

SCOPE OF SERVICES FOR THE STATE STORMWATER ASSESSMENT PROGRAM

When the DEPARTMENT programs a construction or maintenance project on one of the State's roadways, it often finds that the Stormwater Drainage System serving that section of roadway is in need of repair and/or maintenance. The DEPARTMENT intends to routinely effect such repairs and/or maintenance activities in conjunction with any programmed project. The purpose of this program is to locate and evaluate the various structures and pipelines comprising the targeted stormwater system and to make recommendations to the DEPARTMENT for repair and maintenance. Another purpose is to provide stormwater system description and location information in a format suitable for entry into the DEPARTMENT'S existing Geographical Information System (GIS).

The CONSULTANT shall employ qualified, competent, and experienced personnel to provide the services set forth herein. Such services shall be commensurate with both the prevalent methodologies used by Consultants practicing within subject area of work and with the magnitude and intricacy of the work under consideration. The CONSULTANT shall perform engineering services which will result in accurately identifying the stormwater information needed for any programmed project, and for acquiring and managing that information during the development of said projects. These services should conform to standards and guidelines as described in Federal Highway Administration (FHWA), National Association of Sewer Service Companies (NASSCO), Water Research Centre (WRc), and American Society of Civil Engineers (ASCE) publications, and as provided by the DEPARTMENT. The final work shall be completed such that all known storm sewer systems and BMPs are assessed, reported, and formatted for use in the DEPARTMENT'S Enterprise GIS. These services will be accomplished fully by the CONSULTANT so that it will be unnecessary for the DEPARTMENT to supplement any of them with its own personnel, except as noted hereinafter. The DEPARTMENT may, however, review the work from time to time to verify accuracy and evaluate the performance of the CONSULTANT. The following items are not intended to be comprehensive or exclusive; they are merely set forth as a general outline of the work that is expected.

Required Area Classes

The CONSULTANT or CONSULTANT team must be pre-qualified in the following areas classes: 3.01, 3.02, 3.03, 3.04, 3.12, 5.01, 5.02, 5.08, 6.04 and 9.03.

1.1 General Provisions for the State Stormwater Assessment Program (SSAP)

For all work performed under this agreement, the CONSULTANT shall -

1. Obtain all necessary permits from city, county, municipality, railroad or other entity to allow the CONSULTANT to work on existing streets, roads, and private property for the purpose of locating, inspecting, assessing, and reporting the conditions of the existing stormwater systems and facilities.

2. Coordinate with the appropriate governmental jurisdictions and other entities in researching the location(s) of existing stormwater facilities. Secure all “as built” plans, plats, and other necessary data as supplied by the various entities. While obtaining the information from the governmental jurisdictions or other entities; the CONSULTANT shall ascertain the following information to include but not be limited to the age, the size, the material type, the general condition of the stormwater system and the approximate cost to rehabilitate, if necessary.
3. Comply with any and all Utilities Protection Center (UPC) of Georgia and State Law requirements for notification prior to excavation.
4. Provide all traffic control to perform the work. All traffic control shall be performed in accordance with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) and any subsequent amendments thereto.

The CONSULTANT shall notify the Area Engineer in writing a minimum of three (3) calendar days in advance of any traffic interruptions or lane closures prior to initiating any field surveys. If the work involves interstate traffic control, a written traffic control plan shall also be submitted a minimum of seven (7) calendar days in advance. At the discretion of the Area Engineer, a written traffic control plan may be required for work other than interstate traffic control.

The CONSULTANT shall be responsible for furnishing, installing, maintaining, and removing necessary traffic signs, barricades, lights, signals, cones, pavement markings and other traffic control devices and shall include flagging and other means for guidance and protection of vehicular and pedestrian traffic through the Work Zone.

Due to the amount of traffic on certain highways, the CONSULTANT shall not perform work that impedes traffic between the hours of 6:00 a.m. and 9:00 a.m. and from 4:00 p.m. to 7:00 p.m. without the permission of the Area Engineer. In addition, the CONSULTANT shall not work on weekends, national holidays, state holidays, or the days preceding said holidays without the permission of the Area Engineer.

5. Provide all necessary equipment and support personnel, including GIS and surveying capabilities, to secure the stormwater data.
6. Clean the existing system sufficiently enough to allow for the proper detailed inspection of the system.
7. Determine the actual location and physical attributes of stormwater system structures and pipelines using appropriate surveying and data collecting techniques. Required accuracies shall be dictated by the DEPARTMENT and shall, generally, be performed either to survey grade or submeter accuracies.

8. Certify all completed services by an official of the CONSULTANT firm on the documents and/or plans or as directed by the DEPARTMENT. The CONSULTANT shall be responsible for the accuracy of all information presented to the DEPARTMENT.
9. Provide complete cleanup of work site with regards to any work performed by the CONSULTANT.
10. Close out permits as required.
11. Translate any data (See 2.5 GIS Services) for direct incorporation of information into the DEPARTMENT'S or DESIGN ENGINEER'S required format(s). GIS stormwater information shall be clearly delineated via line codes/symbols and labeling as delivered by the DEPARTMENT. All CADD drawings shall conform to the DEPARTMENT'S current *Electronic Data Guidelines (EDG)* and the *Plans Preparation Guide (PPG)*.
12. Coordinate all phases of the project with the DEPARTMENT Project Manager and the State Utilities Office Subsurface Utilities Engineering Program. The CONSULTANT shall be responsible for coordinating with the DEPARTMENT processes as defined in the *Plans Development Process (PDP)*.

The DEPARTMENT shall –

1. Provide a Survey Control Pack, when available, for the CADD files for the purposes of tying the horizontal and vertical position of the existing stormwater system to the State Plane Coordinate System and the project limits, including side roads.
2. Provide topographic mapping files, when available, in Microstation DGN format.
3. Provide the current *EDG* for the CONSULTANT'S use in preparing files in a format compatible with the DEPARTMENT'S CADD systems (current version of Microstation and the current Civil Design Software).
4. Provide imagery/aerial raster or vector files, when available, in a format compatible with the DEPARTMENT'S GIS system.
5. Provide the Metadata or Data Dictionary along with a feature class schema for understanding/interpretation of the GIS files.
6. Provide the current SSAP Deliverables Checklist and current SSAP Condition Grading System Code Matrix for pipe condition assessment.
7. Provide the current SSAP Workflow Chart.

1.2 Quality Assurance Program

1. Quality Reviews –

The CONSULTANT shall conduct quality reviews to make certain the organization is in compliance with the requirements cited in the Scope of Services. Quality Reviews shall be conducted to evaluate the adequacy of materials, documentation, processes, procedures, training, guidance, and staffing included in the execution of this contract. Quality Reviews shall also be developed and performed to assure compliance with specific Quality Assurance provisions contained in this contract.

2. Quality Assurance (QA) Plan –

Within 30 days after the Notice to Proceed of a PROJECT WORK ORDER, the CONSULTANT shall furnish a Quality Assurance Plan to the DEPARTMENT. The Quality Assurance Plan shall detail the procedures, evaluation criteria, and instruction to the organization to assure conformance with the contract. Unless specifically waived, no payment shall be made until the CONSULTANT'S Quality Assurance Plan is approved by the DEPARTMENT.

Significant changes to work requirements may require the CONSULTANT to revise the Quality Assurance Plan. It shall be the responsibility of the CONSULTANT to keep the plan current with the work requirements. The Plan shall include, but not be limited to, the following areas:

- a. Organization – A description is required of the CONSULTANT'S Quality Control Organization and its functional relationship to the part of the organization performing the work under the contract. The authority, autonomy and responsibilities of the QA organization shall be detailed, as well as the names and qualifications of personnel in the quality control organization.
- b. Quality Reviews – The CONSULTANT'S QA methods used to monitor and assure compliance of the organization with the contract requirements for services and products shall be detailed.
- c. Quality Records – The types of records which will be generated and maintained by the CONSULTANT during the execution of the QA program shall be outlined.
- d. Control of Subcontractors and Vendors – The methods used by the CONSULTANT to control the quality of the subcontractors and vendors shall be detailed.
- e. Quality Assurance Certification – A Registered Professional of the CONSULTANT firm will be required to sign and seal a certification that will accompany each

submittal stating that the plans and reports have been prepared and checked in accordance with the specifications found in this Exhibit.

3. Quality Records –

The CONSULTANT shall maintain adequate records of the quality assurance actions performed by the organization, (including subcontractors and vendors), in providing services and products under this Contract. These records shall be available to the DEPARTMENT, upon request, during the contract term. All records are subject to audit review. The QA program should have a second level of review; a “peer review”. The peer review can be conducted by several methods.

- a. The review could be accomplished internally by the CONSULTANT’S organization, or -
- b. At no additional expense to the DEPARTMENT, the use of another consultant firm.

2.0 Description of Required Services

If the deliverable corridor meets certain criteria (e.g., length, complexity), the CONSULTANT may complete and submit the deliverables in incremental deliverables as instructed by the DEPARTMENT. Upon acceptance of all incremental deliverables, the CONSULTANT shall then be responsible for compiling the incremental datasets into a single final geodatabase.

One of two forms of written reports will be required for submittal in Phase 1: (1) A letter report detailing the hydrological evaluation of the system and recommendations for Phase 2 actions, or (2) A two-page status report detailing the number and types of features found in the stormwater system, as well as a summary of initial condition assessments.

If the deliverable corridor is part of a program project, the hydro study report and a file geodatabase with metadata in a WinZip file will be required as the deliverable upon completion of Phase 1. If the deliverable corridor is not part of a program project, the two-page status report will be the only deliverable upon completion of Phase 1.

Reports must contain sufficient descriptive text, written in a coherent, professional technical style, to adequately explain the existing site conditions and to adequately support any computations, tables, or graphics. The English Engineering System of units will be used for all physical quantities; and, except for dimensionless numbers, the units of all numbers will be clearly expressed. All maps and plans will have a scale, a north arrow, and a title. All reports will be stamped/sealed, signed and dated by a professional engineer registered in Georgia.

A file geodatabase with metadata in a WinZip file will be required for submittal in Phase 2, as well as associated media files (e.g., photos, videos, etc.). Once accepted after review by the DEPARTMENT,

media files will be permanently housed on the GDOT GIS server. Hyperlinks to media files within the geodatabase should reference the final storage location on GDOT IT servers.

2.1 Initial Letter Report Deliverable - Phase 1

All essential information must be included in the letter report in such a way that it is readily conveyed to the DEPARTMENT. In general, letter reports are to be written on the CONSULTANT'S official letterhead and are to contain an introduction, findings, conclusions, and recommendations. These reports must contain any drawings, figures, data tables, maps, etc. necessary to support the findings and conclusions. Neat sketches in electronic format when warranted are acceptable for inclusion into a letter report. A letter report shall include professional recommendations of further investigation required to fulfill the requirements set forth in Phase 2 referenced in Section 2.2 below.

Upon authorization to proceed with Phase 1, the CONSULTANT will:

1. Collect, review, and analyze available information about the existing stormwater system serving the programmed roadway segment, including, but not limited to, property plats, existing DEPARTMENT plans, USGS maps, DEPARTMENT GIS files, and county public works records and GIS files;
2. Determine the actual location and physical attributes of the stormwater system structures, pipelines, and BMPs using appropriate surveying and data collecting techniques;
3. Evaluate and record the physical condition and operational integrity of each stormwater structure, conveyance line, and BMP;
4. Make a photographic record of each structure. (If cleaning is required, produce before-and-after shots for verification of payment, note the location and milepost to the nearest tenth of a mile, and date the photo. Photos should be geocoded with the longitude and latitude information in decimal degrees WGS 1984 within the photo header information.
5. **[If associated with a program project:]** Prepare a letter report of the CONSULTANT'S findings and conclusions, to include the level of required traffic control, with professional recommendations of further investigation required to fulfill the requirements set forth in Phase 2 referenced in Section 2.2 below, and submit the report to the DEPARTMENT;
6. **[If associated with a program project:]** Submit a file geodatabase in a WinZip file of stormwater features, metadata, and associated media files to the DEPARTMENT;
7. **[If not associated with a program project:]** Prepare a two-page status report of the CONSULTANT'S findings and initial condition assessments;
8. Meet with DEPARTMENT representatives to discuss the project status.

2.2 Geodatabase and Media Files Deliverable - Phase 2

Upon authorization to proceed with Phase 2, the CONSULTANT will:

1. Develop a schedule for the remainder of the project, review it with the DEPARTMENT, and update it as directed;
2. When required by the DEPARTMENT, inspect the entire length of each pipeline in the stormwater system using appropriate television inspection equipment and techniques, and, as necessary, clean pipelines prior to Closed Circuit Televised (CCTV) inspection;
3. Make a video graphic record of the CCTV inspection of each pipeline inspected;
4. Evaluate the physical condition and operability of each pipeline based on CCTV inspection results. *The Manual of Sewer Condition Classification*, published by the WRC, current edition, and the NASSCO Pipeline Assessment Certification Program (PACP) documentation shall be used as a reference guides for all condition assessment evaluations of CCTV inspections.
5. Provide location and physical attribute information of the existing stormwater system to the DEPARTMENT'S GIS in a compatible format as specified in Section 2.5.
6. Specific items to be addressed during any field evaluation include, but are not limited to:
 - o Each stormwater system that is wholly or partially located within the project area will be studied from the upstream point where it enters the project area to the downstream point where it exits.
 - o Structures to be studied include, but are not limited to:
 - Drop inlets
 - Catch basins
 - Hooded grated inlets
 - Junction boxes
 - Headwalls
 - Flared end sections
 - Pipe ends
 - Outlet structures
 - Culverts
 - Pipelines
 - Paved ditches
 - Unpaved ditches
 - Nonstandard structures
 - o Physical attributes to be determined include, as applicable:
 - Identification number
 - Invert elevations
 - Material(s)
 - Sizes

- Standard GDOT types
- Pipelines entering and exiting structures
- Upstream and/or downstream structures
- Horizontal and vertical location
- Profiles and sections
- Receiving body of water
- Blockage
- Other data required to completely describe the system

2.3 Final Deliverable

Upon final acceptance of previous deliverables by the DEPARTMENT, the CONSULTANT will:

1. Prepare a final geodatabase of the existing stormwater system within the deliverable corridor in accordance with all applicable requirements in this document, and ensure hyperlinks to media files are valid and reference the final storage location on the GDOT IT server;
2. Work with the Highway Maintenance Management System (HMMS) to populate an HMMS reference ID within the conveyances feature class;
3. Submit the final updated geodatabase to the DEPARTMENT for incorporation into the DEPARTMENT'S Enterprise GIS.

2.4 Additional Services

The CONSULTANT may, on a case-by-case basis, be directed to:

- Conduct a hydraulic evaluation of the operation of the system to determine if system modifications or upgrades are necessary; and/or
- Prepare design and construction documents for recommended repair, replacement, relining, maintenance, and/or systems modifications/upgrades.

For this project, all drafting and design work, if necessary or requested by the DEPARTMENT, shall be done using Microstation (current version) and the current DEPARTMENT approved Civil Design software.

2.5 GIS Services

Data management involves assembling and presenting information gathered in a format compatible with the DEPARTMENT'S Enterprise GIS and CADD systems (Microstation) for use by the DEPARTMENT'S staff or the DEPARTMENT'S designated Consultant.

The GIS and Microstation files shall be developed in accordance with the DEPARTMENT'S GIS conventions and *EDG*, current edition (unless otherwise indicated by the DEPARTMENT'S Liaison Engineer). These guidelines can be obtained from the DEPARTMENT'S Liaison Engineer.

The CONSULTANT shall submit completed electronic files to the State Subsurface Utilities Engineer and the Subsurface Utilities Review Engineers for review and comments.

The CONSULTANT will make changes or adjustments to the data as necessary. Work will not be considered complete until the CONSULTANT has addressed all comments from all reviews to the satisfaction of the State Subsurface Utilities Engineer and/or the Subsurface Utilities Review Engineers.

To support the DEPARTMENT'S program of developing a comprehensive statewide stormwater sewer network, the CONSULTANT will collect all applicable field data on stormwater structures, pipes, conveyances, and outfalls by means of GIS or survey-grade GPS receivers and/or traditional surveying methods and by direct inspection, remote video inspection, and/or geophysical sensing methods. The DEPARTMENT will provide the CONSULTANT with base maps and a geodatabase containing existing roads, hydrography, and other features. Upon completion of data collection, the CONSULTANT will submit a file geodatabase with metadata in a WinZip file containing the relevant feature classes. Required associated media files such as storm structure pictures and conveyance CCTV videos shall also be included. All GIS project files shall be submitted in a format that is compatible in ArcMap version 9.3.1 and that is approved by the DEPARTMENT'S Enterprise GIS (EGIS) Manager in charge. Upon acceptance, the information will then be integrated into the DEPARTMENT'S Enterprise GIS.

The projected coordinate system name for the horizontal coordinate system shall be NAD 1983 Georgia Statewide Lambert. The map projection name shall be the Lambert Conformal Conic with details in the current metadata template provided by the DEPARTMENT at the time of issuance of the task order.

As part of the QA/QC program, the CONSULTANT shall report the name, model, and manufacturer of the equipment used for surveying whether by GIS-grade GPS receiver or by traditional surveying instrumentation. The CONSULTANT will document the procedures and settings used to ensure that the specified accuracy is obtained, including the use of offsets, instrument calibration, and spot-checking survey data accuracy. The field procedures will also include spot-checking observational data including, but not limited to, conveyance type, material, and condition; structure type, material, and condition; sizes; shapes; and lengths. Map accuracy and scale specifications of the geodatabase shall be provided.

The CONSULTANT shall use the current Data Dictionary provided by the DEPARTMENT at the time of issuance of the task order. The Data Dictionary contains the XML schema with stylesheet for display. The Data Dictionary shows the minimum required stormwater infrastructure data unless otherwise noted. The submittal shall at a minimum include the items specified in the DEPARTMENT'S current SSAP Deliverable Checklist. The CONSULTANT shall use the current SSAP Condition Grading System Code Matrix for the stormwater infrastructure provided by the DEPARTMENT.

2.6 Certification

For the purpose of this agreement, "Certification" or "certified" means to professionally seal the completed work product. All completed services shall be certified by a responsible registered professional in the State of Georgia, in the full employ of the CONSULTANT firm on the plans or as directed by the DEPARTMENT. The CONSULTANT shall be responsible for the accuracy of all information presented to the DEPARTMENT.