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April 27, 2023

Augusta Engineering Department
Attention: Mr. Moe Mahgoub, M.Sc., PMP
452 Walker St., Suite 130
Augusta, Georgia 30901

Reference: Forest Hills – Database Collection – Study Area 1
Proposal for Engineering Services (BEN #P2319114)

Mr Mahgoub:

Benesch appreciates this opportunity to present a proposal for professional engineering services in relation to the Database Collection phase of the Forest Hills Drainage Study. As discussed, the existing GIS database needs a comprehensive update within the study area. Although the general drainage patterns have been identified in the earlier phases of the study, the existing stormwater database needs an extensive update to meet the new GIS standards developed by the Augusta Engineering Department (AED). As part of these services, we have teamed with Toole Surveying to provide surveying services and Williams Sewer and Drain to provide exploration services. Our project approach, project assumptions, fee summary and schedule are further outlined below.

Project Background and Approach

Benesch has prepared the project scope based on a scoping meeting with the Augusta Engineering Department (AED) staff on February 9, 2023. Development of a comprehensive stormwater database in Study Area 1 will be completed in this phase of the services. Data Collection Area 1 is defined as including the eastern portion of drainage basin 10 as well as drainage basin 14 (Langford Middle School) from the initial Forest Hills Drainage Study. A map of Study Area 1 is attached. Benesch staff will use Arrow handheld units to locate the existing stormwater infrastructure. Toole Surveying will complete a ground run survey of selected structures, approximately 10% of the total identified in the basin, to provide baseline elevations to help determine the tolerances from the GIS locations. Once the database is completed and verified, this information will be used to develop a complete SWMM model to be used for the basin.

This proposal includes services for Database Collection and Surveying Services for Study Area 1 within the Forest Hills Drainage Study Area. Specific tasks to be completed during each of these phases have been outlined below and on the attached man-hour task sheet.

Database Collection

Tasks associated with Database Collection include:

- Benesch will initiate the task by facilitating a kickoff meeting with AED staff to confirm the project area, processes for capturing data, and transfer of data to AED.
- Current GIS information estimates approximately 200 drainage structures within Study Area 1.

- Benesch will then locate stormwater management systems assets within Study Area 1. This will include Storm Structures, Storm Pipes, Storm Ditches, and Storm Ponds. Data will then be processed in ArcGIS software and submitted to AED.
- The collection of attributes will be completed to the greatest extent possible, but there will be circumstances where field conditions make it difficult to populate every field in the database. When/if this occurs, these features will be noted in the database as described in the SOP and will include justification and/or a recommendation for the type of action needed. This may include structures or pipes that could not be opened, buried, or paved over as well as features that could not be examined due to sediment, water, vegetation, or other obstructions. Benesch will provide AED with a list of these features as part of the periodic updates. If AED addresses the recommended action, the feature could be tagged for re-inspection. Benesch will also determine system connectivity as part of the data collection process. In areas where connectivity cannot be confirmed, Benesch will recommend further investigation methods to assist with confirming pipe connections. This could include TVing the pipes, smoke testing, dye testing, etc.
- Upon acceptance of the data, Benesch will provide a supplemental proposal to complete database collection for the next sub-basin within the study area and SWMM model development using the data collected in Study Area 1.

Surveying Services

Tasks associated with Surveying Services include:

- Toole Surveying Company will survey approximately 10% of the structures located within the sub-basin. Survey data proposed by Toole Surveying includes the following:
 - Structures will be located using state/plane coordinate system, NAD83 Datum.
 - Vertical Datum used will be NAVD 1988.
 - 20 structures selected within the basin will be selected to be surveyed.
 - Survey information includes:
 - Structure type and location.
 - Top of structure elevation.
 - Invert elevation of the structure.
 - Invert elevations of pipes coming into and leaving the structure.
 - Size and material of pipes coming into and leaving the structure.
- Benesch will compile the information collected in the field along with the survey data to put together a GIS file for submittal to AED.

Storm Sewer Exploration

Tasks associated with Storm Sewer Exploration include:

- If AED staff is unable to assist in exploration services of the existing storm lines, Benesch will include the services of Williams Sewer and Drain to provide the following services to aid in exploration in the existing storm sewer lines:
 - **Confined Entry Services** – Physical entrance into manhole structures to investigate and install exploration equipment, should it be inaccessible from the ground.
 - **Smoke Testing** – This will include using a fan to blow smoke through the storm lines to determine connectivity.

- **Mobilize Camera Service (CCTV)** – This will include the use of a crawler camera to inspect the existing storm sewer lines and determine connectivity.
- An allowance of \$10,000 has been established to work against should these services be required. This fee was estimated based on the following assumptions:
 - Confined Space Entry = \$375 / Hr.
 - Smoke Testing = \$2,000 / Day
 - Mobile Camera Service (CCTV) = \$3,000 / Day

Project Assumptions:

- GIS data will be collected per the current version of the Stormwater Geodatabase Documentation & Standard Operating Procedures, developed by the Augusta Engineering Department.

Project Exclusions:

Benesch understands the following services are not included in this contract. Should any of these services be requested, Benesch will provide a supplemental fee for approval. No work will be completed without a written notice to proceed:

- Project Identification/Concept Report
- Public Involvement.
- Property Owner Meetings.
- Stormwater modeling and design.
- Private Utility Locate.
- SUE Services.

Project Fee Summary:

The attached manhour estimates provide a detailed outline of services in which we will work time and materials against a not to exceed value. Please see below for a summary of fees per phase of work:

Database Collection:	\$ 24,260.00
(Toole Surveying)	\$ 3,200.00
Strom Sewer Exploration (Allowance)	\$ 10,000.00
Total Proposed Budget:	\$ 37,460.00

Schedule:

Upon Notice to Proceed, Benesch will provide a full schedule outlining the plan development process. In general, the following outlines an estimation of project duration:

- 1) Field Data Collection – 4 Weeks
- 2) Surveying Services – 4 Weeks
- 3) Process Data and Compile Database Information – 4 Weeks

Field Data Collection and Surveying Services will be activities will be completed concurrently if possible.

Again, we appreciate this opportunity to provide a proposal for the Augusta Engineering Department and we look forward to continuing our work with the County. Should you have any questions please feel free to contact our office.

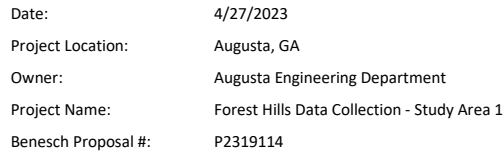
Sincerely,

Alfred Benesch & Company

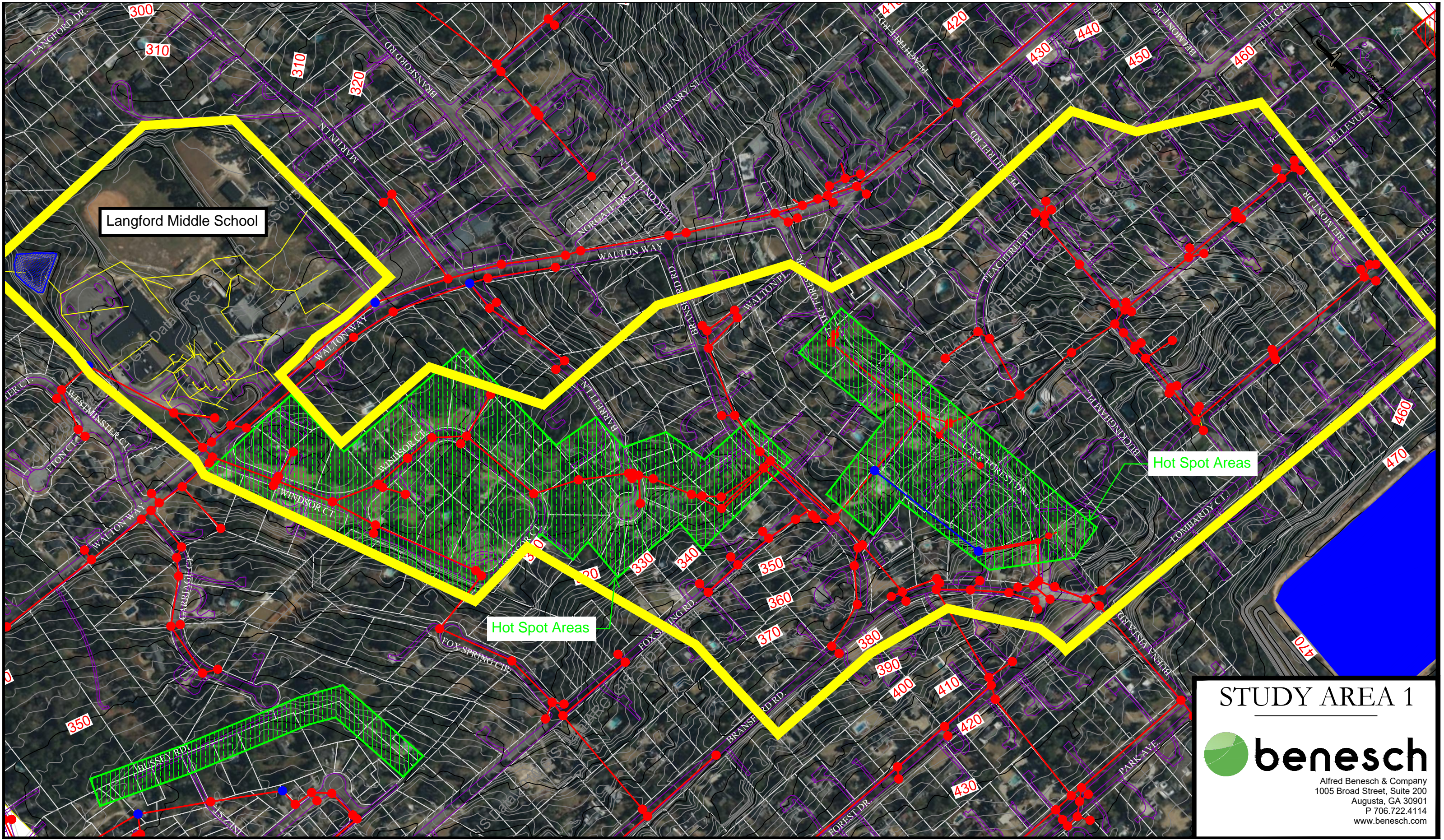
A handwritten signature in blue ink, appearing to read 'V. Conover', with a long horizontal flourish extending to the right.

Victor Conover, PE, CFM
Project Manager

Attachments: Man-hour/Fee Estimate - 1 Page
Project Location Map – 1 Page



Personnel	Est. Hours	Rate/Hour	Cost (\$)	Totals
Division Manager	0	\$235.00	\$0.00	
Sr. Project Manager	0	\$195.00	\$0.00	
Project Manager	30	\$170.00	\$5,100.00	
Engineer	72	\$145.00	\$10,440.00	
Designer	0	\$95.00	\$0.00	
GIS Technician	100	\$85.00	\$8,500.00	
Admin	4	\$55.00	\$220.00	
Total per Rate Schedule			\$24,260.00	\$24,260.00
Subconsultant Costs	Number	Rate	Est. Cost (\$)	
Survey and Database - Toole Surveying Company	1	\$3,200.00	\$3,200.00	
Storm Sewer Exploration Allowance	1	\$10,000.00	\$10,000.00	
Total Subconsultant Costs				\$13,200.00
Total Proposed Fees				\$37,460.00



Langford Middle School

Hot Spot Areas

Hot Spot Areas

STUDY AREA 1



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