CITY OF DURHAM

Date: **January 22, 2019**

To: **Thomas J. Bonfield, City Manager**
Through: **W. Bowman Ferguson, Deputy City Manager**
From: **Donald F. Greeley, Director, Water Management**
Subject: **Long Range Water Resources Plan – Professional Services Contract Award to Hazen and Sawyer, Inc.**

Executive Summary
In April 2018, the Department of Water Management (DWM) issued a Request for Qualifications (RFQ) for professional engineering services for the development of a Long Range Water Resources Plan (LRWRP) for the City of Durham that integrates raw water supply and transmission capacity, potable water treatment capacity, water conservation and demand management, potential reclaimed water use, and wastewater treatment capacity. This innovative LRWRP will provide an understanding of the relationships between sources of risk, the City's ability to meet the potable and non-potable water needs of its service area for the next 50 years, and the City's ability to provide uninterrupted water and sewer service.

The City and County are beginning the process of developing a new Comprehensive Plan to replace the one from 2005. The Comprehensive Plan will guide development in Durham and accommodate future growth, setting a cohesive vision for the community. The Long Range Water Resources Plan will be informed by the Comprehensive Plan and the two plans will be closely coordinated. Phase I of the LRWRP will include tasks not dependent upon the results of the Comprehensive Plan. Phase II of the LRWRP will include tasks dependent on information from the Comprehensive Plan, as well as information from Phase I.

The overall result of this project will assist the DWM in right-sizing the City's water and sewer infrastructure throughout the next 50 years, aligning its capital improvement projects with its water efficiency and conservation program in a way that balances risk and efficiency in the context of our currently changing development patterns and changing climate.

The DWM received three (3) responses to the RFQ. Hazen and Sawyer was selected and a scope of services for the project has been developed in two phases. Phase I has been negotiated in the amount of $1,169,000.00. Phase II has been tentatively negotiated in the amount of $409,900.00 with the final scope and cost for Phase II to be determined upon substantial completion of Phase I and with input from the Comprehensive Plan.

Recommendation
The DWM recommends that the City Council:

1. Authorize the City Manager to execute a Phase I contract with Hazen and Sawyer, P.C. for professional engineering services to develop the Long Range Water Resources Plan in an amount not to exceed $1,169,000.00;
2. Authorize the City Manager to negotiated and execute a Phase II contract amendment with Hazen and Sawyer, P.C. for completion of the Water Resources Portfolio in an amount not to exceed $409,900.00;

3. Establish a contingency fund for the Phase I and Phase II contracts in the amount of $110,000.00; and
4. Authorize the City Manager to negotiate and execute amendments to the Phase I and Phase II contracts provided that the total contract cost does not exceed $1,688,900.00.

Background
The City of Durham needs a Long Range Water Resources Plan (LRWRP) that integrates raw water supply, potable water treatment capacity, water conservation and demand management, reclaimed water, and wastewater treatment capacity. The LRWRP will provide an understanding of the relationships between sources of risk, the City's ability to meet potable and non-potable water needs of the City's service area for the next 50 years, and the City's ability to provide uninterrupted water and sewer service.

The City has been recognized for national excellence in sustainability with a 4-STAR certification by STAR Communities and has a "strategic plan that serves as a road map pointing the organization from its firm foundation to become the leading city in providing an excellent and sustainable quality of life." The LRWRP will be consistent with the City of Durham Roadmap to Sustainability and will include strategies that mitigate the risk of future increases in climate variability.

The major components of the LRWRP will include:
1. Water Demand and Wastewater Flow Forecasts
2. Water Conservation Plan with Program Evaluation
3. Water Resources Portfolio

<u>Water Demand and Wastewater Flow Forecasts</u>
The Department of Water Management has developed numerous flow projections over the past several years, including raw water demands, potable water demands, future wastewater collected, etc. Each projection has been for a specific project, such as sizing a water treatment plant or justifying a water supply storage allocation. These flow projections have used different methods, relied on different sources of data, and used different planning horizons. Furthermore, the last water demand flow projections for evaluating water supply needs were based on data from 2010 or earlier. Much has changed in the City and Triangle Region since then in patterns and types of development, as well as in patterns of water use.

The City will benefit from a single water demand and wastewater flow forecast that provides consistency for all water and wastewater projects. Such an approach will save time and effort overall, as well as provide a more rigorous approach for all projects. We will be using a parcel-based approach and taking advantage of the Triangle CommunityViz Model recently developed for regional transportation planning, and the new Comprehensive Plan.

<u>Water Conservation Plan with Program Evaluation</u>
The City of Durham has had an award-winning water conservation program since 1995. Durham residents, businesses, and institutions used 12% less water in 2012 than in 1999, despite a 20% increase in total customer accounts. This significant increase in efficiency is consistent with trends observed nationwide and reflects the conservation ethic that was fostered among customers in Durham and other Triangle area communities – many of whom implemented permanent changes to reduce water use – during the record droughts of 2001-02 and 2007-08.

The City of Durham has reinforced this trend through a combination of educational outreach, regulatory initiatives, and customer incentives. However, continued program effectiveness

requires a rigorous evaluation of the existing program, providing a basis for eliminating ineffective elements, adding promising elements, and targeting the City's resources most wisely.

Water Resources Portfolio

The Jordan Lake Partnership published a Compendium of Future Water Supply Sources which was limited to those water supply sources identified in the Triangle Regional Water Supply Plan. The Long Range Water Resources Plan will evaluate the water supply sources identified in the Compendium, all water supplies considered by the City in the past, the recently completed Reclaimed Water Master Plan, and determine whether additional alternatives are available. We will consider more creative options, such as cooperating with neighboring water systems to optimize existing regional supplies or developing new, shared supply sources, and evaluate the suite of viable water supply alternatives to meet the forecasted water demands. The result will be a portfolio of water resources to support the City of Durham for the next 50 years.

Issues and Analysis

In April 2018, the Department of Water Management (DWM) issued a Request for Qualifications (RFQ) for professional engineering services for the development of a Long Range Water Resources Plan for the City of Durham that integrates raw water supply and transmission capacity, potable water treatment capacity, water conservation and demand management, potential reclaimed water use, and wastewater treatment capacity. The DWM received three (3) Statements of Qualifications (SOQs):

Hazen and Sawyer, P.C.
HDR Engineering, Inc. of the Carolinas
RTI International

All three (3) firms were invited to present their proposals to the selection committee. The selection committee was comprised of staff from the DWM and the Equal Opportunity/Equity Assurance Department. Based on their SOQ and presentation the committee selected Hazen and Sawyer for the project.

The City and County are beginning the process of developing a new Comprehensive Plan to replace the one from 2005. The Comprehensive Plan will guide development in Durham and accommodate future growth, setting a cohesive vision for the community. The Long Range Water Resources Plan will be informed by the Comprehensive Plan and the two plans will be closely coordinated. Phase I of the LRWRP (see Exhibits A and B) will include tasks not dependent upon the results of the Comprehensive Plan. Phase II of the LRWRP will include tasks dependent on information from the Comprehensive Plan, as well as information from Phase I.

Alternatives

One alternative is to not move forward with the project. The DWM could continue to develop ad hoc and disparate water demand and wastewater flow projections for every future master plan. The DWM could continue to fund its water efficiency and conservation program activities as they now are without understanding their effectiveness. The DWM could continue to implement its Capital Improvements Program and hope that the future continues to unfold as was expected years ago. The result would be greater risk for the City, its residents and businesses in a period of rapidly changing development patterns and climate change.

Financial Impact

Funding for this project is available in the following accounts:

Organization Code	Object Code	Project Code	Amount
4100 P002	731004	P0BLR	$1,092,700.00
4100 P002	731900	P0BLR	$509,900.00
4100 P002	731004	P05LR	$76,300.00
4100 P002	731900	P05LR	$10,000.00
		TOTAL	$1,688,900.00

The project includes the following task items for Phase I:

	Water Demand Forecasts	$367,440.00
	Wastewater Flow Forecasts	$36,200.00
	Water Efficiency and Conservation Plan with Program Evaluation	$277,300.00
	Climate Variability Analyses	$28,500.00
	Bathymetric Surveys	$76,360.00
	Coordination of Plans (Water Resources and Land Use)	$80,000.00
Miscellaneous Engineering Services	$20,000.00	
	Meetings and Workshops	$124,400.00
	Deliverables	$156,300.00
	Other Direct Costs	$2,500.00
	Total Project Cost	**$1,169,000.00**

The project includes contingency for Phase II. Phase II has been tentatively negotiated in the amount of $409,900.00 with the final scope and cost for Phase II to be determined upon substantial completion of Phase I.

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

M/W UBE REQUIREMENTS
There were no MUBE or WUBE goals for this project, as there were no subcontracting opportunities identified by the Department of Water Management. Hazen and Sawyer will subcontract to the following certified firm:

Firm	ID	City/State	Amount	% of Contract
Stewart Engineering, Inc.	MUBE	Raleigh, NC	$76,360.00	6.6%

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