

(Revised November 22, 2022)

ATTACHMENT A

SCOPE OF WORK

General

Engineer shall furnish all Professional Engineering services to implement the Project for Phase 3A facilities in five tasks with four parts with durations listed below using the design-bid-build delivery method.

- 0. Task 0 – Project Management:** Engineer shall provide Project coordination and management for the activities performed during Project.
 - a. Duration: Entire Project.
- 1. Task 1 - Part One – Design:** Prepare, submit for review and comment, and present at meetings with County for each milestone deliverable: PDR(s) with evaluation of alternatives, BODR detailing selected alternatives, DDR for submission to regulatory agency, and design documents at 30, 60, 90 and 100 percent completion milestones, along with permit applications and supporting documentation to obtain all permits.
 - a. Duration: 18 months.
- 2. Task 2 - Part Two – Bid Phase:** Engineering services during the Bid phase of the project, including production of Bid and Conformed Contract Documents.
 - a. Duration: 9 months.
- 3. Task 3 – Part Three - Construction:** Engineering services during Construction.
 - a. Duration: 36 months.
- 4. Task 4 - Part Four – Post-Construction:** Post-Construction engineering services.
 - a. Duration: 24 months (12 months General Contractor’s warranty period plus 12 additional months).

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: process, hydraulic, surveying, geotechnical, erosion and sediment control (E&SC), civil, demolition and preservation, landscape architecture, architectural, structural, mechanical, heating, ventilating and air conditioning, plumbing, fire protection, instrumentation, electrical, cost estimating, scheduling, environmental, health and safety, permitting, 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. Reuse of documents by County on a different site shall be at County's risk.

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 2 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 **Attachment A**).

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 2 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 2 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 2 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.

Reference Documents are listed in **Section I.A Background** and provided in **Exhibit 1 Reference Documents**. 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 2 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. 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, including travel costs for two (2) County personnel, associated with field visits outside of the metro-Atlanta area related to equipment evaluation, selection, or testing during design and construction. Engineer may delegate coverage of travel costs during construction to the General Contractor in the specifications.

Description of Phase 3A Facilities

Influent Pump Station (IPS)

To improve communications, terminology for the existing influent lift station "ILS" is distinguished from the replacement "IPS" included in the Project.

The IPS shall be a dual "trench-type wet well" (self-cleaning) style as defined in the Hydraulic Institute Standards.

Submit PDR to include evaluation of minimum three complete system IPS alternatives. Alternative evaluation is subject to approval of County and may include: odor control selection, coarse screen and screenings handling equipment selection (e.g., screen type, screw/belt conveyors, sluicing, washing and compaction equipment, container storage and spares with traffic flow logistics); pump type selection (e.g., dry well, submersible, column type); quantity of pumps in each wet well addressing redundancy and future flows.

Engineer's design will integrate existing piping with the new IPS. Engineer shall perform a hydraulic transient analysis, recommending mitigation measures if required, to ensure that all possible system pressures/vacuum conditions are within existing and new system component

ratings. Vacuum conditions could occur, for example, in the event of a power outage while pumping.

Engineer shall conduct a physical model study of the IPS to evaluate hydraulic conditions and to develop recommended modifications to remediate adverse hydraulic phenomena that could impact pump performance.

Engineer's design shall incorporate wastewater influent flow measurement and automated/refrigerated sampling, and separate flow measurement/sampling of side-streams that return to the IPS.

Note that Engineer's response to the RFP shall consider that Engineer shall complete the Project (including evaluation of alternatives, followed by design, permitting and engineering services during construction) with replacing the existing ILS with a new IPS that includes odor control, coarse screens prior to influent pumping and associated screenings handling equipment, and flow measurement/sampling equipment.

WAS Handling

Existing (nominal 1983) WAS handling facilities remain in use after Phase 2 construction is complete. These facilities are aging and include: sludge blend tank, gravity thickeners, conditioned sludge tank, associated pumps, piping, instrumentation and electrical.

Engineer shall perform a condition assessment and capacity evaluation of the existing WAS handling facilities and evaluate, at minimum, the following three alternatives:

1. "No Action" Alternative with Minor Refurbishment: existing facilities to remain in operation with little or no refurbishment (e.g., minor instrument additions/modifications to enhance operation, replacement of a few major equipment items like pumps).
2. Major Refurbishment: existing facilities to remain in operation with major refurbishment (e.g., complete overhaul of tanks, replacement of multiple major equipment items).
3. Replacement: build replacement process, addressing redundancy and future flows. Submit PDR to include evaluation of minimum three complete WAS handling system alternatives. Alternative evaluation is subject to approval of County and may include: odor control selection, sludge thickening, sludge blending, thickened sludge storage, blended/thickened sludge pump type selection (e.g., progressive cavity, rotary lobe), equipment quantities addressing redundancy and future flows. Note that Engineer's response to the RFP shall consider that Engineer shall complete the Project (including evaluation of alternatives, followed by design, permitting and engineering services during construction) with replacement of WAS handling as the selected alternative.

Dewatering Improvements

Four (4) centrifuges are installed as part of Phase 2. It is expected that dewatered cake from the centrifuges will have a higher water content than the cake produced from the existing (nominal 1983) sludge dewatering system that includes plate and frame type filter presses. It is important to have dewatered cake with as low a water content as possible to reduce transportation costs, to have a cake quality that is acceptable by the landfill and to reduce landfill volume. Dewatered cake is stored overnight, over the weekends and on holidays in open-top trucks that are subject to adding water to the cake via weather precipitation.

Submit PDR to include evaluation of minimum three complete system alternatives for sludge stabilization and dewatering improvements to reduce quantity and improve quality of sludge that goes to landfill or future beneficial use options. Alternative evaluation is subject to approval by County and may include: anaerobic digesters or other sludge stabilization methods, sludge dryers (succeeding or integral to the centrifuge dewatering process), dewatered sludge cake conveyance, storage and sludge loadout facilities, including odor control (e.g., storage silos, screw/belt conveyors, sludge pumping); equipment quantities addressing redundancy and future flows and weekend/holiday/extraordinary conditions for sludge storage capacity.

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:

- Assign and supervise staff, including reassigning staff from Project if requested by County.
- Adequately manage and adhere to the Project Part, Task and Subtask Not-to-Exceed budgets.
- Submit deliverables to County on time and in accordance with the contract requirements.
- Coordinate and communicate with County in a timely and professional manner.
- For each meeting related to the Project (with exception of Progress Meetings specifically assigned to the Construction Manager during construction), Engineer shall be responsible for preparation of Agenda and distribution 7 days in advance of meeting, taking meeting minutes during the meeting and distribution of meeting minutes no later than 7 calendar days following the meeting.

Subtask A - Project Initiation

Engineer shall:

1. 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 written Notice to Proceed.
2. Schedule and facilitate a Project Kickoff Meeting with County within 21 calendar days following written Notice to Proceed. 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 7 calendar days prior to Project Kickoff Meeting.
 3. 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.

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.

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.

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:

1. 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.
2. Provide checklists and quality management guidance documents for performance of the Project.
3. Require all Engineer Project personnel to read the approved Project Execution Plan and be familiar with the Project procedures and requirements.

4. 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.
5. 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.
6. 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.
7. 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.

Subtask E - Schedule Management

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

1. All schedules shall be prepared using scheduling software approved for use by County.
2. Schedules shall be submitted as electronic files (native and Adobe Acrobat PDF format) and hardcopy and shall be updated monthly to show progress.
3. 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 and Part Four Project activities. An updated detailed schedule for Part Three and Part Four 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:
 - Start date for each activity;
 - Finish date for each activity;

- Major milestones;
 - Meeting and workshop dates;
 - Submittal dates including submission dates for each deliverable, County review periods, submission of responses to County review comments and final submission dates;
 - 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.
4. 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.
 5. General milestone schedule for each deliverable shall be as follows:
 - a. Each draft deliverable shall be submitted to County in two hardcopies and six (6) electronic copies on separate devices. Each final deliverable shall be submitted to County in six (6) hardcopies and six (6) electronic copies on separate devices. Electronic copies shall be .pdf format and final deliverables also shall include MSWord and AutoCAD formats.
 - b. Submit to County the draft deliverable and agenda for meeting to review draft deliverable no later than 7 calendar days prior to the meeting.
 - c. Hold meeting to review draft deliverable.
 - d. Submit to County the meeting minutes for draft deliverable review meeting no later than 7 calendar days following the meeting.
 - e. County comments on the draft deliverable shall be delivered to Engineer within 14 calendar days following the deliverable review meeting.
 - f. 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.
 6. 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.
 7. 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.

Subtask F - Work Management System

1. 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.

2. 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.
3. Engineer and County will coordinate with Construction Manager and General Contractor to evaluate and select the PMIS to be utilized during Part Three and Part Four Project activities.

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:

1. Administration
 - Respond and prepare correspondences to County and third-party Construction Manager.
 - Update Project Management Plan.
2. Document Control
 - Utilizing software mutually agreed upon by County, Engineer, Construction Manager and General Contractor (e.g., Primavera Contract Manager), Engineer

shall collaborate with Construction Manager to carry out the following construction document processes:

- Requests for Information (RFIs)
- Submittals/Shop Drawings/Sample Review
- Design Change Notices (DCNs)
- Change Orders
- Other mutually agreed upon construction documents

Task 1 – Part One: Design

Engineer shall submit for review and comment, and present at meetings with County for each milestone deliverable: Recommended alternatives to evaluate to prepare PDR(s); PDR(s) with evaluation of alternatives, BODR, DDR, Environmental Information Document (EID), 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 PDR(s) and BODR and provide updates for subsequent milestone deliverables:

1. 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.
2. Evaluate the constraints of the project site and associated supporting infrastructure (e.g., yard piping, power, ductbank/conduit capacity, SCADA, roads and utilities) that interface with the Phase 3A facilities to determine if they are adequate to service the Phase 3A facilities, and if found lacking, Engineer's recommendations to address the identified issues.
3. Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve permits required for construction of the Project.
4. Evaluate the Project reference documents, including but not limited to the **County's Standards, Exhibit 1 Reference Documents** and **Exhibit 2 Guide Specifications**, project specific assessment data, and, recommend to County design features, alternatives and options that would benefit the Project.
5. County has sole right to select its preferred Project approach.

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 Not-to-Exceed budgeted limit listed on the Project Fee 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:

1. Topographic and sub-surface surveys and geotechnical services as determined necessary by Engineer to confirm the suitability of the proposed design.

2. 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, odor control testing as deemed necessary by Engineer.
3. Physical Model Study: Physical model study of the IPS performed by County-approved laboratory specializing in physical hydraulic models (e.g., Clemson Engineering Hydraulics or equivalent).
4. Permit Fees: Engineer to pay permitting fees to authorities having jurisdiction.

Subtask B - Preliminary Design Report(s) (PDRs)

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 PDR(s) for each of the three (3) Project elements (i.e., 1.) a replacement influent pump station (IPS); 2.) replacement of waste activated (WAS) sludge handling facilities that remain in use after Phase 2 construction is complete; and, 3.) evaluation only of potential improvements to reduce quantity and improve quality of sludge, including sludge from proposed new primary clarifiers, that goes to landfill). Engineer may request, and County may or may not grant, approval to separately submit draft PDR(s) for each Project element. In any case, the final PDR 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, as well life span and 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%). Evaluation of alternatives shall be in the form of a business case evaluation including capital, O&M, and life cycle costs in net present worth analysis. Non-economic factors shall also be considered, such as complexity, operability, and flexibility for expansion and/or changes in the regulatory framework.

Subtask C - Basis of Design Report (BODR)

Submit a Basis of Design Report (BODR) 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 BODR shall include applicable requirements, analyses and considerations (e.g., codes, design approach for engineering disciplines), conceptual design drawings (including process flow diagrams and electrical load), sketches and exhibits and design criteria (e.g., equipment capacity, performance, horsepower, quantity, redundancy). The BODR shall also include the following:

1. Survey data, as applicable.
2. Geotechnical investigation data, as applicable.
3. Other exploration, testing, and analyses, as applicable.
4. Identification of discrepancies between data provided by County and that collected by Engineer.
5. Permitting requirements and approach.

6. Opinion of probable cost, AACE Class 4, Schematic/Conceptual (accuracy -15% to +50%).
7. Engineer's updated Project schedule through construction.

Subtask D - Permitting

After acceptance by County of the BODR, Engineer shall proceed with preparation of the Design Development Report (DDR) to be submitted to regulatory agencies. The DDR shall be accompanied by an EID, as required, and published for 30-day public comment. Assist County with holding a public meeting and public hearing including the preparation of associated documents and tabulation of public comments.

Prepare documents and perform other permitting activities as may be required by regulatory agencies.

Subtask E - 30% Design Documents

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

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

- Engineer's responses to County comments on the prior deliverable (BODR/DDR).
- Narrative with updates (as applicable) to BODR/DDR content (refer to list of items in section "Basis of Design Report (BODR)") to include detailed descriptions of deviations from the BODR/DDR.
- Drawings:
 - Cover Sheet
 - Index of Drawings (intended list of drawings for completed project)
 - Location and Vicinity Maps
 - Hydraulic Profile: separate Project and future, as applicable
 - Flow and Mass Balance
 - List of Abbreviations
 - General Site Layout
 - Layout drawings for each facility
 - Start of drawings for each engineering discipline
- List of Specifications
- Permitting
 - Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable.
- Quality management and constructability review of documents prior to submission to County
- Design calculations: Calculations applicable to 30% deliverable.

Subtask F - 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:

- Engineer's responses to County comments on the prior deliverable (30% Design Documents).
- Narrative with updates (as applicable) to BODR/DDR content (refer to list of items in section "Basis of Design Report (BODR)") to include detailed descriptions of deviations from the BODR/DDR.
- Opinion of probable cost, AACE Class 2, Construction Documents (accuracy -5% to +20%)
- Drawings
 - Drawings developed to at least 60% completion
- Specifications
 - Specifications developed to at least 60% completion
- Permitting
 - Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable.
- Quality management and constructability review of documents prior to submission to County
- Value engineering workshop with County after submission to County
- Design calculations: Calculations applicable to 60% deliverable.

Subtask G - 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.

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

- Engineer's responses to County comments on the prior deliverable (60% Design Documents)
- Narrative with updates (as applicable) to BODR/DDR content (refer to list of items in section "Basis of Design Report (BODR)") to include detailed descriptions of deviations from the BODR/DDR.
- Updates to 60% opinion of probable cost to AACE Class 1, Bid (accuracy -3% to +15%)
- Bid instructions, including Bid Form. If provided by County, edit County's Bid instructions for the Project.
- Drawings
 - Drawings developed to 90% completion, ready to be signed and sealed by a Professional Engineer
- Specifications

- Specifications developed to 90% completion, ready to be signed and sealed by a Professional Engineer
- Permitting
 - Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable.
- Quality management and constructability review of documents prior to submission to County
- Design calculations: Final calculations.

Subtask H - 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, but labeled “NOT FOR CONSTRUCTION”, to submit for permit reviews by the Planning and Sustainability Department and required regulatory agencies such as the Georgia EPD.

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

- Engineer’s responses to County comments on the prior deliverable (90% Design Documents)
- Narrative with updates (as applicable) to BODR/DDR content (refer to list of items in section “Basis of Design Report (BODR)”) to include detailed descriptions of deviations from the BODR/DDR.
- Updates to 90% opinion of probable cost to AACE Class 1, Bid (accuracy -3% to +15%), as applicable.
- Bid instructions, including Bid Form.
- Drawings
 - Drawings developed to 100% completion, signed and sealed by a Professional Engineer
- Specifications
 - Specifications developed to 100% completion, signed and sealed by a Professional Engineer
- Permitting
 - Preparation of documents to support permitting and permitting submittals and meetings with regulatory agencies, as applicable.
 - Confirm that all permitting and regulatory approvals have been obtained and that no outstanding issues prevent the project to be bid.
- Quality management review of documents prior to submission to County
- Design calculations: Updates to final calculations, as applicable.

Task Two - Part Two: Bid Phase

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:

- County shall coordinate production and selling of bid documents.
- County shall maintain list of plan holders.
- 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.
- Engineer shall assist County with bidder's visit to the Site.
- Engineer shall furnish County with responses to questions involving the interpretation of the Contract Documents during the bidding period.
- County shall prepare, issue and distribute addenda to all prospective bidders.
- One person from Engineer shall attend bid opening.
- 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:

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

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.

Task Three - Part Three: 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.

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.

Subtask B – Pre-Construction Conference

Participate in a Pre-Construction Conference prior to Commencement of General Contractor’s Work at the Site.

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.

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.

Subtask E – Visits to Site and Observation of Construction

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

1. 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.
2. 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.
3. Furnish Engineer site visits for 2 full days per week throughout construction of the Project. Engineer's days at the Site shall be agreed upon with County, some weeks with less than 2 days at the Site and some weeks with more than 2 days at the Site with average 2 days per week at the Site, and at least one day per week shall coincide with General Contractor's weekly, monthly and special meetings so that Engineer may attend meetings.

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.

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.

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.

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.

Subtask J – Substitutes and “or-equal”

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

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.

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, or decline to resolve such Claim if Engineer in its discretion concludes that to do so would be inappropriate. In rendering such decisions, Engineer shall be fair

and not show partiality to County or General Contractor or Engineer.

Subtask M – Applications for Payment

Based on Engineer's observations as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation in consultation with Construction Manager:

1. Determine the amounts that Engineer recommends General Contractor be paid. Such recommendations of payment will be in writing and will constitute Engineer's representation to County, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, General Contractor's Work has progressed to the point indicated, the Work is generally in accordance with the Contract Documents, and the conditions precedent to General Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe General Contractor's Work. In the case of unit price work, Engineer's recommendations of payment will include final determinations of quantities and classifications of General Contractor's Work (subject to subsequent adjustments allowed by the Contract Documents).
2. Engineer's determination of recommended payment amounts may be based, in part, on information supplied by Construction Manager. Engineer can rely on the accuracy of Construction Manager's information when making recommendation for payment.

Subtask N – Project Checkout, Testing, Start-up and Commissioning

Engineer to perform the following:

1. Additional On-Site Personnel: In addition to weekly Engineer site visits and as requested by County, approximately 6 months prior to Project Substantial Completion, provide at the Site one (1) full-time (40 hours per week) and one part-time (24 hours per week) Engineers of varying discipline specialties based on changing needs of the Project as Project Start-Up and Commissioning approaches. Engineer on-Site personnel are to facilitate Engineer responsiveness, witness ongoing construction, and provide Engineer witness of testing at the Site.
2. Equipment/Product List: Review and verify the final Equipment/Product List provided by the General Contractor identifying all the major equipment, products installed, spare parts and special tools, with the name of manufacturer, trade name and model number to facilitate ongoing construction and to assist the plant staff with populating the plant's asset management database.
3. Testing, Checkout and Start-Up Services: Observe and document, as required by Engineer in the Contract Documents, equipment and product installation, equipment verification, system demonstration, operational checks, functional testing, field and performance testing.

4. Pre-Start-up Conference: Actively participate in the General Contractor's pre-start-up conference along with County, Construction Manager, plant operations staff and other relevant stakeholders to review and discuss the Start-up and demonstration scope requirements. Identify facilities requirements, identify the commissioning teams and responsibilities and the scheduling of the next steps. Review the General Contractor's supplied agenda and submittals as required by Engineer in the Contract Documents. Review and comment on:
 - Qualifications of the General Contractor's proposed Start-up Manager
 - Pre-Conference Agenda provided by the General Contractor
 - Meeting Minutes and guideline notes
 - Preliminary commissioning team organization chart
 - Startup and Demonstration Schedule
 - Initial Check-out Plan Review

5. Review Vendor(s) Provided Data: Review final manufacturers and vendors Shop Testing reports, Physical Checkout reports, Field Testing reports, certifications, guarantees, warranties, data sheets, recommended preventative and corrective maintenance protocols and spare parts lists. Verify that required certificates of proper installation are completed, signed and dated by the manufacturer's service representative. Review Plant Assets List including: "Tag#", "Description" and "Location Detail" in list compiled by General Contractor during construction phase.

6. Operations and Maintenance Manual: Update the plant's facility O&M Manual to integrate the Project with the existing facilities, to facilitate plant operations and to meet GA EPD requirements. Present O&M Manual to train plant operations staff on the Project facilities. Updates to the plant's facility O&M manual shall include a plant overview, unit processes, electrical power distribution, SCADA systems, and buildings and support systems installed as the Project. Plant operators will refer to existing plant's facility O&M Manual for existing operations and maintenance that does not change. Unit process data shall provide:
 - Format same as existing plant facility O&M Manual, including .pdf version of the O&M Manual shall provide links to supporting documents (Vendor O&M manuals, detailed preventative maintenance tasks and schedules, record drawings and specifications).
 - Detailed design data
 - Equipment list with operating characteristics
 - Process description
 - Process flow diagram
 - Process control philosophy and control strategies
 - Initial operating parameters, set points and range
 - Standard operating procedures for operations
 - Start-up, shutdown, and bypass procedures

- Description of alarms, interlocks, and recommended responses
 - Process troubleshooting.
 - Revisions based on operations during the commissioning process.
7. Pre-Checkout Facility Walk: When requested by County at a time intended to be after the General Contractor and Construction Manager have corrected all known issues, conduct a complete facility walk through to identify punch-list items and confirm non-conformance and deficiencies have been addressed.
 8. Check-out and Start-up Plans Oversight: Review General Contractor's Functional Testing, Check-out and Start-Up Plans along with proposed Pass/Fail criteria for testing, Checklists and Logs; verify that manufacturer(s) pre-start and start-up checks are incorporated into the checklists; review the calibration certificates of special testing equipment and source of the testing media (Water, Sewage, Power, etc.) along with any interim temporary connections and/or disposal points; review and verify safety, bypass, discharge points, shutdown and emergency procedures; and review equipment check-lists, calibration sheets, forms, support and temporary equipment, and the necessary interfaces.
 9. Dry Inspection and Initial System Tests: Witness, including to confirm test adequacy and test pass/fail, Dry inspection and initial tests of equipment installed to demonstrate readiness for wet commissioning. Tests shall include operating the components through each of the written sequences of operation, and verification of proper interconnection and integration to other systems as required. Review updated Commissioning Log with any testing items that pass or do not pass Contract Requirements.
 10. Unit Checkout and Functional Testing: Witness, including to confirm test adequacy and test pass/fail, stand-alone Unit Testing and Functional Testing conducted by the General Contractor's start-up team. One retest of each Unit Checkout and Functional Test will be provided as part of normal checkout. Additional retests beyond one retest will be considered additional and outside the normal scope of Engineer's work.
 11. Operator Training: Attend key equipment training classes to perform spot checks to ensure adequacy of training, and consistency with the O&M manual. Review training manuals, lesson plans, handouts and reference materials provided by General Contractor for each training session. Following operator training, follow-up with plant operational staff, General Contractor and specialty equipment manufacturers that hands-on field training for the Project has been completed.
 12. Performance Testing and 30-Day Operating Test: Witness, including to confirm test adequacy and test pass/fail, the performance testing and 30-day operating test period to verify performance metrics and validate operation. Performance testing may run concurrent with or separate from the 30-Day Operating Test and shall be as required to comply with the specified process performance test durations in the equipment specifications. Provide Letter of Recommendation for acceptance of equipment and/or Systems.

13. Retesting of Major Systems: Witness retesting as necessary. One retest of each major system will be provided as part of normal checkout. Additional retests beyond one retest will be considered additional and outside the normal scope of Engineer's work.
14. Final Job Walk: Upon completion of all retesting, conduct a final Project walk to verify completion of all punch list items.
15. Record Drawings: Verify General Contractor's Record Drawings through periodic (e.g., monthly) submission by General Contractor and final submission.

Subtask O – General Contractor's Completion Documents

Receive, review and transmit to County maintenance and operating instructions, 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.

Subtask P – 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.

Subtask Q – 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.

Provide letter to Georgia Environmental Protection Division certifying construction is completed in accordance with the DDR and Contract Documents. If required, provide a letter to DeKalb Department of Planning and Sustainability certifying construction is completed in accordance with the Contract Documents. These letters shall be provided so that a Certificate of Occupancy and use of facilities will be issued by regulatory agencies. These letters 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.

Task 4 – Part Four: Post-Construction Phase

Following successful completion of Part Three, County may authorize Engineer to proceed with Part Four of the Project. Upon request by County, and up to the Not-to-Exceed budgeted limit listed on the Project Fee 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:

- 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.
- 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.
- Assist and advise County staff on the operations and maintenance of facilities installed as part of the Project.

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	Technical Specifications (included)	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	National Fire Protection Association (NFPA)	Latest Edition
13	American National Standards Institute (ANSI)	Latest Edition
14	Codes adopted and enforced by DeKalb County	Latest Edition

SPECIAL CONDITIONS

A. The Contractor shall comply with the following Special Conditions:

1. ***Work Coordination*** - It shall be Engineer's responsibility to coordinate his work with any work to be performed by the Owner or others that could impact the design to allow for the completion of the project without undue delay.
2. ***Personal Protective Equipment (P.P.E.)*** - Engineer shall wear all appropriate P.P.E. at all times when working on the job site.
3. ***Payment Applications*** - Contractor and County staff shall review payment items with monthly payment application submittal.

END OF ATTACHMENT A