

**Proposal to Provide  
Professional Engineering Services  
for  
Brevard County Public Works  
Wickham Road & Suntree Boulevard,  
Brevard County, Florida**

Brevard County (County) is proposing to improve the safety and operation of the N. Wickham Road and Suntree Boulevard intersection. These improvements are proposed to address County concerns regarding the overall functionality of the intersection and the observed queue lengths of vehicles at the intersection.

ATKINS has prepared this proposal for the initial phase; data collection, feasibility study and concept planning. The following will be considered:

- Improve the functionality of the intersection.
- Replace the existing traffic signal strain poles with new mast arms.
- Coordinate any proposed signal timing changes with the existing Wickham Road corridor ITS system.
- Upgrade pedestrian crossings to current standards.
- Extending/connecting two lane traffic between the intersection of Suntree Boulevard and US-1.

The following scope of services details the services to be provided.

## **SECTION 1 SCOPE OF SERVICES**

### **TASK 1: SURVEY**

ATKINS will use a subconsultant to prepare the project survey. The survey will be a road route survey, including right-of-way and topographic survey, of the intersection of Wickham Road and Suntree Boulevard. The survey shall begin at the intersection of Wickham Road and Suntree Boulevard and run northerly 700 ft, southerly 700ft, easterly 1,300, and westerly 300 ft, and shall include the following tasks:

1. Establish right-of-ways and vertical control for topographic collection along Wickham Road and Suntree Boulevard within the project limits.
2. Locate all existing above ground improvements including traffic signal poles, pavement marking, pavement, walks, trees, storm structures, visible utilities, and other above ground features within the project limits.
3. Locate existing power poles and record the height above ground of existing power, communication and cable lines within the intersection.
4. Locate the alignments, inverts and pipe diameters of storm and gravity sanitary sewers.
5. Locate underground utility improvements based on field location information provided by SUE Electronic Designation and utility providers field locates.

6. Coordinate with Subsurface Utility Exploration (SUE) contractor to record the locations and depths of subsurface utilities located by the SUE contractors VVH work at the Wickham and Suntree intersection corners and update the project survey.
7. Prepare a detailed drawing of recovered information under the guidelines and requirements set forth by Brevard County accompanied with checklist.
8. A survey base line will be established and monumented.
9. Surveyor will obtain a copy of the Brevard County standards checklist for topographic and right-of-way mapping from the Contract Management Office.
10. Cadd drafting and mapping of the project area.
11. Survey will be referenced to the state plane coordinate system.

All surveys shall meet minimum technical standards adopted by the Florida Board of Professional Surveyors and Mappers as set forth in Chapter 61G-17 F.A.C. Surveyor will submit County Standards Checklist along with survey submittal.

Exclusions: Easement Descriptions, Title Reports, Control Survey or Right of Way Maps are not included in this scope of work. The Right of Way location will be based on Right of Way maps provided by Brevard County Survey.

## **TASK 2: SUBSURFACE UTILITY ENGINEERING (SUE) AND UTILITY COORDINATION**

ATKINS will use a SUE subconsultant to locate existing utilities within the project area including at the intersection of Wickham Rd & Suntree Boulevard and along the entire right of way of Suntree Blvd from Wickham Road east to and including the intersection of Suntree Boulevard and US-1.

1. The purpose of this task is to locate the depth and approximate alignment of underground utilities near the intersection corners. This information will be utilized in future phases to help determine proposed locations for mast arm foundations. The work location and dates will be provided to County for approval prior to starting the work.
2. The subconsultant will use perform Electronic Designation (Quality Level B) including the use of Ground Penetrating Radar (GPR) to determine the horizontal location of the buried utilities within the project area. Utility locations will be used by the surveyor. Gravity storm sewers and gravity sanitary sewers will not be located under this task as it is assumed this information will be provided by the utility and the project survey.
3. The subconsultant will provide verification horizontally and vertically (VVH's), a.k.a. "soft-digs" to Quality Level A on existing utilities at locations to be directed by ATKINS based on proposed improvement locations and in coordination with the County. Up to 40 maximum VVH's are included with up to 2 separate mobilizations. Field book notes and Surveyor's Report reflecting VVH/ soft-dig information (measure down distance, utility size, and makeup) will be recorded. Restoration will consist of backfilling the hole with the select fill and restoration of the surface pavement (oversize restoration, milling and resurfacing is not included).
4. The subconsultant will provide routine traffic control in accordance with applicable FDOT Standard Plans Maintenance of Traffic (MOT) to include signs and/or other safety equipment. Major MOT such as lane closures and certification of MOT plans by FDOT approved MOT contractor is not included.

5. ATKINS will file a Sunshine One-Call Design Ticket to obtain listed utility providers with facilities within the project area. Based on the utilities listed on the design ticket ATKINS will provide a Notice to Utility Owner Providers via email requesting information on the nature and location of existing utility infrastructure.
6. The project survey will be provided to utility providers for their use. The utility provider responses will be utilized for the Level A SUE services to help determine proposed test hole locations.
7. ATKINS will submit the draft Concept Plan to the utility providers and attend a utility coordination meeting. The draft Concept Plan will include the project survey and results of the SUE efforts. The utility coordination meeting will be conducted after completing the survey, SUE and the draft Concept Design Drawings.

Utilization of the above methods is the industry recognized procedure for locating underground utilities and features. Although effective and reliable, there is the possibility that all utilities may not be detected including but not limited to environmental conditions, soil conditions, water table elevation, excessive depth of utility, and/or feature makeup.

### **TASK 3: TRAFFIC DATA COLLECTION**

ATKINS will obtain the following traffic data:

1. Daily Traffic Volume Collection (screen line counts): Screen line counts will be arranged so that daily directional volumes of Wickham Road and Suntree Boulevard can be determined. Count devices will be arranged so that directional distribution can be determined per count location. Collection will occur for 1 week (7 days) in duration and include vehicular volumes only. It is anticipated that collection spots will be as follows:
  - Wickham Road (north and south of Suntree Boulevard),
  - Suntree Boulevard (east and west of Wickham Road),
2. Intersection Turning Movement Counts: These counts will include four hours (2-hour AM and 2-hour PM) of peak period turning movement volume collection for vehicles, pedestrians, and bicycles. The vehicular queue length present at the beginning and end of each time period will be recorded for each lane group type. The data collection sites are as follows:
  - Wickham & Suntree intersection
3. Historical traffic data maintained by the Florida Department of Transportation, TPO, or County will be collected as an additional reference. Signalized intersection timing plans will be provided from the maintaining agency.
4. The data collected will be referenced to develop a profile of the existing corridor traffic volumes and turning volumes at the intersections surrounding the study segment. The existing volumes will serve as a baseline for current operations and provide guidance to developing patterns for vehicle redistribution for alternatives planning.
5. Traffic Recession Adjustment Factor: Due to the current traffic volume recession compared to historical annual averages, the data collection will include at a minimum one validation count at nearby FDOT count stations. The newly collected count results will be compared against a

forecasted AADT calculated from FDOT historical data or Space Coast TPO/Brevard County historical data. Differences in volumes will be used to derive a local count adjustment factor for traffic data collected. Turning movement counts will be applied the same factor unless engineering judgment shows the movement is likely not applicable to be scaled due to unusually different travel patterns during the recession (ie, movements leading to bars, movie theatres, gyms, schools, etc). Adjusted volumes will be submitted to the county for review before using in analysis.

#### **TASK 4: CONCEPT PLAN**

1. ATKINS will develop 30% Level Concept Plans for the proposed improvements. The Concept Plan will be based on the project survey, utility coordination, evaluation of the existing traffic data and coordination with the County. The concept plan will be drawn to scale and will show the proposed improvements at a concept phase level of detail, including two-way lane modifications, turn lane modifications, pedestrian crossing upgrades, signage, pavement markings, storm sewer drainage improvements, proposed mast arm locations, pedestrian signal heads and button locations, proposed controller cabinet replacement, necessary ITS modifications and utility adjustments.
2. County review comments of the draft Concept Development Plan will be incorporated into the final Concept Plan.
3. Based on the concept plan, a cost estimate for the construction of the intersection improvements will be developed. FDOT unit construction costs will be used to determine prices on all items. An estimated allowance will be assumed for the proposed mast arms. Easement and Right of Way acquisition costs will not be included.
4. It is anticipated that no additional turn lanes will be proposed for Wickham Rd or Suntree Blvd.
5. Available Right of Way is expected to be a limiting factor, the concept plan will be developed to avoid or limit the need for right of way acquisition where feasible.

#### **TASK 5: FEASIBILITY STUDY**

1. Information from the Survey, SUE work, Traffic Data Collection and Concept Plan will be combined into a feasibility study report. The report contents are anticipated to include the following:
  - Introduction and location map,
  - Evaluation of current operation,
  - Improvement recommendations including evaluation of roadway improvements on Suntree Boulevard east to for east and west bound 2 lane traffic between US-1 and Wickham Road.
  - Concept Plan,
  - Cost Estimate,
  - Anticipated permitting requirements (SJRWMD, FEC, FDOT, Brevard County),
  - Survey,
  - SUE results,
  - Sunshine One-call design ticket and utility provider responses,
  - Traffic data;
    - Raw traffic data information and summary tables for each of the intersection and segment counts.

Map of existing volumes and summary of existing traffic operations measures of effectiveness (using methodologies of HCM6 and reported in Level of Service and Delay).

2. The Consultant will attend a review meeting with the county to discuss County review comments based on review of the draft Feasibility Study by the County. County comments will be incorporated into the final Feasibility Study provided to the County.

## **SECTION 2 ASSUMPTIONS AND EXCLUSIONS**

The following assumptions and exclusions apply to this scope of services:

1. Application fees, impact fees and any other fees required by regulatory agencies are considered a direct expense to the County.
2. The following assumptions apply to this scope of services:
  - This scope of services is for concept planning purposes. Construction Documents, Permitting and Construction Phase Services will follow in a separate scope of services if requested.
  - The County will provide plans (pdf format and/or AutoCADD) for the newly constructed US-1 and Suntree Boulevard improvements.
3. The following items are not included in this scope of work:
  - Renderings, Construction Documents, Traffic Signal design, Railroad crossing signal design.
  - Stormwater management and Utility design,
  - Permitting, Public meetings, Geotechnical Investigations,
  - Easements and land acquisition support services,
  - Right of Way permitting and permitting fees for SUE/VVH/soft digs.
  - MOT plans for lane closures.
  - Handling and disposal of contaminated soils or groundwater.
  - Flowable fill, asphalt pavement restoration other than as noted in the SUE Task.

## **SECTION 3 DELIVERABLES**

The following deliverables are anticipated:

- Draft and Final Survey,
- Draft and Final Feasibility Study and Concept Plan.

## SECTION 4 SCHEDULE

It is anticipated that this work order will be executed in the following sequence:

1. Initiate SUE Level B locates by SUE subcontractor and request Storm and Sanitary locates from County.
2. Conduct project survey and initiate traffic data collection.
3. Submit draft project survey to County for review and utility providers for markup.
4. Receive utility markups and County review comments.
5. Review traffic data and develop draft Concept Plan.
6. Submit draft Feasibility Study and Concept Plan for County review
7. Receive County review comments.
8. Update Concept Plan based on County review comments and initiate SUE Level A locates based on revised Concept Plan.
9. Update/revise Concept Plan as needed based on SUE VVH results.
10. Submit Final Concept Plan to County.

The following schedule is anticipated following NTP:

1. Complete and submit draft Survey: 3 months from NTP,
2. Complete Traffic Data Collection: 2 months from NTP,
3. Submit draft Feasibility Study and Concept Plan: 3 months after completion of Survey, Traffic Data Collection, SUE (Level B locates) and Utility notification,
4. Submit Final Concept Plan: 2 months after receipt of County review comments and completion of SUE (Level A locates).

## SECTION 5 COMPENSATION

The proposed scope of services will be provided on a lump sum basis administered pursuant to the provisions of our master contract dated February 12, 2019, and invoiced monthly based on the percentage of completion of the overall project.

<b>Task 1: Survey</b>	\$	24,230
<b>Task 2 Utility Coordination and SUE</b>	\$	36,475
<b>Task 3 Traffic Data Collection</b>	\$	7,008
<b>Task 4 Concept Plan</b>	\$	45,100
<b>Task 5 Feasibility Study</b>	\$	35,340
<b>TOTAL</b>	\$	148,153

**MAN HOUR BREAKDOWN**

Project:

**BC GEC - Wickham & Suntree**

DATE: 2/9/2021

BY:

**JHW**

<b>TASK DESCRIPTION</b>	<b>PROJECT MANAGER</b>	<b>PROJECT ENGINEER</b>	<b>STAFF ENGINEER</b>	<b>ENG INTERN</b>	<b>DRAFTER</b>
<b>Task 1 - Survey</b>					
Verification of exist features		8.0	8.0		
Survey Coordination	8.0	4.0	4.0		
County Submittal	4.0	4.0			
QAQC	4.0	4.0			
<b>Subtotal</b>	16.0	20.0	12.0	0.0	0.0
<b>Task 2 - Utility Coord and SUE</b>					
SUE Coordination (Level B and Level A)	4.0	8.0	4.0		
Sunshine Ticket and Utility Notifications	2.0	4.0	8.0	8.0	
Utility data collection and compilation	4.0	8.0	16.0	8.0	
Utility Coord Meeting	8.0	8.0	4.0		
<b>Subtotal</b>	18.0	28.0	32.0	16.0	0.0
<b>Task 3 - Traffic Data Collection</b>					
Traffic Data Collection Coord	2.0	8.0	8.0		
QAQC	2.0	2.0	2.0		
<b>Subtotal</b>	4.0	10.0	10.0	0.0	0.0
<b>Task 4 - Concept Plan</b>					
PM	16.0				
Roadway Concept Plans	16.0	56.0	48.0	24.0	16.0
Signal Concept Plans	8.0	24.0	32.0	16.0	12.0
Cost Estimates	4.0	8.0	16.0	16.0	
QAQC	12.0	12.0	8.0		
<b>Subtotal</b>	40.0	100.0	104.0	56.0	28.0
<b>Task 5 - Feasibility Study</b>					
Permitting research	8.0	8.0			
Traffic Modeling & Analysis	4.0	12.0	16.0	8.0	
Draft Report	16.0	32.0	16.0	8.0	
County coordination and review meeting	8.0	16.0	8.0		
Final Report	8.0	12.0	12.0		
QAQC	12.0	12.0	8.0		
<b>Subtotal</b>	56.0	92.0	60.0	16.0	0.0