

To: Mayor and City Council
From: Carl Thomas, Stormwater Utility Manager
Re: Funding Authorization for Donald Bannister Park Engineering Analysis
Date: February 26th, 2024

Action

Authorize the Mayor, City Manager, or designee to approve \$82,632.00 in funding for the Donald Bannister Park Engineering Analysis.

Summary/Details

In February 2023, Parks staff met with the City's Stormwater Division to investigate drainage and erosion concerns at the Donaldson-Bannister Farm site, a pivotal historic and recreational location at Vermack Road and Chamblee-Dunwoody Road. The drainage issues threaten some of the historic buildings and cause damage and further erosion to the adjacent areas at the park. Over 2023, the Parks Department attempted to mitigate the erosive flows by constructing a riprap-lined swale with a grated drop inlet to collect runoff and downspout connections to divert runoff from some of the buildings. Although the improvements provided some relief to the drainage issues at the park, staff requested a follow-up meeting last fall to discuss a more permanent solution.

Section 4.2.6 of the Phase II stormwater permit requires periodic evaluations of City-owned drainage systems designed before adopting the Georgia Stormwater Management Manual for potential improvements to bring the infrastructure to current design standards. The City of Dunwoody requested the professional services of Freese and Nichol (FNI) to evaluate the park to determine low-impact development (LID) solutions that meet current design standards for managing stormwater, reducing erosion, and increasing connectivity. To complete this task, the team with FNI will conduct an on-site survey, geotechnical analysis, hydrologic and hydraulic (H&H) analysis, and a presentation of feasible solutions. The estimated cost for the design of this project, plus 10% contingency, is \$82,632.00.

If approved by Council, this project will be funded from the Stormwater Repairs and Maintenance budget allocated for stormwater improvement projects.

Recommendation

Staff recommends approving \$75,120.00, plus 10% contingency, for a total of \$82,632.00 in funding for the Donald Bannister Park Engineering Analysis.



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February 7, 2024

Carl B. Thomas Sr, CSM, CFM
Stormwater Utility Manager
City of Dunwoody
4800 Ashford Dunwoody Road
Dunwoody, GA 30338

Subject: Proposal for Donaldson-Bannister Farms Stormwater Implementation Plan and Alternatives Analysis

Dear Mr. Thomas,

We are pleased to submit this proposed scope of services to provide professional engineering services for the City of Dunwoody ("City") related to drainage and erosion concerns noted at Donaldson-Bannister Farm ("Site"), located at the intersection of Vermack Road and Chamblee-Dunwoody Road. This proposal describes the scope of professional engineering services to be completed under this contract.

Background

The City owns and uses the Site as a public park, with the Parks and Recreation Department ("Parks Department") performing most of the operation and maintenance. The Site is also listed on both the Georgia and National Register of Historic Places, with the Dunwoody Preservation Trust acting as a major stakeholder in maintaining and operating the Site. Besides being utilized as a public park, the site is also a popular venue for weddings and other events.

The Site consists of historical buildings of various sizes, pervious and impervious pavers, various stone features, two gravel parking lots, a gravel drive, trees of various sizes, manicured lawns, landscaping, and open space. Currently, the Site is experiencing erosion at locations of higher shade and where the terrain changes to a steeper gradient. The runoff from the Site also flows towards some of the historical buildings, causing damage and further erosion to the areas adjacent to them. The runoff ultimately flows toward the easternmost gravel parking lot, where the runoff inundates the parking lot before leaving the site via sheet flow or through an existing pedestal top drain inlet. Within the last year, the Parks Department attempted to mitigate the erosive flows by constructing a riprap-lined swale with a grated drop inlet to collect runoff in addition to downspout connections to divert runoff from some of the buildings. No complaints were noted by the City about downstream runoff from the Site. The project Site is located entirely within public property or right-of-way; therefore, no easements would be required. In addition, the Site is not located within a FEMA flood hazard area.

Project Understanding

FNI was asked by the City to submit a proposal to evaluate the issues noted in the Project Background as well as provide innovative, low impact development (LID) solutions to manage stormwater, mitigate erosion, increase connectivity, enhance aesthetics, and promote the character of the Site as a park and historic locale. To help in the preparation of this proposal, FNI conducted a site visit with City staff on 10/26/2023 and 11/2/2023 to observe the areas of concern and assess project constraints. The following observations were made during the site visit and **Figure #1** details the approximate areas of interest (AOI).



Figure #1: Areas of Interest

The location at AOI #1 consists of open space, with landscaping and grassing in addition to a brick paver walkway straight down the middle of the area and trees/plantings on the south side. The south side of the AOI was observed to have moist soil despite it not having rained recently at the time of the site visit. In addition, there were multiple bare earth patches where the ground was exposed due to shade as well as potential erosion from foot traffic while the rest was covered with pine straw. The north side of the AOI is grassed, sloping slightly to the north and the east towards AOI #2 and AOI #3. Generally, this area is flat and consists of landscaped areas with multiple trees, with evidence of minor utilities such as irrigation and lighting within the immediate vicinity. The City stated that they desired a solution to make the space more usable with an emphasis on minimal disturbance.

Noticeable signs of erosion were observed at AOI #2, where flows from upstream of the site begin to concentrate to form rills and a swale that flows towards historical buildings and AOI #3. This area consists of multiple large trees that provide a lot of shade. There are multiple patches of bare earth in this location that are resulting from and contributing to the erosion. The terrain at this location is located on a steeper gradient that flows towards buildings and an area of gravel ground cover before it is routed via the riprap swale and grated drop inlet towards AOI #3. The building at this AOI has downspout connections that capture flow from the rooftop and direct it via a plastic pipe towards AOI #3. Due to the presence of large trees, tight site footprint, and the historical buildings, the City desires a solution to be surgical in nature with minimal disturbance to minimize the erosion and runoff damage.

The location at AOI #3 consists of a gravel parking lot, which is the downstream-most point for most of the property where runoff collects before sheeting off the site or being collected by the pedestal top inlet. The captured flow from AOI #2 directly discharges to the parking lot in addition to flows from the rest of the Site. The area is mostly flat and, as stated by the City, is inundated during most storm events. The City added that this area has the most flexibility for implementing a solution with the least amount of constraints towards site disturbance.

FNI recognizes the City's challenges noted above and will evaluate green infrastructure (GI) and LID solutions to mitigate erosion and flooding at the Site. In addition, an approach will be provided to implement those solutions at each AOI with respect to a holistic overall solution for the Site. FNI understands the City's goals being the use of innovative results to minimize impacts; provide aesthetics; and maintain the character of the Site as a public park (with educational opportunities), venue, and historic site. Consideration will be given to underground storage, filtration, and infiltration GI/LID practices in addition to native plantings, with an emphasis on ease of operation and maintenance by Parks Department staff. The implementation plan and concept evaluation will be summarized in a technical memorandum ("memo") outlined in Task 3 below. The project does not include detailed design in order to promote a phased approach based on the availability of City funds and the prioritization of the solutions at each AOI.

Scope of Services

The scope includes the following tasks:

- Task 1 – Project Management and Coordination
- Task 2 – Data Collection and Review
- Task 3 – Stormwater Implementation Plan and Alternatives Analysis

Task 1 – Project Management and Coordination

- A. **Project Kick Off Meeting:** FNI will conduct and attend a project kick-off meeting to discuss the scope of work, schedule, and coordination. As part of this subtask, FNI will prepare and distribute meeting agendas and minutes. An internal kickoff meeting will also be held with the FNI project team after the client kickoff meeting.
- B. **Monthly Status Reports:** FNI will prepare and distribute monthly status reports via email. The status report shall summarize work completed, percent completed to date for the schedule, upcoming work, and any outstanding issues or decisions that must be resolved by City staff or the project team.
- C. **Project Management:** FNI will coordinate with the City continuously throughout the project, with an expected duration of 5 months from the kickoff meeting. Internal management with the FNI project team will take place to maintain the scope, schedule, and budget agreed upon in this proposal. A schedule will be agreed upon at the kickoff meeting and used for the duration of the project.

Deliverables and Due Dates:

- Meeting Agenda – Due 1 day prior to kickoff meeting
- Meeting Minutes – Due within 5 days after the kickoff meeting
- Project Schedule – Due within 5 days after the kickoff meeting

Task 2 – Data Collection and Review

A. **Survey:** FNI will provide topographical survey with the following characteristics:

- Elevation data for the entire parcel.
- Locations of any other features (buildings, landscaping, etc) and above-ground/underground utilities on site (including irrigation).
- Data for all stormwater infrastructure within or directly adjacent to the site, up to the first downstream junction (size, invert, material, top, etc).
 - Include downstream junctions located at the right-of-way adjacent to parcel 4700 and within parcel 4840.
- The location and size of all trees located on and directly adjacent to the parcel.

B. **Geotechnical Investigation:** FNI assumes that a geotechnical investigation will be performed by the City before the project to determine soil characteristics for implementation of GI/LID practices at the site. FNI will review the results of the geotechnical investigation and provide comments/questions (if any) to facilitate the alternative development. The following are the items assumed to be included in the geotechnical investigation:

- Bore up to five (5) boreholes, each with standard penetration tests (SPTs) constantly in the upper 10-foot and 5-foot intervals thereafter. See **Figure #2** below for approximate locations.
 - No rock coring is included.
 - Abandon all boreholes with soil cuttings and bentonite chips/pellets to ground surface. Top off borehole with soil cuttings.
 - Boreholes should be performed with hollow stem auger techniques.
 - B1 and B2 to 15-ft below ground surface (bgs).
 - B3 may go to 25 ft bgs or top of rock. This one can be relocated to avoid trees and roots as needed.
 - B4 and B5 to utilize hand augers to 5-ft bgs, with samples segregated and classified every 1-ft interval.
- Perform three (3) lab permeability tests at B1/B2/B4 for minimal disturbance.
- Perform up to five (5) moisture content and Atterberg limits tests at the immediate vicinity of the 5 bore locations, estimated one (1) per boring.
- Perform up to ten (10) GSD+ hydrometer tests at the immediate vicinity of the 5 bore locations, estimated 2 per boring.
- Install two (2) shallow piezometers at B2 and B3 (P2 and P3, respectively).
 - These should be flush mount piezometers (so there is no need for bollards to protect the instrument).
 - Boreholes should be performed with hollow stem auger techniques and left open for a 24-hour period. If no water is encountered, there is no need to install a piezometer.
- Provide a geotechnical data report to present the findings.

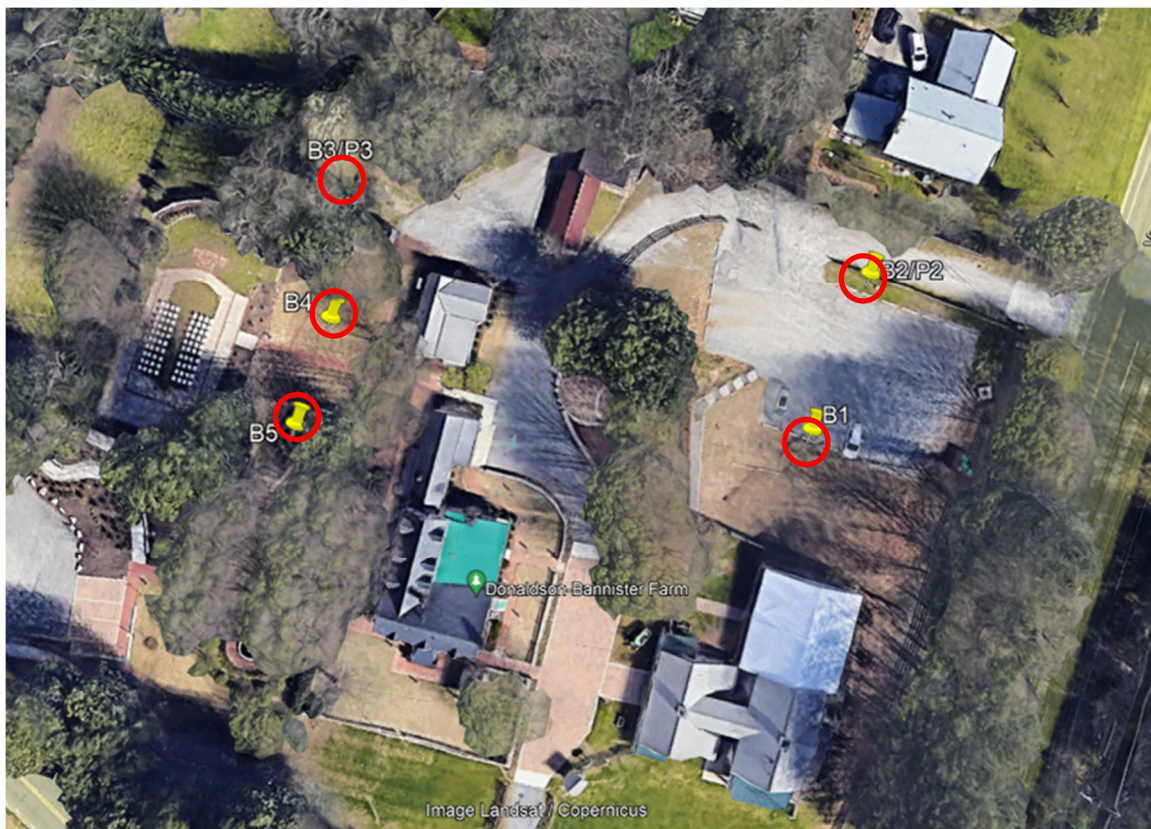


Figure #2: Anticipated Boring Locations

- C. **Data Collection and Review:** FNI will perform a single site visit to map and document the existing conditions and evaluate opportunities to mitigate erosion and flooding at the site. As part of this site visit, a tree survey will be performed to verify the tree size, species, and classification per City tree protection ordinances. City, County, State, and National data will be used to inform the H&H analysis and evaluation. Piezometer readings from Task 2B will be taken at the locations identified in **Figure #2** for a duration of 12 months to determine the seasonal high-water table.

Assumptions: It is assumed that this task will require approximately 1.5 months to complete. Since this project scope is for a conceptual evaluation and implementation plan, it is intended that the data will be used to inform detailed design at a later date. Final schedule for the concept evaluation and implementation plan to be agreed upon at the kickoff meeting and sent with the meeting minutes.

Deliverables and Due Dates:

- No deliverables for this task. Results to be provided in the memo outlined in Task 3.

Task 3 – Stormwater Implementation Plan and Alternatives Analysis

- A. **Implementation Plan and Alternatives Analysis:** A memo will be completed along with supporting Hydrologic and Hydraulic (H&H) calculations and figures that will provide the following:
- One (1) proposed GI/LID alternative per AOI to mitigate erosion and flooding at the Site, per required local standards.
 - Methods and processes used to perform the analysis with documented assumptions.
 - For the hydrologic analysis, it is anticipated that TR-55 Method will be used to determine values for peak storage requirements while the Modified Rational Method will be used to determine values for peak flow requirements. For the hydraulic analysis, appropriate modeling software will be used to evaluate detention requirements, pipe size, and outfall swale capacities as applicable.
 - Expected constraints and requirements for detailed design.
 - Conceptual construction cost estimates for each alternative.
 - Park Concept Plans (including renderings and graphics) intended for use by Site stakeholders.
 - A list of native plantings for potential to be used with the proposed solutions in detailed design.
 - Expected operation and maintenance requirements for the proposed solutions.
 - A proposed phasing plan to implement the solutions in detailed design.
- B. **Client Review Meeting:** Following the memo submittal and after a 2-week client review period, FNI will meet with the City to review the proposed concept solutions. The intent of this meeting is to present FNI's recommendations and discuss proposed concepts, budget constraints, and other key coordination topics with the City. The information gathered at this meeting will be used to revise the memo based on client QC comments and the preferred concepts to carry forward into detailed design. Meeting minutes will be documented and provided within 5 days of the meeting.

Assumptions: It is assumed that this task will require approximately 4 months to complete. Final schedule to be agreed upon at the kickoff meeting and sent with the meeting minutes. The scope does not include coordination with any stakeholders besides the meetings listed in Task 1A and Task 3B. Detailed design is not included in this scope of work but can be provided as an additional service at the conclusion of this project.

Deliverables and Due Dates:

- Draft Technical Memorandum – Due approximately 5 months after the kickoff meeting
- Meeting Minutes – Due within 5 days after the client review meeting.
- Final Technical Memorandum – Due 10 days after the client review meeting.

Project Team and Organization

FNI will provide a team of professionals to deliver the scope of services in this proposal. This team will consist of the following key staff:

- Project Manager – John Schneider, PE
- Technical Lead – Nadeem Khan, PE
- Senior Advisor – Blair Hinkle, PE
- QC Review – Lydia Ward, PE; Henry Hartshorn
- Engineering Support –Nathan Shelp, EIT; Mayuko Mizutani, EIT;
- Park Concepts: Matt Milano

Estimated Budget

FNI proposes to perform the services listed above for a not-to-exceed amount of \$75,120. The summary of each task fee is based on the expected level of effort to complete the scope items outlined above.

Task	Description	Fee
1	Task 1 – Project Management and Coordination	\$12,078
2A	Task 2A – Survey	\$13,000
2B	Task 2B – Geotechnical Investigation	\$0
2C	Task 2C – Data Collection and Review	\$8,502
3	Task 3 – Stormwater Implementation Plan and Alternatives Analysis	\$41,540
Project Total (Not to Exceed)		\$75,120

Tasks		Labor												Subconsultants			Total		
Activity	Task Description	John Schneider	Nathan Shelp	Blair Hinkle	Nadeem Khan	Charles Crowell	James McNash	Stephanie Kirchstein	Mike Ways	Jason Steele	Lydia Ward	Matt Milano	Henry Hartshorn	Total Hours	Total Labor Effort	ECS	Terramark	Total Sub Effort	Total Effort
		PM/Production	APM/Production	SA	Tech Support/QC	Review	Geotech QC	OA	QA	Tree Survey	GILID Support/QC	LA	LA QC						
		\$211	\$130	\$227	\$178	\$227	\$178	\$90	\$218	\$187	\$178	\$175	\$175						
															\$ -			\$ -	\$ -
															\$ -			\$ -	\$ -
PM / Production	Task 1: Project Management														\$ -			\$ -	\$ -
	Internal kickoff meeting	1	1	1	1	1	1			1	1	1		9	\$ 1,691			\$ -	\$ 1,691
	External kickoff meeting, agenda, & minutes	6	7	2	1	1	1							18	\$ 3,213			\$ -	\$ 3,213
	Maintain and monitor scope / schedule / budget	16												16	\$ 3,376			\$ -	\$ 3,376
	One Page Reports / Periodic client communications	8	5											13	\$ 2,338			\$ -	\$ 2,338
	Project Closeout							2						2	\$ 180			\$ -	\$ 180
	Develop quality management plan & Schedule	2												2	\$ 422			\$ -	\$ 422
	Quality Assurance reviews	2							2					4	\$ 858			\$ -	\$ 858
															\$ -			\$ -	\$ -
PM / Production	Task 2: Data Collection and Review														\$ -			\$ -	\$ -
	Survey														\$ -		13,000	\$ 13,000	\$ 13,000
	Geotechnical														\$ -			\$ -	\$ -
	Data Collection & Review	6	18		1		5			2				32	\$ 5,048			\$ -	\$ 5,048
	Site Visit	3	3							13				19	\$ 3,454			\$ -	\$ 3,454
															\$ -			\$ -	\$ -
PM / Production	Task 3: Stormwater Implementation Plan & Alternatives Analysis														\$ -			\$ -	\$ -
	H&H/Concept Design Development - Assume 1 alternatives per AOI (3 total)	15	30	3	20	3				2	10	30		113	\$ 19,391			\$ -	\$ 19,391
	Tech Memo Development	6	18		3									27	\$ 4,140			\$ -	\$ 4,140
	OPCC Development	9	9											18	\$ 3,069			\$ -	\$ 3,069
	Periodic internal meetings	10	10		6									26	\$ 4,478			\$ -	\$ 4,478
	Senior Advisor			3										3	\$ 681			\$ -	\$ 681
	Quality Control reviews	3		5	3		2				6		4	23	\$ 4,426			\$ -	\$ 4,426
	Address IQC Comments	3	6		3									12	\$ 1,947			\$ -	\$ 1,947
	Client Review Meeting & Meeting Minutes	3	5		1									9	\$ 1,461			\$ -	\$ 1,461
	Address Client Comments	3	6		3									12	\$ 1,947			\$ -	\$ 1,947
															\$ -			\$ -	\$ -
Total Hours / Quantity		96	118	14	42	5	9	2	2	18	17	31	4	358		\$ -	\$ 13,000		
Total Effort		\$ 20,256	\$ 15,340	\$ 3,178	\$ 7,476	\$ 1,135	\$ 1,602	\$ 180	\$ 436	\$ 3,366	\$ 3,026	\$ 5,425	\$ 700		\$ 62,120	\$ -	\$ 13,000	\$ 13,000	\$ 75,120

Our services will be billed on an hourly basis using rates that match our agreement with the City of Dunwoody, by staff classification. Invoices will be submitted no more than monthly throughout the duration of the project. The invoices will provide a cost breakdown by work order on each invoice.

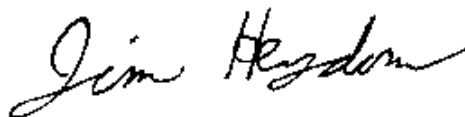
All services will be performed in accordance with the Terms and Conditions of the On-Call Agreement for Stormwater Engineering and Design Services (SOQ 22-01) between the City of Dunwoody and Freese and Nichols, Inc. dated October 27, 2022. You can indicate your approval by signing below. Thank you once again for the opportunity to serve the City of Dunwoody.

Sincerely,

FREESE AND NICHOLS, INC.



John Schneider, PE
Project Manager



Jim Heydorn, PE
Principal/Vice President

Authorized By:

Printed Name

Signature

Date