COUNTY AGENDA REQUEST

Department:	Water System	Presenter(s):	Steven Rapson
Meeting Date:	Thursday, November 14, 2013	Type of Request:	New Business

Wording for the Agenda:

Consideration of staff's recommendation to award a contract to CH2M Hill (Engineer of Record for the Water System) as outlined under Task #1 (Eng. Svc 90-Day-NTE) in the amount of $312,300 and Task #2 (Attached-Regulatory/CIP-Hrly Rate) in the amount of $26,250, and for the County Manager to execute said contract and related documents.

Background/History/Details:

Staff has approved the Engineer of Record (Request for Proposals #888) contract for specialized professional engineering services related to the treatment, storage, and distribution of water. As you are aware, this allows the Water System to respond to the needs of water customers or the requirements of regulators more rapidly than would be possible otherwise.

The County Manager and Attorney finalized the CH2M Hill rate structure prior to the contract. This contract uses that revised rate structure to price the task orders reflected in this request. Task #1 targets resolving EPD Notice of Violations and the remaining Sanitary Survey Deficiencies and is already in progress. The remaining Tasks, fast-track operational enhancements, and provides the Water System the foundational elements to implement best practices across the organization. These tasks will generate future requests for capital improvement, infrastructure development and water treatment plant optimization projects.

This approach collaborates discussions with EPD and begins the process of the Fayette County Water System regaining the public trust and confidence.

What action are you seeking from the Board of Commissioners?

Approval of staff's recommendation to award a contract to CH2M Hill (Engineer of Record for the Water System) as outlined under Task Task #1 (Eng 90-Day-NTE) in the amount of $312,300 and Task #2 (Regulatory/CIP-Hrly Rate) in the amount of $26,250, to establish a budget for this purpose utilizing the Water System Fund 2012 Bond Construction, and to authorize the County Manager to execute said contract and related documents.

If this item requires funding, please describe:

Funds are available in the Water System Fund 2012 Bond Construction proceeds for this purpose. 505-111128

Has this request been considered within the past two years?	Yes	If so, when?	Thursday, September 26, 2013
Is Audio-Visual Equipment Required for this Request?*	No	Backup Provided with Request?	Yes

**** All audio-visual material must be submitted to the County Clerk's Office no later than 48 hours prior to the meeting. It is also your department's responsibility to ensure all third-party audio-visual material is submitted at least 48 hours in advance.***

Approved by Finance	Yes	Reviewed by Legal	Yes
Approved by Purchasing	Not Applicable	County Clerk's Approval	Yes
Administrator's Approval	Yes		

Staff Notes:

Water System Fund 2012 Bond Construction proceeds from the tabled MIEX 2012 Bond Project will be utilized for this project. These proceeds will also fund future capital improvement, infrastructure development and water treatment plant optimization projects.

Fayette County Water System

Task Order Number 1:
Engineering Services for Overall Water System 90 Day Support

Background

CH2M HILL was recently selected to serve as the Engineer of Record for Fayette County Water System (the County). In this official capacity, the County has requested that CH2M HILL immediately engage to support the County in developing an overall approach and roadmap for improving the County's water system. The purpose of this Task Order is to provide engineering support to address areas of deficiency and improvements noted as part of the Georgia Environmental Protection Division (GA EPD) sanitary survey the Crosstown Water Treatment Plant (WTP) and South Fayette WTP, as well as perform other related assessments and evaluations for the overall improvement of the County's water system. The engineering support provided by CH2M HILL in the delivery of this Task Order will ultimately result in the development of a plan to successfully improve the County's water system in an environmentally and fiscally responsible manner.

SCOPE OF SERVICES

The scope of services includes:

Task 1- Sanitary Survey Responses

Task 2 – Crosstown WTP Assessment

Task 3 – South Fayette WTP Assessment

Task 4 – WTP Operational Evaluation

Task 5 – System-Wide SCADA Evaluation

The work to be performed, assumptions, and anticipated deliverables for each of these five tasks will now be discussed in further detail to demonstrate CH2M HILL's understanding of the work.

Task 1 - Sanitary Survey Responses

CH2M HILL will support the County in preparing the required responses to the sanitary survey performed by GA EPD in June 2013. The County is already in the process of aggressively addressing many of the deficiencies on their own; however, several items were designated by the County as needing to be addressed by the water system's engineer of record. The following tasks will be performed by CH2M HILL to address the sanitary survey deficiencies assigned to the engineer of record.

Task 1.1 – Comprehensive Filter Evaluation

One of the major deficiencies noted during GA EPD's sanitary survey of the Crosstown WTP was the current condition of the granular media filters. Due to the observed condition of the filters, GA EPD has required the County to have a professional engineer perform a comprehensive assessment of the filters. CH2M HILL will perform the overall filter evaluation, which will include the following aspects:

- Coring of the eight filters at the Crosstown WTP to assess the media depth and integrity by conducting analyses at CH2M HILL's Applied Science Laboratory
- Observation of the backwashing for each filter to determine bed expansion, to assess the operation of the surface sweeps, and assess the functionality of the controls on the filter consoles
- Assessment of the filter valves during normal filter operation to identify leaking valves for replacement
- Conduct a survey of the washwater troughs to assess whether the troughs are level and at the appropriate elevation
- Inspection of the filter underdrains

Upon the completion of these aspects of the comprehensive filter evaluation, CH2M HILL will prepare a technical memorandum (TM) summarizing the methodology and results of the evaluation. Also included in the TM will be recommendations for improvements to each filter with an estimated cost for each recommended improvement.

Task 1.2 – Constant Head Device Assessment for Combined Filter Turbidimeter

GA EPD noted during the sanitary survey that both the Crosstown and South Fayette WTPs need a constant head device installed prior to the combined filter turbidimeter. To address this deficiency, CH2M HILL will review the existing piping to the combined filter turbidimeter to determine the most appropriate means to install a constant head device. CH2M HILL will develop an estimated cost for the recommended approach to address this deficiency and document the recommendation to the County via e-mail. The installation of the constant head device, following the recommendation from CH2M HILL, will then be completed by the maintenance staff at each plant.

Task 1.3 – Chlorine Dioxide System Evaluation

The location of the chlorine dioxide generation system at the Crosstown WTP was noted as a deficiency during the recent sanitary survey. GA EPD would prefer that the generation system be located in an isolated, dedicated facility at the plant. In addition, the chlorine dioxide system at the South Fayette WTP was noted as not functioning properly and needs to be repaired or replaced.

CH2M HILL will evaluate the chlorine dioxide generation systems at each plant and identify potential alternative locations to provide an isolated, dedicated facility. CH2M HILL will also assess the potential replacement of the existing chlorine dioxide generation systems with new systems to address on-going operations and maintenance issues given the current condition of the existing systems. A TM will be prepared to document the

recommendations for the relocation and potential replacement of the chlorine dioxide generation system at each plant. The TM will also include equipment costs for the upgrade of the existing systems, as well as the cost for potential replacement.

Task 1.4 – Sedimentation Basin Weir Elevation Assessment

GA EPD observed that the weirs in Sedimentation Basin #1 at the Crosstown WTP may not be level and thus, noted this as a deficiency on the recent sanitary survey. To confirm the elevation for the weirs, CH2M HILL will obtain elevation data through a survey of the weirs in Sedimentation Basin #1 at the Crosstown WTP. The survey data will then be compared to the elevations indicated on the record drawings for the plant. A short TM will be prepared to document the procedure to determine whether the weirs were level and present the results from the surveying effort. Should the results of the survey indicate the weirs in Sedimentation Basin #1 are not level, a recommendation for addressing this issue will also be presented in the TM.

Task 1.5 – Crosstown WTP Clearwell Structural Assessment

The existing 4 million gallon clearwell at the Crosstown WTP was noted as having minor structural deficiencies during the sanitary survey. Specifically, GA EPD noted that the grout around the tank base and the cornice of the tank needed to be repaired. Given that the 4 million gallon clearwell is a prestressed concrete tank, these minor deficiencies require the evaluation of a structural engineer to coordinate the required repairs with the tank manufacturer. CH2M HILL will conduct a site visit to evaluate the condition of the existing clearwell structure and will coordinate the proposed improvements with the tank manufacturer. As part of the coordination with the tank manufacturer, CH2M HILL will obtain a quote for the improvements and make a formal recommendation to the County in an e-mail format.

Task 1.6 – Solids Lagoon Decant Relocation Assessment

The recent taste and odor episode at the Crosstown WTP resulted in GA EPD having concerns over the recycle practices at the plant given the decant from the solids lagoons immediately discharge at the raw water pump station. As part of Task 2 in this Task Order, CH2M HILL will evaluate long-term disposal options for the solids and lagoon decant to determine if the County should proceed with other disposal options, such as obtaining an NPDES permit or conveying the decant water to the sanitary sewer system. However, as a temporary solution to address this deficiency on the sanitary survey, CH2M HILL will identify an immediate option to temporarily relocate the decant point for the lagoons to a different location in the raw water reservoir.

To identify the recommended option for this temporary solution, CH2M HILL will review the record drawings for the Crosstown WTP and visit the site to review field conditions. CH2M HILL will then prepare a TM with a recommendation for the County implement while longer term options are assessed as part of Task 2.

Task 1.7 – Raw Water Pump Station Capacity Testing

GA EPD noted as a deficiency in the recent sanitary survey that the County needed to determine the firm pumping capacity of each of its raw water pump stations. To determine the firm pumping capacity, CH2M HILL will perform pump testing at each raw water

pump station. It is assumed that the pump testing will be conducted over a one (1) day period at each raw water pump station. A total of six (6) raw water pump stations will be evaluated for firm pumping capacity – the Flint River, Lake Kedron, Lake Horton, Lake Peachtree, Lake McIntosh, and Starr's Mill raw water pump stations. Given that there is not a flow meter at the raw water pump stations, CH2M HILL will utilize either an ultrasonic meters or insertion magnetic flow meter to obtain the required flow data for the pump testing. The pump testing at each intake location will be coordinated with the County to not inhibit or impact overall water production operations.

Following the completion of the pump testing at each pump station, CH2M HILL will analyze the flow data obtained to assess the overall capacity of each pump in order to determine the firm pumping capacity. A TM will be prepared to summarize the pump testing performed, to present the results from the testing, and to provide the firm capacity of each pump station.

Task 1.8 – Raw Water Pump Station Flowmeter Location Assessment

GA EPD noted during the sanitary survey that the County needs to install raw water flowmeters at the Lake Peachtree, Flint River, Lake Horton, and Starr's Mill intakes. To address this deficiency, CH2M HILL will first review existing site conditions and anticipated flow ranges for the pump stations located at each intake. The review of this information will allow for the evaluation of flowmeter alternatives, such as full body venturi meters and magnetic flowmeters. CH2M HILL will prepare a TM to document the site conditions at the four intake locations requiring raw water flowmeters and recommend an option for installation. Capital costs will be developed for each flowmeter alternative evaluated to provide additional justification and support for the ultimate recommendation at each intake site.

Task 1.9 – Lake Peachtree Walkway Assessment

As a deficiency on the sanitary survey, GA EPD noted that railing along the walkway at the Lake Peachtree intake was required to improve overall safety at the site for the County's operations staff. Given that walkway railing is a structural design element, CH2M HILL's structural engineer will conduct a site visit to the Lake Peachtree intake to review the field conditions associated with the walkway to determine the most cost effective and appropriate means to provide a railing for the walkway. In addition, CH2M HILL will review the record drawings to confirm the structural design of the walkway to facilitate the finalizing of an approach to providing railing at the Lake Peachtree intake. A TM will be prepared to document the recommendations for the walkway railing. An order of magnitude cost estimate to incorporate the recommended railing at the intake site will also be provided as part of the TM.

Task 1.10 – Crabapple and Ellis Road Pump Station Capacity Testing

GA EPD noted as a deficiency in the recent sanitary survey that the County needed to determine the firm pumping capacity of two distribution system booster pump stations. To determine the firm pumping capacity, CH2M HILL will perform pump testing at these two stations. It is assumed that the pump testing will be conducted over a one (1) day period at each booster pump station. A total of two (2) booster pump stations will be evaluated for firm pumping capacity – the Crabapple and Ellis Road booster pump stations. Given that

there is not a flow meter at the booster pump stations, CH2M HILL will utilize either an ultrasonic meters or insertion magnetic flow meter to obtain the required flow data for the pump testing. The pump testing at each intake location will be coordinated with the County to not inhibit or impact overall water distribution operations.

Following the completion of the pump testing at each booster pump station, CH2M HILL will analyze the flow data obtained to assess the overall capacity of each pump in order to determine the firm pumping capacity. A TM will be prepared to summarize the pump testing performed, to present the results from the testing, and to provide the firm capacity of each pump station.

Task 1.11 – South Fayette WTP Clearwell Roof Assessment

During the sanitary survey, GA EPD noted the growth of plants in the expansion joints in the clearwell at the South Fayette WTP. This resulted in a deficiency requiring the County to perform an evaluation of the clearwell roof to ensure structural integrity. To assess the integrity of the roof structure, CH2M HILL will review the record drawings for the design of the structure and conduct a site visit to physically evaluate the clearwell roof to determine the state of the expansion joints.

Following the site visit to the South Fayette WTP by CH2M HILL's structural engineer, a TM will be prepared to document the recommendations to address any structural integrity issues associated with the clearwell roof. This report will outline the evaluation performed, the professional opinion of the structural integrity of the clearwell roof, and recommendations for improvements to address any structural integrity issues noted during the evaluation. The TM will also include an order of magnitude cost to improve the structural integrity of the clearwell roof.

Task 1.12 – South Fayette WTP Flocculator Evaluation

The design and operation of the flocculation process at the South Fayette WTP was noted as a deficiency during the sanitary survey. To evaluate the flocculation process and provide documentation to GA EPD that the process is operated within acceptable ranges, CH2M HILL will perform design calculations to determine the detention time and the mixing intensity (measured in velocity gradient) during each stage of flocculation. The design calculations to confirm the current operating conditions for the flocculation process at the South Fayette WTP will be based the record drawings for the treatment plant, as well as a site visit to review the flocculator operation. Upon completion of the design calculations to confirm the operational parameters for the flocculation process, CH2M HILL will compare the calculated values to industry standards for flocculation to indicate whether or not the operation of the flocculation process falls within acceptable ranges.

A TM will be prepared to outline the evaluation and calculations performed for the flocculation process and how the calculated values compare to acceptable industry standard ranges. Should the evaluation indicate the current operation of the flocculators at the South Fayette WTP does not fall within acceptable operational ranges, CH2M HILL will include in the TM recommendations for the County to implement to modify the flocculator operation to ensure that the operational parameters remain in acceptable ranges.

Task 1.13 – South Fayette WTP Sedimentation Basin Velocity Assessment

CH2M HILL will evaluate the flow-through velocity for the sedimentation basins at the South Fayette WTP to address the deficiency noted by GA EPD as part of the sanitary survey. The assessment of the velocity through the sedimentation basins will be based upon the record drawings for the South Fayette WTP and will be calculated at various plant flow rates to determine if the velocities at each flow rate are within acceptable ranges for sedimentation basins design. CH2M HILL will prepare a TM documenting the assessment of the sedimentation basin velocity and how the calculated velocity compares to accepted industry standards. The TM will also note any potential modifications to the sedimentation basins to adjust the flow-through velocity should the assessment indicate that the current velocity is not within the acceptable range.

Assumptions

The following assumptions are included in Task 1:

- Each individual TM developed to provide an engineering response to a deficiency noted in the sanitary survey will be compiled into one overall document that the County will then submit to GA EPD to demonstrate its response to those deficiencies.
- It is assumed that CH2M HILL will only inspect the underdrain for Filter #7 as this filter is currently out of service. Should the County elect to rehabilitate the remaining filters following the comprehensive filter evaluation, CH2M HILL will inspect the underdrains for the other seven (7) filters as part of that rehabilitation effort under a separate authorization.
- Only the weir elevations in Sedimentation Basin #1 will be surveyed as part of Task 1.6 to confirm the elevation and level. The survey of the weirs in the other sedimentation basins will be considered as an Additional Service.
- The design of the flowmeter and associated improvements required for the construction of the flowmeters at each intake location are not included in Task 1.10.
- No power monitoring will be performed during the pump testing associated with Tasks 1.9 and 1.12. Only flow monitoring will be performed to determine the firm capacity of each raw water pump station. Should the County request power monitoring to facilitate future operational strategies related to energy consumption, this feature can be added as an Additional Service.

Deliverables

The following deliverables are included in Task 1:

- Individual technical memorandum or engineering documentation for each deficiency
- Overall document with each individual technical memorandum or documentation to demonstrate how each deficiency was addressed

Task 2 - Crosstown WTP Assessment

CH2M HILL will perform an assessment of the Crosstown WTP to identify potential modifications to improve the overall treatment process. The focus of this assessment will be

on the existing infrastructure and treatment processes at the plant. CH2M HILL will conduct a two day (16 hour) site visit to the plant to evaluate the existing infrastructure and overall operation of the plant. During the site visits, CH2M HILL will review the condition of the existing infrastructure and mechanical equipment, review how chemicals are applied, and discuss the overall operation of the various unit processes with the plant operational staff. Following the site visits, CH2M HILL will review the existing record drawings from the Crosstown WTP to assess the design criteria for each unit process to ensure that the processes are appropriately sized to treat the permitted plant flow rate.

Per the concurrence letter received from the Georgia Environmental Protection Division for the corrective action plan for the Crosstown WTP, CH2M HILL will perform a high level review of disposal options for the decant and sludge from the two lagoons at the Crosstown WTP. A total of three options will be considered, including an NPDES discharge permit for the decant, modifications to the existing recycle practice at the plant, and conveying the lagoon contents to the Peachtree City Water and Sewer Authority sanitary sewer system. For the NPDES permit option, CH2M HILL will only assess where the nearest discharge stream is located and conduct an engineering assessment for how the flow from the lagoons would be routed to that location.

A final report will be prepared summarizing the information collected from the site visit and the recommended modifications and improvements to the Crosstown WTP. The final report will include an estimated budget for each of the improvements recommended. CH2M HILL will submit a draft report to Fayette County for review and will respond to one set of comments on the draft report. CH2M HILL will then submit a final report to Fayette County.

Assumptions

The following assumptions are included in Task 2:

- The County will provide CH2M HILL with all record drawings for the Crosstown WTP and the associated raw water pumping facilities from each source at the outset of the project.
- No permitting support for a potential NPDES permit for the Crosstown WTP is included in this scope of services.
- The assessment of the Crosstown WTP for future expansion is not included in this scope of services.
- The limits of the evaluation of the Crosstown WTP include the raw water pumping stations through the high service pump station. No assessment of the distribution system is included in this scope of services.
- The yield for the available raw water sources for the Crosstown WTP to sustain current and future demand scenarios is not included in this scope of services. Similarly, no flow projections for the County's water system are included in this scope of services.
- An architectural and structural assessment of the condition of the existing facilities will not be performed. The evaluation of the buildings and structures for structural and architectural issues will be considered an Additional Service.

- Subsurface explorations to assess the geotechnical conditions at the site are not included in this scope of service and will be considered Additional Services.
- The assessment of the SCADA system for the Crosstown WTP will be included in the overall system-wide SCADA assessment associated with Task 5 and is not included with this task.
- The design of the recommended improvements is not included in this scope of services.
- A detailed hydraulic model to identify constraints and 'bottlenecks' through the plant will not be performed. Should the operations staff note hydraulic constraints through the plant under various flow scenarios, CH2M HILL will include those in the overall assessment report with conceptual level options to address the identified hydraulic constraints.

Deliverables

The following deliverable is included in Task 2:

- Technical memorandum summarizing WTP assessment with recommended improvements and their associated order of magnitude cost estimates.

Task 3 – South Fayette WTP Assessment

CH2M HILL will perform an assessment of the South Fayette WTP to identify potential modifications to improve the overall treatment process. The focus of this assessment will be on the existing infrastructure and treatment processes at the plant. CH2M HILL will conduct a two day (16 hour) site visit to the plant to evaluate the existing infrastructure and overall operation of the plant. During the site visits, CH2M HILL will review the condition of the existing infrastructure and mechanical equipment, review how chemicals are applied, and discuss the overall operation of the various unit processes with the plant operational staff. Following the site visits, CH2M HILL will review the existing record drawings from the South Fayette WTP to assess the design criteria for each unit process to ensure that the processes are appropriately sized to treat the permitted plant flow rate.

A final report will be prepared summarizing the information collected from the site visit and the recommended modifications and improvements to the South Fayette WTP. The final report will include an estimated budget for each of the improvements recommended. CH2M HILL will submit a draft report to the County for review and will respond to one set of comments on the draft report. CH2M HILL will then submit a final report to Fayette County.

Assumptions

The following assumptions are included in Task 3:

- The County will provide CH2M HILL with all record drawings for the South Fayette WTP and the associated raw water pumping facilities from each source at the outset of the project.
- The assessment of the South Fayette WTP for future expansion is not included in this scope of services.

- The limits of the evaluation of the South Fayette WTP include the raw water pumping stations through the high service pump station. No assessment of the distribution system is included in this scope of services.
- The yield for the available raw water sources for the South Fayette WTP to sustain current and future demand scenarios is not included in this scope of services. Similarly, no flow projections for the County's water system are included in this scope of services.
- An architectural and structural assessment of the condition of the existing facilities will not be performed. The evaluation of the buildings and structures for structural and architectural issues will be considered an Additional Service.
- Subsurface explorations to assess the geotechnical conditions at the site are not included in this scope of service and will be considered Additional Services.
- The assessment of the SCADA system for the South Fayette WTP will be included in the overall system-wide SCADA assessment associated with Task 5 and is not included with this task.
- The design of the recommended improvements is not included in this scope of services.
- A detailed hydraulic model to identify constraints and 'bottlenecks' through the plant will not be performed. Should the operations staff note hydraulic constraints through the plant under various flow scenarios, CH2M HILL will include those in the overall assessment report with conceptual level options to address the identified hydraulic constraints.

Deliverables

The following deliverable is included in Task 3:

- Technical memorandum summarizing WTP assessment with recommended improvements and their associated order of magnitude cost estimates.

Task 4 – WTP Operational Evaluation

As part of this task, CH2M HILL staff will conduct a third party review of the operations and maintenance practices at the Crosstown and South Fayette WTPs. To perform this review, CH2M HILL will provide an operational specialist who will conduct site visits to the Crosstown and South Fayette WTPs to commence the review. During the site visits, CH2M HILL's operational specialist will meet with the managers for each plant to review the overall system operation, to discuss process control methodology, and to understand the treatment objectives and challenges for each plant. Prior to conducting the site visits, CH2M HILL will review historical operational data and existing standard operating procedures (SOPs) from each treatment plant to develop a basic understanding of the treatment regime, chemical dosages, and typical water quality. A key element of the operations review will focus on the how the County selects which raw water sources are utilized for treatment and how the County balances production needs between the Crosstown and South Fayette WTPs.

During the site visits, CH2M HILL will also interview a cross-section of the operations and maintenance staff at each plant to review functions, duties, and assignments to assist in the development of an overall staffing plan for the two plants. The staffing plan developed for each plant will consider both operations and maintenance staff while considering the County's shift schedule as a basis for the staffing plan.

CH2M HILL will also develop updated SOPs for the Crosstown and South Fayette WTPs. A total of ten (10) SOPs per plant are included in the proposed level of effort for this task. CH2M HILL will utilize the existing SOPs as a basis for updating the County's existing operating procedures. CH2M HILL will submit the updated SOPs to the respective plant managers for review and comments before finalizing the SOPs as a final deliverable to the County.

Assumptions

The following assumptions are included in Task 4:

- CH2M HILL will develop ten (10) SOPs per plant for a total of twenty (20) SOPs for the County.
- CH2M HILL will provide one (1) operational specialist as part of this effort to review the operation and develop the staffing plan, SOPs, and other operational recommendations.

Deliverables

The following deliverables are included in Task 4:

- SOPs for the Crosstown and South Fayette WTPs
- Overall staffing plan for the operations and maintenance at the Crosstown and South Fayette WTPs
- Site visit report detailing recommendations for operational improvements and modifications to enhance the County's overall water plant operation

Task 5 – System-wide SCADA Evaluation

To identify issues and potential improvements to the County's overall Supervisory Control and Data Acquisition (SCADA) system, CH2M HILL will conduct an extensive review of the County's existing SCADA system. CH2M HILL will review the system architecture, block diagrams, process and instrumentation diagrams (P&IDs), and associated operations and maintenance (O&M) manuals for the instrumentation installed throughout the County's system. Following the review of the existing infrastructure, CH2M HILL will conduct a series of site visits to each facility (including both treatment plants and raw water pumping facilities), as well as remotely monitored distribution system sites such as the elevated storage tanks and booster pump stations, to assess the functionality of the existing telemetry. During the site visits, CH2M HILL will coordinate directly with the County's existing SCADA integrator (JK Duren) to discuss particular system aspects and challenges to further the understanding of the system architecture.

A key aspect of CH2M HILL's evaluation of the County's overall SCADA system will focus on the notice of violation included in the sanitary survey related to the current issues

associated with the recording and storage of system data in the SCADA system. CH2M HILL will evaluate the programming logic and data storage systems included in the existing SCADA system to develop recommendation for addressing this notice of violation.

CH2M HILL will develop a detailed TM documenting the existing issues in the County's SCADA system with recommendations for modifications to the programming logic, instrument replacement, and other required improvements. The recommendations developed for the County's SCADA system will focus on enhancing the existing components and improving functionality and overall operation of the system. CH2M HILL will also develop order of magnitude cost estimates for the recommended SCADA system improvements to facilitate the inclusion of SCADA related improvements in the County's overall capital improvement plant.

Assumptions

The following assumptions are included in Task 5:

- CH2M HILL will not perform any design or system integration tasks as part of this effort. The work to be performed will focus on evaluating the existing system and developing recommendations for a subsequent capital project to improve the County's SCADA system.
- The County will provide CH2M HILL with existing system documentation related to the system architecture, block diagrams, process and instrumentation diagrams (P&IDs), and associated operations and maintenance (O&M) manuals for the instrumentation installed in the County's system.
- CH2M HILL will provide one (1) instrumentation and controls technical resource during the site visit to the County's facilities.

Deliverables

The following deliverable is included in Task 5:

- Technical memorandum summarizing the evaluation of the County's SCADA system and recommendations for capital improvements to the overall SCADA system

SCHEDULE

This Task Order is based upon the schedule as shown in Table 1.

TABLE 1
Project schedule

Task	Start Date	Duration
Task 1 – Sanitary Survey Responses	Immediately upon issuance of Notice to Proceed	60 days
Task 2 – Crosstown WTP Assessment	Immediately upon issuance of Notice to Proceed	60 days
Task 3 – South Fayette WTP Assessment	Immediately upon issuance of	60 days

TABLE 1
Project schedule

Task	Start Date	Duration
	Notice to Proceed	
Task 4 – WTP Operational Evaluation	Immediately upon issuance of Notice to Proceed	60 days
Task 5 – System-wide SCADA Evaluation	Immediately upon issuance of Notice to Proceed	60 days

COMPENSATION

Compensation for the work in this task order will be based on a lump sum fee of $312,300 and paid as a percent of completion per identified task. The cost breakdown per task is provided in Table 2.

TABLE 2
Cost per Task

Task	Cost
Task 1 – Sanitary Survey Responses	$123,300
Task 2 – Crosstown WTP Assessment	$36,500
Task 3 – South Fayette WTP Assessment	$35,500
Task 4 – WTP Operational Evaluation	$60,000
Task 5 – System-wide SCADA Evaluation	$57,000
TOTAL	**$312,300**

Approved by:

Fayette County

Date:_____

_____

Steve Rapson
County Administrator

CH2M HILL

Date:_____

_____

Stuart Jeffcoat, PhD, PE
Business Vice President

Fayette County Water System

Task Order Number 2:

Engineering Services for Water System Regulatory Support and CIP Development

Background

As part of the delivery of *Task Order Number 1: Overall Water System 90 Day Support*, CH2M HILL will identify a number of improvements and make recommendations to improve the overall water treatment infrastructure for the Fayette County Water System (the County). The prioritization of the recommended improvements at the County's water treatment plants will be essential in developing a fiscally responsible and defensible capital improvement plan (CIP). This CIP will then be utilized in negotiations with the Georgia Environmental Protection Division (GA EPD) to obtain occurrence with the recommended corrective actions included in the proposed CIP. The engineering support provided by CH2M HILL in the delivery of this Task Order will focus on providing regulatory coordination support and working with the County to finalize the overall water system CIP.

SCOPE OF SERVICES

The scope of services includes:

Task 1- Regulatory Coordination

Task 2 – Capital Improvement Plan Development

The work to be performed, assumptions, and anticipated deliverables for each of these tasks will now be discussed in further detail to demonstrate CH2M HILL's understanding of the work.

Task 1 – Regulatory Coordination

CH2M HILL will provide the County with technical support in addressing system deficiencies and notices of violation included in the recent GA EPD sanitary survey. This technical support will include the following:

- Attendance by one (1) CH2M HILL employee at meetings with GA EPD to discuss system regulatory compliance issues related to the sanitary survey, notices of violation, and any potential consent order for the County's water system
- Assistance in developing an overall package for submission to GA EPD to document progress related to the sanitary survey
- Assistance in preparation of corrective action plans, technical correspondence with GA EPD, and other as needed communications with GA EPD on system progress in addressing deficiencies and notices of violation

- Assistance in the review of correspondence submitted to the County by GA EPD in regards to overall system compliance
- Assistance in reviewing future notices of violation and public notifications

Assumptions

The following assumptions are included in Task 1:

- The level of effort for the preparation and assistance in any communications with GA EPD are included in the appropriate tasks associated with this Task Order.

Deliverables

There are no formal deliverables associated with this task.

Task 2 - Capital Improvement Plan Development

CH2M HILL will meet with the County to discuss the recommended improvements and the associated cost estimates identified through the delivery of *Task Order Number 1: Overall Water System 90 Day Support*. The purpose of this meeting will be to review all of the recommended improvements to the treatment processes at both water treatment plants in order to develop a prioritized list of improvements for implementation. CH2M HILL will develop a preliminary prioritization prior to the meeting based upon its technical expertise and experience, and this preliminary prioritization will be used to facilitate the discussion during this meeting.

It is anticipated that this meeting will held with members from the County's water system, the County's Administration, and selected staff members from the Crosstown and South Fayette WTPs. Based upon the feedback from the meeting attendees from the County, CH2M HILL will finalize the prioritized list of improvements to develop an overall CIP for the Crosstown and South Fayette WTPs.

Upon completion of the final CIP for the water treatment plants, CH2M HILL will prepare a technical memorandum summarizing the overall CIP with an implementation schedule for each recommended improvement. CH2M HILL will then draft a letter to the Georgia Environmental Protection Division (GA EPD) with the technical memorandum with the CIP and the WTP assessment reports included as attachments in order to receive concurrence with the proposed CIP at the Crosstown and South Fayette WTPs.

Assumptions

The following assumptions are included in Task 2:

- The development of the CIP will not include water distribution or raw water storage improvements, such as water main extensions, new elevated storage tanks, or water supply reservoir dam improvements. The focus on the CIP will be on the Crosstown and South Fayette WTPs, as well as those other system issues noted in the sanitary survey.
- The level of effort associated with any meetings with GA EPD to discuss the proposed capital improvement plan will be included as part of Task 1.
- In addition to those recommendations from *Task Order Number 1: Overall Water System 90 Day Support*, the only additional improvements that will be considered during the prioritization effort relate to the County's previous work to investigate MIEX as a treatment

technology and the laboratory testing conducted by CH2M HILL to evaluate opportunities to optimize the County's treatment processes.

Deliverables

The following deliverable is included in Task 2:

- Technical memorandum summarizing overall CIP for the Crosstown and South Fayette WTPs
- Letter to GA EPD for concurrence with proposed CIP

SCHEDULE

This Task Order is based upon the schedule as shown in Table 1.

TABLE 1
Project schedule

Task	Start Date	Duration
Task 1 – Regulatory Coordination	Immediately upon issuance of Notice to Proceed	90 days
Task 2 – Capital Improvement Plan Development	Upon completion of *Task Order Number 1: Overall Water System 90 Day Support*.	30 days

COMPENSATION

Compensation for the work in this task order will be based on a time and materials basis and is estimated to cost $26,250. The cost breakdown per task is provided in Table 2.

TABLE 2
Cost per Task

Task	Cost
Task 1 – Regulatory Coordination	$15,750
Task 2 – Capital Improvement Plan Development	$10,500
TOTAL	**$26,250**

Approved by:

Fayette County

Date:_____

_____

Steve Rapson

County Administrator

CH2M HILL

Date:_____

_____

Stuart Jeffcoat, PhD, PE
Business Vice President