
MEMORANDUM

To: Mayor McConnell and Members of the Assembly
Jay Sweeney, Interim Municipal Administrator

From: Michael Harmon, P.E., Public Works Director
Stephen L. Weatherman, P.E., Municipal Engineer

cc: Mike Middleton, Deputy Finance Director
Mark Buggins, Environmental Superintendent

Date: June 5, 2013

Subject: UV Disinfection Facility
Approval to Award Design Contract

Background:

The Blue Lake drinking water system is a surface water system, which must comply with the EPA Enhanced Surface Water Treatment Rules (ESWTRs). The subject UV Disinfection Facility will provide the additional microbial and disinfection controls required under the ESWTRs. The project to design and construct the Facility has been moving forward and by Department of Environmental Conservation requirements must be operational by the end of 2014. We will be requesting a time extension to 2015 to allow the project to become operational after the Blue Lake Project is complete.

A Request for Qualifications (RFQ) for design of the UV Disinfection Facility was published in accordance with City and Borough procurement policy in 2009. The preliminary phases of the UV Disinfection Facility design contract were awarded to CH2MHill. This preliminary work has allowed CBS to obtain the required loans and grants required to construct the facility.

Analysis:

CH2MHill has done an excellent job of assisting CBS in developing the conceptual design for the facility and preparing the procurement documents used to order the UV Reactors for the UV Disinfection Facility. In order to finish the design work required to construct the required facility CH2M Hill has provided a fee proposal to complete design of the UV Disinfection System. A copy of that proposal is attached. The design proposal to complete the project is a time and materials contract for \$999,000. This includes both design of the facility, assistance in construction inspection and project programming, testing and startup.

Fiscal Note

The current project funding is show below:

- \$4,000,000 FY 2011 State of Alaska Department of Environmental Conservation (ADEC) Loan. Includes \$2,500,000 financed with \$1,500,000 subsidized.
- \$2,550,000 FY 2012 ADEC Loan (pending).
- \$3,500,000 FY 2012 ADEC Grant (30% local match requirement)
- \$2,061,000 FY 2013 ADEC Grant (pending - 30% local match requirement)

\$12,111,000 Total Project Funding with a current project budget of \$8,966,000 including this design contract. The loans may be used for the required match.

Recommendation:

Approve award of a design contract for the UV Disinfection Facility to CH2M Hill, Anchorage, and authorize CH2M Hill to proceed with completing the design for a Time and Materials fee of \$999,000.



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May 21, 2013

Mr. Stephen Weatherman
Engineering Manager
City and Borough of Sitka
100 Lincoln Street
Sitka, AK 99835

Subject: Final Design and Services During Construction for City and Borough of Sitka's UV
Disinfection Facility

Dear Mr. Weatherman:

This letter provides our updated proposal for final design and services during construction of the UV Facility to meet USEPA and ADEC Drinking Water Treatment Requirements related to the Long Term 2 Enhanced Surface Water Treatment Rule (LT2 rule) for filtration avoidance community water systems. The work was originally broken into six phases. A summary of the phases and our progress to date is provided below. This proposal is based on lump sum pricing for the design phase milestones and time and materials pricing for services during construction. Additionally, some pieces of the previous proposal have already been contracted including the UV Procurement and the construction services for the UV Tees. These scope items have been removed from this proposal.

- **Phase 1 - Basis of Design Report** for the new water treatment facility and Site Civil engineering design construction documents for installation of four new mainline Tees to accommodate the UV Facility and the Blue Lake Hydro Project. [Complete]
- **Phase 2 - Request for Proposals and Statements of Qualifications for selection of the UV System Equipment Supplier.** City and Borough of Sitka (CBS) will pre-purchase the UV equipment. CBS has signed a contract with the selected UV equipment provider, Trojan, for purchase of the UV reactors. The design will incorporate this owner-furnished equipment. [Complete]
- **Phase 3 - UV Disinfection Facility engineering design construction documents.** The treatment facility will include a UV disinfection system, a standby generator, a chlorine room, fluoride room, and additional improvements to complete the design of the facility. The design will include 24-inch supply and return yard piping to the new treatment facility from the civil construction contract main line connection piping Tees. [35% Complete]
- **Phase 4 - Bidding assistance** services to help CBS select the General Contractor. [0% Complete]
- **Phase 5 - Construction and post construction phase services.** [0% Complete]
- **Phase 6 –Presentations to the CBS Assembly, ADEC, USEPA, and others,** on an as-needed basis. [Not included with this change order].

The proposed scope and budget for these services are presented below.

Scope of Work

CH2M HILL will provide engineering services to complete the UV Disinfection Facility project for CBS for the six project phases listed above. The engineering services phases and tasks to be included in the proposal are described below:

Phase 1 - UV Disinfection Facility Basis of Design and Site Civil Engineering Design

Task Complete.

Phase 2 - UV Disinfection Equipment Procurement Engineering Services

Task Complete.

Phase 3 - UV Disinfection Treatment Facility Engineering Design Services

Task 3.1 Final Design Phase Project Kick-off Meeting

A one-day meeting will be held in Sitka with CBS and CH2M HILL staff to kick-off the final design. CBS and CH2M HILL staff will discuss any issues remaining from the Intermediate (35%) Design. Details and outstanding design issues that need to be finalized prior to the final design of the treatment facility will be discussed with firm decisions made during or immediately after the meeting. CH2M HILL's project manager and UV design specialist may attend the meeting.

During the project kick-off meeting, CH2M HILL and CBS will define key project objectives and success factors for the project and document any CBS design standards as they may pertain to this work. Design standards shall be CH2M HILL's standards, with clarifications and exceptions, if any, noted in a summary memo following the meeting.

Task 3.1 Deliverable

- Kick-off Meeting Summary Notes

Task 3.2 UV Facility Construction Documents

CH2M HILL will conduct the necessary architectural, civil, mechanical, electrical, structural, and control system engineering to prepare design drawings and prepare construction specifications for the UV Disinfection Facility. The design is presently 35% complete. Since the delivery of the 35% design package, the site layout was modified to move the UV Facility entirely on to lot 18. Only the Civil drawings were updated, so updates will be required to the other disciplines as well to accommodate this change.

Contract document deliverables in accordance with those described in the following sections will be submitted to CBS for review and approval at 65%, 95% and 100% completion. The drawings and specifications will be sent for permitting and approval as required by each agency. An engineer's opinion of probable cost will be submitted with the 65%, 95% and 100% design documents. In providing opinions of cost, financial analyses, economic feasibility projections, and schedules for the project, CH2M HILL has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by operating personnel or third parties; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, CH2M HILL makes no warranty that Owner's actual project costs, financial aspects, economic feasibility, or schedules will not vary from CH2M HILL's opinions, analyses, projections, or estimates. If Owner wishes greater assurance as to any element of project cost, feasibility, or schedule, Owner will employ an independent cost estimator, contractor, or other appropriate advisor.

It is assumed that CBS will require three weeks for review of each of the submittals. The CAD drawings will be prepared in AutoCAD and the specifications will be Engineer's Joint Council format as modified by CH2M HILL and will employ the new 49 Divisions.

Project management for the design phase is included in the tasks below and covers activities required for project set-up, regular communications and updates to CBS staff and design team, coordination activities, QA/QC of deliverables, coordination of project personnel, preparation of invoices, meeting attendance, project phase closeout, and general project management of issues that arise during execution of the UV Facility design. Milestone invoices will be prepared.

Task 3.2.1 35% Design Documents

Task Complete.

Task 3.2.2 65% Design Documents

The purpose of this task is to utilize the decisions of the project that were made in the previous submittal and to complete and finalize the calculations, develop the project design to achieve a working design concept that can be fully reviewed by CBS staff. The selected UV reactor equipment will be incorporated into this design deliverable. Structures, equipment, major plant piping, process, site plan are all established during this phase to allow detailing of the same in the next phase of design. Specific activities, and work products from this phase include draft specifications, 65% complete drawings, and engineer's opinion of probable cost.

65% Design Review:

The 65% design documents and supporting information will be reviewed by CH2M HILL Quality Control reviewers. 65% design will subsequently be submitted to CBS for review. These comments will be incorporated into the 95% design documents.

CH2M HILL will conduct a telephonic workshop with CBS staff to review the work products from the 65% design submittal. An action/task list from the workshop will be compiled and submitted to CBS.

65% Design Deliverables

The 65% submittal to CBS will include 3 paper copies and electronic pdf of the following items:

- 65% Design Drawings
- 65% Specifications
- 65% Engineer's Opinion of Probable Cost

Task 3.2.3 95% Design Documents

Structures, equipment, major plant piping, process, site plan are all finalized during this phase. Drawings and other bidding documents that are required for permitting review will be available at the conclusion of this phase. The majority of the quality control review and approval will occur prior to the finalization of the work products from design development phase (65% design).

95% Design Submittal:

The 95% design documents and supporting information will be reviewed by CH2M HILL Quality Control reviewers. 95% design documents will subsequently be submitted to CBS for review. The comments will be incorporated into the 100% Contract Documents.

95% Design Deliverables

The 95% submittal to CBS will include 3 paper copies and up to 3 additional paper copies for submittal to permitting agencies which will include the following items:

- 95% Design Drawings

- 95% Technical Specifications
- Updated Engineer's Opinion of Probable Cost

Task 3.2.4 100% Contract (Bid) Document Preparation

The purpose of this task is to develop the final contract drawings, specifications, and schedules for competitive bidding. Key activities during this phase will include:

- Contract Document Completion based on comments from permitting agencies and CBS
- Finalize specification front-end documents, including General Conditions, General Requirements, bidding documents, bonds, and Instruction to Bidders. Owner input is required at this point to determine construction contract requirements and insurance requirements.
- Complete final Engineer's Opinion of Probable Cost
- Coordinate with CBS on advertising and bidding process.
- Prepare final construction drawings.
- Prepare final technical specifications.
- Prepare final calculations.
- Complete final checking and coordination review.

Incorporation of Final Review Comments:

CH2M HILL will modify the contract documents to reflect all agreed upon final review comments from CBS, applicable regulatory agencies and CH2M HILL's quality control review team. The final documents will then be submitted to the CBS and prepared for bidding.

100% Design Deliverables

- 100% Contract Drawings
- 100% Technical Specifications
- 100% Engineer's Opinion of Probable Cost (It is assumed that little to no update will be required from the 95% Cost Opinion).

Task 3.2.5 Permitting Assistance

CH2M HILL will prepare permit documents and submittal packages for the following permits: ADEC Approval to Construct (based on the 95% Design Deliverable), ADEC Approval to Operate, and CBS Building and Fire Permits (based on the 95% Design Deliverable). CH2M HILL will act as the primary point of contact for these permits and will work with the agencies to address any issues or comments. The budget has been prepared on the assumption of one submittal and one set of comment responses per permit with minor design revisions.

Phase 4 – Bidding Phase Engineering Services for the UV Facility

CH2M HILL will prepare bid-ready documents in electronic format, including electronic signatures.

CBS will be responsible for all bid advertising and other bidding related costs during the bidding phase. CBS will be the primary point of contact for bidders during the bid phase. CBS will provide bidding services including bid package preparation, conducting the pre-bid conference, review of contractors' questions, preparation of addenda, and a recommendation for the apparent low bidder for the UV Facility

CH2M HILL will participate via conference call in the pre-bid conference. CH2M HILL will provide technical interpretation of the contract bid documents and will prepare proposed responses to bidders' questions and

requests, which may be in the form of addenda. CH2M HILL shall assist CBS in issuing Addenda to the Bid Documents. CBS will distribute the addenda to the bidders. All Addenda shall be approved by CBS.

Phase 5 – Construction and Post Construction Phase Services

Task 5.2 Construction Phase Services for the UV Facility Design

CH2M HILL will provide Services During Construction (SDC) as defined below. These SDC are intended to assist CBS to administer the contract for construction, monitor the performance of the construction Contractor, verify that the Contractor's work is in substantial compliance with the contract documents, and assist CBS in responding to events that occur during the construction. These SDC are based upon the understanding that CBS will contract directly with the Contractor and will manage the construction process.

CH2M HILL's SDC are based upon the schedule or duration of construction anticipated at the time that these services are agreed (presently 12 months of construction and 3 months of startup and final completion). Deviations from the anticipated schedule or duration of construction will materially affect the scope of these SDC and CH2M HILL's compensation for the SDC, and will require an adjustment to CH2M HILL's compensation.

The presence or duties of CH2M HILL's personnel at a construction site, whether as onsite representatives or otherwise, do not make CH2M HILL or CH2M HILL's personnel in any way responsible for those duties that belong to CBS and/or the construction contractors or other entities, and do not relieve the construction contractors or any other entity of their obligations, duties, and responsibilities, including, but not limited to, all construction methods, means, techniques, sequences, and procedures necessary for coordinating and completing all portions of the construction work in accordance with the construction Contract Documents and any health or safety precautions required by such construction work. CH2M HILL will provide services to assist in coordinating the site activities, administering the contract for construction, monitoring the contractor's performance, responding to design and technical submittals, and closing out the contract for construction.

Submittals and Requests for Information (RFIs)

Document Management System and Procedures

CBS will act as the primary contact with the contractor and have primary responsibility for logging and storing documents. Submittals and RFIs are assumed to be received and responded to in electronic format where possible. CH2M HILL will establish a system and set of procedures for managing, tracking and storing relevant documents between CH2M HILL and the Contractor and CBS produced during the Bid/Award, Construction and Closeout phases of the project. CH2M HILL will utilize an appropriate computer based document management system selected by CH2M HILL.

Shop Drawings, Samples and Submittals

Submittal Schedule: CH2M HILL will review the Contractor's proposed shop drawing and submittal schedule, which shall identify all shop drawings, samples and submittals required by the contract for construction, along with the anticipated dates for submission.

Review of Shop Drawings, Samples and Submittals: CBS will receive all submittals from the Contractor and forward submittals to CH2M HILL for review as required and is assumed to be 50 percent of the total submittals. CH2M HILL will log and track all shop drawings, samples and submittals reviewed by CH2M HILL. CH2M HILL's review of all shop drawings, samples and submittals shall be for general conformance with the design concept and general compliance with the requirements of the contract for construction. Such review shall not relieve the Contractor from its responsibility for performance in accordance with the contract for construction, nor is such review a guarantee that the work covered by the shop drawings, samples and submittals is free of errors, inconsistencies or omissions.

CH2M HILL's scope shall be based upon the scope of work in the contract for construction and shall include for a maximum of two submissions by the Contractor for each shop drawing, sample or submission reviewed by

CH2M HILL. Should there be additional reviews required of CH2M HILL and design team, CH2M HILL shall be entitled to additional compensation.

Permits, Bonds and Insurance: CBS will verify that the required permits, bonds and insurance have been obtained and submitted by the Contractor.

Project Controls/Contractor's Schedule: CBS will review the Contractor's construction schedule, including schedule updates, and verify that it is consistent with the requirements of the contract for construction. CBS will advise the Contractor of any areas where the schedule is not in compliance with the contract for construction.

Payments to Contractor: Requests for payment will be submitted to CBS by the contractor. CBS will review whether the amount requested reflects the progress of the Contractor's work and is in accordance with the contract for construction.

Requests for Information (RFI)

Requests for Information: CBS will receive all requests for information from the Contractor and forward to CH2M HILL for review and response as required and assumed to be 50 percent of the total RFIs. CH2M HILL will review the Contractor's requests for information or clarification of the contract for construction. CH2M HILL will coordinate such review with the design team and with CBS as appropriate. CH2M HILL will coordinate and issue responses to the requests. CBS will log and track the Contractor's requests.

Proposed Substitutions: CH2M HILL will assist CBS in reviewing and responding to the Contractor's requests for substitution of materials and equipment. CH2M HILL will review such requests and will advise CBS as to the acceptability of such substitutions.

Changes

Minor Variations in the Work: CBS will notify CH2M HILL prior to authorizing minor variations in the work which do not involve an adjustment in the Contractor's contract price nor time for construction and are not inconsistent with the intent of the contract documents.

Coordinate Issuance of Changes: CH2M HILL will assist CBS with the issuance of changes to the contract for construction. As it is not possible during the scoping phase to predict the level of effort for design and engineering services required, the budget includes a reserve for these activities.

CH2M HILL will receive and review the Contractor's response to the request for change and will obtain such further information as is necessary to evaluate the basis for the Contractor's proposal.

CH2M HILL shall review all Contractor -requested changes to the contract for construction. CH2M HILL will make recommendations to CBS regarding the acceptability of the Contractor's request.

Claims and Disputes

CBS will receive, log, and notify CH2M HILL about all letters and notices from the Contractor concerning claims or disputes between the Contractor and CBS pertaining to the acceptability of the work or the interpretation of the requirements of the contract for construction. CH2M HILL will review such letters and notices as requested by CBS and will discuss them with the Contractor as necessary to understand each such claim or dispute. CH2M HILL will advise CBS regarding the Contractor's compliance with the contract requirements for such claims and disputes. CH2M HILL will assist CBS in discussions with the Contractor to resolve claims and disputes.

CH2M HILL will not issue decisions on Contractor claims or disputes. CH2M HILL will not, except as part of Additional Services, undertake comprehensive and detailed investigation or analysis of Contractor's claims and disputes, nor participate in judicial or alternative dispute resolution procedures for the claims or disputes.

Site Visits and Teleconferences

Site Coordination

Pre-Construction Conference: CH2M HILL shall attend one pre-construction conference via conference call with CBS and the Contractor to review the project communication, coordination and other procedures and discuss the Contractor's general work plan and requirements for the project.

Project Site Meetings: CH2M HILL will participate in weekly site meetings via conference call.

Field Inspection

CBS will provide an on-site project representative to observe the work of the Contractor on a daily basis. CBS will also will employ, or cause the Contractor to employ, independent firms for the material testing, specialty inspection, survey, or other services related to verifying the quality of the Contractor's work. CBS will conduct daily on-site observations of the Contractor's work for the purposes of determining if the work generally conforms to the contract for construction and that the integrity of the design concept as reflected in the contract for construction has been implemented and preserved by the Contractor. CBS inspection staff will arrange for weekly photographs of the work in progress by the Contractor, which will be made available to CH2M HILL.

Design Team Visits: CH2M HILL will coordinate visits to the site by the design team members to review progress and quality of the work. The visits shall observe the general quality of the work at the time of the visit and review any specific items of work that are brought to the attention of the design team members by the Contractor or CBS.

Factory and Off-Site Tests and Inspections: CH2M HILL will coordinate tests and inspections of work, materials and equipment for the project at off-site facilities and suppliers, as specified in the contract for construction.

Performance and Witness Testing: CH2M HILL will attend and witness field and factory performance tests as specified in the contract for construction and CH2M HILL contract scope.

Substantial and Final Completion: CH2M HILL will assist CBS with inspections at substantial and final completion, in accordance with the contract for construction. CH2M HILL will prepare up to two (2) separate punch lists of items requiring completion or correction. CH2M HILL shall make recommendations to CBS regarding acceptance of the work based upon the results of the final inspection. CBS will issue documents for substantial and final completion and acceptance of the work.

Budget Assumptions: The budget for site visits assumes 6 visits by the Project Manager, 6 visits by the Lead Engineer, and 1 visit each by the structural, civil, architectural, HVAC, electrical, and control system leads. A total of 18 site visits have been assumed with an overnight stay for each. Each visit is for one person, although more than one visit may take place at the same time. Actual distribution of site visits will depend on the needs of the project during construction and be agreed upon with CBS prior to the visits. The budget also provides time for the Lead Engineer to participate in weekly construction progress conference calls and in the Pre Construction Conference via phone.

Safety

CH2M HILL and CH2M HILL's personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with their work or any health or safety precautions and have no duty for inspecting, noting, observing, correcting, or reporting on health or safety deficiencies of the construction contractor(s) or other entity or any other persons at the site except CH2M HILL's own personnel. The presence of CH2M HILL's personnel at a construction site is for the purpose of providing to Owner a greater degree of confidence that the completed construction work will conform generally to the construction documents and that the integrity of the design concept as reflected in the construction documents has been implemented and preserved by the construction contractor(s). CH2M HILL neither guarantees the performance of the construction contractor(s) nor assumes responsibility for construction contractor's failure to perform work in accordance with the construction documents. For this Agreement only, construction sites include places of manufacture for

materials incorporated into the construction work, and construction contractors include manufacturers of materials incorporated into the construction work.

Start-Up Support

CH2M HILL will furnish assistance to CBS in plant startup and initial plant operation to the extent to be mutually agreed upon by both parties. This assistance includes:

- Preparing a Plan of Operation to identify specific actions and related completion dates for startup and operation of the new facilities and developing a transition plan for introducing water flow through the new facility.
- CH2M HILL will provide field testing, startup and training services for the PLC and operator interface units after installation. All process control functions will be tested and demonstrated to CBS for verification of proper operation. The testing will be documented on testing forms signed by CH2M HILL. The budget includes up to three (3) weeks on-site for the SCADA Programmer. This is generally divided up as one week for point-to-point wiring checkout, one week for startup and performance testing support, and one week for follow up network and communications support.
- Witnessing UV vendor equipment performance test and the UV Facility Demonstration Test. Assisting during the initial startup of the facilities by assisting the operating personnel assigned by CBS. The budget includes two (2) week on-site for the process engineer.

Record Drawings

CH2M HILL will revise the original design drawings to reflect available record information provided by the Contractor and equipment suppliers. Since Record Drawings will be prepared, in part, on the basis of information compiled and furnished by others, it may not always represent the exact location, type of various components, or exact manner in which the project was finally constructed. CH2M HILL is not responsible for any errors or omissions in the information from others that is incorporated into the record drawings. One reproducible set, three hard copies, and a DVD with electronic files in AutoCAD and as pdf's will be submitted to CBS.

Operations Manual

CH2M HILL will develop an Operations Manual describing the operation of the Project facilities and systems. This manual will explain the various primary modes of operation that may be used, including both normal operation and initial emergency operation procedures. The manual will explain the purpose and basic concept of the various processes that are incorporated into the overall plant. Where appropriate, reference will be made to the manufacturer's detailed O&M submittals. It will include instructions for process operations and test or laboratory procedures that may be required to monitor the performance of the facilities. The manual will be suitable for use as an operational tool and to facilitate operator training. The manual will be produced in a computerized format using commercially available software. The Operations Manual will be revised at the completion of startup and training based on actual operating and maintenance experience and input from CBS's staff.

Operation and Maintenance Training

CH2M HILL will provide supplemental instruction to CBS's staff in the operation, maintenance and testing of the equipment provided under this Project. This instruction shall cover both the basic operational concept and actual operation of the systems and components under both normal and abnormal operations that are likely to occur. The instruction will also include training of the staff for equipment maintenance. One full day of training will be provided two times to allow for operator shifts.

Warranty Period Services

CH2M HILL will provide the following warranty performance review services during the one-year warranty period to assist CBS in coordinating corrections of deficient equipment or construction:

- Participate in an end-of-warranty period inspection one month prior to completion of the warranty period and provide a letter identifying any deficiencies found and recommended actions.
- Make one visit to the site at the end of the warranty period to assist CBS in final inspection for contract deficiencies in workmanship, materials or equipment and prepare correspondence informing the Contractor of such deficiencies.
- Provide remote support of the control system, up to 40 hours.

SDC Phase Project Management

Project management includes activities required for project set-up, regular communications and updates to CBS staff and design team, coordination activities, QA/QC of deliverables, coordination of project personnel, preparation of invoices, meeting attendance, project phase closeout, and general project management of issues that arise during execution of the UV Facility construction. Monthly invoices will be prepared along with a brief status report.

UV Contract Administration

CH2M HILL will assist CBS in the management of the UV Pre-Purchase contract, including coordination and review of submittals and schedules and coordination with the Contractor for design and implementation related issues. CH2M HILL will also assist in the ADEC approval of the selected UV system as part of the ADEC Approval to Operate permit discussed in Task 2.

SDC Reserve

This budget is provided to cover services that are not well defined at the time of this contract including, but not limited to, preparation of design changes and assistance with evaluation and responses to claims.

Task 5.3 Facility Automation: Control System Programming and SCADA Development

CH2M HILL will program the PLC systems located in CP-100 and configure the SCADA computer. The control system will be programmed to provide the control system functionality illustrated on the design drawings and described in the specifications for the UV Facility. The control system programming will include the integration of the vendor supplied UV system controls. This scope does not include programming for control or supervision of the flow control system, chlorine system, or fluoride system. However, the system architecture will be developed for the future inclusion of these components.

During the software development process, CH2M HILL will review the functionality of the control system and the operator interface graphical displays with CBS through phone and internet meetings at the 50 and 90 percent completion stages.

A control system software test will be conducted at the office of CH2M HILL to verify proper operation of the control system programming prior to field installation and startup. The PLC, operator interface and SCADA computer will be staged in the CH2M HILL programming lab during testing. CBS staff are encouraged to attend and witness this testing.

Documentation of the program and function of the water treatment control system will be included in the UV Facility O&M Manual described in an earlier task.

CH2M HILL will provide the software required for PLC programming and the software and licenses for the Human machine interface, HMI, and hardware including the SCADA computer and printer.

Phase 6 – CBS Assembly and Other Meetings and Presentations

[Not included in this change order].

Budget

Work for Phase 3, UV Facility Design Services, will be lump sum based on 4 milestone payments listed below. Work for Phase 3 Permitting Assistance and Phases 4 through 6 shall be accomplished on a reimbursable time and expense basis, using CH2M HILL standard labor rates and a standard 10 percent markup on all expenses. If fee limits are reached on allowance tasks, work will cease until fee limits are increased.

Phase/Task	Budget
Phase 1 - Site Civil Design Services	Complete
Phase 2 - UV Equipment Procurement Services	Complete
Phase 3 - UV Facility Design Services	
3.1 Final Design Kickoff Meeting – lump sum	\$9,000
3.2.1 Schematic Design (35% Design)	Complete
3.2.2 Design Development (65% Design) – lump sum	\$164,000
3.2.3 Contract Documents (95% Design) – lump sum	\$163,000
3.2.4 Final Bid Documents (100% Design) – lump sum	\$79,000
3.2.5 Permitting Assistance	\$38,000
Phase 4 - Bid Phase Services	
UV Facility Bidding Phase Services (2014)	\$21,000
Phase 5 - Construction and Post-Construction Phase Services	
UV Treatment Facility Construction Phase Services (2014/2015)	\$450,000
Control System Programming and SCADA Development (2014/2015)	\$75,000
Phase 6 - CBS Assembly and Other Meetings and Presentations	Not Included
Total	\$999,000

Schedule

Our CH2M HILL team is available to begin work upon Notice to Proceed (NTP). We propose the following schedule for completion of this project. This schedule is subject to change.

Project Phase	Target Completion Date based NTP in July 2013
Phase 3 - UV Treatment Facility Design Services	
Final Design Kickoff Meeting	July 2013
65% UV Facility Design Submittal	September 2013
95% UV Facility Design Submittal	November 2013
100% UV Facility Design Submittal	January 2014
ADEC Approval to Construct	January 2014
CBS Building and Fire Permit	January 2014
ADEC Approval to Operate	June 2015
Phase 4 - Bid Phase Services	
UV Treatment Facility Bid Phase NTP	March 2014
Phase 5 - Construction and Post-Construction Phase Services	
UV Treatment Facility Construction Phase NTP	May 2014
UV Treatment Facility Construction Phase Complete	July 2015
Phase 6 - CBS Assembly and Other Meetings and Presentations	Not Included

We appreciate the opportunity to submit this proposal and look forward to working with you and your staff. Please contact me if you have any questions.

Sincerely,

CH2M HILL



Kim Ervin, P.E.
Project Manager

CH2M HILL



Tom Wolf, P.E.
Vice President