

Meeting Date
07/22/2014



AGENDA	
Section	Consent
Item No.	II.A.3

**AGENDA REPORT**  
 BREVARD COUNTY BOARD OF COUNTY COMMISSIONERS

SUBJECT:	Approval Re: Authorization to Issue Notice to Proceed for Professional Engineering Services Regarding Wickham Road and Eau Gallie Boulevard Intersection Improvements – District 4/5
DEPT/OFFICE:	Public Works Department – Finance & Contracts Administration

Requested Action:

It is requested that the Board of County Commissioners authorize the Public Works Department to issue a Notice to Proceed to Atkins in the amount of \$165,800 for Professional Engineering Services for the Wickham Road and Eau Gallie Boulevard Intersection Improvements Project.

Summary Explanation & Background:

On September 15, 2010, the Board entered into an Agreement with Atkins for Continuing Professional Engineering Consultant Services (Contract #275). On April 1, 2014, Atkins provided a Proposal for Professional Engineering Services for the Wickham Road and Eau Gallie Boulevard Intersection Improvements Project.

The Board of County Commissioners entered into an Interlocal Agreement with the City of Melbourne on April 29, 2014 and a County Incentive Grant Agreement with Florida Department of Transportation on May 21, 2014 for the design of intersection improvements for the Wickham Road and Eau Gallie Boulevard Intersection Improvements Project.

Per the City of Melbourne Interlocal Agreement and FDOT County Incentive Grant Agreement approved by the Board, the full amount of the \$165,800 will be deposited by the City with the County and the City will be reimbursed in accordance with the amount of FDOT grant funds received by the County (\$82,900).

**Fiscal Impact:** FY 2013/2014 – County has received payment of \$165,800 from the City of Melbourne.  
 FY 2014/2015 – No impact.

Clerk to the Board Instructions: Notify Public Works Department of Board Action

Exhibits Attached: One copy of Atkins April 1, 2014 Proposal

Contract /Agreement (If attached): Reviewed by County Attorney		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	PR	<input type="checkbox"/>
County Manager	Assistant County Manager, Mel Scott	Department Director / Extension		John P. Denninghoff / 57202			
Stockton Whitten	Assistant County Manager, Venetta Valdengo						



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July 23, 2014

**M E M O R A N D U M**

**TO:** John Denninghoff, Public Works Director

**RE:** Item II.A.3., Issue Notice to Proceed for Professional Engineering Services for Wickham Road and Eau Gallie Boulevard Intersection Improvements

The Board of County Commissioners, in regular session on July 22, 2014, authorized you to issue a Notice to Proceed to Atkins in the amount of \$165,800 for Professional Engineering Services for the Wickham Road and Eau Gallie Boulevard Intersection Improvements Project.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS

SCOTT ELLIS, CLERK

*Kelly Fulton*

Tammy Etheridge, Deputy Clerk

/kg

cc: Finance  
Budget

**Proposal to Provide  
Professional Engineering Services  
for  
Wickham Road and Eau Gallie Boulevard  
Intersection Improvements  
Brevard County, Florida**

Brevard County (County) is proposing to improve the safety and operation of the Wickham Road and Eau Gallie Boulevard intersection. The proposed improvements are based on the recommendations within the Feasibility Study completed by ATKINS (fka PBS&J) in October 2009. The improvements are currently proposed to consist of constructing a new 535 LF southbound right turn lane and a new 710 LF northbound right turn lane on Wickham Road and miscellaneous associated pedestrian and drainage improvements. The County has requested that ATKINS refine the original 2009 study based on up to date traffic information and a current survey and propose alternative options to avoid or minimize right of way impacts. Based on County review of the updated study, ATKINS will prepare construction documents for the proposed roadway and signalization improvements.

## **SECTION 1 SCOPE OF SERVICES**

### **TASK 1: TRAFFIC DATA COLLECTION**

An eight-hour turning movement count will be conducted in order to provide updated traffic data. In addition the existing signal timings will be obtained from the maintaining agency.

### **TASK 2: SURVEY**

Prepare a road route survey, including right-of-way and topographic survey, of Wickham Road at the intersection of Eau Gallie Boulevard. Survey shall begin at the intersection of Wickham Road and Eau Gallie Boulevard and run northerly 1,000 ft, southerly 1,000 ft, easterly 500 ft, and westerly 500 ft, and shall include the following tasks:

1. Establish right-of-ways and vertical control for topographic collection along Wickham Road and Eau Gallie Boulevard within the project limits.
2. Locate existing improvements including traffic striping, pavement, walks, trees, storm structures, visible utilities, and other above ground features within the project limits.
3. Prepare a detailed drawing of recovered information under the guidelines and requirements set forth by Brevard County accompanied with checklist.
4. A survey base line will be established and monumented.
5. Surveyor will obtain a copy of the Brevard County standards checklist for topographic and right-of-way mapping from the Contract Management Office.
6. Cadd drafting and mapping of the project area.
7. 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: Title Reports, Control Survey or Right of Way Maps are not included in this scope of work.

### **TASK 3: GEOTECHNICAL SERVICES**

CONSULTANT will retain the services of a qualified geotechnical engineer to:

1. Conduct a subsurface field exploration for structural analysis and design of traffic signal poles. Four (4) SPT borings will be drilled at a depth of 35 feet below ground surface using a procedure similar to the Standard Penetration Test outlined in ASTM D-1586. The boring will be sampled at 18-inch intervals to 10 feet deep and at 5-foot intervals, or change in stratification, below 10 feet. Each sample will be removed from the sampler in the field and then examined and visually classified by the crew chief. Representative portions will be sealed and packaged for transportation to the laboratory for further visual classification as required. Water level observations will be made in the boreholes during the drilling operation.
2. Perform routine laboratory visual classification of the recovered soil samples in general accordance with the Unified Soil Classification System outlined in ASTM D-2488. Laboratory tests to aid in the visual classification (i.e., sieve analysis, Atterberg limits, organic content, etc.) may be conducted.
3. Provide geotechnical engineering analysis and report to evaluate general subsurface conditions and to develop engineering recommendations to guide pole foundation design.
4. Conduct a subsurface field exploration for design of an asphalt turn lane extension. Seven (7) Auger borings will be drilled 6 ft below existing grade using 4-inch diameter continuous flight auger or a 3-inch diameter, hand-held bucket auger. Each sample will be removed from the sampler or auger in the field and then examined and visually classified by the crew chief. Representative portions will be sealed and packaged for transportation to the laboratory for further visual classification as required. Water level observations will be made in the boreholes during the drilling operation.
5. Perform routine laboratory visual classification of the recovered soil samples in general accordance with the Unified Soil Classification System outlined in ASTM D-2488. Laboratory tests to aid in the visual classification (i.e., sieve analysis, organic content, moisture content, etc.) may be conducted. A soil sample composited from the SPT boring will be tested in the laboratory for the FDOT corrosion series.
6. Provide geotechnical engineering analysis and report to evaluate general subsurface conditions and to develop engineering recommendations to guide site preparation.

### **TASK 4: CONCEPT DEVELOPMENT**

1. Develop up to three concepts of the project intersection to provide northbound and southbound right turn lanes at Wickham Road and Eau Gallie Boulevard. The concepts shall include alternative alignment options to avoid right-of-way impacts to adjacent property, i.e. Walgreens Pharmacy, by shifting alignment to the east. A review of the transition through the intersection will be conducted to ensure maximum degree of curve is not exceeded. The ability to make simultaneous left turns through the intersection will also be verified. In addition, the use of design variances for turn lane widths per FDOT standards will be evaluated to minimize right of way impacts. Review of available

roadway plans of the project intersection and information provided by utility owners will be conducted to identify overhead and underground utilities (including sanitary sewer and storm sewer) that may be affected by the construction of the proposed improvements. The consultant will also conduct a site visit to identify other features that may be affected such as drainage, signage and traffic signals, etc.

2. The concepts will be drawn to scale and will show the necessary improvements required to construct the northbound and southbound right turn lanes, including pavement, sidewalks, signage, pavement markings signalization, and drainage. The length of the turn lanes will be based on the traffic analysis. Right of way impacts will be identified and the locations of overhead and underground utilities will be shown based on information provided by the utility and/or project survey. A written description of the required improvements will also be provided.
3. Based on the concepts, a cost estimate for the construction of the northbound and southbound right turn lanes will be developed for each concept. This estimate will include all items required to construct the project and estimated quantities for each item. FDOT unit construction costs will be used to determine prices on all items. Area of right of way required for each concept will be calculated but no dollar value will be assigned.

#### **TASK 5: FEASIBILITY REPORT**

All the above information will be combined into the feasibility report for the intersection improvement. A written description of the recommended improvements will also be provided along with a discussion regarding any environmental, permitting and SJRWMD impacts. The report will also include an introduction, location map, and alignment recommendations. Traffic data and construction cost estimates will be included in an Appendix.

#### **TASK 6: ROADWAY PLANS**

1. Based on County review of the information provided in tasks 4 and 5, the Consultant will prepare design and construction documents for the selected intersection improvements to support the addition of north and south bound right turn lanes from Wickham Road onto Eau Gallie Blvd. In addition to the preparation of the plans, the Consultant will update the engineer's estimate of probable construction cost for the selected intersection improvements. The construction documents will include the following drawing sheets:
  - Cover Sheet
  - General Notes and Index of Drawings
  - Summary of Pay Items
  - Existing Conditions and Demolition Plan - 20 scale
  - Geometry and Pavement Marking Plan - 20 scale
  - Paving Grading and Drainage Plan - 20 scale
  - Construction Details and Sections
  - Stormwater Pollution Prevention Plan
2. Prepare three (3) estimates of probable construction costs based on 90% and 100% Construction Documents (CD's) and Issue For Bid Documents (IFB's). The area of right of way required for construction of the proposed improvements will be calculated but no dollar value will be assigned.

3. Provide technical specification for the project based on latest Brevard County specifications (provided by County) and State design criteria. Specifications shall be submitted to Brevard County for review with the 90% and 100% design submittal, and IFB and IFC submittals.

## **TASK 7: SIGNALIZATION PLANS**

1. Upon completion of the survey, SUE and County's review of the mast arm concept, Atkins will prepare signalization plans in accordance with the Brevard County standards and preferences, the Florida Department of Transportation (FDOT) standards and the Manual on Uniform Traffic Control Devices (MUTCD). The traffic signal design will incorporate a mast arm pole design layout in accordance with FDOT mast arm standards and Brevard County's preferred signal configuration. The signalization plans will be prepared in 11 inch x 17 inch format and will include the following sheets as a minimum:
  - (a) key sheet,
  - (b) quantity sheet,
  - (c) general note sheet,
  - (d) signalization plan sheet,
  - (e) utility location plan sheet,
  - (f) mast arm dimension sheet
  - (g) mast arm assemblies design table sheet,
  - (h) ITS network diagram connection sheet,
  - (i) fiber optic cable splicing diagram sheet.

The signalization modification plans will be developed in coordination with the roadway improvement plans. The structural design of mast arms will be developed at the 100% plan stage.

The design will feature LED signal heads, video detection, and overhead street name signs in accordance with FDOT approved materials. Connection to the existing Wickham Road traffic responsive signal system is included in this scope of work.

2. The new signal will be tied to an existing ITS system along Wickham Road that operates a traffic responsive system to control the traffic signals along Wickham Road.
3. Upon FDOT's approval of the signalization plans, Atkins will provide Brevard County with cost estimates for the construction of the approved traffic signal design.
4. Mast Arm Structural Design: The traffic signal design will include a structural design evaluation of the signal poles and foundations. If the geotechnical information is found to be consistent with what was used to develop the FDOT standard signal poles and arms then FDOT standard design details will be used. However, if the geotechnical information is found to be different from the standard assumptions then a full structural design will be performed.
5. Post Design Services: Support from the Signal Design Team will be available during construction of the signal. These services may include the following:
  - Assistance during bidding (i.e. answering contractor questions).
  - Shop drawing review.
  - Requests for additional information (relative to the intent of the plans, quantities and specifications).
  - Minor plans adjustments resulting from changes in field conditions and/or questions from the signal contractor.

## **TASK 8: TEMPORARY TRAFFIC CONTROL PLANS**

Atkins will develop temporary traffic control plans that identify the work zones for each phase and resolve all conflicts with pedestrian and vehicle traffic. Access to sidestreets and driveways shall be maintained in their existing location wherever possible. Pedestrian traffic shall be maintained thru or around the work zone. If construction activities require their closure, Atkins will show a temporary closure and detour. Access to bus stops and school crossings shall be maintained at all times. Temporary signalization notes will be provided.

Atkins shall develop and include phase notes, plan sheet and typical sections. References to FDOT Design Standard Indexes will be made when applicable.

Quantity calculations will be generated and shown in the plans.

Design criteria shall meet current FDOT and MUTCD design standards.

1. Lane closure analysis is not included. Lane closure restriction times shall be provided by the County.
2. Post-design or construction phase services are not included.

## **TASK 9: PERMITTING**

The Consultant will prepare and submit permit applications with accompanying Construction Plans, and other documentation as required and defined in this scope for agency review, coordinating each submittal with the Client as necessary. The following permit(s) are anticipated:

### **FDOT Permitting:**

As Eau Gallie Blvd (SR 518) is a State Highway, signal modifications must be approved by FDOT. The signalization plans will first be submitted to Brevard County for review and approval. Written responses will be prepared in response to County's comments. Upon County's approval, the signalization plans will be submitted to the FDOT District Five local maintenance office for review. Written responses will be prepared in response to FDOT's comments.

### **SJRWMD:**

St. Johns River Water Management District (SJRWMD) Administrative Permit Modification: The Consultant shall prepare and submit a request for an administrative change to the existing SJRWMD permits for Wickham Rd.

### **City of Melbourne Permitting:**

It is assumed that courtesy copies of plans will be provided by County to the City for their review. The consultant will incorporate City's comments in the construction documents. No other City permitting is included in this scope.

## **TASK 10: COORDINATION AND MEETINGS**

The Consultant anticipates attending a total of up to six (6) meetings which would include the County and the City of Melbourne during the plan development and review process and one final design review meeting.

The Consultant will coordinate with local utility providers including FP&L, AT&T, Bright House Networks, NUI City Gas Company, Brevard County Utilities, and City of Melbourne Utilities Department to obtain available information regarding existing utilities within the proposed project limits. The Consultant will provide a Notice to Utility Owner Providers of the proposed improvements. A record of notification to each utility provider will be provided to the County. This record will either consist of an email confirming electronic delivery, certified mail, or fedx/ups delivery record.

## **TASK 11: UNDERGROUND UTILITY LOCATION SERVICES (SUE)**

Atkins will retain the services of a qualified professional to provide SUE at the four (4) proposed mast arm locations. A maximum of 12 test holes will be performed. The test hole locations will be provided by Atkins based on the concept prepared in Task 4.

This task also includes up to 6 test holes to verify the location, size and depth of any underground utilities that may be in conflict with the proposed roadway improvements. The test hole locations will be provided by Atkins based on the 90% CD plans prepared in Task 6.

## **TASK 12: PASSAGE OF TIME UTILITY REVIEW (OPTIONAL)**

If more than one year elapses from the time ATKINS provides the ISSUE FOR BID DOCUMENTS to the COUNTY and commencement of construction. ATKINS will provide additional utility coordination and verification of utilities existing conditions. These services will include sending the ISSUE FOR BID documents to the utility providers requesting a follow up review of impacted facilities. In addition, ATKINS will conduct field observations attempting to visually identify any utility changes. With the obtained information, ATKINS will prepare a summary memo with the findings and also update the design documents to reflect those changes that can be shown without updating the project survey. Should a survey update be determined necessary, ATKINS will provide the COUNTY a proposal for additional survey services at that time.

## SECTION 2 ASSUMPTIONS AND EXCLUSIONS

1. Application fees, impact fees and any other fees required by regulatory agencies are considered a direct expense to the County.
2. It is assumed that the site does not contain hazardous materials.
3. Design and permitting of any offsite improvements, other than those identified herein, are not included in this proposal.
4. Structural design scope is as noted in Task 7. FDOT standard structures will be specified for all proposed drainage structures. The structural design of special structures that may be required to address special design conditions or conflicts is not included in this scope.
5. ACOE and FEMA permitting are considered an additional service.
6. It is assumed that the proposed facilities will not require relocation of major utility facilities. Design and permitting of major utility relocation is not included in this proposal.
7. The Contractor shall provide record drawings, prepared by a land surveyor registered in the State of Florida, to the County and Atkins.
8. It is assumed that the Contractor will be responsible for preparation and submittal of the FDEP NOI for the project prior to construction and N.O.T upon completion of construction.
9. The design fee is based upon the proposed improvements depicted October 2009 feasibility study by ATKINS (f/k/a PBS&J). Should an updated feasibility study result in additional design elements the Consultant will discuss additional design and permitting fees with County.
10. Construction Phase Services are not included in this scope of work except as noted in Task 7.

### SECTION 3 SCHEDULE & DELIVERABLES

The following schedule is anticipated:

- A. Traffic Count: Fourteen (14) days from notice to proceed.
- B. Project Survey for Review: Thirty (30) days from receipt of notice to proceed.
- C. Final Project Survey incorporating County review comments: Ten (10) days from receipt of comments.
- D. Draft Conceptual Drawings: Twenty-eight (28) days from receipt of an approved survey
- E. Final Conceptual Drawings: Fourteen (14) days from receipt of Draft Conceptual Drawings review comments.
- F. Draft Feasibility Report: Fourteen (14) days from receipt of Final Conceptual Drawings review comments.
- G. Final Feasibility Report: Fourteen (14) days from receipt of Draft Feasibility Study review comments
- H. 90% Construction Documents and Cost Estimate: Forty-five (45) days from receipt of approved concept plan.
- I. 100% Construction Documents and Cost Estimate: Fifteen (15) days from receipt 90% County Review Comments.
- J. Issue For Bid Documents and Cost Estimate: Ten (10) days from receipt of 100% County Review Comments).
- K. Issue For Construction Documents: Ten (10) days from receipt of final Bid Clarifications.

The following deliverables will be provided to the County:

- A. Project Survey : For review
- B. Final Project Survey: Incorporating review comments
- C. Draft Conceptual Drawings for review
- D. Final Conceptual Drawings
- E. Draft Feasibility Report in PDF format
- F. Final Feasibility Report (three (3) hard copies, one (1) electronic copy on CD)
- G. 90% Construction Documents and Cost Estimate for County Review.
- H. 100% Construction Documents and Cost Estimate for County Review.
- I. Issue for Bid Documents (IFB) and Cost Estimate.
- J. Issue for Construction Documents (IFC).

## SECTION 4 COMPENSATION

The proposed scope of services will be provided on a lump sum basis administered pursuant to the provisions of our master contract dated September 15, 2010, and invoiced monthly based on the percentage of completion of the overall project.

<b>Task 1:</b> Traffic Data Collection	\$	1,600
<b>Task 2:</b> Survey	\$	11,900
<b>Task 3:</b> Geotechnical Services	\$	5,500
<b>Task 4:</b> Concept Development	\$	17,700
<b>Task 5:</b> Feasibility Report	\$	9,900
<b>Task 6:</b> Roadway Plans	\$	42,600
<b>Task 7:</b> Signalization Plans	\$	29,700
<b>Task 6:</b> Temporary Traffic Control Plans	\$	8,500
<b>Task 8:</b> Permitting	\$	12,700
<b>Task 9:</b> Coordination and Meetings	\$	11,200
<b>Task 10:</b> Underground Utility Locations Services	\$	9,600
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<b>TOTAL Tasks 1-10</b>	<b>\$</b>	<b>160,900</b>
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<b>Task 11:</b> Passage of Time Utility Review (OPTIONAL)	<b>\$</b>	<b>4,900</b>
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<b>TOTAL with optional Task 11</b>	<b>\$</b>	<b>165,800</b>