

CONTRACT ROUTING FORM

1. Complete the information below BEFORE printing and completing items 2 through 7. Items in red are required.

Department: Public Works

Department contract file name (use effective date): Hazen_PublicWorks_20231120

Project Code: [Click here to enter text.](#)

Contract type: Agreement

Contracted Services/Goods: Engineering Services

Contract Component: Other

Change Order Number/Addendum Number: [Click here to enter text.](#)

Vendor Name: Hazen and Sawyer

Effective Date: 11/20/23

Approved by: County Manager

Date approved by the BOC: 11/20/23

Ending Date: [Click here to enter a date.](#)

Total Amount: \$ 118,000.00

Please Return Contract to:

Name: Wendy Paschal

Email: wendy.paschal@chathamcountync.gov

Special Instructions for Clerks

Office:

2. Department Head or his/her designee has read the contract in its entirety.

By: *Blake Mills / Wendy Paschal* (Department Head signature required)

3. County Attorney has reviewed and approved the contract

County Attorney has reviewed and rejects the contract Reason: _____

This is an automatic renewal and does not require approval from the County Attorney: Yes No



If this box is checked the County Attorney's Office has reviewed the contract but has not made needed changes to protect the County because the contract is a sole source contract and the services required by the County are not available from another vendor.

4. Technical/MIS Advisor has reviewed the contract if applicable. Yes No

5. Vendor has signed the contract. Yes No

6. A budget amendment is necessary before approval. Yes No

If budget amendment is necessary, please attach to this form.

7. Approval

Requires approval by the BOC - contracts over \$100,000.00. Follow Board submission guidelines.

Requires approval by the Manager – contracts \$100,000 or less.

8. Submit to Clerk.

Clerk's Office Only

Finance Officer has signed the contract

The Finance Officer is not required to sign the contract

NORTH CAROLINA

CHATHAM COUNTY

AGREEMENT FOR GOODS AND/OR SERVICES

TASK ORDER NO. 7

This Task Order under the Agreement ("Task Order No. 7") is made and entered into this 20th day of November, 2023, by and between Chatham County, a body politic and corporate of the State of North Carolina (the "County") and Hazen and Sawyer (the "Contractor").

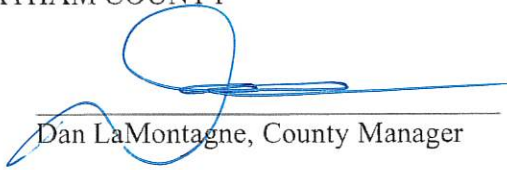
RECITALS

- A. The County and the Contractor entered into an Agreement dated and made effective the 1st day of July, 2022, (the "Agreement").
- B. The County has requested that the Contractor provide an assessment of the County's current customer metering program and assist in determining and developing the criteria and conditions to be addressed to successfully implement advanced metering infrastructure.
- C. The Contractor has agreed to perform the work as requested by the County and described in Appendix I.
- D. The Contractor has agreed that the fees for this Task Order shall not exceed \$118,000.00 without prior authorization from the County.

NOW, THEREFORE, in consideration of the mutual covenants and the conditions contained herein, the County and Contractor agree as follows:


CHATHAM COUNTY

BY:



Dan LaMontagne, County Manager

HAZEN AND SAWYER

BY:


Aaron B. Brower, PE, Associate VP
Hazen and Sawyer
4011 WestChase Boulevard, Suite 500
Raleigh, North Carolina 27607
919-833-7152
ttant@hazenandsawyer.com

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.


Roy Lynch, Finance Director

Appendix 1 Consulting Services for AMI Assessment

Services to be provided by: Hazen and Sawyer with The E Source Companies LLC (Team)

1.1.1 Scope of Services

The Hazen Team will provide an assessment of Chatham County's current customer metering program and assist the utility in determining and developing the criteria and conditions to be addressed to successfully implement advanced metering infrastructure. We will evaluate and recommend potential modifications to Chatham County existing systems and operations, including whether AMI best meets Chatham County needs.

Task 1: Assessment and Business Case

Subtask 1.1: Project Kickoff & Mobilization

Immediately following the notice to proceed, The Hazen Team will meet with project team, in a kickoff meeting to review project scope, requirements, deliverables, timetable, and reporting relationships, and to discuss project issues and concerns.

To provide our team with the necessary information to begin formulating our assessment, a data request for background information, including the current IT environment (e.g., operational systems such as the existing CIS, Asset Management, GIS, maintenance planning, customer web portals, etc.), as well as any environment and integration diagrams that may exist, current conservation programs, current water rate sheets, capital investment plans, etc., will be provided. We will share and review discovery questions with Chatham County project team to understand what information is readily available. The Team will establish a timetable and consider Chatham County staff members' time. The Team will suggest Chatham County staff members to be interviewed and establish an interview schedule that fits within the overall project schedule.

DELIVERABLES

- Kickoff Meeting presentation with associated documents
- Data requests
- Discovery questions

Subtask 1.2: Stakeholder Mapping

Projects are most often a participatory process in which stakeholders with differing levels of participation play a role in achieving a successful project outcome. The Team will identify internal stakeholders (e.g., meter shop staff, customer service, etc.) to engage during the assessment. Participation requirements, however, aren't the same for each stakeholder associated with the project. Instead, participation expectations depend on the degree of a project stakeholder's direct or indirect involvement. Stakeholders usually have many and varied expectations therefore, mapping out their influence and interest in the project is warranted to effectively communicate with them.

Clearly understanding project stakeholders can help you not only gain buy-in and execute your project more effectively, but it can also help you gain more support and resources, increase project visibility, and prevent costly roadblocks later in the project cycle. The county may elect to engage external stakeholders (e.g., other county officials (executives and department leads), large customers, etc.) at some point in the process.

To address this issue, the Hazen Team will host two (2) stakeholder virtual mapping sessions with Chatham County to properly identify who needs to be involved or informed as well as the level of support for the project and how each stakeholder may facilitate project implementation. The Hazen Team will then use this information to build out a stakeholder analysis which will provide the project team with valuable information to help Chatham County fulfil the requirements of the stakeholders. Successfully achieving genuine change takes powerful guiding teams; this is why the Hazen Team will work with Chatham County to construct guiding teams using the information gathered from the stakeholder mapping sessions.

ASSUMPTIONS

- Chatham County will identify those individuals for the stakeholder mapping sessions to derive the most accurate information
- The information gathered during the stakeholder mapping sessions is confidential and will be only used by the project team

DELIVERABLES

- Stakeholder Analysis (living document)

Subtask 1.3: Technology & State of the Industry Education

A customized technology review workshop will be developed for this Task. During the workshop, the Hazen Team will discuss the critical success factors and relative advantages / disadvantages of AMI platforms as they relate to Chatham County. We review success stories of other utilities and discuss how Chatham County can avoid potential pitfalls. We will provide a market vendor overview along with explanations of how the products and system characteristics could impact your operations and customer base. The technology review will be an interactive discussion designed to provoke thought, prompt questions, and bring Chatham County team base-level knowledge up to a level suitable for making decisions going forward with an AMI initiative.

DELIVERABLES

- Technology & State of the Industry presentation and workshop

Subtask 1.4: Program Goals & Objectives Identification

Our team forms a solid foundation for success by conducting a workshop with executives, stakeholders, and key SMEs to establish a common understanding of your project goals, drivers, success factors, and risks. This approach is designed to stimulate discussion around project goals and objectives that otherwise may not have been considered. This task will serve as the foundation for future work to ensure what is ultimately deployed directly addresses your goals and objectives. Findings and conclusions from this task will be summarized in the final assessment presentation.

DELIVERABLES

- Summary of findings in the Final Assessment Presentation

Subtask 1.5: Discovery & Operational Impact Assessment

As a foundation for the economic and financial analyses and in preparation for the AMI requirements definition, we will conduct a series of short interviews and a set of workshops to identify key operational impacts.

The Hazen Team will work with Chatham County PM to identify the internal subject matter experts (SMEs) and schedule the necessary workshops to review the discovery responses received with each respective Chatham County department. During this effort, The Hazen Team will review the policies currently in place that may be affected by the deployment of new technology. The output of this task will serve as input to The Hazen Team's findings and recommendations specific to Chatham County readiness to begin an AMI initiative.

As applicable, the Hazen Team expects to meet with the Chatham County representatives of the following at a minimum:

- Billing / Customer Service
- Meter Reading / Meter Shop / Field Services
- Finance / Rate Analysis
- Engineering
- Water Operations
- Conservation

DELIVERABLES

- Summary of findings in the Final Assessment Presentation

Subtask 1.6: IT Systems Analysis

Achieving the full benefit of an AMI system requires integrating the AMI system with other Chatham County information systems. For example, other processes and interfaces may automatically notify customers of anomalies via instant messaging, email, or outbound dialing, based on account data in the CIS. Linking consumption data from all the customers in a specific area to production data from the SCADA system could (if applicable) help you monitor and manage Non-Revenue Water (NRW).

Additionally, during the AMI field deployment, an AMI system may need to interact efficiently with several Chatham County information systems to manage the project and ensure accurate billing during the transition. For example, meter and customer data must be generated out of the CIS to create work orders, which in turn may be coordinated with the asset management system.

Photographs and geo-positioning coordinates are likely to be part of the meter asset database. Meter register ID numbers may be different than meter base ID numbers if some meters are retrofitted. The CIS typically requires meter and Meter Interface Unit (MIU) ID numbers in inventory before they can be accepted in work orders.

The Hazen Team will conduct a workshop with applicable personnel to review your existing information systems to identify areas that must be modified for effective integration to achieve the benefits of AMI. This review will also provide input into IT costs for advanced metering to be included in the business case. We will also review existing networks for potential use as backhaul for the AMI system.

DELIVERABLES

- Current state and future state systems documentation

- Summary of findings in the Final Assessment Presentation

Subtask 1.7: Financial Analysis

A financial analysis will be prepared, giving an organization a long-term outlook for their capital investment while also serving to quantify and memorialize what predicted impact the project will have on operational efficiencies. Following the efforts of the preceding tasks to gather preliminary cost information and potential business case benefits, additional data points will likely be needed to complete the financial analysis development.

We will input into our model major technology and deployment scenarios that incorporate many variables (project implementation phasing, differential inflation rates, component and labor costs, equipment lifespan, deployment timeline, etc.), and the average model we produce has between 200-300 discrete inputs (or more, depending on complexity) to ensure the highest level of fidelity and precision possible. We will produce engineer's estimates and annual budgetary outlays by leveraging our past proposals and contracts with which we have been involved on behalf of our clients.

The model will calculate annual and cumulative cash flows across the project lifespan, present value, return on investment, internal rate of return and other financial measures of interest. The analysis will also delineate what meters should be replaced vs retrofit considering known degradation, meter age, testing data, etc. Using a sensitivity analysis, we can vary the inputs to arrive at best- and worst-case scenarios, ensuring that Chatham County is prepared for all potential outcomes. Our financial analyses are also flexible and robust enough to accommodate an assessment of the financial impact across various business units within Chatham County. By allocating costs and benefits across different groups, we can reveal what the relative effects are for a specific department or division, as well as for the overall organization.

For many projects, the costs derived from a traditional cost-benefit analysis are only one part of the overall value stream. While the financial modeling deals well with only hard, direct costs and benefits, a comprehensive business case must also consider soft and indirect costs and benefits, such as enhanced customer satisfaction and confidence, or reduced environmental impact. As part of the larger business case, we will include an explicit review of the non-economic factors that can be realized. We will endeavor to describe and evaluate the significant direct and indirect impacts of technology strategies in these areas, focusing on the relevant indicators.

ASSUMPTIONS

- The financial analysis resulting from the services described in this statement of work is based on one or more underlying financial models. The Hazen Team does not, however, claim ownership of any of the data inputs into the models or any of the reports, analyses, and other work product resulting from the use of the models.
- The number of model scenarios is limited to three (3).

DELIVERABLES

- Draft and final financial metrics, direct, and indirect benefits, and scenario analysis results
- Summary of findings in the Final Assessment Presentation

Subtask 1.8: Project Implementation Planning

AMI implementation involves several coordinated dimensions. The integrity of the information created during AMI deployment is critical to employee and customer acceptance.

Based on the recommended strategies and financial analysis, the Hazen Team will conduct a workshop and work with Chatham County to prepare a draft project schedule in the form of a Gantt chart that shows the key tasks and milestones for project procurement and deployment. This will help identify the points at which monetary and staffing commitments are required. The draft implementation plan will be updated once a vendor is selected, and the particulars of the system are known.

The suggested project schedule will span from the start of procurement through deployment. All AMI elements, such as metering infrastructure installation, software applications, data management, business processes changes will be planned. At each stage, we will recommend the functions required for project management (for example, vendor selection, field inspections, programming, acceptance testing, etc.) and which functions could be outsourced, provided by the vendor, or should be handled by Chatham County staff.

DELIVERABLES

- Workshop to develop initial project implementation plan/schedule

Subtask 1.9: Assessment Presentation

The Hazen Team's findings that are gathered during the tasks outlined above will be documented in a comprehensive presentation. The presentation will be the primary vehicle for communicating the Hazen Team's recommendations to Chatham County.

The Hazen Team will schedule working sessions with Chatham County upon delivery of the Draft AMI Assessment presentation to review the results and recommendations. The Hazen Team expects Chatham County to provide feedback / questions / comments, which will be incorporated into the Final Assessment presentation. Additionally, the Hazen Team will prepare and conduct a presentation to Chatham County Executive Management / Stakeholders summarizing the effort, results, and recommendations.

DELIVERABLES

- Draft/Final AMI Assessment results presentation

Subtask 1.10: Project Management

The Hazen Team will provide structured project management to ensure that all project components are executed in a timely, organized fashion and completed to the project scope and expectations.

Project management activities will include:

- Develop and maintain the overall project schedule
- Work with all project participants to monitor progress and adjust the work plan as needed
- Schedule and facilitate regular project progress and other meetings
- Create project status reports as required with input from Chatham County
- Track and report on project budget

Project timeliness, quality, and costs are measures of success and satisfaction. As such, the Hazen Team delivery methodology employs a quality monitoring process whereby senior management within the firm will monitor all timeliness, quality, and project costs adherence to ensure success in all areas. The Hazen Team project manager will also manage and maintain the Microsoft SharePoint website for collaboration including calendaring, contacts, document repositories, etc.

Additionally, The Hazen Team will make use of web-based meeting applications for remote meetings, as appropriate.

DELIVERABLES

- Project status reports
- Project schedule
- SharePoint setup and administration

1.1.2 Schedule

The Hazen Team estimates the proposed tasks will span approximately 4 months. The actual project schedule will be provided and refined with Chatham County input during project planning and provide a greater level of detail. The Hazen Team is able to commence work immediately after contract execution.

1.1.3 Compensation

The Hazen Team proposes to perform the requested scope of services as detailed in this proposal for the **not-to exceed** amount presented in **Table 1**. The Hazen Team has calculated the fee based on experience with several similar projects and understanding of the level of effort desired by Chatham County. Our fee includes all services and deliverables described herein. All tasks will be invoiced monthly based on timesheets of the task.

Table 1 - Phase 1 AMI Assessment and Business Case

Task ID	Task	Fee
Task 1	Project Kick-off & Mobilization	\$ 10,000
Task 2	Stakeholder Mapping	\$ 10,000
Task 3	Technology & State of the Industry Education	\$ 8,000
Task 4	Program Goals & Objectives Identification	\$ 7,000
Task 5	Discovery & Operational Impact Assessment	\$ 12,000
Task 6	IT Systems Analysis	\$ 13,000
Task 7	Financial Analysis	\$ 17,000
Task 8	Project Implementation Planning	\$ 15,000
Task 9	Assessment Presentation	\$ 14,000
Task 10	Project Management	\$ 12,000
	Total	\$ 118,000

1.1.4 Assumptions

The following assumptions apply to this proposal:

- The Hazen Team's proposed fee to implement this Scope of Work is based on the timely start and timely completion of each proposed task.
- The Hazen Team will work with the Chatham County project manager to schedule the necessary workshops. We suggest scheduling the majority of the proposed workshops over the course of a single onsite visit spanning 3-4 business days.
- Deliverable documents will be in Microsoft Office, including MS-Word, PowerPoint, Excel, MS-Project, Visio, and Adobe PDF.
- Chatham County will provide The Hazen Team with working space, network connections, infrastructure, administrative support, and other services and materials reasonably required to perform Project work while onsite at Chatham County offices, if requested.
- The above scope and fee once agreed upon will be attached to a Task order via their on-call contract.