

CITY OF HIGH POINT

AGENDA ITEM



Title: Hamilton-Montlieu Stormwater Study & Preliminary Design

From: Terry Houk – Public Services Director
Robby Stone – Asst. Director Public Services

Meeting Date: September 17, 2018

Public Hearing: N/A

Advertising Date: N/A
Advertised By: On-Call

Attachments: Attachment A – Scope of Services

PURPOSE:

The City has focused on stormwater improvement projects to address excessive flooding. There is significant data indicating severe flooding within this stormwater basin. This project will allow for further engineering analysis to best serve those impacted within the stormwater basin.

BACKGROUND:

The professional engineering services to be provided for this project involve work associated with project development, data compilation, modeling of existing conditions, modeling alternative analysis, and project administration. These tasks are anticipated to take one year to complete.

BUDGET IMPACT:

Funds for the project design services are in the 2018-2019 Annual Budget.

RECOMMENDATION / ACTION REQUESTED:

The Public Services Department recommends approval and asks for the Council to award the professional engineering services to Freese & Nichols, Inc. in the amount of \$206,580.00.

**Scope of Services
City of High Point
Hamilton-Montlieu Area
Monroe Place Stormwater Improvements**

The City of High Point (City) performed a watershed planning study that identified areas of concern and recommended improvements in the Hamilton-Montlieu area. Project M-2, Monroe Place, from that study evaluated the Richardson Avenue, North Hamilton Street, Monroe Place, Oakland Place and East Ray Avenue stormwater collection systems. The study concluded that the majority of these systems were undersized for a 10-year event and are frequently overloaded causing flooding issues. The study further recommended replacing a portion of these systems with larger lines and the consideration of detention. Freese and Nichols, Inc. (FNI) will assist the City by providing evaluation and design of the required improvements to alleviate the flooding issues in this area. A detailed scope of work is provided below:

SCOPE OF SERVICES

A. Data Collection

1. Kickoff Meeting: FNI will conduct a kickoff meeting with City staff to discuss project goals, scope, deliverables and schedule. It is anticipated that an on-site evaluation of the impacted areas will be conducted concurrently.
2. Data Collection - FNI will review existing available information provided by the City including record drawings, previous studies, GIS Information, previous drainage complaint database information, and other pertinent information related to the project. FNI will prepare and submit a Data Request Memorandum and provide to the City at the kickoff meeting.

B. Preliminary Design

FNI will utilize information collected in Task A to evaluate alternatives and present a recommended alternative for the project. The evaluation will generally include the following:

- Develop a hydraulic 2D model of the Monroe Place Area
 - Assign attributes to the existing Storm Drainage GIS features provided by the City along with survey information obtained in Task D.
 - Build surface/obtain high quality LiDAR for use in hydraulic model
 - Delineate sub-watersheds and determine where assumptions will be made
- Utilize the hydraulic model to evaluate the existing system;
- Set spread criteria and other hydraulic parameters of the proposed system per City standards and preferences;
- Utilize the model to evaluate alternatives:
 - Confirm the original recommendation and optimize pipe sizes with split flow options
 - Evaluate the need for and locate additional inlets
 - Develop and evaluate one additional alternative, to include possible downstream detention and/or treatment

- Evaluate up to two (2) alternatives for stabilizing the downstream channel.

FNI will prepare a Preliminary Design Memorandum (PDM) summarizing the alternatives evaluated, considerations, recommendations, system layout and a Preliminary Opinion of Probable Construction Cost (OPCC). FNI will conduct a workshop with City staff to discuss the PDM, the recommendations, comments and to select a preferred alternative. FNI will revise the PDM based on City comments and submit five (5) final hard copies and one (1) CD with an electronic copy in PDF format of the Final PDM.

C. Final Design

1. Preparation of Plans and Specifications – FNI will prepare construction drawings, technical specifications, and an opinion of probable construction cost. Contract and bidding documents will be prepared under a separate agreement at a later date. Documents will be submitted to the City for progress review at the 60% and 90% level. FNI will conduct design review workshops with the City's staff as part of each progress submittal.
2. Based on City comments and coordination, FNI will prepare final construction plans, specifications and updated opinion of probable construction cost for the project. The plans and specifications will be used for the Bidding and Construction Phase at a future date.
3. Permitting – FNI will prepare permit applications and coordinate with the review agencies. It is anticipated that a Sediment and Erosion Control Permit will be obtained from NCDEQ and environmental permits will be required from USACE and NCDEQ for stream impacts. It is anticipated that the City will pay all permitting fees.

D. Topographic Survey

FNI will prepare a limited topographic survey of the project area. The intent of the survey is to provide adequate information to complete the design and will be supplemented with record drawing information (if available) and information obtained as part of the site visit noted above and SUE information noted below. The survey will include basic topography of the area including survey of visible surface feature and inverts of sanitary sewer and storm drain. The final limits will be determined upon completion of the Preliminary Design Phase.

E. Subsurface Utility Engineering

FNI will subcontract with a SUE firm to provide the following SUE services:

1. SUE Quality Level "A" (QLA) – Provide QLA information for a total of eight (8) test hole locations along various points throughout the pipeline alignment. QLA services will be in accordance with ASCE Publication CI/ASCE 38-02 (Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data). Subconsultant will excavate test holes by means of non-destructive vacuum excavation methods. Subconsultant will produce a summary sheet containing the coordinates and elevation to the top of the utility at each test hole location with test holes incorporated in the surveyor's topographic survey file.
2. SUE Quality Level "B" (QLB) – Designate horizontal location information for the sections of force main in the vicinity of each river crossing, railroad crossing and other bored crossing. For purposes of this scope, it is anticipated that QLB services will be provided for up to 2,000 linear feet of the alignment. This information is obtained through the application and interpretation of appropriate non-destructive surface geophysical methods. A variety of electromagnetic equipment will be used to complete the process. Residential services and irrigation systems will not be mapped,

commercial services will be mapped should they cross or parallel the alignment. Un-locatable lines will be depicted as per records from the utility if available.

TIME OF COMPLETION

FNI is authorized to commence work on the Project upon execution of this Agreement and agrees to complete the services in accordance with the following schedule:

1. Preliminary Design – Completed within 90 days from Notice to Proceed
2. 60% Submittal – Completed within 60 days from approval of PDM
3. 90% Submittal – Completed within 30 days from receipt of comments on 60% Submittal
4. Final Submittal – Completed within 15 days from receipt of comments on 90% Submittal

If FNI's services are delayed through no fault of FNI, FNI shall be entitled to adjust contract schedule consistent with the number of days of delay. These delays may include but are not limited to delays in Owner or regulatory reviews, delays on the flow of information to be provided to FNI, governmental approvals, etc.

COMPENSATION

FNI shall perform professional services as outlined the Scope of Services for a not to exceed fee of Two Hundred Six Thousand Five Hundred Eighty Dollars (\$206,580) broken down as follows:

- Kickoff/Data Review/Site Visit - \$4,800
- Develop 2D Model - \$16,330
- Alternatives Analysis for the System - \$19,700
- Alternatives Analysis for the Channel - \$6,400
- Prepare Preliminary Design Report and Workshop - \$16,900
- Final Design (60%, 90% and Final) - \$78,530
- Permitting (S&EC, USACE) - \$18,770
- Topographic Survey - \$18,950
- SUE Level B - \$18,200
- SUE Level A - \$8,000

Details concerning the fee are included in Attachment CO.

ATTACHMENT CO

COMPENSATION

Compensation to FNI for the Scope of Services shall be computed on the basis of the Schedule of Charges, but shall not exceed Two Hundred Six Thousand Five Hundred Eighty Dollars (\$206,580); If FNI sees the Scope of Services changing so that services are needed in addition to those services described, FNI will notify OWNER for OWNER's approval before proceeding. Compensation to FNI for such services shall be computed based on the Schedule of Charges.

Schedule of Charges:

<u>Position</u>	<u>Rate</u>
Professional - 1	107
Professional - 2	130
Professional - 3	146
Professional - 4	169
Professional - 5	197
Professional - 6	200
Construction Manager - 1	85
Construction Manager - 2	111
Construction Manager - 3	131
Construction Manager - 4	164
CAD Technician/Designer - 1	91
CAD Technician/Designer - 2	117
CAD Technician/Designer - 3	145
Corporate Project Support - 1	87
Corporate Project Support - 2	105
Corporate Project Support - 3	139
Intern/ Coop	53

Rates for In-House Services

Travel

Standard IRS Rates

Bulk Printing and Reproduction

	<u>B&W</u>	<u>Color</u>
Small Format (per copy)	\$0.10	\$0.25
Large Format (per sq. ft.)		
Bond	\$0.25	\$0.75
Glossy / Mylar	\$0.75	\$1.25
Vinyl / Adhesive	\$1.50	\$2.00
Mounting (per sq. ft.)	\$2.00	
Binding (per binding)	\$0.25	

OTHER DIRECT EXPENSES:

Other direct expenses are reimbursed at actual cost times a multiplier of 1.10. They include outside printing and reproduction expense, communication expense, travel, transportation and subsistence away from the FNI office and other miscellaneous expenses directly related to the work, including costs of laboratory analysis, test, and other work required to be done by independent persons other than staff members. For Resident Representative services performed by non-FNI employees and CAD services performed In-house by non-FNI employees where FNI provides workspace and equipment to perform such services, these services will be billed at cost times a multiplier of 2.0. This markup approximates the cost to FNI if an FNI employee was performing the same or similar services.

These rates will be adjusted annually in February.