



# US 17 at Main Road Intersection Improvements and Main Road/ Bohicket Road Widening

## Purpose

To provide a safer and more efficient access point on and off Johns Island by improving the intersection at US 17 and Main Road. This project will also include intersection improvements where Main Road meets Maybank Highway and capacity improvements to Bohicket Road.

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## Budget

\$195,000,000 from the 2016 Half-Cent Sales Tax.

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## Status

### **Segment A - Main Road from Bees Ferry to River Road/Chisolm Road**

The project team began the National Environmental Policy Act (NEPA) process and right of way (ROW) plans for Segment A on August 13, 2018. The Project Team anticipates holding a Public Meeting to present possible design alternatives in the Spring of 2019.

The NEPA process and ROW plans expected to be completed in the fall of 2020.

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### **Segment C - Bohicket Road**

Charleston County is currently negotiating a contract for the NEPA process..

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### **Maybank Highway at Main Road/Bohicket Road Intersection Improvements**

Charleston County Council approved a design services contract in a effort to expedite intersection improvements on December 20, 2018.

**COUNCIL ACTION**

**18 - 351**

DATE: December 21, 2018  
TO: County Administrator  
FROM: Clerk of Council  
RE: US17/Main Rd Intersection Improvements/Main/Bohicket Widening  
- Request to Approve

At a meeting of County Council held on December 20, 2018, Council voted to approve the scope and fee in the amount of \$137,832.75 for preliminary engineering services and authorize staff to negotiate a contract amendment for full design if supported by the traffic analysis for Maybank Highway and Main Road Intersection Improvements to expedite infrastructure improvements on Johns Island. Project costs will be funded from the US 17 and Main Road Intersection Improvements and Main Road/Bohicket Road Widening since the intersection is within the project limits.

COUNCIL ACTION  
FROM THE OFFICE OF THE COUNTY ADMINISTRATOR

A handwritten signature in black ink, reading "Jennifer J. Miller". The signature is written in a cursive style with a large, decorative initial "J".

**COMMITTEE AGENDA ITEM**

**TO:** JENNIFER J. MILLER, COUNTY ADMINISTRATOR

**THROUGH:** JIM ARMSTRONG, DEPUTY ADMINISTRATOR *JDA*

**FROM:** STEVE THIGPEN *ST* **DEPT.** TRANSPORTATION DEVELOPMENT

**SUBJECT:** US 17 AND MAIN ROAD INTERSECTION IMPROVEMENTS AND MAIN ROAD/BOHICKET ROAD WIDENING

**REQUEST:** APPROVE SCOPE AND FEE FOR ENGINEERING SERVICES AT INTERSECTION OF MAIN ROAD AND MAYBANK HIGHWAY

**COMMITTEE OF COUNCIL:** FINANCE **DATE:** 12/20/18

**COORDINATION:** This request has been coordinated with: (attach all recommendations/reviews)

	Signature of		Individual Contacted
	Yes	N/A	
Legal Department	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u><i>John Miller</i></u>
Procurement/Contracts	<input type="checkbox"/>	<input type="checkbox"/>	_____
Zoning Regulations / Comp. Plan Compliance	<input type="checkbox"/>	<input type="checkbox"/>	_____
Community Services	<input type="checkbox"/>	<input type="checkbox"/>	_____
Grants Auditor	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other: Transportation Development	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other:	<input type="checkbox"/>	<input type="checkbox"/>	_____

**FUNDING:** Was funding previously approved?      yes     no     n/a

If yes, provide the following:	Org.	Object	Balance in Account	Amount needed for item
	TTE038008	64877	<i>137,833</i>	\$137,832.75

**NEED:**    Identifv anv critical time constraint.

**BUDGET OFFICER SIGNATURE:**      *Mark Mile*

**Fiscal impact:**  
*Funds are available in the 2nd Transportation Sales Tax*

**ADMINISTRATOR'S SIGNATURE:** *Wally Small*

**ORIGINATING OFFICE PLEASE NOTE:**

**DUE DATE TO ADMINISTRATOR'S OFFICE IS 5:00 P.M. ON TUESDAY OF THE WEEK PRECEDING THE COMMITTEE MEETING.**

## **SITUATION**

In November 2016, the citizens of Charleston County approved a second Transportation Sales Tax (TST). The 2016 TST ordinance states that projects may include US 17 at Main Road flyover and widening Main Road from Bees Ferry to Betsy Kerrison with Parkway type section at Bohicket as a project of Regional Significance. The project intends to improve safety, increase traffic capacity, provide bicycle/pedestrian facilities, reduce congestion at the intersection of US 17 and Main Road, and improve drainage on Main Road between US 17 and the John F. Limehouse Bridge.

On April 7, 2017, Council authorized staff to negotiate a contract with Infrastructure Consulting Engineers (ICE) for the Phased Engineering Design and Environmental Permitting. ICE received the notice to proceed with the design contract on September 6, 2017, and shortly after began collecting data to begin the National Environmental Policy Act (NEPA) process. The first step of the NEPA process included identifying potential impacts to various environmental features: wetlands, cultural resources, land use (schools, churches, protects farmland, etc.), hazardous materials sites, population demographics, noise, trees, and traffic. In an effort to accelerate the schedule, County Council approved dividing the project into three segments: A, B, and C (shown in attached Figure) on May 15, 2018.

Staff anticipates the completion of the NEPA process and right of way plans for Segment A by August 31, 2020. ICE is currently working on the scope and fee for Segment C.

In order to expedite improvements along Main Road, county staff requested the consultant develop a separate preliminary engineering services scope and fee for Main Road and Maybank Highway Intersection Improvements. The scope includes traffic analysis, conceptual design, environmental screening and cost estimating for conceptual alternatives. These intersection improvements will take into consideration the potential future widening of Main Road to minimize rework in the future. Should the traffic analysis support the need for immediate improvements, county staff will execute a contract amendment with ICE to move forward with final design plans for the intersection improvements. Staff believes the intersection improvements could avoid the lengthy NEPA process if separated from Segment C.

## **ACTION REQUESTED OF COUNCIL**

Approve the attached scope and fee in the amount of \$137,832.75 for preliminary engineering services and allow staff to move forward with a contract amendment if needed for Main Road and Maybank Highway Intersection Segment A - US 17 and Main Road Intersection Improvements.

## **DEPARTMENT HEAD RECOMMENDATION**

Approve the attached scope and fee in the amount of \$137,832.75 for preliminary engineering services and authorize staff to negotiate a contract amendment for full design if supported by the traffic analysis for Maybank Highway and Main Road Intersection Improvements to expedite infrastructure improvements on Johns Island. Project costs will be funded from the US 17 and Main Road Intersection Improvements and Main Road/Bohicket Road Widening since the intersection is within the project limits.

*Johnson / Saro*

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**Conceptual Design and Environmental Screening for  
Main Road/Maybank Highway Intersection Improvement  
Charleston County  
*Scope of Work***

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**INTRODUCTION**

Infrastructure Consulting and Engineering, PLLC (**CONSULTANT**) has been selected by Charleston County (**COUNTY**) to provide engineering services for the Main Road/ Maybank Highway Intersection Improvement (**PROJECT**) in Charleston County.

**Project Location**

The **PROJECT** begins just north of the intersection of Brownswood Road (S-10-1442) and continues south along Main Road (S-10-20) through the intersection of Maybank Highway approximately 2500-ft. where Main Road changes to Bohicket Road. (Project Location Map Figure 1).

**Project Description**

The **PROJECT** will entail traffic analysis, conceptual design, environmental screening, and cost estimating for up to three (3) conceptual intersection improvement alternatives for the Main Road/Maybank Highway intersection. This effort will be independent from the Main Road widening project but will consider potential future widening of Main Road in the vicinity of this intersection such that rework or demolition will be minimized and avoided where practical with the future widening project.

**Scope of Work**

The scope of work included herein includes tasks associated to develop three (3) conceptual designs based on traffic analysis and environmental screening. No field studies will be performed during this phase. The **CONSULTANT** will engage activities to identify appropriate intersection improvement alternatives, prepare environmental screening and associated cost estimates for each alternative. The **COUNTY** will review the draft alternatives and decide whether to advance the project beyond the current phase.

At the **COUNTY**'s discretion, the scope of work by the **CONSULTANT** may be extended to include preliminary design, preparation of final right of way plans, public involvement, environmental permitting, final design and construction plans.

## Project Location Map



Figure 1

## SCHEDULE

The **CONSULTANT** shall complete this scope of work within 9 months from written Notice to Proceed. This schedule assumes two (2) week review periods for SCDOT reviews. Notice to Proceed is estimated to begin by November 2018.

Notice to Proceed	November 2018
Traffic Modeling and Analysis	January 2019
Development of Conceptual Alternatives	March 2019
Environmental Screening and Utility Coordination (QL-D)	May 2019
Develop Concept Design Report	June 2019
Public Meeting	August 2019

## **SUMMARY OF WORK**

The anticipated tasks for this phase of the **PROJECT** shall consist of the following:

- Task 1: Project Management & Coordination
- Task 2: Traffic Modeling and Analysis
- Task 3: Concept Design
- Task 4: Environmental Screening
- Task 5: Utility Coordination (QL D)
- Task 6: Concept Design Report
- Task 7: Public Involvement

The following is the detailed Scope of work for the Main Road/Maybank Highway Intersection improvement project.

### **TASK 1: PROJECT MANAGEMENT & COORDINATION (ICE)**

- 1.1** The **CONSULTANT** shall implement all necessary quality control measures to produce plans that conform to the **COUNTY**, South Carolina Department of Transportation (SCDOT), and Federal Highway Administration (FHWA) guidelines and standards. Prior to submittal to the **COUNTY**, all plans shall be thoroughly reviewed by the **CONSULTANT** for completeness, correctness, accuracy, and consistency to ensure approval of complete right of way plans. **CONSULTANT** shall follow the SCDOT's plan checking procedure checklist and submit to the **COUNTY** a copy of the QA/QC checklist with the appropriate signatures with all plan submittals.
- 1.2** Coordinate with the **COUNTY'S** Project Manager, SCDOT'S Program Manager, the USACE Project Manager, and other project stakeholders. Arrange and attend project meetings, conferences and on-site review meetings.
- 1.3** Prepare monthly invoices for **COUNTY** review, approval and payment. Review subconsultant invoices and cost submittals included for payment in monthly invoices. Monitor payments to subconsultants for services provided.
- 1.4** Manage and monitor the project schedule. Keep the **COUNTY** up to date on the schedule and items that may affect the overall project schedule. Update schedule each month and submit with invoice.
- 1.5** Conduct review meeting with the **COUNTY** to review concepts.
- 1.6** Prepare and distribute meeting minutes for internal and public meetings as required.
- 1.7** Provide overall management of all efforts including the management of the **CONSULTANT'S** subconsultants and team members. Monitor subconsultant activities for adherence to overall project schedule and budget.

## **TASK 2: TRAFFIC ANALYSIS (Bihl, Ramey Kemp)**

### **Traffic Analysis Scope**

The following tasks are planned for the analysis of the intersection of Main Road at Maybank Highway and its surrounding area. This includes the review of up to three alternative intersection configurations.

#### **2.1. Project Background**

The following existing conditions and alternatives analysis information will be used in this study:

- Turning movement count and pneumatic tube traffic data collected in the existing conditions analysis
- Crash data from the existing conditions analysis
- Origin/Destination data from the existing conditions analysis
- CHATS travel demand model run data based on model runs performed in the alternatives analysis

#### **2.2. Traffic Volume Development**

The CONSULTANT will attend up to one meeting with the project team to discuss the design details of the alternative intersection configurations.

Design Year traffic volumes will be developed for the weekday AM and PM peak hours in the study area for the No Build conditions with and without the inclusion of the Mark Clark Expressway project. These traffic volumes will be adjusted as necessary for the alternative intersection configurations. Additional CHATS model runs may be performed if necessary.

#### **2.3. Transportation Analysis**

Traffic analyses will be conducted for one future study year using the latest versions of the Synchro and Highway Capacity Software packages for the AM and PM peak hours with and without the Mark Clark Expressway project and include an analysis of the No Build conditions. Operational results will be summarized in a narrative and graphic format.

Microsimulation modeling such as Transmodeler or Vissim is not included as a part of this task.

#### **2.4. Project Documentation**

A draft Traffic Analysis memorandum will be prepared summarizing the background information, methodology, volume development, analysis results of the scenarios and recommendations for the intersection and surrounding area. This document will also summarize the concepts reviewed and the pros and cons of each alternative in tabular or graphic format. We will prepare for and attend up to two meetings with the project team to discuss the preliminary results of the study.



The draft report will be submitted to Charleston County and other entities as requested by County staff for review.

The CONSULTANT will provide a formal response to comments and address comments received and finalize documentation for use in the project.

### **TASK 3: CONCEPT DESIGN (ICE)**

#### **3. Concept Development**

- 3.1.** The **CONSULTANT** shall prepare up to three (3) alternative conceptual designs of the proposed intersection improvements. The conceptual designs shall be developed in accordance with the South Carolina Department of Transportation (SCDOT) 2017 Roadway Design Manual and the American Association of State Highway and Transportation Officials (AASHTO) "A Policy on Geometric Design of Highways and Streets".
- 3.2.** Conceptual designs shall be developed on aerial photography, GIS data available from the **COUNTY**, and previously completed aerial mapping. Design features to be illustrated shall include the proposed roadway typical sections, roadway alignments and intersection layouts. The conceptual designs shall be presented on color roll-plots for coordination with the **COUNTY** and other project stakeholders and public involvement.
- 3.3.** THE **CONSULTANT** shall work to minimize impacts to private property, buildings, cultural features (churches, cemeteries, parks, etc.), major utilities, and natural resources in the development of the **PROJECT** conceptual designs. County GIS property lines shall be referenced into the conceptual design in order to estimate right of way impacts for each alternative. Impacts to buildings and cultural features shall be estimated from aerial photography, GIS data, previously completed aerial mapping, and a **PROJECT** field review.
- 3.4.** The **CONSULTANT** will prepare cost estimates for each of the 3 design concepts.

### **TASK 4: ENVIRONMENTAL SCREENING (ICE)**

- 4.1.** The **CONSULTANT** will identify potential environmental constraints and concerns within the project study area. This information will be obtained from available data sources to include but not limited to GIS, existing literature, mapping, and findings from previous studies. A field review will be conducted to verify and further document the findings. This information will be incorporated into the development and analysis of alternatives.
- 4.2.** The conceptual design alternatives will be evaluated to determine the potential environmental impacts associated with each concept. This will include but not be limited to the potential impacts to wetlands and waters of the U.S., existing residential and commercial developments, right-of-way, cultural resources,

hazardous material sites, protected species and environmental justice. These impacts will be appropriately documented and included in the final alternative analysis report.

#### **TASK 5: UTILITY COORDINATION (ICE)**

- 5.1 For the purpose of supporting the conceptual design work, the **CONSULTANT** will perform utility impact/conflict analysis from collecting existing facilities to ASCE 38-02 Quality Level "D" (QL-D). The **CONSULTANT** will contact utility owners to obtain GIS, maps, as-built plans for existing overhead/underground utility facilities and perform a review of available and provided utility information to determine the anticipated impacts based on the 3 draft conceptual designs. A summary of the anticipated utility impact analysis for each alternative will be included in the Concept Design Report.

#### **TASK 6: CONCEPT DESIGN REPORT (ICE)**

- 6.1 The **CONSULTANT** will prepare report summarizing the data collected, the three (3) conceptual design alternatives, and the associated cost estimates along with a recommendation of a preferred alternative. The report will be reviewed in draft form by the **COUNTY** and revisions made to the report based on feedback.

#### **TASK 7: PUBLIC INVOLVEMENT (ICE)**

- 7.1 Public Information Meeting – The **CONSULTANT** shall be responsible for preparing all related materials (deliverables would include displays, handouts, comment forms, sign-in sheets, security, and facility fees) associated with scheduling, staffing, providing displays and handouts, and gathering comments for one (1) Public Information Meeting. Additionally, the **CONSULTANT** will put public meeting displays on the project website and provide the ability to comment through the website.

