



Hazen and Sawyer
1300 Altmore Drive, Suite 520
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November 14, 2022

Ed Mullinax, PE
Assistant Director
Cartersville Water Department
148 Walnut Grove Road, SE
Cartersville, GA 30120

Re: Westside Feeder Main: Design & Bid Phase

Dear Ed:

Hazen and Sawyer (Hazen) is pleased to submit the following letter proposal to perform detailed design and bid phase services to assist the Cartersville Water Department (CWD) with the Westside Feeder Main project. If acceptable, this work will be performed under our Agreement for General Engineering and Consulting Services with the City of Cartersville, dated September 1, 2016.

Project Understanding

The Westside Feeder Main is a proposed 36-inch water transmission main approximately 5 miles in length and is intended to complete a water transmission loop around CWD's service area that will provide redundancy and reliability for CWD's water system. The water transmission main will parallel an existing gravity sewer from the intersection of West Avenue and Burnt Hickory Road to Georgia State Route (SR) 293 (aka 'Cassville Road') and Mac Johnson Road. CWD previously installed tees and isolation valves at these two locations to facilitate connecting the Westside Feeder Main to existing water mains.

Along its ~5-mile route, the Westside Feeder Main will run parallel to, alongside, and across the CSX railroad right-of-way as well as Nancy Creek and its tributaries. In addition, the Westside Feeder Main will include several pipe interconnections to existing water mains at road crossings.

CWD previously developed partial-design drawings for this project (JJG, 2009). Upon review of the 2009 partial design drawings, several items are noted that will require additional investigations and/or permitting:

- CSX Railroad: the four railroad right-of-way crossings proposed in the 2009 alignment require design coordination and permitting with CSX. Temporary easements may be required to provide adequate space for the trenchless construction under the railroad tracks.
- Nancy Creek (and its tributaries): Eleven stream crossings and pocket wetlands are shown on the 2009 drawings. Work within these stream beds through the pocket wetlands will require a United States Army Corps of Engineers (USACE) nationwide permit.

- Private Property: Approximately 24-30 private properties will be crossed along this alignment requiring easements to be obtained. The quantity of easements may change if the alignment changes.
- GDOT SR 293: work within the right-of-way of SR 293 Cassville Road will require a GDOT encroachment permit.
- Georgia Power: work through Georgia Power's overhead and underground powerline easement approximately 2,000 linear feet north of Mission Road will require plan submittal and coordination with Georgia Power.

The purpose of this Task Order is to develop detailed construction contract documents and support CWD through bid phase for the project. Construction phase services, if requested, will be performed under a separate task order.

Scope of Work

To accomplish this effort, Hazen will provide the following services:

- Task 1: Field Services
- Task 2: Design Services
- Task 3: Permitting Assistance
- Task 4: Bid Phase Services

Task 1: Field Services

Environmental Survey

Hazen will perform a desktop review of the project site area, including a review of National Wetlands Inventory (NWI) data and Natural Resources Conservation Service (NRCS) on-line Web Soil Survey (WSS) to identify soil types in the vicinity of the site.

Hazen will perform a wetland and stream delineation in accordance with the methods listed in the 1987 USACE Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Eastern Mountains and Piedmont Region (V2.0). Stream type (ephemeral, intermittent, perennial) will be delineated based on North Carolina Division of Water Quality Methodology for Identification of Intermittent and Perennial Streams and their Origins¹ (V4.1.1).

Hazen will walk the project alignment prior to the Engineering Survey to flag any areas that need to be considered to help ensure that the project does not require a USACE Nationwide Permit or a Georgia Environmental Protection Division (EPD) Stream Buffer Variance.

¹ *Field Guide for Determining the Presence of State Waters that Require a Buffer* (Georgia EDP, 2017) states that "the most current version of the 'North Carolina Division of Water Quality Stream Identification Method' should be used to verify whether a stream is ephemeral."

Engineering Survey

A survey will be performed by Gaskins Surveying, Inc. (Gaskins) as a subconsultant to Hazen. Gaskins will perform utility location, document as-built conditions (including critical elevations) and provide an engineering survey for the entire land area of the project scope. In as much as possible, existing record drawings will be utilized to document as-built conditions.

Geotechnical Investigation

A geotechnical investigation will be performed by Geo-Hydro Engineers, Inc. (Geo-Hydro) as a subconsultant to Hazen. Geo-Hydro performed subsurface investigation at the railroad crossings for JJG in 2007; they have some documentation already on-hand. The investigation will be performed to provide a general indication of the extent and depth of rock that may likely be encountered in construction, specifically regarding railroad and stream crossings. The geotechnical subconsultant will provide a geotechnical report upon completion of the field investigation. This report will help determine what trenchless construction methods are most appropriate for each crossing.

Task 1 Assumptions

The following assumptions will apply to work conducted as part of this task:

- The environmental survey desktop review does not include a review of cultural resources or threatened and/or endangered species.
- An allowance of \$75,000 is included for the subconsultant's costs for performing the engineering survey. The engineering survey includes a Quality Level B SUE (Subsurface Utility Engineering) Survey in accordance with ASCE 38-02, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.
- For storm and sewer structures that are not readily accessible, it will be CWD's responsibility to gain access to the structures for the survey field work.
- A significant portion of the project is not on property owned by CWD.
 - Per the 2009 design, approximately 24-30 easements will be required.
 - A budget of \$24,000 is included for up to 30 permanent, temporary construction, and/or access easement plats and legal descriptions (\$800/easement)
 - An allowance of \$10,000 is included for Gaskins to perform easement revisions and/or site staking, if required.
 - The project scope includes providing easement plats and legal description; scope does not include providing title opinions, land value appraisals, or supporting easement acquisition.

- If easements are not in place along the existing conveyance system, Hazen will prepare and mail right-of-entry notifications to private property owners prior to the field walk, site survey, and geotechnical investigation. CWD will provide property owner contact information (name, address, and phone number, if available) and will approve the right-of-entry notification letters prior to their mailing.
- CSX Right of Entry permits are required when accessing the CSX right of way for surveying and geotechnical investigation purposes.
 - All proposed work within the right of way will be performed via trenchless construction methods (jack and bore, hand tunneling, or similar).
 - In lieu of accessing the CSX right of way, Gaskins will use a drone to survey the CSX right of way and Geo-Hydro will perform its geotechnical investigations outside of the right of way.
 - Given that no topside work is proposed within the right of way, the drone survey will provide adequate resolution / accuracy to perform Task 2 Design Phase services and to submit a CSX Encroachment Permit as a part of Task 3 Permitting Assistance.
 - Geotechnical borings adjacent to the right of way will provide adequate information to inform Contractors who to plan and bid the most appropriate trenchless construction method for each railroad crossing.
- An allowance of \$30,000 is included for the subconsultant's costs for performing the geotechnical investigations.
 - Per the 2009 design, there are 4 railroad, 11 stream, and 3 roadway crossings. Depending on the anticipated presence of rock, Hazen recommends a minimum of one bore for each crossing; two bores may be appropriate for longer crossings.
 - For linear projects, depending on accessibility and anticipated presence of rock, Hazen generally recommends one bore per 2,000 linear feet along the pipeline alignment.
 - It is anticipated that the 2007 borings at the railroad crossings will be adequate for this portion of the design (it is not anticipated that the railroad crossing locations will change).
 - The scope includes up to 20 borings along the alignment to determine the presence of rock.
 - Soil samples will be collected at up to 5 locations to determine the corrosivity of the soil and the appropriate pipe coating (or if the pipe should be poly-wrapped).
- Borings are to be backfilled with soil.

Task 1 Meetings

- No meetings are anticipated for this task outside of site visits that may occur concurrent with the field services.

Task 1 Deliverables

Hazen will provide the following deliverables:

- Engineering Survey, including wetland and stream features delineated in the Environmental Survey, in both signed/sealed .PDF and AutoCAD .DWG formats
- Geotechnical subsurface investigation report, including soil boring logs and rock core logs, if performed

Task 2: Design Services

The Design Services task will include performing preliminary and detailed design as further described below.

30% Design Submittal

The primary goal of the 30% Design subtask is to identify and finalize decisions for all project components and to help ensure that CWD and Hazen determine and finalize the construction scope. Hazen will develop the general alignment for the pipeline design, develop an opinion of probable construction cost, perform internal QA/QC, and submit 30% Design documents to CWD for review and comment.

The 30% Design documents will focus on the horizontal pipeline alignment and a review of all critical locations along the alignment (including tie-ins and crossings). Specifically, the alignment will be evaluated to confirm the CSX railroad crossing locations and to determine if the number of crossings may be minimized. CWD's approval of this submittal will serve as a basis of design for 60% and 90% Design subtasks.

60% Design Submittal

The 60% Design Submittal will build upon the 30% Design Submittal. In the 60% Design Submittal, Hazen will perform the detailed design activities required to produce construction contract documents that define the work to be bid and constructed and identify any construction contract conditions (aka 'special conditions') that need to be incorporated into the contract. Hazen will develop the appropriate level of design, update the opinion of probable construction cost, perform internal QA/QC, and submit in-progress documents to CWD for review and comment. The 60% Design Submittal will generally include the following:

- Drawings – horizontal and vertical alignment, cross-sections at major pipe crossings, and proposed easement extents
- Technical Specifications and Details (both CWD standard and Hazen project-specific)
- Opinion of Probable Construction Cost (AACE Class 3, +30% to -20%)

Hazen will develop an overall project map using the field survey, proposed design, and CWD GIS information. This map will be utilized to select the extent of the proposed easements (permanent, temporary, and access). The extents will be finalized as a part of the 60% Design review meeting. Hazen will release its surveyor to prepare easement documents for review and approval by CWD after the 60% Design review meeting.

Upon the receipt of the results of the Geotechnical Investigation, Hazen will evaluate the appropriate trenchless technologies for each of the railroad, stream, and roadway crossings. Hazen will review its findings with CWD and develop technical specifications to support the approved trenchless construction methods. Outcomes of this evaluation will be utilized to update the opinion of probable construction costs.

Hazen will develop a overall project map using the field survey, proposed design, and CWD GIS information. This map will be utilized in a project update meeting to select and finalize isolation valve and blow-off hydrant assemblies.

Hazen will coordinate with the Georgia Power for the easement crossing north of Mission Road to ensure that the design meets its design and construction requirements. System improvements at the crossing may include adjusting the horizontal alignment to ensure adequate

90% Design Submittal

The 90% Design Submittal will build upon the 60% Design Submittal. In the 90% Design Submittal, Hazen will prepare plans and specifications that comply with applicable codes, laws, and regulations, and be suitable for submittal and approval by authorities having jurisdiction. The 90% Design Submittal will generally include the following:

- Fully-developed detailed construction drawings
- Technical Specifications
- Bidding and Contract Requirements (aka 'Front Ends')
- Opinion of Probable Construction Cost (AACE Class 2, +20% to -15%)

Permitting Submittal

Hazen will incorporate CWD's 90% Design Submittal comments to develop a Permitting Submittal that will be used as the submittal package for Task 3 Permitting Assistance. The Permitting Submittal will generally include only the following as necessary for permitting review:

- Fully-developed detailed construction drawings
- Other documents requested by individual permitting agencies

100% Design Submittal

The 100% Design Submittal will incorporate 90% Design Submittal comments and input from CWD and Permitting Submittal comments from the appropriate permitting agencies, and will include final drawings, specifications, and attachments ready for final review and approval by CWD prior to Bid Phase. It is not anticipated that additional design be performed after the 90% Design Submittal; the intent of the 100% Design Submittal is to provide a final check set prior to sealing the Issued for Bid documents.

Task 2 Assumptions

The following assumptions will apply to work conducted as part of this task:

- CWD will provide electronic and/or hard-copy versions of available as-built or design plans and specifications, maps and data, for sewer and waterlines along and adjacent to the proposed Westside Feeder Main alignment, including at both tie-in locations.
- CWD will provide available standard details and specifications. Hazen to compliment CWD's standards as needed to complete the design.
- CWD to determine the Westside Feeder pipe diameter and material.
- No water and/or surge modeling included within this design. CWD will provide Hazen a summary of its modeling results. The modeling results and anticipated pipe bedding conditions will be used to determine the required pipe pressure class.
- CWD will direct the pipe diameter(s) and locations for all interconnections along the Westside Feeder Main route.
- The proposed system improvements will not require the development of a Stormwater Management Plan (aka 'hydrology study') or the design of stormwater management facilities.
- For each design submittal, Hazen will conduct a meeting with CWD to review and discuss the design documents prior to continuing to the next design milestone.

Task 2 Meetings

- Kickoff meeting
- Design milestone document review meetings (anticipate 4 meetings: 30%, 60%, 90% and 100% milestones)

Task 2 Deliverables

Hazen will provide the following deliverables:

- Agendas and summaries for all meetings
- 30% Design Submittal
- 60% Design Submittal

- 90% Design Submittal
- Permitting Submittal
- 100% Design Submittal

Task 3: Permitting Assistance

Hazen will utilize the Permitting Submittal to assist CWD in obtaining permits for the project. The following permits are expected to be required for this project ²:

- Georgia Environmental Protection Division (EPD) Drinking Water Permit
- City of Cartersville Land Disturbance Activity (LDA) permit (including erosion control), for portions of the project within the City limits
- Bartow County LDA permit (including erosion control), for portions of the project outside City limits
- EPD Stream Buffer Variance (SBV)
- USACE Nationwide Permit (NWP)
- CSX Railroad Crossing Permit (one permit per crossing, estimated 4 permits)
- Georgia DOT Encroachment Permit

Task 3 Assumptions

The following assumptions will apply to work conducted as part of this task:

- Hazen will submit all permit applications to CWD for review and approval prior to submitting to permitting agencies.
- Hazen will provide permitting documents to the CWD. CWD to submit the permitting documents to Governing Authority permitting agencies.
- Site improvements will not require the addition of or modifications to existing stormwater management facilities. The improvements at the project site will include less than 5,000 square feet of new or redeveloped impervious surfaces and therefore will not require a stormwater management (aka ‘hydrology’) report or facility design.
- It is anticipated that land disturbance will be in Waters of the U.S.; therefore, a USACE Nationwide Permit (NWP) will be required.
- It is anticipated that land disturbance activities will occur within Georgia EPD’s 25-foot undisturbed stream buffer; therefore, a Stream Buffer Variance (SBV) will be required.

² As per Task 1 Field Services assumptions, no survey work is planned within the CSX right of way under this proposal. If it is determined during the project that access to the right of way is required, Hazen will support CWD in preparing a CSX Right of Entry permit.

- CWD will help resolve any permit requirement conflicts between various permitting agencies.
- CWD will be responsible for all associated permit fees.
- Governing Authority will hold the Building and LDA permit(s) until the Contractor is selected and finalizes the permit applications.
- The Contractor (once selected) will submit the Georgia EPD-required NPDES Notice of Intent (NOI) and Notice of Termination (NOT).

Task 3 Meetings

- LDA plan review meeting, if required

Task 3 Deliverables

Hazen will provide the following deliverables:

- EPD Drinking Water Permit application and approved letter from Georgia EPD
- Georgia EPD SBV application
- USACE NWP application

Task 4: Bid Phase Services

Issued for Bid Documents

Hazen will incorporate CWD's standard bidding and contract requirements and specifications in the documents as appropriate. Concurrent with the 90% Design Submittal subtask, Hazen will submit a draft copy of Volume 1 "Bidding and Contract Requirements" (aka 'Front Ends') to CWD for review. The purpose of this review is to ensure that the contract documents are consistent with CWD and its standards.

Upon receipt of all comments and input from the 'Front Ends' review and the 100% Design Submittal review, Hazen will produce a signed and sealed "Issued for Bid" bid package ready for public solicitation. In general, the Issued for Bid documents will include:

- Volume 1: Divisions 00-01 Bidding and Contract Requirements and Divisions 02-46 (as appropriate) Technical Specifications
- Volume 2: Construction Drawings

Contractor Pre-Qualification

Prior to Bid Solicitation, Hazen will develop a Request for Pre-Qualification (RFPQ) package to select interested and qualified Contractors for Invitation to Bid. The following services are anticipated:

- Develop RFPQ package (CWD to review and approve)

- Work with CWD to develop RFPQ criteria for selection of qualified Contractors
- Prepare and distribute RFPQ addenda, as required
- Review Contractors' RFPQ Submittal Packages with CWD
- Provide a Recommendation of Qualified Contractors to CWD
- Notify all Contractors who submitted RFPQ's who has been determined as 'qualified' and will be invited to submit a bid

Bidding Period

The following services will be performed during the project's solicitation period:

- Assist CWD in advertising and securing sealed bids for the construction of the project.
- Distribute copies of the Bid Documents.
- Develop and maintain a plan holder list.
- Coordinate and administer the Pre-Bid Meeting.
- Interpret, clarify, or modify the bidding documents by addenda as deemed appropriate by Hazen. Issue addenda, as needed, during the advertisement period.
- Attend and assist with bid opening.
- Evaluate bids for conformance with bidding requirements, provide input for bid tabulation, assist CWD in evaluating the bids, check apparent low bidder's references, and provide a Recommendation of Award letter to CWD.

Conformed Contract Documents

Hazen will develop conformed drawings and specifications for execution of a contract between CWD and the Contractor, including:

- Complete conformed drawings/specifications to include all changes made by addenda, as well as incorporate the successful Contractor's bid information.
- Transmit conformed documents to the Contractor for signature of the Contract and to obtain bonds, insurance documents, and signed forms.
- Coordinate with CWD to complete and execute conformed Contract Documents, including review of the executed contract, insurance certificates, bonds, and other forms required by the Contract.

Task 4 Assumptions

The following assumptions will apply to work conducted as part of this task:

- Hazen will use Division 00 Procurement and Contracting Requirements specifications for Volume 1 “Bidding and Contract Requirements” previously developed by Hazen for the Cartersville WWTP upgrade project. Hazen will develop Division 01 General Requirements and 02-46 Technical Specifications (as applicable) using CSI 48 Division format.
- Contractor pre-qualification activities will only involve a single round of evaluation and selection.
- Bid Documents will be distributed electronically through QuestCDN or CWD-approved equivalent online bid platform. Hazen will establish procedure within the Invitation to Bid to allow prospective contractors to request electronic copies of Bid Documents.
- Hazen will attend the bid opening.
- The bidding process to select a construction contractor will only involve a single round of solicitation, and the project will be bid as a single construction contract.

Task 4 Meetings

- Pre-Bid Meeting

Task 4 Deliverables

Hazen will provide the following deliverables:

- Recommendation of Qualified Contractors
- Signed/sealed Issued for Bid documents:
- Pre-Bid meeting agenda
- Addenda to Bid Documents, as required
- Recommendation of Award letter
- Conformed Contract Documents
 - Volume 1: Four (4) originals for execution (2 for CWD, 1 for Contractor, 1 for Hazen)
 - Volumes 2 & 3:
 - Three (3) full-size and six (6) half-size copies for CWD
 - Two (2) full-size and two (2) half-size copies for Contractor
 - All Volumes: Electronic (PDF) copy of executed Contract for all parties



Schedule

This Task Order is based upon the attached project schedule.

Compensation

Compensation for the Scope of Services outlined above will be in accordance with the terms specified in Hazen's Demand Services Agreement with a maximum not to exceed amount of \$547,000. Work in excess of this limit will not commence without prior written approval from CWD. This budget includes a \$139,000 allowance for Hazen's subcontractors. A cost summary estimated by task is provided below.

Task	Hours	Budget
1: Field Services	202	\$172,723
2: Design Services	1784	\$273,388
3: Permitting Assistance	434	\$69,882
4: Bid Phase Services	174	\$31,006
	Total:	\$547,000

Please call me at (404) 353-0571 if you have any questions regarding this proposal. We look forward to serving CWD through this very important project.

Very truly yours,

Bryant (Pat) Rogers, PE
Vice President

cc: Alan Bowling, PE, Sam Mark, PE
Attachments: Project Schedule