EXHIBIT A

SCOPE OF SERVICES
PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDIES

Financial Project ID:	436560-1-22-01
Work Program ID:	TBD
Description:	Recker Highway Grade Separation over CSX

EXHIBIT A

SCOPE OF SERVICES FOR CONSULTING ENGINEERING SERVICES
PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDIES

This Exhibit forms an integral part of the agreement between the State of Florida Department of Transportation (hereinafter referred to as the **DEPARTMENT**) and _____ (hereinafter referred to as the **CONSULTANT**) relative to the transportation facility described as follows:

Financial Project ID:	436560-1-22-01
Work Program ID:	TBD
Description:	Recker Highway Grade Separation over CSX, Polk County

PURPOSE

The purpose of this Exhibit is to describe the scope of work and the responsibilities of the **CONSULTANT** and the **DEPARTMENT** in connection with the Preliminary Engineering (Conceptual Design), and Environmental Studies necessary to comply with **DEPARTMENT** procedures and to obtain Florida Department of Transportation approval of proposed improvements to this transportation facility.

The Project Development Process shall follow the **DEPARTMENT's** most recent version of the publication titled ***Project Development and Environment Manual*** (650-000-001). The Scope of Services portion of this **CONSULTANT** Contract will refer to this publication as the ***PD&E Manual***. The **CONSULTANT** will complete all tasks identified in this scope of work in accordance with the **DEPARTMENT's *PD&E Manual***, unless otherwise stated.

The ***PD&E Manual*** incorporates all the requirements of Federal law and executive orders, and applicable State laws and regulations including Chapter 339.155 of the Florida Statutes and Chapter 14 of the Florida Administrative Code. The **CONSULTANT** will prepare all project documentation in accordance with the ***PD&E Manual*** and therefore in compliance with all applicable State and Federal laws, executive orders, and regulations.

The **CONSULTANT** shall perform those engineering services required for PD&E studies, including consideration of all social, economic, environmental effects, and mitigation as required by the ***PD&E Manual***, along with the required environmental documents, engineering reports, preliminary plans, public involvement and hearing, and right-of-way maps.

Sections 1 through 4 of the Scope of Services will establish which items of work described in the ***PD&E Manual*** are specifically included in this contract, and additionally which of the items of work will be the responsibility of the **CONSULTANT** or the **DEPARTMENT**.

The **DEPARTMENT** will provide contract administration and provide management services and technical reviews of all work associated with the development and preparation of the engineering/environmental study reports for the transportation facility.

STUDY OBJECTIVE

The **CONSULTANT** is to study the creation of a grade separation between Recker Highway and the CSX railroad in Polk County, Florida.

The study will include a fatal flaw analysis. The project is anticipated to use a compressed twelve (24) month schedule, and is anticipated to be completed as a SEIR.

STUDY REQUIREMENTS AND PROVISIONS FOR WORK

Governing Regulations

The services performed by the **CONSULTANT** shall comply with all applicable **DEPARTMENT** Manuals and Guidelines. The **DEPARTMENT's** Manuals and Guidelines incorporate, by requirement or reference, all applicable State and Federal regulations. The **CONSULTANT** understands that AASHTO criteria shall apply as incipient policy. The **CONSULTANT** will use the current edition, including updates, of the following **DEPARTMENT** Manuals and Guidelines in the performance of this work:

- Florida Statutes
- Florida Administrative Codes
- Applicable Federal Regulations, U.S. Codes and Technical Advisories
- Project Development and Environment Manual (650-000-001)
- Efficient Transportation Decision Making (ETDM) Manual (650-000-002)
- Sociocultural Effects Evaluation Handbook
- Public Involvement Handbook
- Plans Preparation Manual Volume 1 (625-000-007) & Volume 2 (625-000-008)
- Interchange Handbook (525-030-160)
- Design Standards (625-010-003)
- Highway Capacity Manual
- Manual on Uniform Traffic Studies (MUTS)
- Minimum Standards for Design, Construction, and Maintenance Streets and Highways (Florida Greenbook) (625-000-015)
- Guide for the Design of Bicycle Facilities (AASHTO)
- Right-of-Way Mapping Handbook (550-030-015)
- Right-of-Way Procedures Manual (575-000-000)
- Location Survey Manual (550-030-101)
- EFB User Guide
- Drainage Manual (625-040-002)
- **DEPARTMENT's** Stormwater Facilities Handbook
- Aerial Survey Standards for Transportation
- Structures Design Guidelines (625-020-154)
- CADD Manual (No. 625-050-001)
- CADD Production Criteria Handbook (CPCH)
- FDOT Quality/Level of Service Standards Handbook Software & Tables
- FDOT Standard K-Factor
- Project Traffic Forecasting Procedure (525-030-120)
- FDOT Highway Landscape Guide
- Basis of Estimates Manual (600-000-002)

Liaison Office

The **DEPARTMENT** will designate a Project Manager who shall be the representative of the **DEPARTMENT** for the Project. Although the **CONSULTANT** shall seek and receive advice from various

State, regional, and local agencies, the final direction on all matters of this Project remain with the **DEPARTMENT's** Project Manager.

Key Personnel

The **CONSULTANTS** will use key personnel identified in the proposal to perform and direct the work of this project. Any changes in the indicated personnel shall be subject to review and approval by **DEPARTMENT**.

Meetings and Presentations

The **CONSULTANT** shall attend a Notice to Proceed Meeting with **DEPARTMENT** representatives, where the **DEPARTMENT** will provide relevant project information, along with procedures for administering the contract. The **CONSULTANT** and staff shall also be available with no more than a five (5) workday notice to attend meetings or make presentations at the request of the **DEPARTMENT**. The **DEPARTMENT** may hold such meetings and presentations at any hour between 8:00 A.M. and 12:00 midnight on any day of the week. The **DEPARTMENT** may call on the **CONSULTANT** to provide maps, press releases, advertisements, audiovisual displays and similar material for such meetings.

Correspondence

The **CONSULTANT** will provide copies of all written correspondence between the **CONSULTANT** and any party pertaining specifically to this study to the **DEPARTMENT** for their records within one (1) week of the receipt of said correspondence.

Submittals

The **CONSULTANT** shall provide electronic and hard copies of the required documents as listed below. These are the anticipated printing requirements for the project. The **CONSULTANT** will use this tabulation for estimating purposes, and the Project Manager will determine the number of copies required prior to each submittal.

Public Involvement	**Copies:**
Public Involvement Plan	**02**
Advance Notification Package (To Be Determined)	**02**
Public Hearing Transcript	**02**
Comments and Coordination Package	**02**

Engineering Items:	**Copies:**
Corridor Report (typically new facility – memo if not)	**N/A**
Design Traffic Technical Memorandum / Report	**03**
Draft Preliminary Engineering Report	**03**
Preliminary Engineering Report (Signed and Sealed)	**03**
Location Hydraulics Report	**02**
Drainage/Pond Siting Report	**02**
Geotechnical Report (if applicable)	**03**
Conceptual Design Roadway Plan Set	**03**
Typical Section Package	**03**
Bridge Analysis	**03**

Bridge Hydraulic Report	**03**
Bridge Development Report	**03**
Value Engineering Information Report (Const over $25M)	**03**
Design Variations and Exceptions Package	**03**
Interchange Modification or Justification Report	**N/A**

Environmental Items:	**Copies:**
Sociocultural Effects Report	**03**
Section 4(f) DOA	**03**
Section 4(f) Statement (only if affected)	**03**
Section 106 Report	**03**
Noise Study Report	**03**
Air Quality Report	**03**
Contamination Screening Evaluation Report	**03**
Essential Fish Habitat Assessment	**N/A**
WQIE	**05**
Farmlands Package	**03**
Cultural Resource Assessment	**05**
Conceptual Stage Relocation Plan	**05**
Endangered Species Biological Assessment	**03**
Wetlands Evaluation Report	**03**

Upon completion of the study, the **CONSULTANT** shall deliver to the **DEPARTMENT**, in an organized manner, all project files, maps, sketches, worksheets, and other materials used or generated during the study process. The **CONSULTANT** will also submit all documents as PDF files.

Computer Automation

The **CONSULTANT** will develop this project utilizing Computer Aided Drafting and Design (CADD) systems. The **DEPARTMENT** makes available software to help assure quality and conformance with the policy and procedures regarding CADD. It is the responsibility of the **CONSULTANT** to meet the requirements in the ***FDOT CADD Manual.*** The **CONSULTANT** will submit final documents and files as described therein. The **CONSULTANT** will find Additional related information in the ***FDOT Plans Preparation Manual.***

The **CONSULTANT** will scan all computer disks for viruses prior to submitting to FDOT. Failure to scan for viruses may result in a lower **CONSULTANT** work performance evaluation.

Coordination with Other Consultants and Entities

The **CONSULTANT** is to coordinate their work with any ongoing and/or planned projects that may affect this study.

The **CONSULTANT** is to coordinate with local governmental entities to ensure design and right-of-way requirements for the project are compatible with local public works improvements and right-of-way activities.

The **CONSULTANT** is to coordinate with any agencies and/or entities that require further coordination through the ETDM Process.

Optional Services

At the **DEPARTMENT's** option and authorization, the **CONSULTANT** may be required to perform certain unforeseen engineering, environmental and/or public involvement services not currently covered under the scope of services for the PD&E study. Additionally, the **DEPARTMENT** may request the **CONSULTANT** to provide final design and plans preparation services. The **DEPARTMENT** may request the **CONSULTANT** to provide expert witness services for right-of-way acquisition. The **DEPARTMENT** will negotiate the fee for these services with the **CONSULTANT** in accordance with the terms detailed in exhibit b, method of compensation, for a fair, competitive and reasonable cost, considering the scope and complexity of the project(s). The **DEPARTMENT** will execute a supplemental agreement adding the additional services in accordance with paragraph 2.00 of the Standard Consultant Agreement.

1.0 PUBLIC INVOLVEMENT

Public involvement includes communicating to and receiving input from all interested persons, groups, and government organizations regarding the development of the project. The **CONSULTANT** shall coordinate and perform the appropriate level of public involvement for this project as outlined in ***Part 1, Chapter11, and Part 2, Chapter 9 of the PD&E Manual, the FDOT Public Involvement Handbook*** and the following sections.

The **CONSULTANT** shall provide to the **DEPARTMENT** drafts of all Public Involvement collateral (i.e., newsletters, property owner letters, advertisements, handouts, exhibits, etc.) associated with the following tasks for review and approval at least five (5) business days prior to printing and/or distribution.

1.1 Public Involvement Program

The **CONSULTANT** shall prepare, in accordance with ***Part 1, Chapter 11 of the PD&E Manual***, a written Public Involvement Program (PIP), outlining each element of the Public Involvement Process. The **CONSULTANT** will update and amend the PIP throughout the Project Development Process. The plan indicates the basic Public Involvement approach the **CONSULTANT** will take with the project. It also lists generally the contact persons, media officials/agencies, and the means by which the **CONSULTANT** will use to involve them in the process. The PIP will also outline if bilingual materials and speakers are necessary for this project.

1.2 Public Involvement Data Collection

The **CONSULTANT** will be responsible for the collection of Public Involvement data and the preparation of the Mailing List early in the PD&E Study. The Mailing list should include:

- Any affected or possibly affected parties.
- Elected and appointed officials in the area (City, County, State) and community leaders
- Possible permit and review agencies
- Media in the project area (to be used for news releases, advertisements or any concerns)
- Any person or institution expressing an interest in the project

The collection of public input occurs throughout the life of the project and requires maintaining of files, newspaper clippings, letters, and especially direct contacts before, during, and after any of the public meetings. In addition to collecting public input data, the **CONSULTANT** shall assist the **DEPARTMENT** in preparing responses to any public inquiries as a result of the Public Involvement Process.

1.3 Notice of Intent

Not Applicable.

1.4 Advance Notification

At the beginning of the project, the **CONSULTANT** shall prepare the Advance Notification and transmittal letter as per Part 1, Chapter 3 of the PD&E Manual, as needed.

1.5 Scheduled Public Meetings

The **CONSULTANT** shall provide all support necessary for the **DEPARTMENT** to hold or participate in various public meetings, which may include but not limited to the following:

- Elected Officials/Agency Kick-off Letter
- Public Kick-off Meeting
- Small Group Meetings
- Alternatives Public Meeting
- Public Hearing

For any of the above type meetings, the **CONSULTANT** shall prepare and/or provide as necessary:

- Public officials and Agency letters. (The **CONSULTANT** will prepare the letters, insert them in envelopes, and address the envelopes. The **CONSULTANT** will pay for first class postage.)
- Property owner letters. (The **CONSULTANT** will provide marked tax maps of the project alternatives and identify the names and addresses of the property owners from county tax rolls. The **CONSULTANT** will prepare the letters, insert them in envelopes, and address the envelopes. The **CONSULTANT** will pay for first class postage.)
- Scripts or agenda for presentation
- Handouts
- Graphics for presentations
- Videos and renderings
- Meeting equipment (setup and take down)
- Legal and/or display advertisements (The **CONSULTANT** will pay the cost of publishing.)
- Letters for notification of elected and appointed officials and interested parties (The **CONSULTANT** will prepare the letters, insert them in envelopes, and address the envelopes. The **CONSULTANT** will pay for first class postage.)
- News releases (For use three to five days prior to meeting)
- Summary notes of meetings to be provided to the **DEPARTMENT** no later than 5 business days after the meeting
- Briefing and debriefing of **DEPARTMENT** staff

The **CONSULTANT** will investigate potential meeting sites to advise the **DEPARTMENT** on their suitability. The **CONSULTANT** will pay all costs for meeting site rental and insurance.

The **CONSULTANT** will attend the meetings with an appropriate number of personnel to assist the **DEPARTMENT's** Project Manager.

It is estimated for this project there will be **one (1)** Public meetings during the study.

<u>Alternatives Public Meeting/Workshop</u>

The purpose of the Public Information Workshop is to present to the public the results of the study to date and obtain comments on the Design Alternatives. There is a possibility that the

citizens may suggest additional alternatives. It is anticipated there will be **one (1)** workshop held for this project.

The **DEPARTMENT** will advertise and conduct this workshop as an information meeting. **CONSULTANT** participation may be required in any portion of the presentation. The **CONSULTANT** shall attend the workshop and prepare all necessary displays, maps, scripts, etc. The **DEPARTMENT** will review and authorize all presentations (script and graphics), media releases, legal display advertisements, and general (mass) property owner letters.

A black-and-white, quarter-page legal display advertisement announcing any meeting shall be prepared and submitted to the **DEPARTMENT** for approval. The **CONSULTANT** shall have published the advertisement in the area newspaper(s) having the largest daily circulation. The **CONSULTANT** shall make notification to elected and appointed officials by letter on **DEPARTMENT** stationery fourteen (14) days before workshops. The **CONSULTANT** will write and send a letter on **DEPARTMENT** stationery or a newsletter announcing the workshop ten days before the workshop to all property owners whose property lies in whole or in part within 300 feet of the centerline of any Design Alternative. All advertising and mailing costs are the responsibility of the **CONSULTANT**. The **CONSULTANT** will prepare and submit for publication news releases during the week of the workshop. Mailing costs are the responsibility of the **CONSULTANT**. A memorandum with location map shall be prepared and sent to the **DEPARTMENT's** District Office for submission to the Office of the General Counsel, the Environmental Management Office and the Information Office for distribution.

The **CONSULTANT** will develop the workshop format for approval by the **DEPARTMENT**. The **CONSULTANT** will prepare displays or wall graphics for use during the workshop. These include typical sections, aerials, renderings, charts, and graphs, as needed. The **CONSULTANT** will write and use a PowerPoint presentation script in association with the graphics in the PowerPoint presentation produced by the **CONSULTANT**. The **CONSULTANT** shall prepare a project brochure for distribution at the workshop.

The **CONSULTANT** will handle meeting equipment setup and take down by staff members familiar with audiovisual equipment and the facilities available at the workshop site. The **CONSULTANT** will brief the staff (who will be on hand during the workshop) before the workshop to make sure the staff is up to date on the project and understands the study well enough to discuss it with the public and to answer questions. Conducting the workshop will take knowledgeable staff and shall require enough staff members to handle the crowd anticipated for the workshop. The **CONSULTANT** will have staff available for some time before and/or after the set hours of the workshop in order to maintain public contact or for media interviews, etc. All audiovisual equipment costs and facility rental costs are the responsibility of the **CONSULTANT**.

The identification of issues brought up at the workshop is an integral part of the Workshop Debriefing Process, which all **CONSULTANT** staff members taking part in the workshop process and talking with the public will attend. The **CONSULTANT** shall identify issues from the workshop and determine their significance. Determine if the issues are valid enough for further consideration or if they have elements, which may require further consideration. Addressing the issues and responding to them is also an integral part of the workshop process. This task involves letter writing, the preparation of a follow-up newsletter, the placement of an advertisement, distribution of news releases, or any other appropriate technique.

1.6 Other (Unscheduled) Public and Agency Meetings

In addition to scheduled public meetings, the **CONSULTANT** may be required to participate in other meetings with the public, elected officials, special interest groups or public agencies. The **CONSULTANT's** participation will be limited to participation during the meeting, note taking, and summarizing the meeting in a memo to the file. It is estimated there will be up to **ten (10)** meetings during the study.

1.7 Public Hearing

The **CONSULTANT** shall provide all the support services listed in Sections 1.2 and 1.5 above, and in addition shall prepare:

Public Officials and Agency Letters

The **CONSULTANT** will prepare the letters, insert them in envelopes, and address the envelopes. The **CONSULTANT** will pay for first class postage. At the **DEPARTMENT's** discretion, the **CONSULTANT** will e-mail letters in lieu of or in addition to those sent by U.S. Mail.

Property Owner Letters

The **CONSULTANT** will provide a list of names and addresses of the property owners from county tax rolls in a format specified by the **DEPARTMENT**. The **CONSULTANT** will prepare the letters, insert them in envelopes, and address the envelopes. The **CONSULTANT** will pay for first class postage.

Additional Items

- All elements of the multi-media presentation, which will include videos
- Graphics
- Displays of plans and report(s) for the public display
- Brochures or handouts
- Public advertisements
- Court Reporter(s)
- Briefing and debriefing of **DEPARTMENT** staff

The **CONSULTANT** will procure a verbatim transcript of the Public Hearing. The **CONSULTANT** will combine the transcript with any other comments received by the **DEPARTMENT** as part of the public hearing record, and affidavits of publication of legal ads, and will provide copies of the transcript for the **DEPARTMENT's** use. The **CONSULTANT** will also prepare a Public Hearing Summary attached to the Public Hearing Transcript.

1.8 Location and Design Concept Acceptance

Not Applicable.

1.9 Special Public Involvement Requirements

Identify and Inspect Public Meeting Sites

The **CONSULTANT** will inspect prospective sites for any public meetings for suitability. The **CONSULTANT** will consider location, seating capacity, sound system, lighting, display space, and any other physical characteristics, which would influence the viability of this site, including compatibility with the terms of the Americans with Disabilities Act of 1990. The **CONSULTANT** shall make all arrangements for use of the meeting facility for the Public Information Workshop(s) and Public Hearing including payment of any rental fees, if applicable.

Correspondence

Within three days of the receipt or mailing of all written correspondence between the **CONSULTANT** and any party pertaining to this study, the **CONSULTANT** will provide copies to the **DEPARTMENT** for their records. The **CONSULTANT** shall assist the **DEPARTMENT** in preparing responses to any public inquiries that were a result of the public involvement process.

Newsletters

The **CONSULTANT** shall prepare newsletters at various key points during the study. The **CONSULTANT** shall mail the newsletters to elected officials, property owners, businesses and interested persons included on the mailing list compiled by the **CONSULTANT**. **DEPARTMENT** review prior to mailing is required. A **maximum of three (3)** newsletters are anticipated.

Comments and Coordination Package

The Comments and Coordination Package shall contain, as a minimum, all documentation of the public participation accomplished throughout the study period. This package should summarize and respond to the comments received from the Public Involvement, Advance Notification, coordination with local officials and agencies, public meetings, etc. as part of ***Part 2, Chapter 31 of the PD&E Manual***. The Comments and Coordination Package shall be submitted with and summarized in the SEIR.

Project Web Site

The **CONSULTANT** will create project web pages for this project. The **DEPARTMENT** expects this project to take **24** months. These pages will have a distinct address on the District One website: www.swflroads.com. Project page will be coordinated through the District's web developer. Based upon the **DEPARTMENT's** template, the web pages will allow for input via E-mail links, provide that meeting information and report summaries will be available for viewing and downloading. Limited graphics will be available due to the size and downloading time for many graphical applications. The **CONSULTANT** will coordinate with the District's web developer to update the web pages monthly.

The web site will contain a minimum of six pages:

- *A facts page (home page)* - The facts page will be a brief synopsis of what the project and pictures of the project location. Additionally, key information will be posted on this page such as but not limited to: FDOT District, Start Date, Estimated Completion Date,

Estimated Project Cost, Lengths and Limits, **CONSULTANT**, **DEPARTMENT's** Project Manager, **CONSULTANT's** Project Manager, Project Map, etc.

- *A Project Overview page* - The Project Overview page will contain an overview of the project with more detail than the facts page, a Consistency with Transportation Plan Goals and Objectives description, and the need and/or purpose for the project.

- *A PD&E definition page* - A link to the PD&E definition page will appear wherever the acronym PD&E appears on any of the subsequent pages. It will give a brief overview of the PD&E process.

- *A public involvement page* - The public involvement page will contain a general overview of proposed meetings. This will include Public Information Meetings, Public Workshops, Public Hearing, and any other meeting the **DEPARTMENT** would like added to the site. The page will also contain an area where viewers may enter their name and address (both are to be mandatory inputs) to be added to the mailing database. The **DEPARTMENT's** Project Manager's name will be listed as a contact with his/her FDOT mailing, E-mail address, telephone number and fax number at the District Office.

- *A project schedule page* – The project schedule will contain a brief generalization of the milestones for this project. The **CONSULTANT** will take project milestones as approved by the DEPARTMENT, from the developed schedule and place them on this page. List milestones by seasons of the year rather than by actual dates**.** The **CONSULTANT** will reflect shifts in the schedule in this page as they occur.

- *A photo page* – The photo page will include a selection of photographs obtained from the project area with a small accompanying description of the photographs location, direction, and/or any other important details contained within the picture. The photograph page can be in the form of an index, a slideshow, or a map with hyperlinked photograph locations.

Videos, Renderings, etc.

The **CONSULTANT** shall prepare a **maximum of two (2)** narrated PowerPoint for public meetings. See Section 1.5 and 1.7 for presentation requirement related to the Public workshop and hearing.

1.10 Quality Control

The **CONSULTANT** shall be responsible for insuring that all work products conform to **DEPARTMENT** standards and criteria. This shall be accomplished through an internal quality control process performed the **CONSULTANT**. This quality control process shall insure that objective and qualified individuals who were not directly responsible for performing the initial work achieve quality through checking, reviewing, and surveillance of work activities.

Prior to submittal of the first invoice, the **CONSULTANT** shall submit to the **DEPARTMENT's** Project Manager for approval the proposed method or process of providing quality control for all work products. The Quality Control Plan shall identify the reviewed products, the personnel who perform the reviews, and the method of documentation. The **CONSULTANT** will be

responsible for the inclusion of the Quality Assurance Checklist indicating the **CONSULTANT'S** quality control process was completed. The **CONSULTANT** shall review all reports prepared by sub-consultants.

The **CONSULTANT** shall include a QA/QC sheet in the front of all documents showing that the documents went through an internal review prior to submittal to the **DEPARTMENT**.

2.0 ENGINEERING ANALYSIS AND REPORTS

The **CONSULTANT** shall coordinate and perform the appropriate level of engineering analysis for this project as outlined in ***Part 1, Chapter 4 of the PD&E Manual*** and the following sections.

Upon notice to proceed, the **CONSULTANT** shall begin preliminary assessments of the study corridor from an engineering standpoint. This activity consists of collecting various information and materials relative to the performance of engineering analysis within the study area. The information should include all data necessary to perform adequate evaluation of the location and design of a transportation facility. Utilizing the data collected, the **CONSULTANT** shall perform the engineering analysis necessary to complete the project development process. The **CONSULTANT** will continue the engineering analysis throughout the duration of the project with consideration to the results of the environmental impacts analysis.

After selection of viable corridor(s), the **CONSULTANT** shall develop and analyze alternate conceptual design alternatives. The development of the design alternatives shall consider Context Sensitive Solutions. The **CONSULTANT** shall develop and evaluate all viable alternatives in order to address the project needs. The **DEPARTMENT** will then determine which viable alternative(s) to further evaluate through the public involvement process and environmental analysis. The **DEPARTMENT** understands that the selection of the No-Build alternative is still a possibility.

2.1 Field Review

The **CONSULTANT** shall conduct all anticipated field trips needed to collect engineering data

2.2 Survey

Aerial Photography

The use of Aerial Photography as a basis for plotting various data is necessary for both engineering and environmental analysis, alternative corridor and design studies, and the development of the preliminary plans of conceptual design. Copies of aerial photography are the prime source of information used to convey project considerations to the public at public meetings.

The **CONSULTANT** will obtain and utilize the ***most recent Polk County*** aerials from FDOT. Aerial photography shall be prepared for the following uses at the noted scales:

Overall Project Location Map	1”=100’
Drainage Map	1”=50’
Concept Plans	1”=50’

Survey Coordination

The **CONSULTANT** is to coordinate with FDOT’s Survey Department regarding project requirements, review of survey data, and/or scheduling if necessary.

2.3 Geotechnical

Soils

The **CONSULTANT** shall review the United States Department of Agriculture, Geological Survey, Natural Resource Conservation Service (formerly Soil Conservation Service) Maps/GIS and summarize the findings.

Geotechnical Coordination

The **CONSULTANT** will coordinate with the geotechnical staff regarding project requirements, review of geotechnical data, and scheduling.

2.4 Traffic

Traffic Data

This section must meet the specific needs of the project, and specify what elements will be provided by the DEPARTMENT, and what will be required by the CONSULTANT.
For example…

The DEPARTMENT will furnish the following initial traffic data:

- Current corridor traffic counts.
- 20 year Design Corridor System Traffic with K, D & T Factors.
- Volume of trucks (medium and heavy), and buses for existing, opening, interim years and design year
- LOS "C" traffic volumes at anticipated posted speed if Level of Service D, E or F is anticipated during the life of the project (for noise study)

The CONSULTANT will analyze the traffic projections provided initially by the DEPARTMENT, and report to the Project Manager concerning apparent inconsistencies. The CONSULTANT will provide the Project Manager with support and advice in procuring acceptable revised Traffic Projections.

The CONSULTANT will furnish 72-hour traffic machine counts (approach volumes at 15-minute increments) at the following intersection locations at a minimum:

Thornhill Road at Recker Highway
Hillcrest Road at Recker Highway
Derby Avenue at Recker Highway
Recker Highway at US 92

Based on an analysis of the 72-hour traffic machine counts and evaluation of current and future development trends (traffic generators) the CONSULTANT will then perform 8-hour manual vehicle turning movement counts for peak hours at those intersections where required.

Traffic Analysis

The following services may be required from the CONSULTANT. Specific details as to what will be provided by the DEPARTMENT, and what is to be provided by the CONSULTANT will be discussed below.

Design Traffic

The CONSULTANT is responsible for developing the traffic projections to be used to establish the basic design requirements for roadway typical sections, intersection, and intersection design. The CONSULTANT will develop Average Daily Traffic (ADT) and Design Hour Volume (DHV) for the present year, the opening year, ten years and twenty years from opening the new facility. The CONSULTANT shall develop and analyze the traffic data for each viable corridor and design alternative, as appropriate.

Traffic Operational Analysis

The CONSULTANT shall also perform the following activities in connection with the Design year; twenty (20) years post construction traffic.

- Capacity analyses at appropriate locations.
- Identification of weaving sections to evaluate future conditions.
- Identification of ramp merge and diverge conditions to evaluate future conditions.

Design Traffic Memo

After selection of viable corridor(s), the CONSULTANT will prepare a Design Traffic Technical Memorandum. This memorandum will document the methodology used in developing the traffic demand and multi-modal splits, if applicable. The memorandum shall also identify the design traffic volumes for each corridor alternate, which may include combinations with other modes of transportation.

The CONSULTANT will use the results of the traffic data collection activities described in section 2.6 of this scope of services, and the initial traffic data furnished by the DEPARTMENT.

After DEPARTMENT approval of the Design Traffic Technical Memorandum, those traffic projections will be used during the study of conceptual design alternatives and for the analysis of any impacts which depend on traffic inputs (i.e. noise impacts and air quality assessments).

The Design Traffic Memo will also include the traffic operational analysis of the alternatives. The design traffic will be prepared in accordance with the Project Traffic Forecasting Procedure (# 525-030-120).

Traffic Data

The Project Traffic Report (PTR) shall develop traffic forecasts utilizing recent traffic counts and FSUTMS traffic forecasts as obtained from the adopted Long Range Transportation Plan (LRTP) model. Forecasts shall be developed for 2020, 2030 and 2040 through modeling, interpolation, extrapolation or approved method proposed by the **CONSULTANT**. Recommended improvements should be based on a review of FSUTMS model generated traffic with the necessary adjustments (described in subsequent sections of this Scope of Services) to projected traffic. The **CONSULTANT** shall use conventional Highway Capacity Manual techniques to

determine level of service conditions for no build and build scenarios. The specific measure of effectiveness shall be level of service and delay. The report will also provide supporting documentation for recommended queue lengths at existing and any proposed signalized intersection locations and input data for air/noise analyses. Specific elements to be included within the PTR are:

- Traffic counts.
- Historic traffic count data.
- Collision data.
- Polk County and 2035 Cost Feasible model networks to develop future year traffic volumes.
- Level of service conditions for existing (2013) conditions with comparison to adopted level of service standards.
- Level of service conditions for future year conditions based on a no build scenario (maintain existing roadway).
- Level of service conditions based on improved roadway condition(s).
- Evaluate need for operational improvements (i.e., traffic signals or roundabouts at potential locations.
- Analysis of major (existing or potential future signalized/roundabout) intersections.
- Major intersection improvement needs (turn lanes) for Design Year 2040.
- Support information for air and noise analyses (no build and build conditions).

Based on the study goals and objectives, the **CONSULTANT** shall provide a PTR in compliance with all applicable FDOT Policies, Procedures and Rules.

Data Collection

The **CONSULTANT** shall use all available data sources to establish existing traffic volumes and operational conditions. As determined by the **CONSULTANT**, recent year (2 years or newer) traffic counts may be used in place of the data collection noted below.

The **CONSULTANT** shall collect the following information and data for the extended project limits:

All historical traffic counts from FDOT and Polk County.

1. Additional traffic counts, if needed, as follows:
   a. 72 hour classification counts:
   b. 24 hour bidirectional volume counts:
   c. Two hour AM/PM peak period turning movement counts (TMC), including pedestrian and bicycle:

2. Transit data required for analysis.
3. Five year crash data (to be supplied by the FDOT District Safety Office via FDOT District One) or through Polk County Public Works).
4. All applicable 5 year, 10 year and long range transportation improvement plans.
5. Future development information along the corridor including but not limited to site plans, master plans and any other current land development information that may impact the corridor.

6. Information from all FDOT traffic count stations within the urban areas of Polk (K and D determination).
7. Roadway Characteristic Inventory (RCI) data and straight-line diagram (SLD's).
8. FSUTMS model(s) as provided by FDOT for use in determining future year traffic forecasts.

All traffic counts as defined in Section 2.b. above shall be conducted in accordance with FDOT traffic data collection procedures. Turning movement counts shall be done in accordance with the most current FDOT Manual on Uniform Traffic Studies (MUTS) and include an intersection diagram. **CONSULTANT** will contact Systems Planning staff to verify availability of recent counts that may be used for this study.

Traffic Analysis

Existing Traffic and Conditions

a. Existing Traffic Volumes
   All traffic counts identified in Section 2.6.2 shall be converted from daily counts to "normalized" average annual daily traffic (AADT) volumes by use of appropriate peak season factors. All traffic counts shall be adjusted to reflect 2013 existing conditions. Adjustments shall be determined based on an analysis of historic traffic count data for the corridor. 2013 design hour turning movement volumes will be developed by use of the TURNS5 program with appropriate adjustments based on collected data. Information shall be presented both in tabular and graphic formats. The **CONSULTANT** should develop all forecasts and check all traffic volumes for reasonableness of results prior to finalizing the existing 2013 AADT's and DDHV's for presentation.

   The **CONSULTANT** shall perform a check of all traffic count data collected for this project. This check shall, but not be limited to, include:

   - Consistency of volume flows between count locations (no major drops or additions of traffic between count locations),
   - 24 hour approach counts for intersections should be within 10 to 15 percent of turning movement count approach volumes for the same periods,
   - Total daily directional traffic flows should be approximately equal (balanced) in both directions (if not, some reasonable explanation should be provided),
   - Calculated design hourly volume for intersections/links should be within 5% of the calculated DDHV; and
   - The report and traffic counts shall be certified as being reviewed by a professional engineer prior to the inclusion and/or use of the traffic counts for the study.
   -

b. Existing Conditions Analysis

   - Traffic Factors and Characteristics

     Based on the data collection efforts, the **CONSULTANT** shall develop traffic factors to use for the analysis and to develop design hourly volumes. Peak hour factors (PHF's) for the existing conditions analysis shall be based on an average overall

factor from the traffic count data collection. Future year peak hour factors may be modified based on guidelines as found in the Highway Capacity Manual and other technical resources to reflect anticipated conditions.

The **CONSULTANT** shall develop traffic characteristics (K-, D- and T-factors) as defined in the current Project Traffic Forecasting Handbook. K-factors shall be determined based in part on a review of the K-factor data contained within the Florida Traffic Information (FTI) DVD (both Telemetered Traffic Monitoring Sites and Portable Traffic Monitoring Sites) and a review of the K-factor data obtained from similar County maintained traffic count stations within southeastern Manatee County. A standard K factor may be approved for use in this project under direction of the District. The D-factors will be developed based on the traffic count data collected. It is a suggestion that one overall set of traffic factors and characteristics be used for the entire corridor for balancing of volumes. The FDOT will accept rational adjustments to overall K- and D-factors for uniformity (adjusted values must maintain the minimum acceptable values as defined in the Project Traffic Forecasting Handbook). Traffic factors and characteristics shall be summarized and provided in the PTR along with supporting documentation of adjustments.

Truck percentages and vehicle composition for daily and design hour volumes shall be obtained from the FDOT traffic count stations and compared to the 72 hour classification counts collected for this study. The higher value of the two data sources shall be used and documented within the PTR. The_PTR will also provide truck percentage composition estimates for noise analysis within the PTR appendix.

- Collision History and Analysis

The **CONSULTANT** shall summarize the five (5) year collision history for the 15th Street East extended project limits in accordance with the FDOT MUTS Manual. The **CONSULTANT** shall review the data to determine any locations that may be experiencing higher than normal collision rates (actual rate/calculated rate). The **CONSULTANT** shall note such locations for further review during the PD&E Study. The collision data summary, including collision diagrams, shall be provided in the PTR in a manner consistent with collision data as identified in the FDOT MUTS Manual. All of the collision data shall be summarized and be obtained from the FDOT Safety Office or Manatee County Public Works.

c. Existing Traffic Operations/Level of Service

The **CONSULTANT** shall evaluate the intersections and associated roadway links for existing (year 2012) level of service conditions. The intersection level of service determination shall be done in accordance with the latest adopted Highway Capacity Manual (HCM) and associated software. For roadway links/multimodal analysis, the **CONSULTANT** shall use the most recent version of the Q/LOS software (ARTPLAN).

The **CONSULTANT** shall summarize the level of service results for intersections by approach and movement. Roadway links shall be summarized for daily and design hour conditions. Each respective analysis shall include (as appropriate) volume to capacity ratio (V/C), delay, density and/or speed along with level of service in a tabular format.

Identification of deficient movements or roadway links shall be based on current FDOT level of service standards for the mainline and other State Roads identified in Section 2.6. The **CONSULTANT** shall note all roadway links or intersection approaches/movements that operate below acceptable standards.

Information will be summarized in the Project Traffic Report in graphic and tabular format.

Future Traffic Forecasts and Conditions

The **CONSULTANT** shall use the traffic count data and other information to provide traffic forecasts to determine roadway operational conditions for future year no build and build scenarios. Recommendations for improvements shall be consistent with currently adopted plans and policies. The PTR shall also provide support data and analysis for air and noise impact determinations.

a. Future Traffic Forecasts

The **CONSULTANT** shall develop future traffic forecasts using the FSUTMS models developed and approved for the Sarasota/Manatee MPO for all locations as identified in the existing conditions section of this scope. Future traffic forecasts shall be developed for no build and build scenarios for the following years:

- Opening Year – 2020
- Mid-Design Year – 2030
- Design Year – 2040

The **CONSULTANT** shall prepare and submit a FSUTMS Modeling Effort Memorandum of Understanding (MOU) to the **DEPARTMENT** that summarizes specific steps they will undertake.

Prior to running the future year models, the **CONSULTANT** shall assess the validation accuracy of the base year (2007) model for the 15th Street East study corridor. A sub-area validation shall be performed if it is necessary. The sub-area validation limits will be provided by the **CONSULTANT** for approval by the **DEPARTMENT**. The sub-area validation will meet the requirements of the FSUTMS Model Update Task C: Develop Standardized Distribution and Assignment Models, Table 3.

Upon completion of the sub-area validation, the same modification should be applied to the 2035 Cost Feasible no build and build model networks for the project. The no build model network will contain all approved cost feasible improvements and maintain the existing roadway laneage for the project limits. The build model network will include improvements for 15th Street East extended project limits consistent with the adopted cost feasible and needs plans for Manatee County for that facility. The **CONSULTANT** shall coordinate with FDOT and Manatee County staff as to the proper future roadway network to be used. The **CONSULTANT** shall use the no build model trip tables for assignment in the build network.

The 2035 no build and build FSUTMS model output data will be converted from PSWADT to AADT using the appropriate model output conversion factor (MOCF). These model forecasts should be adjusted using the National Cooperative Highway Research Program (NCHRP) Report 255 procedure. The **CONSULTANT** will provide a comparative analysis of these adjusted model AADT volumes to future AADT volumes developed using historic growth rates. The **CONSULTANT** shall use the more conservative future year AADT volumes.

The **CONSULTANT** shall use **DEPARTMENT** approved K- and D-factors to develop directional design hour link volumes (DDHV's). Design hour directional turning movement volumes shall be developed using the TURNS5 spreadsheet as furnished by the FDOT. It should be noted that the **CONSULTANT** can make manual adjustments to the TURNS5 output for reasonableness. All adjustments will be documented within the PTR. AADT and DDHV information shall be provided in tabular and graphic form within the PTR. Design hour directional turning movement volumes shall be provided in tabular and graphic format by movement, approach and direction for each intersection leg within the PTR for the no build and build traffic forecasts.

b. Future Year Traffic Operations/Level of Service

Using the future year traffic forecasts, the **CONSULTANT** shall analyze future year traffic conditions for the no build and build scenarios. The **CONSULTANT** shall analyze design hour and daily traffic conditions using the same applicable procedures used to determine existing levels of service.

- Unsignalized Intersections

  In the case of unsignalized intersections being analyzed for future year conditions, the **CONSULTANT** shall conduct an unsignalized analysis first. The **CONSULTANT** shall note the reported level of service based on unsignalized operation. In the event that the unsignalized intersection analysis results become so deficient that the actual delay values are not reported (only * are shown), the **CONSULTANT** shall provide signalized intersection analysis results and note that a traffic signal was assumed. The **CONSULTANT** shall also provide a planning- level estimated time frame when a signal may be required based on the signal warrant procedures as outlined in the FDOT MUTS Manual (Warrants 1 and 2 only). The future year requiring signalization will be shown in a text or table format within the report. The reports for signalization/unsignalization analysis shall be provided within the PTR appendix. The analysis procedure will apply for no build and build alternatives. Intersections analyzed as future signalized locations shall be noted as such on the figures in the report. The note shall indicate that a traffic signal was assumed at this location due to poor level of service in the unsignalized condition and that actual traffic signal installation is based on satisfying Traffic Signal Warrants using actual traffic counts (if not warranted in the existing conditions). **This project component shall be coordinated with Access Management**.

- No Build Analysis

The **CONSULTANT** shall conduct a traffic operations/level of service analysis based on the existing two-lane facility using the no build traffic forecasts. Traffic signalization may be assumed in accordance with Section 2.17.2.2.1. The **CONSULTANT** shall determine the approximate year(s) when the two-lane facility can no longer provide adequate level of service by each roadway link and intersection.

The **CONSULTANT** shall summarize no build roadway link failures within the PTR in a tabular and graphic format. The no build analysis will be conducted for opening, mid-design and design years. The **CONSULTANT** shall summarize all level of service results in a format similar to the existing conditions analysis.

- Build Analysis

The **CONSULTANT** shall conduct a traffic operations analysis for the build scenario using the build traffic forecasts. The **CONSULTANT** shall first determine the maximum roadway improvements needed for the design year. The **CONSULTANT** shall use the maximum geometry to obtain traffic operations/level of service for the opening year.

The **CONSULTANT** shall summarize the resulting levels of service and required geometry in a tabular format that shows required geometry (both roadway links and intersections) to satisfy the level of service standard. Improvements at intersections should have consistent geometry as required by the roadway links for 15th Street East and cross streets. A two-lane roadway shall not widen to four lanes at an intersection to satisfy level of service criteria. This rational also applies for multiple turn lanes from a side street to the mainline and the reciprocating movement. Dual left-turn lanes will need to have adequate receiving lanes for cross streets and shall be noted within the report. The Build analysis shall be conducted for opening, mid-design and design year traffic forecasts. The **CONSULTANT** shall summarize all level of service results in a format similar to existing conditions analysis.

2.5 Safety

Crash Data

The **CONSULTANT** shall obtain available data from **DEPARTMENT's** Database and local sources for various highway segments required. Obtain data for previous five years. The data collected shall include the number and type of crashes, crash locations, number of fatalities and injuries, and estimates of property damage and economic loss.

Safety Analysis

Based on information obtained from information gathered and presented in the purpose and need statement of the ETDM Programming Screening Summary Report, the CONSULTANT shall identify project needs associated with the safety of existing facility.

2.6 Utilities & Railroads

Data Collection

The **CONSULTANT** shall obtain information in accordance with ***Part 2, Chapter 10 of the PD&E Manual***.

Analysis and Report

Based on the coordination with the utility companies along the project the **CONSULTANT** shall prepare a Utility Assessment Package as described in ***Part 2, Chapter 10 of the PD&E Manual***. The **CONSULTANT** will also address impacts to existing and proposed railroads.

2.7 Needs

Transportation Plans

Not Applicable.

Planning Consistency Form

Not Applicable.

Analysis of Existing Conditions

The **CONSULTANT** shall analyze the existing conditions in order to identify any deficiencies that are to be identified in the Needs section.

Purpose and Need Statement

The **CONSULTANT** shall update and verify the purpose and need for the project from the Programming Screen Summary Report as outlined in ***Part 2, Chapter 4 of the PD&E Manual***.

2.8 Corridor Analysis

Not Applicable.

2.9 Roadway/Grade-Separated Pedestrian Crossing

Existing Location Characteristics

The **CONSULTANT** will collect the existing location/roadway characteristics in accordance with ***Part 1, Chapter 4 of the PD&E Manual***.

Typical Section Analysis

The **CONSULTANT** shall develop all appropriate typical section alternatives for the project. These will include the **DEPARTMENT's** standard typical sections, and any typical sections that may result in minimizing right-of-way, and incorporating context sensitive solutions.

Crossing Design Alternatives

The objective of the conceptual design and preliminary engineering analysis is to develop viable Design Alternatives based on standard engineering practice, which provides an appropriate intersection of design with social, economic, and environmental impacts involved. If such a design is determined by the **CONSULTANT** to not be feasible, the **CONSULTANT** shall recommend to the **DEPARTMENT** the most feasible Design Alternative for the proposed facility.

The **CONSULTANT** shall identify, develop, and analyze feasible Design Alternatives as outlined in ***Part 1, Chapter 4 of the PD&E Manual.*** For each Design Alternative, the **CONSULTANT** shall determine (as necessary):

- Horizontal and vertical alignment
- Typical sections
- Preliminary right-of-way costs
- Preliminary drainage to the extent of identifying required outfalls
- Existing and proposed utility location to the extent they affect the decision process
- Soils data
- Acreage involved
- Preliminary structure concepts and locations
- Location of detention/retention basins as may be required

Other such design features may be pertinent.

The **CONSULTANT** shall develop at least **two (2)** roadway alternatives.

Access Management

The **CONSULTANT** shall review the **DEPARTMENT's** State Highway System Access Management Classification System and Standards (Rule 14-97) and determine their application to the project. The **CONSULTANT** shall determine the proper access classification and standard to apply to the project. The **CONSULTANT** will then coordinate with the Districts' Access Management Review Committee.

The **CONSULTANT** will present the proposed access management plan as part of the public involvement process. If an Access Management Classification/Reclassification Public Hearing is required, it will be combined with another public meeting.

Identify Construction Segments

Not Applicable.

2.10 Structures

Existing Structure Characteristics

The **CONSULTANT** will collect the existing structure characteristics in accordance with ***Part 1, Chapter 4 of the PD&E Manual.***

Structures Typical Section Analysis

The **CONSULTANT** shall develop all appropriate structural typical section alternatives for the project. These will include the **DEPARTMENT's** standard typical sections, and any typical sections that may result in minimizing right-of-way, environmental impacts and incorporating context sensitive solutions.

Structure Design Alternatives

The **CONSULTANT** shall develop a **minimum of two (2)** alternatives at a minimum.

2.11 Drainage

Drainage and Floodplain Analyses

The **CONSULTANT** shall perform preliminary drainage design in order to determine potential outfall locations and preliminary sizes (volume and area) of required detention and/or retention facilities for storm water treatment or attenuation. The location and size of potential detention/retention areas will be determined for all viable alternate alignments.

Location Hydraulics Report

The **CONSULTANT** shall prepare a Location Hydraulics Report for the project in accordance with ***Part 2, Chapter 24 of the PD&E Manual***.

2.12 Concept Plans

Base Map

The **CONSULTANT** shall develop a CADD database that includes existing characteristics. CADD database information shall be compatible for use on aerial photography used for public hearing presentations, corridor maps, and concept plans.

The **CONSULTANT** shall plot, delineate and label pertinent cultural, natural and geopolitical features bordering the existing alignment on 1"=100' aerial photography for subsequent use in the evaluation and development of the Conceptual Design Plans. The Corridor Base Map(s) must include, at a minimum:

- Number of lanes, signals, crosswalks, cross drains, existing intersections, and drainage easements
- Street names and highway numbers
- All pertinent cultural and natural features and land use information
- Locate north arrow, scale and aerial flight date at upper-mid portion of the plan sheets
- Existing and proposed rights of way and platted property lines
- All public and private development, as well as archeological or historic sites
- Significant features which could be impacted by the project, especially wetlands and endangered species habitat, floodplain and flood prone areas
- Hazardous material and petroleum use sites
- Establish logical termini giving consideration to directness, length, and service
- Railroad right-of-way and utility easements

- All land use information (names of establishments, etc.); current zoning, future land use (per Comprehensive Plan) for vacant properties
- New data as it becomes available to keep the Corridor Base Map(s) up to date

Alternative Concept Plans

The **CONSULTANT** will prepare alternative concept plans. At a minimum, the concept plans should include existing and proposed right-of-way, elevations, and architectural features for the Design Alternatives.

Preferred Alternative

The **CONSULTANT** will finalize concept plans for the preferred alternative based on a review and analysis of all engineering, environmental, and public involvement issues related to the project, including refinements from the public hearing.

2.13 Typical Section Package

The **CONSULTANT** will prepare the Typical Section Package in accordance with the **DEPARTMENT's *Plans Preparation Manual*** (excluding pavement design). The **CONSULTANT** will provide an approved typical section package to the **DEPARTMENT** *45* days prior to the public hearing.

2.14 Design Exceptions and Variations

Identify Design Exceptions and Variations

The **CONSULTANT** will identify exceptions and variations for approval in accordance with the **DEPARTMENT's *Plan Preparation Manual*.**

Prepare Design Exception and Variation Package(s)

The **CONSULTANT** will prepare exception and variations package(s) for approval in accordance with the **DEPARTMENT's *Plan Preparation Manual***. The **CONSULTANT** will provide an approved Design Exception and Variation Package to the **DEPARTMENT** *45* days prior to the public hearing.

2.15 Multi-modal Accommodations

The **CONSULTANT** will coordinate with transit and local government officials in order to determine which multi-modal accommodations to study and/or evaluate as part of the project alternatives. This task only includes existing and planned multi-modal facilities.

2.16 Park and Ride-Lots

Not applicable.

2.17 Maintenance of Traffic Analysis

The **CONSULTANT** will analyze the design alternatives for constructability, and the ability to maintain traffic. If the constructability analysis indicates that there will be a substantial cost to maintain traffic, the cost estimate will be included in the cost estimate for that alternative.

2.18 Comparative Analysis and Evaluation Matrix

After developing the viable alternatives and costs, the **CONSULTANT** will prepare a matrix comparing the impacts and costs of the alternatives evaluated, with a recommendation of the most viable alternative(s). The **CONSULTANT** shall present their recommendations to the **DEPARTMENT** for consideration.

2.19 Selection of Preferred Alternative(s)

The **CONSULTANT** shall recommend a preferred alternative(s) based on a review and analysis of all engineering, environmental, and public involvement issues related to the project.

2.20 Value Engineering

This project will be subject to a Value Engineering (VE) review during the study ***(state when the value engineering will be conducted)*** prior to the Public Workshop. The **DEPARTMENT** will select a multi-disciplined team of personnel to conduct the VE reviews. The VE team will consider value improvements to proposed concepts and designs.

Prior to initiating the value engineering study(ies), the **CONSULTANT** shall provide to the **DEPARTMENT** any information that is pertinent to the selection of the **DEPARTMENT's** preferred concept. The **CONSULTANT** will logically organize the information in order to facilitate the value engineering teams understanding of the project. At a minimum, the information given to the value engineering team will consist of:

- Traffic information, including latest traffic projections and if applicable design traffic analysis
- Aerial photography depicting project concepts prepared to the scales specified in this scope
- Support and back up information for right-of-way estimates which may include if applicable:
    - Square foot market value for areas affected by each proposed conceptual design
    - R/W to be purchased (no. parcels & cost)
    - Business relocations (no. locations & cost)
    - Residential relocations (no. locations & cost)
    - Business damages (no. locations & est. cost)
- Construction cost estimate for each alternative developed
- Any environmental analysis associated with each of the alternatives under consideration
- Results of any public involvement associated with the project
- Any commitments to the local governments

- Provide a decision matrix that shows the criteria and the weighted impact used by the **CONSULTANT** to make decisions on the preferred concept with criteria such as safety, operation and public acceptance which must be fully documented

Value Engineering is an event oriented function and will occur at specific times in the development process of the project. The information described above will vary in degree of detail depending on the point in time when the value engineering study is conducted.

The **CONSULTANT** Project Manager and other key project personnel shall meet with the VE team to explain development of initial concepts and the rationale for such. The **CONSULTANT** Project Manager and other key project personnel will be available to the value engineering team for clarification of the information used during the value engineering study.

The **DEPARTMENT** will carry the approved VE recommendations concerning modified or additional concepts forward to the alternatives analysis phase of the PD&E study.

2.21 Risk Management

CONSULTANT will define level of Risk Management performed based on the **DEPARTMENT's** ***Risk Management Guidelines***. If required, this will be an Optional Service.

2.22 Construction Cost Estimates

The **CONSULTANT** shall develop construction cost estimates and updates for design alternatives using the **DEPARTMENT's** long range estimating (LRE) program.

2.23 Right-of-way Cost Estimates

The **CONSULTANT** shall prepare maps of the project area showing all related right-of-way and affected parcels on all alternatives to be included in the project matrix. The **CONSULTANT** will coordinate with the **DEPARTMENT's** Right-of-Way Office and produce tables of the affected parcels (by number), including the square footage of the entire parcel, the amount needed, and assumptions associated with the taking so that the **DEPARTMENT's** Right-of-Way staff can prepare estimates.

Relocation Plan

The CONSULTANT shall collect the data and perform the analysis necessary to complete a Conceptual Stage Relocation "A" Plan for the proposed design alternatives as described in ***Part 2, Chapter 9 of the PD&E Manual*** and the ***FDOT Right-of-Way Manual***.

2.24 Preliminary Engineering Report

The **CONSULTANT** shall prepare a Preliminary Engineering Report (PER) in accordance with ***Part 1, Chapter 4 in the PD&E Manual***. The **CONSULTANT** will provide the PER (95% complete) to the **DEPARTMENT** *45* days prior to the public hearing.

2.25 Other Engineering Services (As Applicable)

Roundabouts

The **CONSULTANT** is to examine the geometric feasibility of implementing roundabouts for intersection traffic control at locations identified in the operational and safety analysis. Prior to proceeding forward with project development, it is important to understand whether the roundabout will fit within available space at the intersection and the relative impacts it might have to adjacent properties. In some situations, an appropriately designed roundabout may not be practical due to physical, cultural, historical, environmental, or other constraints.

The **CONSULTANT** will develop a conceptual plan-view roundabout layout to a level sufficient to verify that the concept will meet the objectives outlined in NCHRP Report 672, including fastest path speeds, heavy vehicle accommodation, natural vehicle paths, sight distance/driver view angles, and multimodal accommodation. The development of the roundabout concept will take into consideration the appropriate size and placement of the inscribed circle, and the alignment and arrangement of approaches to meet the geometric objectives outline in NCHRP Report 672.

The **CONSULTANT** will develop up to three roundabout concepts. The **CONSULTANT** will use these concepts to screen different combinations of roundabout location, size, and / or approach alignments to review how different options might affect adjacent properties. Within the immediate roundabout vicinity, the **CONSULTANT** should flag potential impacts including conflicts with adjacent property access, structures, utilities, or ROW for each option developed. The **CONSULTANT** will meet with the District One Roundabout Task Force (RTF) to discuss options developed, and the RTF will select the preferred roundabout option(s) for further development.

In order to verify reasonableness of the preferred roundabout concept, the **CONSULTANT** will conduct performance checks using the following minimum considerations:

- Check fastest vehicle paths to verify that the roundabout concept adequately controls vehicle speeds for each turning movement.

- Check design vehicle accommodation using AutoTurn or equivalent for the various turning movements at the intersection (right-, though-, and left-turns). Commonly a WB-62FL tractor-trailer is the design vehicle along the state routes, but alternative design vehicles may apply.

- Review multimodal needs to verify that splitter islands provide adequate width for pedestrian refuge and that crosswalk locations are appropriate. Sidewalk facilities should also be included in the concepts to understand the full right-of-way needs for all modes.

The **CONSULTANT** will also prepare a constructability review associated with the roundabout concept. This will briefly describe the possible staging for construction (e.g. maintenance of traffic, off-site detour, etc.) of the conceptual roundabout design identified for the study intersection. The **DEPARTMENT** does not authorize detailed construction staging plans as part of this task.

The **CONSULTANT** shall prepare a memorandum report summarizing the concept(s) developed, results of design checks, discussion of possible impacts, and review of constructability findings. The **CONSULTANT** will provide this memorandum to the **DEPARTMENT** for review and comment. The **CONSULTANT** shall revise the memorandum, as necessary, in response to the review comments and submit a final version to the FDOT.

2.26 Quality Control

The **CONSULTANT** shall follow the Quality Control Plan as described in Section 1.10. The **CONSULTANT** shall include a QA/QC sheet in the front of all documents showing that the documents went through an internal review prior to submittal to the **DEPARTMENT**.

3.0 ENVIRONMENTAL ANALYSIS AND REPORTS

The **CONSULTANT** shall coordinate and perform the appropriate level of environmental analysis for this project as outlined in the ***PD&E Manual*** and the following references.

The **CONSULTANT** shall utilize the Programming Screen Summary Report and graphical information from the Environmental Screening Tool (EST) available at http://www.dot.state.fl.us/emo, or other appropriate database. Database information shall be compatible for use on base maps used for public presentations, corridor maps, and alternative plans.

The level of effort for the following work activities shall be commensurate with the level of impact identified in the final Programming Screen Summary Report. If the Summary Degree of Effect from the Final Programming Screen Summary Report is "No Involvement", or "None", for an activity, the activity will be marked N/A in the Scope of Services.

Sociocultural Resources

The **CONSULTANT** shall collect data regarding the following sociocultural issues, as needed. The **CONSULTANT** will collect, analyze, and summarize pertinent data in the appropriate section of the Environmental Document. The **CONSULTANT** shall display pertinent data on the base map, as applicable. The **CONSULTANT** will analyze these issues in accordance with ***Part 2, Chapter 9 of the PD&E Manual*** and the Sociocultural Effects Evaluation Handbook (available at http://www.dot.state.fl.us/emo).

3.1 Land Use Changes

Document as needed:

- Planning Consistency
- Land Patterns

3.2 Social

Document as needed:

- Community Cohesion
- Community Facilities and Focal Points
- Safety/Emergency Response
- Title VI
- Community Goals and Quality of Life

3.3 Economic

Document as needed:

- Commerce
- Tax Base

3.4 Mobility

Document as needed:

- Accessibility
- Connections to other transportation modes

3.5 Aesthetics

Document as needed:

- Aesthetics

3.6 Relocation Potential

Not Applicable.

Cultural Resources

3.7 Archaeological and Historic Resources

The **CONSULTANT** shall implement a Cultural Resources study analyzing the impacts to all cultural resources by all proposed alternatives. All work shall be conducted by a professional qualified under the provisions of 36 CFR 61, and be done in compliance with the National Historic Preservation Act of 1966 (Public Law 89-665, as amended) and the implementing regulations (36 CFR 800) as well as with the provisions contained in Chapter 267, Florida Statutes.

This task includes identifying and analyzing impacts to archaeological sites and historic resources within the project Area of Potential Effects, including documentation and coordination with appropriate agencies as per ***Part 2, Chapter 12 of the PD&E Manual*** and the ***DEPARTMENT's Cultural Resource Management Handbook***. In addition, attendance at public meetings may be required. The **CONSULTANT** will also review and address any resources listed in the Environmental Screening Tool (EST) by the SHPO ETAT member.

Research Design Methodology

The **CONSULTANT** will prepare a Research Design and Survey Methodology for the project. The **CONSULTANT** will submit the Research Design and Survey Methodology to the **DEPARTMENT** for approval prior to the initiation of fieldwork. The **CONSULTANT** shall identify and map out the zones of probability for the project study area, and identify any previously recorded resources. The Area of Potential Effect (APE) will be determined.

Cultural Resources Assessment Survey (CRAS)

- *Field Work* – The **CONSULTANT** shall identify any archaeological sites within the project area, both previously recorded and potentially eligible, and excavate the appropriate number of test pits. The **CONSULTANT** shall identify any existing historic resources within the project area, both previously recorded and potentially eligible. The **CONSULTANT** will also locate, identify, and bound any additional cultural resources included on the Florida Master Site File (FMSF) and all structures 45 to 50 years older

(depending upon the length of time anticipated before construction). The **CONSULTANT** will collect enough data to document each site's significance in terms of eligibility for listing on the National Register of Historic Places (NRHP).

- *Documentation* – The CRAS will be prepared with appropriate documentation detailing the results of the survey and the final assessments of resource significance, and including a FMSF form for all identified resources. The Research Design Methodology and the Pond Site Technical Memo (if required) will be included in the CRAS appendix.

Pond Site Technical Memorandum

If required, the **CONSULTANT** will identify archaeological probability and potential NRHP eligible resources for pond sites for the preferred project alternative. The **CONSULTANT** will document the results of this work in a technical memorandum, which will be included as an appendix to the CRAS.

Determination of Eligibility (DOE)

If required, the **CONSULTANT** will prepare a DOE for each resource determined to be significant. The DOE package will include an NRHP registration form, and the DOE's will be included as a CRAS appendix.

Case Study Report

If required, a Section 106 Case Study Report, documenting the application of the Criteria of Effect, will be prepared.

Memorandum of Agreement (MOA)

If required, the **CONSULTANT** will assist the **DEPARTMENT** with the preparation of a Section 106 MOA.

Section 106 Consultation Meetings

If required, the **CONSULTANT** will assist the **DEPARTMENT** with coordination of a Section 106 Consultation meeting.

Section 106 Public Involvement

If required, the **CONSULTANT** will assist the **DEPARTMENT** with public involvement for Section 106.

Native American Coordination

If required, the **CONSULTANT** will assist the **DEPARTMENT** with coordination with any Native American tribes that have or wish to have involvement or input on the project or any site of relevance to them.

Cultural Resource Committee Meetings

If required, the **CONSULTANT** will assist the **DEPARTMENT** with any meetings with the Cultural Resource Committee.

3.8 Recreational Areas

The **CONSULTANT** shall inventory all recreational properties potentially affected by any proposed design alternatives. There will be one inventory prepared that will address all of the potential recreational properties within the project area. Cultural resources will be addressed separately.

Natural Resources

3.9 Wetlands and Essential Fish Habitat

In accordance with ***Part 2, Chapters 11 and 18 of the PD&E Manual***. This includes a Conceptual Mitigation Plan, if applicable.

3.10 Water Quality

In accordance with ***Part 2, Chapter 20 of the PD&E Manual***.

3.11 Special Designations

In accordance with ***Part 2, Chapters 19, 21, 23, and 26 of the PD&E Manual***, respectively:

- **Outstanding Florida Waters**
- **Wild and Scenic Rivers**
- **Aquatic Preserves**
- **Coastal Barrier Resources**
- **Scenic Highways**

3.12 Wildlife and Habitat

In accordance with ***Part 2, Chapter 27 of the PD&E Manual.***

The **CONSULTANT** shall survey and analyze the project corridor for the presence of federally or state designated threatened or endangered species. The **CONSULTANT** shall coordinate with appropriate Federal, State and local agencies as to specific permits required, significance of impacts, required mitigation, and any specific concerns about the project or its impacts. The **DEPARTMENT** has completed much of this coordination through the ETDM process. The **CONSULTANT** will coordinate to update the issues.

The **CONSULTANT** will attend any coordination meetings with the regulatory agencies regarding these project issues as necessary.

<u>Threatened and Endangered Species Technical Memorandum</u>

As applicable, the **CONSULTANT** will conduct and prepare the Threatened and Endangered Species Technical Memorandum (or other appropriate document) in accordance with ***Part 2,***

Chapter 27 of the PD&E Manual. The Threatened and Endangered Species Technical Memorandum will include an analysis of potential impacts to Federal and State listed species and other wildlife and habitat, conceptual mitigation requirements, standard protection measures where applicable, and a commitments and recommendations section. The **DEPARTMENT** will complete the commitments and recommendations before construction begins.

Pond Siting Analysis

The **CONSULTANT** shall collect the necessary data to completely analyze the impacts on all protected floral and faunal species by all viable proposed storm water management alternatives and their respective infall and outfall locations, as described in ***Part 2, Chapter 27 of the PD&E Manual***. The **CONSULTANT** shall determine the potential for involvement with protected floral and faunal species and include this analysis in the Preliminary Pond Siting Report and in an addendum to the ESBA.

Mitigation Plan

If required, the **CONSULTANT** will prepare conceptual mitigation alternatives for listed species impacts. This effort will consist of the identification of alternative possibilities only. This task will be included in the Threatened and Endangered Species Technical Memorandum.

3.13 Identify Permit Conditions

The **CONSULTANT** shall identify permit conditions and type of permits required during the project. This task includes the review of maps and data in order to determine permit related information for the project. The intent of this task is to identify all needed permits and any special issues or conditions to consider during permit acquisition or design.

For projects where permits are required as part of the PD&E Study, see Section 4.3.

3.14 Farmlands

In accordance with ***Part 2, Chapter 28 of the PD&E Manual***.

Physical Effects

3.15 Noise

In accordance with ***Part 2, Chapter 17 of the PD&E Manual***.

3.16 Air Quality

In accordance with ***Part 2, Chapter 16 of the PD&E Manual***.

3.17 Construction Impact Analysis

In accordance with ***Part 2, Chapter 30 of the PD&E Manual***.

3.18 Contamination

The **CONSULTANT** shall perform the necessary analysis to complete the Contamination Screening Evaluation for all viable alternatives, and complete the Contamination Screening Evaluation Report as described in ***Part 2, Chapter 22 of the PD&E Manual.***

The **CONSULTANT** shall conduct a diligent search for monitoring wells that may be impacted during construction and mark their location on maps and appropriate plan sheets.

The **CONSULTANT** shall schedule meetings with the FDOT District Contamination Impact Coordinator prior to performing the contamination screening investigation and any Level II investigation. The purpose of these meetings is to provide information to the **DEPARTMENT** regarding the sampling plan and locations. It is the responsibility of the **CONSULTANT** to undertake the necessary action (i.e. phone calls, meetings, correspondence, etc.) to set up these meeting and ensure that the FDOT District Contamination Impact Coordinator is kept informed of the project efforts to enhance the overall success of the project.

Environmental Reports

The Environmental Documents prepared by the **CONSULTANT** will comply with the procedures listed in ***Part 1 of the PD&E Manual***, and will also follow the format and include content described in ***Part 2 of the PD&E Manual***. The task of documentation includes the preparation of draft and interim reports prepared by the **CONSULTANT** for review and comment upon by the **DEPARTMENT** prior to producing final reports and documents.

3.19 Class of Action Determination

Not Applicable.

3.20 Categorical Exclusion Type II

Not Applicable.

3.21 State Environmental Impact Report

Prepare a State Environmental Impact Report in accordance with ***Part 1, Chapter 10 of the PD&E Manual***.

3.22 Environmental Assessment

Not Applicable.

3.23 Finding of No Significant Impact

Not Applicable.

3.24 Draft Environmental Impact Statement

Not Applicable.

3.25 Final Environmental Impact Statement

Not Applicable.

3.26 Quality Control

The **CONSULTANT** shall follow the Quality Control Plan as described in Section 1.10. The **CONSULTANT** shall include a QA/QC sheet in the front of all documents showing that the documents went through an internal review prior to submittal to the **DEPARTMENT**.

4.0 MISCELLANEOUS SERVICES

4.1 Contract and Project Files

Project Management efforts for complete setup and maintenance, developing monthly progress reports, schedule updates, work effort to develop and execute sub-consultant agreements etc. The **CONSULTANT** will deliver progress reports to the **DEPARTMENT** in a format as prescribed by the **DEPARTMENT** and no less than 10 days prior to submission of the corresponding invoice. The **DEPARTMENT'S** Project Manager will compare the reported percent complete against actual work accomplished to ensure the work is of sufficient quality and quantity.

Within ten (10) days after the Notice to Proceed, the **CONSULTANT** shall provide a schedule of calendar deadlines accompanied by an anticipated payout curve. Said schedule and anticipated payout curve shall be prepared in a format prescribed by the **DEPARTMENT**.

4.2 Project Management Meetings and Coordination

The **CONSULTANT** shall meet with the **DEPARTMENT** as needed throughout the life of the project. The **DEPARTMENT** anticipates **twelve (12)** meetings. These meetings will include progress and miscellaneous review and other coordination activities with the **DEPARTMENT**.

4.3 Additional Services

The following services are examples of tasks that may be considered optional services. If any of these services will be included in the project, the project manager will need to coordinate with the responsible office for the appropriate scope language.

Public Involvement

The **DEPARTMENT** may require the **CONSULTANT** to perform certain unforeseen and/or additional public involvement services not currently covered under the scope of services, but are necessary for the successful completion of the PD&E study. Some examples of these types of additional services (but not all) are below. Other tasks not specifically mentioned below may also be required:

- *Scheduled Public Meetings* – The **CONSULTANT** may be required to provide additional staff to participate in scheduled public meetings.

- *Other (Unscheduled) Public and Agency Meetings* – The **CONSULTANT** may be required to participate in additional meetings with the public, elected officials, special interest groups or public agencies.

- *Public Hearing* – the **CONSULTANT** may be required to provide additional staff to participate in the public hearing.

- *Special Public Involvement Requirements* – The **CONSULTANT** may be required to prepare additional newsletters and/or updates to the project website and/or videos and renderings as needed.

Engineering

The **DEPARTMENT** may require the **CONSULTANT** to perform certain unforeseen and/or additional engineering services not currently covered under the scope of services, but are necessary for the successful completion of the PD&E study. Some examples of these types of additional services (but not all) are below. Other tasks not specifically mentioned below may also be required:

- *Typical Section Analysis* – The **CONSULTANT** may be required to prepare typical section alternatives that go beyond the number or scale identified in this Scope of Services.

- *Roadway Design Alternatives* – The **CONSULTANT** may be required to develop and evaluate additional alignment alternatives.

  Access Management – The **CONSULTANT** may be required to develop additional access management details for the study alternatives.

- *Alternative Concept Plans* – The **CONSULTANT** may be required to develop additional concept plans for additional alignment alternatives.

- *Risk Management* – The **CONSULTANT** may need to provide Risk Management services once defined by the **DEPARTMENT**.

- *Pavement Type Selection Report* – The **CONSULTANT** may be required to prepare a Pavement Type Selection Report instead of a Pavement Type Selection Memo.

Environmental

The **DEPARTMENT** may require the **CONSULTANT** to perform certain unforeseen and/or additional environmental services not currently covered under the scope of services, but are necessary for the successful completion of the PD&E study. Some examples of these types of additional services (but not all) are below. Other tasks not specifically mentioned below may also be required:

- *Conceptual Stage Relocation Plan* – If relocations are required, the **CONSULTANT** shall prepare a Conceptual Stage Relocation Plan.

- *Archaeological and Historical Resources* – If the project is determined to have an adverse effect on a Section 106 resource, the **CONSULTANT** may be required to prepare a Section 106 Memorandum of Agreement.

- *Section 4(f) Applicability and Evaluation* – The **CONSULTANT** will prepare a Section 4(f) Determination of Applicability, as well as prepare and coordinate a Section 4(f) Evaluation, if required. (This document will be separate from the parks and recreation 4(f) document).

- *Additional Coordination with FHWA* – The **CONSULTANT** may be required to participate in other meetings with FHWA.

Miscellaneous

- *Contract and Project Files* – The **CONSULTANT** may be required to provide additional months of contract and project file maintenance.

- *Project Management Meetings and Coordination* – The **CONSULTANT** may be required to attend additional progress meetings or provide additional project-related coordination.

Design-Related activities

The **DEPARTMENT** may require the **CONSULTANT** to perform certain unforeseen and/or additional design-related services not currently covered under the scope of services, but are necessary for the successful completion of the PD&E study. Some examples of these types of additional services (but not all) are below. Other tasks not specifically mentioned below may also be required:

- Need to develop more detail to identify impacts including right-of-way.
- Special project feature(s) (bridge structures, roadway, drainage, geotechnical, etc.) that require engineering analysis beyond the PD&E Study level of detail.
- Permitting is included during the PD&E Study on all or portions of the project.
- Preparation of scope and staff hours for the additional services will involve reference to the Standard Scope of Services, Staff Hour Estimation Forms, and Staff Hour Estimation Basis for Highway and Bridge/Structures Design.
- Permitting services may include consideration of the following design activities: Roadway Analysis, Roadway Plans, Drainage Analysis, and Environmental Permits, Survey, Photogrammetry, Mapping and Geotechnical.

5.0 METHOD OF COMPENSATION

Payment for the work accomplished will be in accordance with Exhibit B of this contract. Invoices shall be submitted through the **DEPARTMENT's** web enabled Consultant Invoice Transmittal System (CITS) Internet application. The **DEPARTMENT's** Project Manager and the **CONSULTANT** shall monitor the cumulative invoiced billings to insure the reasonableness of the billings compared to the project schedule and the work accomplished and accepted by the **DEPARTMENT**.

Payments will not be made that exceed the percentage of work identified in the approved payout curve and schedule provided in accordance with Section 4.1.

6.0 SERVICES TO BE PERFORMED BY THE DEPARTMENT

The **DEPARTMENT** will provide those services and materials as set forth below:

- Project data currently on file.
- All available information in the possession of the **DEPARTMENT** pertaining to utility companies whose facilities may be affected by the proposed construction.
- All future information that is in possession or may come to the **DEPARTMENT** pertaining to subdivision plans, so that the **CONSULTANT** may take advantage of additional areas that can be utilized as part of the existing right-of-way.
- Process all environmental and engineering documents including the Permit Coordination Package.
- Coordinate with the State Historic Preservation Officer.
- Existing FDOT right-of-way maps.
- The **DEPARTMENT** will permit the **CONSULTANT** to utilize the **DEPARTMENT's** computer facilities upon proper authorization as described in the **DEPARTMENT** Procedure No. 325-060-401.
- The **DEPARTMENT** will provide available FDOT crash data.
- The **DEPARTMENT** will provide up to twenty (20) noise spot elevations as requested by the **CONSULTANT**.
- The **DEPARTMENT** will provide sociocultural effects information for the project (land use changes, social, economic, and mobility).