

**(Revised June 21, 2021)**

**EXHIBIT I**

**SCOPE OF WORK**

**I. General**

Engineer shall furnish all Professional Engineering services to implement the Project in four tasks with three parts with durations listed below using the design-bid-build delivery method. Note this project is an integral part of the overall efforts included in the 2020 updated Consent Decree. The updated Consent Decree contains significant financial penalties to Dekalb County if work is not completed on time. The below schedule reflects these Consent Decree driven requirements for work completion.

**Task 00: Project Management:** Engineer shall provide Project coordination and management for the activities performed during Project.

- a. Duration: Entire Project

**Task 01: Design:** Prepare, submit for review and comment, and present at meetings with County for each milestone deliverable: Basis of Design Report (BDR) with evaluation of alternatives, detailing selected alternatives, and design documents at 30, 60, 90 and 100 percent completion milestones, along with permit applications and supporting documentation to obtain all permits. This step includes acquiring all required permits and providing easement legal descriptions and plats (249 parcels estimated at this time). It is anticipated that easement plats and legal descriptions can begin at the 90% design stage. Proposing firms need to submit a Project Master Schedule (Level 1) to include major milestones with their proposal.

- a. Duration: 12 months for design, 12 months for easement/land acquisition support services and permitting efforts (24 months total). Note that easement acquisition will be completed by a third party for the County.

**Task 02: Bid Phase:** Engineering services during the Bid phase of the project, including production of Bid and Conformed Contract Documents.

- a. Duration: 12 months.

**Task 03: Construction and Post-Construction:** Engineering services during Construction and Post-Construction.

- a. Construction Duration: 36 months.
- b. Post-Construction Duration: 12 months (General Contractor's warranty period)

Engineer shall furnish Professional Engineering design services for all engineering disciplines required to provide a complete design for the Project in a series of advancing progressive milestone deliverables. Though not an exhaustive list, engineering disciplines could include the following: hydraulic, surveying, geotechnical, erosion and sediment control (E&SC), civil,

structural, cost estimating, scheduling, environmental, health and safety, permitting, and project management.

All Project documents, including Engineer's deliverables, plans, drawings, estimates, specifications, and data are and remain the property of County. Engineer agrees that County may reuse any and all Project documents at County's sole discretion without first obtaining permission from Engineer and without payment to Engineer.

Project construction shall be by a third-party General Contractor whose scope shall be defined by the Engineer through Contract Documents that are a product of the Engineer's design. Construction Management shall be by a third-party Construction Manager.

The awarded Engineer shall be responsible so that the design, and succeeding construction, of all facilities included in the Project is in accordance with **Exhibit II Guide Specifications** and the latest version of the **DeKalb County Department of Watershed Management Design Standards Manual (County's Standards)**; and all other Local, State, and Federal requirements of Governmental Authority (refer to **List of Minimum Regulatory Standards** at the end of **Exhibit I**).

Refer to following link for **DeKalb County Department of Watershed Management Design Standards Manual (County's Standards)**:

<https://www.dekalbcountyga.gov/watershed-management/office-engineering-construction-management-services>

The **Exhibit II Guide Specifications** represent the minimum requirements and minimum technical standards for the Project and serve as a guide in developing the design and final specifications. Engineer is responsible for reviewing the Guide Specifications, presenting proposed modifications to County for review, and for developing the final detailed technical specifications for the Project signed and sealed by a licensed Georgia Professional Engineer.

If a conflict or difference exists between the requirements contained in the specified standards and practices and the requirements contained in the minimum **Exhibit II Guide Specifications**, use the most stringent material or installation requirement for the Project. Engineer is to notify the Owner of any such conflicts or differences with each deliverable submission.

In the design, Engineer shall not make any generalized blanket references to **County's Standards** and **Exhibit II Guide Specifications**, or other State or National standards. If any sections of these standards and specifications are to be included by reference, the design shall quote or cite specific chapters and/or paragraphs of the reference standards.

Engineer shall fully evaluate all information provided along with new information that may manifest during its work and shall use its own professional engineering judgment along with the design guidance requirements provided in the **County's Standards** and **Exhibit II Guide Specifications**.

Engineer shall provide a design that achieves all DWM requirements and that is consistent with all approved comments/recommendations made by County. Engineer shall provide a design that is a complete, and consistent throughout, set of Contract Documents (including bid instructions with bid form, general conditions, special conditions, specifications in 16-Division CSI format, drawings) suitable for competitive bidding and building by General Contractor.

Acceptance of Project deliverables by County does not relieve Engineer from being solely and fully responsible for the accuracy of all deliverables and promptly clarifying ambiguities, and correcting errors and omissions at Engineer's own expense throughout the Project.

County recognizes that County and the Project may benefit from design of a few, specific elements being delegated to the General Contractor that may arise from unforeseen situations require it that arise during the course of construction. Engineer shall not delegate design to the General Contractor unless the following criteria are met for each delegated design element:

1. During design, Engineer specifically requests of County that delegated design be approved for a specific element and County agrees, in writing, that design element can be delegated to General Contractor.
2. Element is clearly identified as delegated design in the Contract Documents and requires General Contractor to obtain documents signed and sealed by a Professional Engineer licensed in the State of Georgia for the delegated design.
3. Contract Documents require that delegated design is submitted to Engineer for review during construction.

Engineer shall be responsible for all travel costs associated with field visits outside of the metro-Atlanta area related to material selection or testing during design and construction of:

1. Section I: Snapfinger AWTF to Flat Shoals Pkwy
2. Section II: Flat Shoals Pkwy to Hwy I-20
3. Section III: Hwy I-20 to S. Columbia Dr

## **II. Description of Consent Decree – Design and Engineering Services for Shoal Creek Trunk Sewer Relief Project**

The project is to be designed based on the following sections as shown in **Exhibit III: Project Map**.

### ***Section I: Snapfinger AWTP to Confluence of Doolittle, Shoal, and Cobb Fowler Creek Gravity Mains near the intersection of Flat Shoals Pkwy and Boring Rd.***

This gravity main begins at the Snapfinger AWTP influent pump station as a 42-inches pipe. The size reduces to 40-inches and then 36-inches just downstream of the confluence of Doolittle, Shoal, and Cobb Fowler Creek gravity mains near Boring Rd. This section of the Project is located behind homes in numerous

residential neighborhoods along the banks of the South River. It has two road crossings and no river crossings.

***Section II: Confluence of Doolittle, Shoal, and Cobb Fowler Creek Gravity Mains near the intersection of Flat Shoals Pkwy and Boring Rd to I-20 Crossing***

The gravity main begins as a 36-inch before crossing under Flat Shoals Pkwy after which it crosses under Highway I-285. It continues as a 36-inch and then decreases to a 24-inch before crossing under Highway I-20. This section is located in a mix of residential and commercial properties along the Shoal Creek flood plain. It has three road crossings, two highway crossings, and at least two creek crossings.

***Section III: I-20 Crossing to S. Columbia Dr (project termination)***

The gravity main continues north of I-20 as a 24-inch before it becomes a 21-inch crossing under multiple roads and terminates as an 8-inch near S. Columbia Drive. The section also includes other branches which terminate near Forest Boulevard and Hill Street. This section of the gravity main is located in residential neighborhoods along the Shoal Creek flood plain. It has fourteen (14) road crossings, including Memorial Drive, Columbia Drive, and multiple creek crossings throughout the route.

**A. Task 0 – Project Management**

Engineer shall provide Project coordination and management for the activities performed during the Project. This includes management and monitoring of labor utilization, project schedule, and project budget on a regular basis, including those for Engineer’s Subconsultants and Subcontractors as applicable. It shall be the ongoing responsibility of Engineer to:

- a. Assign and supervise staff, including reassigning staff from Project if requested by County.
- b. Adequately manage and adhere to the Project Part, Task and Subtask Not-to-Exceed budgets.
- c. Submit deliverables to County on time and in accordance with the contract requirements.
- d. Coordinate and communicate with County in a timely and professional manner.
- e. For each meeting related to the Project (with exception of those specifically assigned to the Construction Manager during construction), Engineer shall be responsible for preparation of Agenda and distribution 3 days in advance of meeting, taking meeting minutes during the meeting and distribution of meeting minutes no later than 5 calendar days following the meeting.

**1. Subtask A - Project Initiation**

Engineer shall:

- a. Prepare a draft Project Execution Plan summarizing the Project goals and objectives; the Project approach; project organization requirements defining resources/staffing

plan, responsibilities, contacts, and communication plan; Engineer's quality assurance/quality control (QA/QC) plan; project budget, schedule and work breakdown structure; financial tracking procedures; and scope change management process. The project delivery schedule shall be in coordination with County's requirements and milestone dates. Submit for review within 14 calendar days following awardee acknowledgement receipt date of Notice to Proceed Letter.

- b. Schedule and facilitate a Project Kickoff Meeting with County within 30 calendar days following awardee acknowledgement receipt date of Notice to Proceed Letter. At the meeting review the draft Project Execution Plan and Procedures Manual and discuss Project goals, objectives, and critical success factors. Prepare draft Project Execution Plan and agenda and submit to County no later than 3 calendar days prior to Project Kickoff Meeting.
- c. County comments on the draft Project Execution Plan shall be delivered to Engineer within 7 calendar days following the Project Kickoff meeting via a Quality Review Form (QRF). Upon receipt of the QRF, Engineer shall respond to review comments in the QRF, revise the draft Project Execution Plan based on the comments received, and submit a final version within 14 calendar days after receipt of review comments.

## **2. Subtask B - Monthly Progress Reports**

Engineer shall prepare and submit monthly progress reports with applications for payment for the Work completed during the prior pay period. The progress reports shall compare earned value (at the Subtask level) to actual expenditures for the month and project duration. Progress reports shall include an updated schedule which will be reviewed by County and discussed during progress meetings. The status reports will also identify or forecast proposed modifications to the project scope. Key issues requiring County action or direction shall also be included. A monthly meeting to review the progress report shall be conducted with County at DWM's Engineering and Construction Management's office or, at the County's discretion, the office meeting may be performed via a conference call.

## **3. Subtask C - Change Management**

Engineer shall document scope and schedule changes associated with completion of Engineer's work by using a Change Management Log, which describes the major changes that arise and shall provide a status of each item for County review during monthly progress meetings.

## **4. Subtask D - Quality Management**

Engineer shall perform in-progress quality management reviews to ensure the project objectives are realized. At a minimum, Engineer shall perform the following:

- a. Designate a quality assurance/quality control (QA/QC) officer to the Project that is responsible for implementation of the QA/QC plan, and documentation of QA/QC activities.
- b. Provide checklists and quality management guidance documents for performance of the Project.

- c. Require all Engineer Project personnel to read the approved Project Execution Plan and be familiar with the Project procedures and requirements.
- d. Perform an internal review of all calculations and deliverables by Engineer's qualified quality management personnel prior to each submission to County. Calculations shall be recorded neatly, kept in an orderly fashion for ease in review and suitable for a permanent record of the design work and submitted to County, as applicable, with each deliverable. Highlight significant assumptions and conclusions in the calculations.
- e. Engineer shall identify and utilize an individual or individuals on its staff to perform an independent quality control check of all deliverables, including those of its Subconsultants and Subcontractors, prior to submission to County to ensure that they are accurate, clear and complete and to assure functional coordination of the work with permits, easements, etc. The quality control check shall be comprehensive and shall include at a minimum checking against existing geospatial relationships and subsurface conditions, utilities, sizes and slopes, details, constructability, section and elevation references, coordination of geotechnical discipline, and permitting and/or other Local, State, or Federal regulations. The Drawings shall be checked for coordination with each other and shall be checked for coordination with references to the Specifications. The Drawings and Specifications shall be reviewed for constructability and future maintenance access. Upon request by County, Engineer shall submit within 3 days of request by County the comments from the independent quality control check to County.
- f. Record and submit with draft deliverables certification by the Project Manager that submitted information has been reviewed and checked in accordance with the procedures documented.
- g. County may elect to perform a third-party peer review on behalf of County. Engineer shall supply all necessary calculations, analyses, and other documents needed for the third-party peer review, shall cooperate fully with the peer reviewers and shall adjudicate peer review comments to the mutual agreement of County, the peer reviewers and Engineer.

##### **5. Subtask E - Schedule Management**

Engineer shall prepare, maintain, and provide updates to the Project Schedule according to the following:

- a. All schedules shall be prepared using scheduling software approved for use by County.
- b. Schedules shall be submitted as electronic files (native and Adobe Acrobat PDF format) and hardcopy and shall be updated monthly to show progress.
- c. Prepare and submit a baseline Project Schedule with the Project Execution Plan. The Project Schedule shall include a detailed schedule for Part One and Part Two Project activities and summarize activities and milestones for Part Three Project activities. An updated detailed schedule for Part Three Project activities shall be submitted by Engineer around and before issuance of Notice to Proceed to the construction General



Contractor. The Project Schedule shall be based upon the schedule submitted with Engineer's proposal, and shall include at a minimum:

- i. Start date for each activity;
  - ii. Finish date for each activity;
  - iii. Major milestones;
  - iv. Meeting and workshop dates;
  - v. Submittal dates including submission dates for each deliverable, County review periods, submission of responses to County review comments and final submission dates;
  - vi. Identification of critical path; and float. Float is for the exclusive use or benefit of County. Float is a resource that is exclusively controlled by County.
- d. The Project Schedule shall show the milestones and activities of County, Engineer and its Subconsultants and Subcontractors necessary to meet County's overall Project Schedule completion requirements.
- e. General milestone schedule for each deliverable shall be as follows:
- i. Each draft deliverable shall be submitted to County in two (2) hardcopies and up to two (2) electronic copies on separate devices at the County's request. Each final deliverable shall be submitted to County in two (2) hardcopies and up to two (2) electronic copies on separate devices at the County's request. Final 100% plans shall be submitted to County in six (6) hard copies and up to two (2) electronic copies on separate devices at the County's request. Electronic copies shall be PDF format and final deliverables also shall include MS Word and AutoCAD formats.
  - ii. Submit to County the draft deliverable and agenda for meeting to review draft deliverable no later than 3 calendar days prior to the meeting.
  - iii. Hold meeting to review draft deliverable.
  - iv. Submit to County the meeting minutes for draft deliverable review meeting no later than 5 calendar days following the meeting.
  - v. County comments on the draft deliverable shall be delivered to Engineer within 14 calendar days following the deliverable review meeting.
  - vi. Engineer shall respond to County comments within 14 calendar days following delivery of County comments. The next deliverable (e.g., if draft deliverable is 30%, then the next deliverable is 60% design) shall include a copy of Engineer's responses to County comments on the prior deliverable. Engineer's responses are to be provided with adequate detail for verification purposes, such as locations of revised details, specification sections and updated drawing numbers.
- f. The baseline Project Schedule shall be reviewed and analyzed by County. Engineer shall discuss with County any review comments at the Project kick-off meeting and shall provide a revised baseline schedule that is consistent with mutually agreed upon changes.

- g. Schedule updates shall be made at least monthly and shall be submitted with the level of detail for each update reflecting the information then available, with a narrative describing each change to the schedule. If an update indicates a previously submitted Project Schedule will not be met, Engineer shall provide a detailed corrective recovery plan of action to County for review.

## **6. Subtask F - Work Management System**

- a. Document Management: Engineer will maintain and coordinate all pertinent electronic design files and documents including all Computer-Aided Design and Drafting (CADD)-related files related to the Project. Electronic files submitted during the Project shall use a naming convention approved by County and described in the Project Execution Plan.

Engineer shall furnish to County such documents and design data as may be required for, and assist in the preparation of, the required documents so that County may secure approval of governmental authorities having jurisdiction over design criteria applicable to Project, and maintain for all phases of the Project all records necessary to enable governmental audit.

- b. Project Management Information System: A web-based County-approved project management information system (PMIS), which may be the County's SharePoint system, shall be used to facilitate collaboration and management of the Project. Engineer will be required to use the PMIS and follow established procedures and workflows for documenting, sharing, and control of Project information. At a minimum, the PMIS shall be capable of facilitating the following:
- Overall Project tracking and monitoring of key performance indicators;
  - Meeting and workshops agendas, presentations, meeting minutes, and notes;
  - Action items, issues, decision logs, and tracking;
  - Budget and schedule tracking;
  - Document submittals and transmittals including drawings (pdf format);
  - Quality management documentation including comments, responses, and confirmations;
  - Applications for Payment and monthly reports;
  - Templates and tools;
  - Project related communication; and
  - Dashboards of Project progress prepared by County.
- c. Engineer and County will coordinate with Construction Manager and General Contractor to evaluate and select the PMIS to be utilized during Part Three Project activities.

## **7. Subtask G – Additional Project Management Activities during Construction Phase**

Communications shall be maintained between the Engineer and County, as well as coordination during Project meetings with other entities throughout the Project. Engineer



will work with Construction Manager and the General Contractor as County's agent related to construction issues.

The scope of these services is summarized below:

- a. Administration
  - i. Respond and prepare correspondences to County and third-party Construction Manager.
  - ii. Update Project Management Plan.
- b. Document Control
  - i. Utilizing software mutually agreed upon by County, Engineer, Construction Manager and General Contractor, Engineer shall collaborate with Construction Manager to carry out the following construction document processes:
    - 1) Requests for Information (RFIs)
    - 2) Submittals/Shop Drawings/Sample Review
    - 3) Design Change Notices (DCNs)
    - 4) Change Orders
    - 5) Other mutually agreed upon construction documents

## **B. Task 1 – Design**

Engineer shall submit for review and comment, and present at meetings with County for each milestone deliverable: Recommended alternatives to evaluate, BDR, and other permitting documents as applicable, and design documents at 30, 60, 90 and 100 percent completion milestones. Specifically address the following items in the BDR and provide updates for subsequent milestone deliverables:

- Review the Project Requirements and consult with County as appropriate to further clarify requirements for the Project including County's budget, review of Project Design Criteria Requirements, and available County-Furnished Information.
- Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve permits required for construction of the Project.
- Evaluate the Project reference documents, including but not limited to the **County's Standards, Exhibit I, Scope of Work** and **Exhibit II Guide Specifications**, project specific assessment data, and, recommend to County design features, alternatives and options that would benefit the Project.

### **1. Subtask A - Specialist Professional Services**

Engineer shall advise County if additional reports, data, information or services are required. Upon County approval, Engineer shall furnish, up to the budgeted limit listed on the Cost Proposal Form, all specialist professional services necessary to complete the Project. Specialist professionals shall be licensed in the State of Georgia for the work

performed and shall certify/seal their deliverables accordingly. Specialist professional services may include the following:

- a. Topographic and sub-surface surveys and geotechnical services as determined necessary by Engineer to confirm the suitability of the proposed design.
- b. Other exploration, testing, and analyses that may be required to determine the suitability of the design including but not limited to soil corrosivity analyses, environmental surveys, and other testing as deemed necessary by Engineer.
- c. Permit Fees: Engineer to pay permitting fees to authorities having jurisdiction. County will reimburse the fees to the Engineer from the Owner Control Allowance.

## **2. Subtask B - Basis of Design Report (BDR)**

Prior to evaluation of alternatives, hold a meeting to advise County of the alternatives proposed for evaluation and gain County's approval to proceed with the evaluations.

Submit BDR outlining Engineer's alternatives which may include parallel relief sewers, same trench replacement, or others. The final BDR shall be a single document that addresses the Project in entirety.

Assessments and evaluation of alternatives shall include preliminary design criteria, exhibits, photos, sketches and drawings, opinion of probable costs for projected capital and operations and maintenance costs over a 20-year period. Opinion of probable costs shall be AACE Class 4, Schematic/Conceptual (accuracy -15% to +50%).

Submit a final Basis of Design Report (BDR) presenting finalized design concepts for the alternate solutions that are recommended by Engineer and selected by County to achieve the County's requirements for the Project. The BDR shall include applicable requirements, analyses, and considerations (e.g., codes, design approach for engineering disciplines), conceptual design drawings, sketches and exhibits and design criteria. The BDR shall also include the following:

- a. Survey data, as applicable.
- b. Geotechnical investigation data, as applicable.
- c. Other exploration, testing, and analyses, as applicable.
- d. Identification of discrepancies between data provided by County and that collected by Engineer.
- e. Permitting requirements and approach.
- f. Opinion of probable cost, AACE Class 4, Schematic/Conceptual (accuracy -15% to +50%).
- g. Engineer's updated Project schedule through construction.

### **3. Subtask C - Permitting**

Prepare documents and perform any required activities as may be required by regulatory agencies to obtain all required permits for construction of the Project including but not limited to: Land Disturbance Permits (DeKalb and municipalities), EPD Stream Buffer Variance, U.S. Army Corps of Engineers NWP, GDOT, gas and power company encroachments, etc.

### **4. Subtask D - 30% Design Documents**

After acceptance by County of the BDR, Engineer shall proceed with preparation of the 30% design documents, further enhancing and refining the concepts presented in the BDR.

The 30% Design Documents shall include specifications and drawings developed to 30% completion of final design and shall include at minimum:

- a. Engineer's responses to County comments on the prior deliverable (BDR).
- b. Narrative with updates (as applicable) to BDR content (refer to list of items in section "Basis of Design Report (BDR)") to include detailed descriptions of deviations from the BDR.
- c. Drawings:
  - i. Cover Sheet
  - ii. Index of Drawings (intended list of drawings for completed project)
  - iii. Location and Vicinity Maps
  - iv. Plan and Profile
  - v. List of Abbreviations
  - vi. General Site Layout
- d. List of Specifications including any additional which have not been provided in the County's Guide Specifications
- e. Permitting
  - i. Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable
- f. Quality management and constructability review of documents prior to submission to County
- g. Design calculations: Calculations applicable to 30% deliverable

### **5. Subtask E - 60% Design Documents**

After acceptance by County of the 30% Design Documents, Engineer shall proceed with preparation of the 60% design documents, further enhancing and refining the concepts presented in the 30% Design Documents.

The 60% Design Documents shall include specifications and drawings developed to 60% completion of final design and shall include at minimum:

- a. Engineer's responses to County comments on the prior deliverable (30% Design Documents).

- b. Narrative with updates (as applicable) to BDR content (refer to list of items in section “Basis of Design Report (BDR)”) to include detailed descriptions of deviations from the BDR.
- c. Drawings
  - i. Cover Sheet;
  - ii. Sheet Index;
  - iii. Summary of Quantities
  - iv. Drawing symbols, numbering, symbols, and abbreviations;
  - v. Pipe replacement sizing and material schedules;
  - vi. Surveys (100% complete)
  - vii. Site layouts, alignments, and plan views (60% complete)
  - viii. Sections, profiles, and details (60% complete)
- d. Specifications
  - i. Updated Specifications developed to at least 60% completion including any additional which have not been provided in the County’s Guide Specifications
  - ii. The Exhibit II Guide Specifications provide the minimum requirements for the Project. The Engineer is responsible for updating the Guide Specifications and preparing the final Project Specifications using the CSI format. To expedite the review process, the Engineer shall document and provide to the County all proposed changes to the Guide Specifications for the County to review and approve. The Final Technical Specifications shall not make any generalized blanket references to the County’s Standards and Guide Specifications, or other State or National standards. If any sections of these standards and specifications are to be included by reference, the Project technical Specifications shall cite specific chapters and/or paragraphs of the reference standards.
- e. Permitting
  - i. Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable.
- f. Quality management and constructability review of documents prior to submission to County
- g. Value engineering workshop with County after submission to County
- h. Design calculations: Calculations applicable to 60% deliverable.
- i. The Engineer shall include all necessary geotechnical investigation work for the project after DWM accepts the 30% Design submittals. Note the scope and cost for this work will be proposed by the Engineer, approved by DWM, and be paid for out the “Owner-Controlled Allowance”.

## **6. Subtask F - 90% Design Documents**

After acceptance by County of the 60% Design Documents, Engineer shall proceed with preparation of the 90% design documents, further enhancing and refining the concepts presented in the 60% Design Documents to submit for permit reviews by the Planning and

The 90% Design Documents shall include specifications and drawings developed to 90% completion and shall include at minimum:

- a. Engineer's responses to County comments on the prior deliverable (60% Design Documents)
- b. Narrative with updates (as applicable) to BDR content (refer to list of items in section "Basis of Design Report (BDR)") to include detailed descriptions of deviations from the BDR.
- c. Opinion of probable cost, AACE Class 1, Bid (accuracy -3% to +15%)
- d. Bid instructions, including Bid Form. If provided by County, edit County's Bid instructions for the Project.
- e. Drawings
  - i. Drawings developed to 90% completion, ready to be signed and sealed by a Professional Engineer
  - ii. General – Cover, Index, Summary of Quantities, Location, General Notes
  - iii. Civil – General Notes, Existing Condition Plans, Sewer Main Plan and Profiles, Construction Site Plans, Site Plans, Paving, Grading and Drainage, Standard Details, Landscaping, ES&PC
  - iv. Traffic Control Plan/Maintenance of Traffic – Projects that affect local, County and State roads require a maintenance of traffic (MOT) plan and traffic control plan (TCP) per the requirements of each jurisdiction/agency.
- f. Specifications
  - i. Updated Specifications developed to 90% completion, ready to be signed and sealed by a Professional Engineer
- g. Permitting
  - i. Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable.
  - ii. Confirm that all permitting and regulatory approvals have been obtained and that no outstanding issues prevent the project to be bid
- h. Quality management and constructability review of documents prior to submission to County
- i. Design calculations notebook: Final calculations.

## **7. Subtask G - 100% Design Documents**

After acceptance by County of the 90% Design Documents, Engineer shall proceed with preparation of the 100% design documents that are signed and sealed by a Professional Engineer”.

The 100% Design Documents shall include specifications and drawings developed to 100% completion of final design and shall include at minimum:

- a. Engineer's responses to County comments on the prior deliverable (90% Design Documents)
- b. Engineer's responses to all Permitting agency comments on any prior deliverable
- c. Narrative with updates (as applicable) to BDR content (refer to list of items in

section “Basis of Design Report (BDR)”) to include detailed descriptions of deviations from the BDR.

- d. Updates to 90% opinion of probable cost, as applicable.
- e. Bid instructions, including Bid Form.
- f. Drawings
  - i. Drawings developed to 100% completion, signed and sealed by a Professional Engineer
- g. Specifications
  - i. Specifications developed to 100% completion, signed and sealed by a Professional Engineer
- h. Quality management review of documents prior to submission to County
- i. Design calculations notebook: Updates to final calculations, as applicable.

#### **8. Subtask H – Easement and Land Acquisition Plan**

The Engineer’s Easement and Land Acquisition Plan shall identify all parcels along with areas of easements necessary to perform the work including construction entrances/exits and access roads. The Engineer will also be responsible for development of temporary construction and permanent easement plats and legal descriptions on all affected properties reflecting the final alignment of the trunk sewer for the entire project length. Refer to the County’s Department of Watershed Management Design and Construction Standards located online at [www.dekalbwatershed.com](http://www.dekalbwatershed.com) under the Engineering and Construction Management Services (ECMS) section for information regarding easement requirements. Currently 249 properties are expected to require easement plats and legal descriptions.

The Engineer shall produce a master list of affected properties which identify the following:

- a. Parcel ID and address
- b. Whether the proposed gravity main on each property will utilize same trench replacement or new alignment

The County will procure a separate firm to complete title work and appraisals associated with temporary construction and permanent easement acquisition. The Engineer shall be responsible for any design changes that arise during easement acquisition.

#### **9. Subtask I – Hydraulic Sewer Modeling**

The Engineer is to perform hydraulic calculations (means and methods to be decided by the Engineer) as needed to demonstrate the proposed hydraulic grade line (applying the design peak flows and the specifics of the design; alignment, slopes, pipe sizes etc.) **does not exceed the crown of the proposed pipe segments in accordance with the Consent Decree.**

The Engineer should assume enough hours to perform the following:

- a. Complete the hydraulic design of the proposed interceptor(s) such that the necessary level of confidence in the resulting interceptor design (for the Engineer of Record and the Engineering Firm) is achieved.
- b. Provide DWM with complete digital data sufficient for input into the existing County dynamic model, Info Works ICM (includes but not limit to manhole



coordinates and proposed rim elevations, ground elevations at MHs, pipe lengths, pipe sizes, invert elevations and peak flows used for the Engineer's design). The County or its assigned agent will validate the Engineer's design to ensure the proposed nominal flow capacities match requirements as provided to the Engineer.

- c. Complete any modifications to the Engineer's design needed to adjust design/drawings based on the independent validation by the County.
- d. Upon EPA/EPD approval of the dynamic model, the awarded Engineer will receive the necessary portions of the approved model applicable to this project with specific TM for assumptions and guidelines (after execution of non-disclosure agreement). DWM has provided and will update (as needed) required hydraulic flow for each segment of trunk sewer that will be updated. DWM will check design of awarded Engineer with the dynamic model to ensure required objectives (e.g. HGL not above the crown of the pipe) are achieved.

## **C. Task Two – Bid Phase**

### **1. Subtask A – Bid Phase Services**

Following successful completion of Part One, County may authorize Engineer to proceed with Part Two of the Project. Engineer shall prepare Contract Bid Documents and furnish professional services to assist County with the bidding of the design for construction, including the following tasks:

- a. County shall coordinate production and selling of bid documents.
- b. County shall maintain list of plan holders.
- c. County shall prepare agenda, conduct, and take meeting minutes at pre-bid conference. Engineer shall attend, assist with presentation of scope and answer questions at pre-bid conference.
- d. Engineer shall assist County with bidder's visit to the Site.
- e. Engineer shall furnish County with responses to questions involving the interpretation of the Contract Documents during the bidding period.
- f. County shall prepare, issue, and distribute addenda to all prospective bidders.
- g. One person from Engineer shall attend bid opening.
- h. Engineer shall assist County with evaluation of Bids, "or equals", substitute materials and equipment, subcontractors, suppliers, other individuals, and entities proposed by prospective General Contractors and include written report of evaluation.

#### ***Contract Bid Documents***

After acceptance by County of the 100% Design Documents, Engineer shall proceed with preparation of the Contract Bid Documents that are signed and sealed by a Professional Engineer for competitive bidding and building by General Contractors. It is anticipated that the Contract Bid Documents are identical to the 100% Design Documents except for revisions that may be required by County or permitting or regulatory agencies.

The Contract Bid Documents shall include specifications and drawings developed to 100% completion of final design and shall include at minimum:

- a. Engineer's responses to County, permitting and regulatory agency comments on the 100% Design Documents
- b. Narrative with updates (as applicable) to BDR content (refer to list of items in section "Basis of Design Report (BDR)") to include detailed descriptions of deviations from the BDR.
- c. Updates to 100% opinion of probable cost, as applicable.
- d. Bid instructions, including Bid Form.
- e. Drawings
  - i. Drawings developed to 100% completion, signed and sealed by a Professional Engineer
- f. Specifications
  - i. Specifications developed to 100% completion, signed and sealed by a Professional Engineer
- g. Permitting
  - i. Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable.
- h. Quality management review of documents prior to submission to County
- i. Design calculations: Updates to final calculations, as applicable.

## **2. Subtask B – Conformed Documents**

After completion of the Bid period and when directed by the County, Engineer shall prepare Conformed Documents that are to be signed and sealed by a Professional Engineer. It is anticipated that the Conformed Documents are identical to the Contract Bid Documents with the integration of design revisions issued to Bidding General Contractors during the Bid Period. The revisions shall be clearly noted as "conformed" drawing and specification changes.

## **D. Task Three – Construction and Post-Construction Phase**

Following successful completion of Part Two, County may authorize Engineer to proceed with Part Three of the Project. Engineer shall furnish professional services to assist County with all engineering services during the Project construction, including the following tasks.

### **1. Subtask A – General Administration of Construction Contract**

If the Project involves more than one prime contract, then Part Three-Construction Phase services may be rendered at different times in respect to separate contracts. Engineer's response to the RFP shall be based on a single construction contract for the Project.

Consult with County and act as County's representative as provided in the Contract Documents. The extent and limitations of the duties, responsibilities, and authority of Engineer as assigned in the Contract Documents shall not be modified, except as Engineer may otherwise agree in writing. All of Engineer's and County's instructions to General Contractor will be issued through Construction Manager, which shall have authority to act on behalf of County in dealings with General Contractor.

### **2. Subtask B – Pre-Construction Conference**

Participate in a Pre-Construction Conference prior to Commencement of General

**3. Subtask C – Schedules**

Receive, review, and determine the acceptability of General Contractor's initial schedule submissions, including the Progress Schedule, the Schedule of Submittals and the Schedule of Values. Construction Manager will be responsible for review of the General Contractor's monthly construction schedule submissions. Upon request by County on an intermittent basis, Engineer shall receive, review, and determine the acceptability of additional General Contractor's schedule submissions.

**4. Subtask D – Baselines and Benchmarks**

Upon request by County, establish baselines and benchmarks for locating General Contractor's Work which in Engineer's judgment are necessary to enable General Contractor to proceed.

**5. Subtask E – Visits to Site and Observation of Construction**

In connection with observations of General Contractor's Work while it is in progress:

- a. Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer deems necessary, to observe as an experienced and qualified design professional the progress of General Contractor's executed Work. Such visits and observations by Engineer are not intended to be exhaustive or to extend to every aspect of General Contractor's Work in progress or to involve detailed inspections of General Contractor's Work in progress beyond the responsibilities specifically assigned to Engineer in its contract with County and the Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment. Based on information obtained during such visits and observations, Engineer will determine in general if the Work is proceeding in accordance with the Contract Documents, and Engineer shall keep County informed, in writing, of the progress of the Work to guard County against omissions, substitutions, defects and deficiencies noted in the Work of the Contractor.
- b. The purpose of Engineer's visits to the Site will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for County a greater degree of confidence that the completed Work will conform in general to the Contract Documents and that General Contractor has implemented and maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents. Engineer shall not, during such visits or as a result of such observations of General Contractor's Work in progress, supervise, direct or have control over General Contractor's Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by General Contractor, for security or safety at the Site, for safety precautions and programs

incident to General Contractor's Work, nor for any failure of General Contractor to comply with Laws and Regulations applicable to General Contractor's furnishing and performing the Work. Accordingly, Engineer neither guarantees the performance of any General Contractor nor assumes responsibility for any General Contractor's failure to furnish or perform the Work in accordance with the Contract Documents.

- c. Furnish Engineer site visits for 1 full day per week throughout construction of the Project. Engineer's days at the Site shall be agreed upon with County, some weeks with less than 1 day at the Site and some weeks with more than 1 day at the Site with average 1 day per week at the Site, and at least one day every two weeks shall coincide with General Contractor's weekly, monthly and special meetings so that Engineer may attend meetings.

#### **6. Subtask F – Defective Work**

Reject Work if, on the basis of Engineer's observations, Engineer believes that such Work (a) does not conform or is defective under the standards set forth in the Contract Documents, (b) will not produce a completed Project that conforms to the Contract Documents, or (c) will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. In the event of a conflict of opinion between Construction Manager and Engineer as to any matter in which both Construction Manager and Engineer are to provide opinions, the opinion of Engineer shall control.

#### **7. Subtask G – Clarifications and Interpretations**

Issue necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of General Contractor's Work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents.

#### **8. Subtask H – Field Orders and Change Orders**

Review and recommend field orders and change orders to County based on recommendation and analysis provided by Construction Manager.

#### **9. Subtask I – Shop Drawings and Samples**

Review and take appropriate action in respect to Shop Drawings and Samples and other data which General Contractor is required to submit, but only for conformance with the information given in the Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Engineer shall meet General Contractor's submittal schedule that Engineer has accepted.

**10. Subtask J – Substitutes and “or-equal”**

Evaluate and determine the acceptability of substitute or “or-equal” materials and equipment proposed by General Contractor.

**11. Subtask K – Inspections and Tests**

Require such special inspections or tests of General Contractor’s Work as deemed reasonably necessary, and receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Contract Documents. Engineer’s review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Contract Documents. Engineer shall be entitled to rely on the results of such tests. Payment for testing shall not be in Engineer’s scope if it is required to be provided by the General Contractor in the Contract Documents.

**12. Subtask L – Disagreements between County and General Contractor**

Render formal written decisions on all duly submitted issues relating to the acceptability of General Contractor’s Work or the interpretation of the requirements of the Contract Documents pertaining to the execution, performance, or progress of General Contractor’s Work; review each duly submitted Claim by County or General Contractor, and in writing either deny such Claim in whole or in part, approve such Claim. In rendering such decisions, Engineer shall be fair and not show partiality to County or General Contractor or Engineer.

**13. Subtask M – Project Checkout, Testing, Start-up and Commissioning**

Engineer to perform the following:

- a. Testing Services: Observe and document, as required by Engineer in the Contract Documents field and performance testing.
- b. Final Job Walk: Upon completion of all retesting, conduct a final Project walk to verify completion of all punch list items.
- c. Record Drawings: Verify General Contractor’s Record Drawings through periodic (e.g., monthly) submission by General Contractor and final submission.

**14. Subtask N – General Contractor’s Completion Documents**

Receive, review and transmit to County schedules, guarantees, bonds, certificates or other evidence of insurance required by the Contract Documents, certificates of inspection, tests and approvals, Shop Drawings, Samples and other data approved and review and transmit the annotated record documents which are to be assembled by General Contractor in accordance with the Contract Documents to obtain final payment.

**15. Subtask O – Substantial Completion**

Promptly after notice from General Contractor that General Contractor considers the entire

Work ready for its intended use, in company with County and General Contractor, visit the Project to determine if the Work is substantially complete. If after considering any objections of County, Engineer considers the Work substantially complete, Engineer shall deliver a certificate of Substantial Completion to County and General Contractor.

**16. Subtask P – Final Notice of Acceptability of the Work**

Conduct a final visit to the Project to determine if the completed Work of General Contractor is acceptable so that Engineer may recommend, in writing, final payment to General Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a notice that the Work is acceptable (subject to the provisions herein) to the best of Engineer's knowledge, information and belief and based on the extent of the services provided by Engineer under this Agreement.

If required, provide a letter to DeKalb Department of Planning and Sustainability certifying construction is completed in accordance with the Contract Documents. This letter will be based on the documents provided by Construction Manager and General Contractor, and Engineer's knowledge based on extent of services provided. This assumes adequate documentation of construction is provided by Construction Manager and General Contractor. If Engineer believes adequate documentation of construction is not being provided by Construction Manager or General Contractor to certify construction completion, Engineer shall report this to County so that adequate documentation can be obtained at the time in which it is required.

**17. Subtask O – Post-Construction Phase**

Following successful completion of construction, County may authorize Engineer to proceed with the Post Construction phase of the Project. Upon request by County, and up to the Not-to-Exceed budgeted limit listed on the Cost Proposal Form for a duration not to exceed 1 year following the General Contractor's warranty period, Engineer shall furnish professional services to assist County with post-construction services, including the following tasks:

- a. Together with County, and on an as-needed basis, visit the Project to observe any apparent defects in the Work, assisting County in consultations and discussions with the General Contractor concerning correction of any such defects, and make recommendations as to replacement or correction of defective Work, as applicable.
- b. Together with County, visit the Project within one month before the end of the General Contractor's warranty period to ascertain whether any portion of the Work is subject to correction.
- c. Assist and advise County staff on the operations and maintenance of facilities installed as part of the Project.



**III. List of Minimum Regulatory Standards**

Engineer must comply with all Local, State and Federal Regulations including, but not limited to, the following Specifications and Standards:

Item	Title	Edition
1	Department of Watershed Management Design Standards, Potable Water Main, Gravity Sanitary Sewer, and Sanitary Sewer and Force Main Design Standards	Latest Edition
2	Guide Specifications Excerpt Technical Specifications Table of Content	Attached
3	The Georgia Manual for Erosion and Sedimentation Control	Latest Edition
4	Federal Highway Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)	Latest Edition
5	ASTM International Standards formerly known as American Society for Testing and Materials (ASTM)	Latest Edition
6	American Water Works Association (AWWA)	Latest Edition
7	The American Association of State Highway and Transportation Officials (hereinafter AASHTO)	Latest Edition
8	National Sanitation Foundation (NSF)	Latest Edition
9	American Concrete Institute (ACI)	Latest Edition
10	29 Code of Federal Regulations (CFR) 1910	Latest Edition
11	29 Code of Federal Regulation 1926	Latest Edition
12	American National Standards Institute (ANSI)	Latest Edition
13	Codes adopted and enforced by DeKalb County	Latest Edition
14	Georgia Environmental Finance Authority (GEFA)	Latest Edition
15	Water Infrastructure Finance and Innovation Act (WIFIA)	Latest Edition

Note that the bidding and construction efforts on behalf of Dekalb County will need to be WIFIA and GEFA compliant.

**END OF EXHIBIT I**