Engineer'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 Engineer 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 Engineer is to complete performance in accordance with Section 2 of the Special Provisions. Upon request, and within a reasonable time, the Engineer 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 Engineer 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 Engineer 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

_____
City Council or Designee

Date:_____

ATTEST:

_____
City Clerk

Date:_____

Engineer--HDR Engineering, Inc.

_____

Name:_____
Title:_____
Date:_____

IRS Tax ID #_____

APPROVED AS TO FORM:

By_____
BRENT BROOKS, City Attorney

STATE OF MONTANA)
: ss.
COUNTY OF YELLOWSTONE)

On this _____ day of _____, 2012, 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:_____

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

Appendix A

Basic Services of Engineer
W.O. 12-15 IWPI--Wastewater Treatment Facility Plan

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, PE working under the Principal-in-Charge, John Doe, PE.

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.

SCOPE OF WORK:

See the following pages:

Scope of Services

The City of Billings faces changing effluent discharge conditions in the Yellowstone River driven by new regulatory requirements and water quality impairment (303d) listings. These changing effluent discharge conditions will significantly impact treatment and discharge to the Yellowstone. For the City of Billings, these conditions call for an update to the wastewater treatment facilities plan to account for the impact of the recently approved Senate Bill 367, the future Total Maximum Daily Loads (TMDL) expected after 2015 by Montana Department of Environmental Quality (MDEQ) and anticipated discharge permit changes expected during permit renewal negotiation in 2012. These changes indicate that reexamination of the 2006 wastewater facilities master plan (2006 MP) that forms the basis for the City's current and future wastewater facilities would be prudent.

Historically, the City of Billings has been required to remove carbonaceous biochemical oxygen demand (BOD) and total suspended solids (TSS) at a permitted level to meet requirements for the Yellowstone River. The existing plant is a conventional activated sludge plant and is designed for 85% removal for BOD and TSS. The plant is also capable of, although not designed for, removing ammonia seasonally in the summer months when water temperatures are higher. However, as flows and loads increase, improvements will be needed.

The future plans for the City of Billings Wastewater Treatment Plant (WWTP) will be based on control of nitrogen (and ammonia), phosphorus, and metals. A significant change in potential effluent limits for the Yellowstone River discharge will be driven by the Yellowstone River TMDL. Preliminary modeling and sampling work is underway in support of that work. In addition, change will be driven by Senate Bill 367 passed in the 2011 legislature. Senate Bill 367 indicates in the near term the City of Billings will likely get a variance from low instream nutrient standards and would be allowed to only treat its effluent to 10 mg/L total nitrogen and 1 mg/L total phosphorus until 2016. These levels represent significant improvements to the facility. Future limits will likely include lower nutrient targets.

In addition, new metals limits are likely in upcoming permits and several local industries that may contribute metals to the system have approached the City to request connections. These issues need to be addressed.

The objectives for this facilities plan are:

- Update the 2006 MP to reflect new loads including industrial discharges
- Update treatment process considerations to ensure that the basis in facilities planning provides the City with a long-term treatment program to sustain utility operations
- Update site layout requirements
- Provide detailed cost information to support financial and rate analysis

The final wastewater treatment facilities plan (WWTFP) will be a document organized into memorandums by the major task headings for Tasks 100-600 shown below. The memorandums will summarize existing components and provide recommendations for future infrastructure.

Task	
100	Establish Wastewater Design Criteria
200	Water Quality and Regulatory Requirements
300	Existing Plant Evaluation
400	Treatment Alternative Evaluation
500	Resource Recovery Evaluation
600	Recommended Facility Plan
700	Project Management
800	Early Action Tasks
900	Project Reports

A detailed description of the scope divided up by the tasks and subtasks is included below.

Task 100 Establish Wastewater Design Criteria

The purpose of Task 100 is to establish design criteria including the new flow stream from Lockwood. Also, the potential of taking on additional industrial flow will be evaluated.

Subtask 101 – Define Future Wasteloads

Based on flows provided in the collection system study and existing plant data, define future wasteloads for BOD, TSS, nitrogen, phosphorus and metals.

Deliverables:

- Write-up and tables summarizing design criteria in the WWTFP.

Subtask 102 – Define Capacity to serve area Industry

Four industries have approached the City to discuss connection into the collection system. Define flow and load implications including metals compliance issues, pretreatment requirements (following EPA Region 8 Guidelines) and treatability issues at the WWTP for these industries.

Deliverable:

- Summary section in WWTFP on industrial connections including potential issues and solutions.

Task 200 Water Quality and Regulatory Requirements

The purpose of Task 200 is to identify water quality and regulatory requirements driving treatment, effluent management and biosolids recovery and disposal considerations.

Water Quality Modeling

Subtask 201 – Water Quality Modeling Support

Preliminary review of the MDEQs Yellowstone River Water Quality model (Qual2K model linked to AT2K algorithm) indicate that going to treatment levels below 10 mg/L TN and 1 mg/L may have no reduction in algae concentrations downstream of the City's outfall. This water quality modeling effort will document six different water quality modeling scenarios using the MDEQ model. Two will have the City WWTP treating to 10 mg/L total nitrogen, 1.0 mg/L total phosphorus. Two will have the City treating to 4 mg/L total nitrogen and 0.08 mg/L total phosphorus. The last two will have the City treating to 0.3 mg/L total nitrogen and 0.03 mg/L total phosphorus. Each nutrient will be evaluated independently. Two meetings with MDEQ to discuss modeling results are assumed.

WWTP Discharge Permit

Subtask 202 – Permit Support

The City of Billings discharge permit expired in October of 2011 and has been administratively extended.. Two meetings with the permit writer in Helena are assumed during permit development. One comment letter on the draft permit will be prepared. One appeal letter is also assumed, along with an appeal mediation meeting in Helena.

Subtask 203 – Long Term Permitting Issues

In conjunction with the draft permit meetings above, long term compliance issues will be discussed. A timeline with possible new parameters and estimated treatment levels will be developed.

503 Biosolids Rule

Subtask 204 – Biosolids Rule Summary

Summarize 503 Biosolids Rule with emphasis on the items most pertinent to options for the City of Billings in terms of biosolids disposal.

Miscellaneous Permits

Subtask 205 – Air Quality Permit

Proposed upgrades will be evaluated in terms of impact on the Air Quality Permit to determine any limitations of the improvements based on air quality.

Subtask 206 – *Stormwater Permit*

Proposed improvements will be reviewed for any concerns related to the Stormwater Permit or necessary provisions to address the permit. .

Deliverable:

- Each subtask item will have a written section in the facilities plan.

Task 300 Existing Plant Evaluation

The purpose of Task 300 is to define the capacity, conditions and limitations of the existing WWTP facilities and process.

Subtask 301 – Evaluate equipment, structures and support facilities

Update inventory from the 2006 MP of major plant equipment, with condition assessment, useful life estimate and updated schedule of replacement or overhaul. Evaluate condition of existing support facilities including structural condition, non-structural components, HVAC condition and associated code compliance. Senior personnel in each discipline except electrical (Electrical Master Plan recently completed) will conduct an on-site evaluation of the entire plant and provide follow up write-ups and recommendations.

Deliverables:

- Written section in WWTFP on equipment and schedule of replacement
- Written sections in WWTFP on support facilities

Subtask 302 – Treatment Plant Data Compilation

Collect and summarize all existing plant performance data and create summary liquids/solids balance. Include data and results from stress testing. This analysis will be used to estimate current and future flow, BOD, TSS and nutrient loadings to each WWTP unit process with consideration of the other studies being conducted by the City.

Subtask 303 – Evaluate Flow Schemes.

Evaluate options for flow schemes into and through the plant that relate to a secondary treatment maximum capacity of 26 mgd or less. Review the addition of flow equalization or other means to handle peak flows. Also revisit evaluation in 2006 MP for bypassing Special Manhole No. 2.

Deliverables:

- Schematics and layout of options
- Estimated costs

Subtask 304 – Create Process Model of Existing Plant

Create BioWin process model of existing plant and calibrate to plant data. Set up model to evaluate nutrient removal.

Deliverables:

- BioWin Model
- Text summary about the model and results for WWTFP.

Task 400 Treatment Alternative Evaluation

This task will use the information developed in Tasks 100-300 and 800 to develop alternatives for the WWTP to meet various levels of nutrient criteria and other discharge criteria for the Yellowstone River. Additionally, options will be evaluated for treatment levels required to meet alternative discharges such as reuse, farm irrigation and others developed in the Reuse and Reclamation Study.

Subtask 401 – Evaluate Capacity of Existing Plant to Meet Future Requirements

Using developed design criteria, determine capacity and level treatment of the existing plant by modifying existing structures to meet future discharge permit requirements. Example modifications would include aeration basin reconfiguration, addition of pumping equipment for internal recycles, addition of mixers etc. Addition of new basins or other major structures would not be included. The BioWin Model and budgetary costs will be used to help evaluate process options.

Deliverables:

- BioWin Model results
- Facility layouts of the options
- Schematics of the options
- Write up in the WWTFP

Subtask 402 – Evaluate Alternative Processes to meet Future Requirements

This task will expand on Task 401 to evaluate additional treatment alternatives (primary, secondary and tertiary processes) required to meet higher levels of treatment for more stringent water quality requirements. The alternatives will look at different capacity requirements including the current design capacity of 26 mgd and other capacities less than 26 mgd that may result from alternative discharges or de-rating of the plant. The evaluation will look at potential site layouts, solids stream impacts, side stream impacts, peak flow events (flow equalization), compatibility with current operational practices and existing processes.

Additional considerations in the evaluation include seasonal operation as it relates to near-term (summer only) and potential long-term (year round) nutrient requirements. Logical phases for implementation will be recommended along with plant capacity and

expected treatment performance during each phase. The BioWin Model and budgetary capital and operating costs will be used to help evaluate process options. Preliminary process schematics will be included. A maximum of three alternatives will be looked at in detail.

Deliverables:

- BioWin Model results.
- Facility layouts of the options
- Schematics of the options
- Write up in the WWTFP

Subtask 403 – Process Approach Workshop

Conduct a workshop to select the preferred treatment processes, operation strategy and phasing for meeting the future effluent requirements for each potential plant discharge.

Deliverable:

- Incorporate pertinent discussion from workshop in Subtasks 401 and 402.

Task 500 Resource Recovery Evaluation

The objective of this task is to look at ways to better use the resources (biosolids, digester gas and, heat) available at the plant. Reuse of treated water will not be evaluated as reuse is a part of another study being conducted. The facility plan will coordinate with reuse study as each plan will have an impact on the other.

Subtask 501 – Develop Concepts for Resource Recovery

Evaluate alternative approaches for further utilizing resources at the plant including:

- Nutrient Recovery (fertilizer production)
- Grease Receiving (improve digester gas production)
- Biosolids Composting and Land Application (beneficial use of biosolids)
- Energy Recovery (maximize beneficial use of digester gas)
- Heat Recovery (maximize use of the heat from energy recovery for digesters and building heat)

Provide economic analysis of favorable options.

Deliverable:

- Summary and analysis in WWTFP

Subtask 502 – Resource Recovery Concepts Workshop

Combine with Subtask 403.

Deliverable:

- Incorporate pertinent discussion from workshop in Subtasks 501 and finalize summary.

Task 600 Recommended Facility Plan

The purpose of this task is to combine the recommendations of previous tasks and provide partial P&IDs, general layouts and a budgetary cost estimate. In addition a recommended operation plan and phasing plan will be developed.

Subtask 601 – Ancillary Facilities Recommendation

Summarize recommendations for equipment, piping, valves, structures, HVAC components, electrical and non-structural components from previous tasks that are not directly related to nutrient improvements.

Subtask 602 – Partial P&IDs

P&IDs of recommended improvements for each phase will be developed to the extent that includes piping, major valves and equipment requirements. SCADA control diagrams will not be included.

Subtask 603 – Equipment and Piping Considerations

Equipment will be selected to determine budget cost and general layout requirements. Large diameter piping will be considered during general layouts of tunnels and galleries to estimate facility sizing.

Subtask 604 – Facility Preliminary Layouts and Site Layout

Utilizing design criteria for unit processes and equipment requirements, provide general layouts for units processes, associated buildings and interconnecting tunnels where appropriate to facilitate budgetary cost estimating.

Subtask 605 – Cost Estimate

Using the general layouts developed, equipment cost information and large diameter pipe requirements, develop a budgetary cost estimate. As layouts are general and drawings developed are limited a detailed unit take-off will not be possible. Approximate units quantities will be developed where appropriate to develop a budgetary cost estimate.

Subtask 606 – Recommended Phasing and Operations Plan

Based on projected flows, loadings and anticipate upcoming discharge requirements, provide recommendations for phasing is applicable and an operations plan that would include potential seasonal operation.

Subtask 607 – Recommendations Review Workshop

Present recommended facilities, cost estimate, phasing and operations plan.

Deliverables:

- Partial P&IDs
- New Equipment List
- BIM (3D) Model
- Recommended Site Layout

- Cost Estimate
- Phasing and Operations Plan
- Minutes of Workshop

Task 700 Project Management

Subtask 701 – Meetings with Staff

The consultant will meet with City staff on periodic basis to review project progress, coordinate information needed from the City. This subtask does not include meetings in the individual tasks. Twelve meetings are assumed.

Subtask 702 – Meetings with Stakeholders

The consultant will prepare information, attend meetings and provide meeting minutes for (2) two Stakeholder meetings.

Subtask 703 – Project Management

The consultant will keep the City staff updated with project progress, coordinate scheduling, and monitor the budget.

Task 800 Early Action Tasks

Subtask 801 – Innovative Compliance Workshop

Conduct a workshop to review the treatment process options available to the City for the nutrient levels targeted. Possible candidates include:

- Annamox
- Sidestream P removal
- Biological P and N removal

In addition, the current regulatory compliance issues will be reviewed and the team will determine any near term piloting and or sampling that would be beneficial for support of the discharge permit, TMDL or facilities planning preparation.

Subtask 802 – Sampling Analysis

Analyze sampling results from additional sampling conducted by the City and make additional recommendations throughout the sampling period.

Task 900 Project Reports

Subtask 901 – Prepare Draft Facilities Plan

Compile all draft chapters into a facilities plan comprised of chapters from analysis conducted in the tasks above including:

- Executive Summary
- Establish Wastewater Design Criteria
- Water Quality and Regulatory Requirements
- Existing Plant Evaluation
- Treatment Alternative Evaluation
- Resource Recovery Evaluation
- Recommended Facility Plan
- Appendix
    - Sample Data

Provide five hard copies for the City staff to review.

Subtask 902 – Draft Plan Workshop

Meet with City staff to review the draft plan, discuss plan content and potential revisions.

Subtask 903 – Prepare Final Facilities Plan

Prepare a final facilities plan incorporating a single set of review comments from the draft chapters. Provide five hard copies to the City and one .pdf version.

Appendix B

Methods and Times of Payment
W.O. 12-15 IWPI--Wastewater Treatment Facility Plan

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 ten 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 $521,900.00 (Five Hundred Twenty One Thousand Nine Hundred and No/100 Dollars) based on the following tasks:

100	Establish Wastewater Design Criteria	$21,200.00
200	Water Quality and Regulatory Requirements	$64,400.00
300	Existing Plant Evaluation	$103,200.00
400	Treatment Alternative Evaluation	$59,400.00
500	Resource Recovery Evaluation	$19,900.00
600	Recommended Facility Plan	$154,700.00
700	Project Management	$29,900.00
800	Early Action Tasks	$20,300.00
900	Project Reports	$48,900.00

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 on an hourly basis at the applicable fees in Appendix D or by an addendum to this Agreement.

Section 3. Corrections.

Costs of Billings work that is required for the purpose of correcting the Engineer's work 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 and hourly rates as shown in Appendix D have increased for all comparable clients.

Appendix C

Additional Services of Engineer
W.O. 12-15 IWPI--Wastewater Treatment Facility Plan

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
W.O. 12-15 IWPI--Wastewater Treatment Facility Plan

Current agreements for engineering services stipulate that the standard hourly rates are subject to review and adjustments. Hourly rates for services effective on the date of this Agreement are included below.

The itemized schedule provided below includes direct labor costs, normal payroll and overhead costs, transportation, furnishing equipment and materials normally required for performance of the work and reasonable profit. Direct project costs not itemized herein shall be paid for at actual cost.

The cost of Professional Liability Insurance coverage is included in the hourly rates of personnel.

Appendix E

Project Schedule
W.O. 12-15 IWPI--Wastewater Treatment Facility Plan

Based on a notice to proceed by Billings date no later than April 23, 2012, the completion date for the Engineer's work on the Study shall be January 25, 2013.

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. 12-15 IWPI--Wastewater Treatment Facility Plan

Attach Certificate(s) of Insurance