



Date: February 5, 2019

To: Thomas J. Bonfield, City Manager

Through: W. Bowman Ferguson, Deputy City Manager

From: Donald F. Greeley, Director, Water Management

Subject: East Durham Water and Sewer Rehabilitation Project Phase I and Belt Street Regional Stormwater Improvements – Professional Engineering Services Contract for Hazen and Sawyer, P.C.

Executive Summary

The Department of Water Management (DWM) issued a Request for Qualifications (RFQ) for Professional Engineering Services for predesign, design, permitting, bidding, and construction-related services for the rehabilitation and replacement of water lines in East Durham. The attached map (Figure 1 – East Durham Project Area) shows the full extents of the proposed project area. The engineering firm Hazen and Sawyer, P.C. (H-S) was selected and a scope of services has been negotiated in the amount of \$3,722,937.12 for Phase I.

The proposed project is the largest utility system rehabilitation project undertaken by the City in the last 25 years, and is over twice the size of the previously approved American Tobacco Waterline Replacement Project (ATD), and over three times the size of the Central Park Waterline Replacement Project (CP) currently in construction. The proposed scope for the project includes:

- 57,000 linear feet (LF) of waterlines and appurtenances
- 46,200 LF of sewer lines
- Approximately 2,500 LF of 36" diameter transmission main
- Over 15,000 LF of existing stormwater infrastructure

The East Durham Project will be broken in to several design phases and construction contracts to manage the overall impacts of the project and minimize disruptions. The East Durham project is a continuation of these extensive water main replacement projects, such as the Downtown Loop Project, that started with the oldest mains in the City. Figure 2 includes additional information on these prior project extents.

This initial contract will provide predesign and a preliminary engineering report (PER) for later phases of design and construction; and this contract will be amended to address these subsequent phases. Due to immediate needs of isolated portions of the project area, some complete design is included in the initial contract. These are described in more detail below and include the East-West Reinforcing Main (EWRM) and utilities around the Fayette Place site.

Recommendation

To authorize the City Manager to execute a contract with Hazen and Sawyer, P.C., for professional engineering services in an amount not to exceed \$3,722,937.12 for the East Durham Water and Sewer Rehabilitation Project Phase I and Belt Street Regional Stormwater Improvements;

To establish a contingency fund for the contract in an amount not to exceed \$372,293.72;
and

To authorize the City Manager to negotiate change orders for the contract provided that the total contract cost does not exceed \$4,095,230.84.

Background

DWM is responsible for the maintenance of existing water distribution and sewer collection infrastructure in east Durham. A significant portion of this infrastructure is very old, and has been in service beyond its recommended service life. As these water and sewer mains have reached the end of their service life, they require increased maintenance and are significantly more likely to break or leak. DWM evaluates areas where increased maintenance is required and generates Capital Improvement Program (CIP) projects to address them.

In addition to targeting areas with increased maintenance issues, DWM considers potential and current redevelopment when evaluating areas for CIP projects. When a project area is experiencing both increased maintenance costs and is being evaluated for redevelopment, the DWM recommends the associated CIP projects be completed sooner than project areas with only one of the above factors. The Golden Belt District is experiencing significant redevelopment, and significant additional development is anticipated as part of the Fayette Place project, creating further need to replace the existing water and sewer infrastructure to meet current fire flow requirements, sewer flow increases, and minimize service disruptions to current and future customers.

The East Durham water and sewer replacement project shown in attached Figure 1 is generally bounded to the north by Taylor Street, to the south by Linwood Avenue, to the west by Fayetteville Street and to the east by Alston Avenue. The EWRM replacement included in the American Tobacco project is included in this project as well; upon completion a new transmission main will link the City's Williams Water Treatment Plant to the existing elevated storage tanks.

The proposed contract also includes significant assessment and evaluation of existing stormwater infrastructure. DWM coordinates large scale water and sewer rehabilitation work with the Public Works Department. This coordination insures there is no duplication of street and stormwater infrastructure replacement, and minimizes disruptions and impacts to area residents and businesses. Typically, inspection and flushing of existing storm drainage systems is performed to identify any systems that may be compromised or reaching the end of their useful life. Storm drainage systems that are in need of replacement are identified and design services are included in this contract for this contingency. In addition, storm drainage infrastructure that has already been identified for replacement will be included in the work. In this case, two stormwater infrastructure projects are included; Belt Street Regional Stormwater Improvements and a Private Drainage Assistance Program (PDAP) project at 1211 Lincoln Street.

Professional services work is also proposed for Belt Street, this work will address aging and compromised stormwater infrastructure in the area around Belt Street. Periodic flooding in this area resulting from outdated storm drainage systems will also be targeted as part of this work. Professional services work will also address a PDAP project at 1211 Lincoln Street as well as existing City-maintained drainage systems in the right-of-way of Lincoln Street. The City Council established the PDAP to assist property owners with compromised drainage systems that meet certain eligibility requirements. The Durham Code of Ordinances,

[Sections 70-684 through 70-690](#), describe the eligibility criteria, cost sharing requirements, and funding amounts of the program. PWD is responsible for administering the program.

Public notification and community outreach services will be provided during all phases of this project per the City's notification policy, as well as from the outreach plan developed in the PER.

Based on the experienced gained from previous infrastructure rehabilitation projects in this portion of town, additional effort is proposed in surveying the existing conditions and below ground utilities, community outreach during all phases of the project, and identifying potential impacts to the various stakeholders within the project area. These efforts should lead to shorter construction times and reduced impacts to stakeholders.

The total estimated professional services cost of all current and future phases of the project is approximately \$9.5 million. This includes pre-design tasks like survey and geotechnical exploration through services construction observation and administration. The estimated total construction cost of all future construction projects is approximately \$30 million. The total duration of the project is estimated to be between five and seven years including construction.

The construction projects will be broken in approximately five phases to coordinate and sequence construction, including a separate phase for the large diameter transmission main. The first of these construction phases is estimated to cost \$10.5 million including improvements necessary to expedite the Fayette Street project.

DWM recommends award of the design and construction related services to a single firm on a project this extensive to reduce the number of contracts and bids that must be administered. Consolidated these services in to one contract will reduce administration costs and expedite deliverables. Initial due diligence of the existing infrastructure conducted by the City also indicates that many of the affected utilities will have to be moved to or replaced within the same rights-of-way (ROW). A single set of design documents will be necessary to achieve this level of coordination.

Issues and Analysis

In January 2018, the DWM advertised for an RFQ. Four firms responded to the RFQ:

CDM Smith, Inc.
Hazen and Sawyer, P.C.
McGill and Associates, Inc.
Withers and Ravenel, Inc.

Two firms were short-listed to present their proposals to the selection committee. The selection committee was comprised of staff from DWM, the Equal Opportunity/Equity Assurance Department (EO/EA) and the Department of Public Works (DPW).

Key factors in the selection of the proposed consultant included experience with large infrastructure rehabilitation projects as an engineering firm, a significant number of staff experienced in the rehabilitation of utilities in an urban environment, and the engineering firm's overall project approach. H-S's proposal included significant community outreach, comprehensive approaches to the assessment and design of the utilities involved and an innovative design approach of the proposed stormwater facilities.

H-S also demonstrates a firm commitment to Historically Underutilized Businesses (HUB), exceeding the goals set for the project. It is anticipated that future phases will have additional HUB participation.

The committee scored this proposal the highest based on the overall experience, quality and depth of the project team and approach.

H-S has provided engineering services for the study of the routing of the large diameter transmission main project since its inception. They have a wealth of knowledge gleaned from the predesign, design, and now construction phases to improve on this project's design and public outreach.

Based on their qualifications and experience and strength of their project team, the committee selected the firm of Hazen and Sawyer, P.C. for the project.

Alternatives

Alternative #1 - Do not move forward with the contract and prepare all design plans in-house. Department staff does not have the resources or availability to survey and prepare design plans for a project of this magnitude. This alternative would likely result in delayed construction and could potentially result in a failure to satisfy the redevelopment needs in the project area.

Alternative #2 – Do not move forward with the project. This alternative would result in limited water capacity for redevelopment in this portion of Durham. Additionally, this may result in an increase in the number of waterline breaks in the near future, resulting in increased maintenance costs and traffic disruptions.

Alternative #3 – Break the project in to smaller project areas and issue multiple design contracts. This alternative would take significantly longer to implement, and would jeopardize the City's ability to complete the necessary rehabilitation ahead of anticipated redevelopment. This alternative would also be significantly less efficient, requiring the management of more design and construction contracts.

Financial Impact

The immediate cost to the City for the contract with Hazen and Sawyer, P.C. is \$3,722,937.12. The funds for the contract are available as outlined below:

Base Contract Fund:	4100P002-731004-P0BEA	\$1,136,972.75
	4100P002-731004-P28EA	\$1,788,727.56
	4300P002-731004-P04EA	\$419,351.45
	4300L045-725000-LK100	\$75,434.58
	4300L045-725000-LK107	\$302,450.78
Contingency Fund:	4100P002-731900-P0BEA	\$113,697.278
	4100P002-731900-P28EA	\$178,872.76
	4300P002-731900-P04EA	\$41,935.14
	4300L045-725000-LK100	\$7,543.46
	4300L045-725000-LK107	\$30,245.08
Total Contract:		\$4,095,230.84

EBOP Summary

The Equal Opportunity/Equity Assurance Department reviewed the proposal submitted by Hazen and Sawyer of Raleigh, NC and determined that they are in compliance with the Ordinance to Promote Equal Business Opportunities in City of Durham Contracting.

M/W UBE REQUIREMENTS

The MUBE goal of 8% and WUBE goal of 6% were set for this project. Hazen and Sawyer will subcontract to the following certified firms:

Firm	ID	City/State	Amount	% of Contract
Stewart Engineering, Inc.	MUBE	Raleigh, NC	\$336,250.00	9%
CriTek Engineering Group, PC	MUBE	Greensboro, NC	\$44,700.00	1%
Hollins Construction Services	MUBE	Wake Forest, NC	\$78,530.00	2%
Falcon Engineering, Inc.	WUBE	Cary, NC	\$75,250.00	2%
Cooper & Associates Surveyors, PA	WUBE	Cary, NC	253,500.00	7%

The MUBE and WUBE goals were exceeded.

WORKFORCE STATISTICS

Total Workforce:

Employment Category	Total Employees	Total Males	Total Females
Project Manager	67	54	13
Professional	90	59	31
Technical	21	19	2
Clerical	17	3	14
Labor	0	0	0
Total	195	135	60

Male:

Employment Category	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project Manager	50	1	0	3	0
Professional	51	3	3	2	0
Technical	12	5	0	2	0
Clerical	3	0	0	0	0
Labor	0	0	0	0	0
Total	116	9	3	7	0

Female:

Employment Category	White	Black	Hispanic	Asian or Pacific Islander	Indian or Alaskan Native
Project Manager	12	0	1	0	0
Professional	22	4	4	1	0
Technical	2	0	0	0	0
Clerical	10	3	1	0	0
Labor	0	0	0	0	0
Total	46	7	6	1	0