EXHIBIT “A”

SCOPE OF SERVICES

FOR

CONTINUING SERVICES TRAFFIC STUDIES

FINANCIAL PROJECT ID: TBD

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1.0 GENERAL REQUIREMENTS

The purpose of this contract is to provide the District One Traffic Operations Office with professional services for conducting needed traffic operations studies. The analysis and recommendations produced by the CONSULTANT will provide valuable input into the development of traffic operations improvement projects to be included in the Department's work program.

A major objective of this contract is to obtain study results as expeditiously as possible while maintaining a high degree of thoroughness and professionalism. Independent study types have been identified and work tasks for each have been specified.

1.1 Acronyms

AADT	Annual Average Daily Traffic
DPM	Department's Project Manager
DTOE	District Traffic Operations Engineer
FDOT	Florida Department of Transportation
MUTCD	Manual on Uniform Traffic Control Devices
MICE	Manual on Intersection Control Evaluation
MUTS	The Manual on Uniform Traffic Studies published by the Traffic Engineering & Operations Office, Florida Department of Transportation.

1.2 Issuance of Task Work Order Authorizations

Authorization to perform one or more of the tasks described in this Scope of Services shall be conveyed to the CONSULTANT through a written Task Work Order issued by the DPM. The Task Work Order shall specify the type of study to be conducted, the tasks required, the locations to be included and the date on which the study is to be completed and submitted to the Department.

Each Task Work Order issued by the DPM shall serve as formal notice to precede, effective upon issuance of the Task Work Order.

1.3 Study Type Report

A final report for each study type shall be furnished to include the approved products of all tasks identified.

1.4 Executive Summary

The report for relevant studies shall contain an executive summary providing a general overview of the contents of the report and general comments about the location, purpose, findings, conclusions and recommendations.

1.5 Sealing of Reports

All study type documents and copies submitted to the Department shall be signed and sealed by a Florida Registered Professional Engineer.

1.6 Task Product

One (1) printable Portable Document Format (PDF) of the signed and sealed traffic data or report dated is required, along with any associated CADD files in DGN format. The PDF file shall be submitted by electronic mails (E-Mails), or on an approved file transfer program. The file name should be the task work order number (i.e. TWO****.pdf).

2.0 TYPES OF STUDIES

This scope of work contains four (4) study types for which the CONSULTANT will be issued work orders. These study types and the work tasks associated with each study type are as follows:

2.1 Study Type I - Corridor Analysis - (Page A-4)
- Task 1 - Qualitative Assessment
- Task 2 - Field Inventory
- Task 3 - Crash Analysis
- Task 4 - Synchro/Sim Traffic Analysis
- Task 5 - Future Conditions Analysis
- Task 6 - Development of Alternatives and Recommendations
- Task 7 - Preparation and Submittal of Report
- Task 8 - Travel Time and Delay Study

2.2 Study Type II - Intersection Analysis - (Page A-7)
- Task 1 - Qualitative Assessment
- Task 2 - Field Inventory
- Task 3 - Crash Analysis
- Task 4a - Synchro/Sim Traffic Analysis
- Task 4b - Future Conditions Analysis
- Task 4c - Roundabout
  - Subtask 4c1 - Inventory
  - Subtask 4c2 - Sidra Intersection Analysis

Subtask 4c3 - Benefit/Cost Analysis
Subtask 4c4 - Concept Development
Task 5 - Development of Alternatives and Recommendations
Task 6 - Preparation and Submittal of Report

2.3 Study Type IIIA & IIIB - Signal Warrant Analysis - (Page A-12)
Task 1 - Qualitative Assessment
Task 2 - 12-Hour Turning Movement Counts
Task 3 - Field Inventory
Task 4a - Intersection Delay Analysis (4-Legged Intersection)
Task 4b - Intersection Delay Analysis (T-Intersection)
Task 5 - Crash Analysis
Task 6 - Warrant Analysis and Recommendations

2.4 Study Type IV - Composite Study - (Page A-15)
Task 1 - 4-Hour Turning Movement Count
Task 2 - 12-Hour Turning Movement Count
Task 3 - 24-Hour Approach Traffic Count
Task 4 - 3-Day Continuous Traffic Count
Task 5 - 7-Day Continuous Traffic Study
Task 6 - Non-Motorized Volume Studies
Task 7 - 12-Hour Pedestrian-Bicycle Count
Task 8 - Vehicle Gap Size Count
Task 9 - Left Turn Delay Study
Task 10 - Intersection Delay Study
Task 11 - Field Inventory
Task 12 - Crash Analysis
Task 13 - Qualitative Assessment
Task 14 - Development of Alternatives and Recommendations
Task 15 - Preparation and Submittal of Report
Task 16 - Signal Equipment Inventory (with travel time)
Task 17 - Signal Equipment Inventory (without travel time)
Task 18 - No-Passing Zone Study
Task 19 - Advisory Speed Study
Task 20 - Speed Zone Study Report
Task 21 - Vehicle Spot Speed Study (with travel time)
Task 22 - Vehicle Spot Speed Study (without travel time)
Task 23 - Vehicle Spot Speed Study (24 Hours, All Vehicles, With Travel Time)
Task 24 - Vehicle Spot Speed Study (24 Hours, All Vehicles, Without Travel Time)
Task 25 - Vehicle Classification Count (24 Hours, All Vehicles, With Travel Time)
Task 26 - Vehicle Classification Count (24 Hours, All Vehicles, Without Travel Time)
Task 27a - Roundabout Inventory
Task 27b - SIDRA Intersection Analysis
Task 27c – Roundabout Benefit/Cost Analysis
Task 27d - Roundabout Concept Development
Task 28a - ICE Stage 1 Screening
Task 28b - ICE Stage 2 Preliminary Control Strategy Assessment
Task 28c - ICE Stage 3 Detailed Control Strategy Assessment
Task 29 - ICE Peer Review

Task 30 - Management of Sub Consultant
Task 31a - Meetings
Task 31b - Meeting Preparation
Task 32 - In-house Support
Task 33 – Weaving Analysis
Task 34 – Driveway Connection Study
Task 35 – Driveway Connection Study – Site Specific
Task 36 – Property Owner Identification and Notification
Task 37 – Public Information Workshop/Public Hearing Support
Task 38 – Concept Plans
Task 39 - Miscellaneous Studies

3.0 DESCRIPTION OF STUDY TASKS

This section describes for each study type included in this scope the work required in each task and the task product(s). Also, the units of payment of each work task are defined for the purpose of payment.

3.1 STUDY TYPE I: CORRIDOR ANALYSIS

Purpose

The corridor analysis involves a comprehensive, systematic review of a particular arterial from an operational efficiency and safety perspective. The required product of this study is a report identifying deficiencies and recommended improvements (such as those to improve geometrics, delays and queues, travel time, safety, etc.) for consideration by the department as a basis for the development of an arterial improvement program. Elements of the study report are intended to provide input to the plans preparation process for the recommended improvement projects.

Basis of Payment

The basic unit of this study shall be per corridor miles comprising the section to be studied. For the purpose of this contract, it is assumed that an urban section be one mile in length with 4 signals or less, while a two (2) mile rural section be less than one signal per mile. Composite mileage should be rounded to the nearest tenth of a mile and shall be established by the DEPARTMENT prior to issuance of the work order. The established unit price per mile studied shall be considered full compensation for all work required to perform this study.

Period of Performance

The normal period of performance allowed for completion of a Corridor Study shall be contingent upon the individual corridor and shall be established by the Department based on discussions with the CONSULTANT prior to issuance of the work order. Signal operational studies and/or intersection studies included as part of the Corridor Study are to be conducted concurrently with the Corridor Study and no additional time shall be allotted for their completion.

Scope of Work

This section specifies the work tasks to be performed by the CONSULTANT, the responsibilities of the CONSULTANT and the Department, as well as the products and reports to be developed by the CONSULTANT and delivered to the Department at the completion of the Corridor Study.

Task 1: QUALITATIVE ASSESSMENT

A Professional Engineer shall investigate the corridor during peak periods to identify any geometric traffic operations and traffic control conditions that may provide input to the determination of operational and safety improvements and/or optimal signal control.

Task 2: FIELD INVENTORY

The CONSULTANT shall conduct a field inventory of the arterial under study and shall prepare a condition diagram. At minimum, the CONSULTANT shall develop a drawing to include lane widths, turn lane lengths, taper lengths, and sign locations. Additional roadway features should be included as appropriate.

Task Product

Arterial Inventory
Condition Diagram
Photos of observed operational and/or safety concerns.

Task 3: CRASH ANALYSIS

The CONSULTANT, using his own computer equipment and instructions provided by the DPM, will obtain authorization to access the University of Florida's Signal Four Analytics. The CONSULTANT will then obtain electronic copies of crash records from this system. Crash report images can then be viewed, stored electronically, or printed. The CONSULTANT will also contact the local jurisdiction to request local crash information when available.

The CONSULTANT will then prepare collision diagrams in a DPM approved format. The diagrams shall depict the most recent full 5 years for which data is available.

A crash analysis shall be performed based on a review of the crash reports and the prepared diagrams. The crash analysis will identify the source of the crash information and include a summary table of the crashes. The Summary Table should include Annual Injury and Property Damage Only (PDO) crash totals. Identify observable crash patterns and possible contributing causes.

Task Product

Crash Analysis
Collision Diagram

Task 4: SYNCHRO/SIM TRAFFIC ANALYSIS

The CONSULTANT shall model the roadway using Synchro and SimTraffic computer programs in order to evaluate the recommended corridor improvements versus the existing roadway operation and identify the alternative that results in the safest and most efficient corridor operation for motor vehicles, pedestrian, and bicycles.

The CONSULTANT shall be responsible for determining all input parameters and obtaining all field data for the Synchro analysis. The CONSULTANT should refer to the most recent version of FDOT's Traffic Analysis Handbook for guidance regarding accepted methodologies and input parameters. The CONSULTANT shall obtain existing signal timings from FDOT or the maintaining agency. A minimum of three periods will be analyzed (normally the morning, midday, and evening peak hours). Submit electronic files of all input/output for the corridor. SimTraffic simulations shall also be generated for the existing, as well as the proposed alternatives. The results of the Synchro and SimTraffic analyses for the existing and proposed alternatives shall be tabulated. The results shall include delay and Level of Service (LOS) for the corridor.

Task Product

Existing and Proposed Alternatives Synchro files
Summary of measures of effectiveness

Task 5: FUTURE CONDITIONS ANALYSIS

Cursory analysis of how the recommended improvements operate based on a future analysis year that will be established based on the type of project or if and when other major improvements are scheduled. This information will be used to establish the benefit/cost of the recommended improvement for use in the prioritization process. Future volume projections will be based on trend analysis and/or input from FDOT Planning for the Design year. The analysis may include the same type of tasks included under Task 4.

Task Product

Future and Proposed Alternatives Synchro files
Summary of measures of effectiveness

Task 6: DEVELOPMENT OF ALTERNATIVES AND RECOMMENDATIONS

Utilizing the products from the field inventory and crash analysis, the CONSULTANT will develop and analyze feasible and appropriate alternatives, which address solutions to the defined problem(s). The appropriate alternatives include, but are not limited to: capacity analysis improvements, turn lane extensions, access management improvements (median openings), signal

modifications/phase changes and complete street improvements. Complete street improvements include, but are not limited to: new signalized and unsignalized pedestrian crossings; a road diet; hybrid or rapid flashing beacons at critical unsignalized pedestrian crossings; on-street parking; bicycle lanes; transit-systems; pedestrian fencing and streetscaping, among other treatments. Based on this analysis the CONSULTANT shall recommend one of the alternatives.

Task Product

Development of Alternatives
Analysis of Alternatives
Recommended Alternative

Task 7: PREPARATION AND SUBMISSION OF REPORT

The CONSULTANT shall document the results and recommendations from the Corridor Study in a report and submit the report for review and comment. The report shall include color photographs (and/or graphics), summary of field inventory, results of signal operation and/or roundabout studies, arterial coordination analysis, conceptual drawings of recommended improvements with supporting documentation, cost estimates and a proposed sequential improvement plan.

Task Product

Corridor Analysis Report (1 PDF)

Task 8: TRAVEL TIME AND DELAY STUDY

The CONSULTANT shall perform a Travel Time and Delay Study in accordance with the procedures outlined in Chapter 13 of the MUTS.

Task Product

Travel Time and Delay Study

3.2 STUDY TYPE II: INTERSECTION ANALYSIS

Purpose

This study involves the analysis of an existing or proposed intersection in order to develop a specific conceptual design recommendation that can be utilized in preparing plans for the construction of a new or modified intersection. This analysis may include geometric improvements to increase capacity and operational efficiency.

Basis of Payment

An intersection analysis will be authorized on an intersection-by-intersection basis. The

intersection may be presently signalized or unsignalized. The established unit price per intersection shall be considered full compensation for all work required to perform this study.

Period of Performance

The normal period of performance allowed for completion of an intersection analysis shall be 1 month for each location.

Scope of Work

This section specifies the work tasks to be performed by the CONSULTANT, the responsibilities of the CONSULTANT and the Department, as well as the products and reports to be developed by the CONSULTANT and delivered to the Department at the completion of the intersection analysis.

Task 1: QUALITATIVE ASSESSMENT

A Professional Engineer shall investigate the intersection during peak periods to identify any geometric traffic operations and traffic control conditions that may provide input to the determination of operational and safety improvements and/or optimal signal control.

Task 2: FIELD INVENTORY

The CONSULTANT shall conduct a field inventory of the intersection under study and shall prepare a condition diagram. At minimum the CONSULTANT shall develop a drawing to include lane widths, turn lane lengths, taper lengths, and sign locations. The Posted Speed and Context Class shall be included. Additional roadway features should be included as appropriate.

Task Product

Intersection Inventory
Condition Diagram

Task 3: CRASH ANALYSIS

The CONSULTANT, using his own computer equipment and instructions provided by the DPM, will obtain authorization to access the University of Florida's Signal Four Analytics. The CONSULTANT will then obtain electronic copies of crash records from this system. Crash report images can then be viewed, stored electronically, or printed. The CONSULTANT will also contact the local jurisdiction to request local crash information when available.

The CONSULTANT will then prepare collision diagrams in a DPM approved format. The diagrams shall depict the most recent full 5 years for which data is available.

A crash analysis shall be performed based on a review of the crash reports and the prepared diagrams. The crash analysis will identify the source of the crash information and include a summary table of the crashes. The Summary Table should

include Annual Injury and Property Damage Only (PDO) crash totals. Identify observable crash patterns and possible contributing causes.

Task Product

Crash Analysis
Collision Diagram

Task 4a: SYNCHRO/SIM TRAFFIC ANALYSIS

The CONSULTANT shall use Synchro and SimTraffic computer programs to compare the existing conditions of an intersection to the proposed alternatives in order to identify the alternative that results in the safest and most efficient intersection operation for motor vehicles, pedestrian, and bicycles.

The CONSULTANT shall be responsible for determining all input parameters and obtaining all field data for the Synchro analysis. The CONSULTANT should refer to the most recent version of FDOT's Traffic Analysis Handbook for guidance regarding accepted methodologies and input parameters. The CONSULTANT shall obtain existing signal timings from FDOT or the maintaining agency. Submit electronic files of all input/output for the corridor. SimTraffic simulations shall also be generated for the existing, as well as the proposed alternatives. The results of the Synchro and SimTraffic analyses for the existing and proposed alternatives shall be tabulated. The results shall include delay and Level of Service (LOS) for the corridor.

The results shall include the following:

1. Delay and Level of Service (LOS)
   a. By intersection
   b. By approach
   c. By movement
2. Queue lengths by movement

Task Product

Existing and Proposed Alternatives Synchro files
Summary of measures of effectiveness

Task 4b: FUTURE CONDITIONS ANALYSIS

Cursory analysis of how the recommended improvements operate based on a future analysis year that will be established based on the type of project or if and when other major improvements are scheduled. This information will be used to establish the benefit/cost of the recommended improvement for use in the prioritization process. Future volume projections will be based on trend analysis and/or input from FDOT Planning for

the Design year. The analysis may include the same type of tasks included under Task 4a.

Task Product

Future and Proposed Alternatives Synchro files
Summary of measures of effectiveness

Task 4c: ROUNDABOUT

Subtask 4c1: INVENTORY

The CONSULTANT shall be responsible for determining all input parameters and obtaining all field data for the roundabout analysis. The field review will include identifying any utilities discernible from a ground level view. This may include electrical transmission lines, natural gas pipelines, other utilities (water, wastewater, etc.) correspondent easements, railroads, etc. The review will also document any potential site characteristics that may influence the roundabout feasibility such as adjacent wetlands or other drainage features, parks or historic properties, structures, property access, or other environmental concerns.

The CONSULTANT shall perform a cursory geometric screening to review potential impacts based upon the estimated roundabout size. The review will be conducted over scaled aerial photography (rectified) with the intent to highlight any potential issues identifiable in this cursory screening. This could include expected needs for additional Right-of-Way (ROW), possible environmental or utility impacts, approach realignments that could impact adjacent properties, etc. These items will be coordinated with appropriate FDOT staff to determine possible options to be explored as part of the concept development.

Subtask 4c2: SIDRA INTERSECTION ANALYSIS

The CONSULTANT shall use the SIDRA computer program to compare the existing conditions of an intersection to the proposed roundabout alternative. The CONSULTANT shall refer to the FDOT Design Manual. The CONSULTANT shall run the analysis in HCM mode to be consistent with HCM methodology. The CONSULTANT shall identify the existing operating mode of the intersection and a minimum of three periods will be analyzed (normally the morning, midday and evening peak hours). For existing signalized intersections, the CONSULTANT will obtain existing signal timings from the maintaining agency for use in the analysis. The analysis should include a sensitivity analysis to determine the longevity of the roundabout and its capacity to accommodate future growth. The results of the SIDRA analyses for the existing configuration and proposed roundabout shall be tabulated. The results shall include the volume-to-capacity ratio, average control delay, level of service and 95th percentile queue lengths by approach.

Task Product

Summary of measures of effectiveness

Subtask 4c3 – BENEFIT/COST ANALYSIS

The CONSULTANT will develop a benefit/cost analysis based on the alternatives proposed. Based on this analysis, the consultant shall recommend one of the alternatives.

Task Product

Benefit/Cost Analysis

Subtask 4c4 – CONCEPT DEVELOPMENT

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, 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 outlined in NCHRP Report 672. Expected Right-of Way (ROW) needs shall be calculated and shown in the concept.

Task Product

Roundabout concept drawing

Task 5: DEVELOPMENT OF ALTERNATIVES AND RECOMMENDATIONS

Utilizing the products from the field inventory and crash analysis, the Consultant will develop and analyze feasible and appropriate alternatives, which address solutions to the defined problem(s). Based on this analysis, the CONSULTANT shall recommend one of the alternatives.

Task Product

Development of Alternatives
Analysis of Alternatives
Recommended Alternative

Task 6: PREPARATION AND SUBMISSION OF REPORT

The CONSULTANT shall document the results and recommendations from the Intersection Study in a report and submit the report for review and comment. The report shall include color photographs (and/or graphics), summary of field inventory, results of signal operation and/or roundabout studies, arterial coordination analysis, conceptual drawings of recommended improvements with

supporting documentation, cost estimates and a proposed sequential improvement plan.

Task Product

Intersection Analysis Report (1 PDF)

3.3 STUDY TYPE IIIA: SIGNAL WARRANT ANALYSIS (4-Legged Intersection) STUDY TYPE IIIB: SIGNAL WARRANT ANALYSIS (T-Intersection)

Purpose

This study is intended to provide a specific determination as to whether or not a particular intersection meets warrants for signalization and, if so, whether or not a signal should be installed. The engineer should also identify any improvements (such as geometrics, signing, marking, lighting, etc.) for consideration by the department, if he/she feels it appropriate.

Basis of Payment

A signal warrant analysis will be authorized on an intersection-by-intersection basis. The established unit price per intersection shall be considered full compensation for all work required to perform this study.

Period of Performance

The normal period of performance allowed for completion of a signal warrant analysis shall be 1 month for each location.

Scope of Work

This section specifies the work tasks to be performed by the CONSULTANT, the responsibilities of the CONSULTANT and the Department, as well as the products and reports to be developed by the CONSULTANT and delivered to the Department at the completion of the signal warrant analysis. It is intended that work tasks 1, 2, 3, 4, 5a, 6 & 7 be completed as a part of this Study Type for a 4-legged intersection. It is intended that work tasks 1, 2, 3, 4, 5b, 6 & 7 be completed as a part of this Study Type for a T-intersection.

Task 1: QUALITATIVE ASSESSMENT

A qualified engineer of the firm shall visit the intersection under study during the morning and evening peak traffic periods in the same time period of the data collection in order to make qualitative assessments of intersection operation, particularly in terms of queue lengths, delays, conflicts or any other operational characteristics which should be considered in evaluating the need for a traffic signal. Context Class shall be included.

Photographs shall be taken to document any geometric, operations, and/or safety observations of which the DPM needs to be made aware.

The CONSULTANT shall recommend to the DPM the need for supplemental work tasks.

Task Product

Assessment of Intersection Operation
Recommendation for Supplemental Work Tasks

Task 2: 12-HOUR TURNING MOVEMENT COUNTS

Hourly turning movement counts and pedestrian/bicycle counts shall be taken for a total of eight hours encompassing the morning, midday, and evening peak traffic periods and/or other peak periods during which warranting volumes might exist. The count shall be collected on a typical weekday (Tuesday, Wednesday or Thursday) unless otherwise directed by the DPM. Counts should not be taken during adverse weather conditions or when the intersection is within a construction zone. Turning movement counts shall be provided in 15-minute intervals for all vehicles (automobiles, trucks and buses) and for trucks and buses only. U-turn and right turn on red turning movement counts will also be shown.

Task Product

12-hour turning movement volumes
12-hour pedestrian and bicycle volumes

Task 3: FIELD INVENTORY

The CONSULTANT shall conduct a field inventory of each intersection under study and prepare a condition diagram on standard Department forms contained in the Manual on Uniform Traffic Studies or in another format approved by the Department. Condition diagrams shall include intersection geometry, all traffic control devices, and other roadway or roadside elements that contribute to the quality of intersection operation. The condition diagram shall show lane assignments and lengths of turn lanes. The posted speed on both intersecting roadways shall also be shown.

Task Product

Condition Diagram

Task 4a: INTERSECTION DELAY ANALYSIS (4-Legged Intersection)

An intersection delay analysis shall be made for four consecutive 15-minute periods during morning and afternoon peak hours for movements as determined by FDOT. Delay analysis should be done on a typical weekday (Tuesday, Wednesday or Thursday). This study shall be performed in accordance with the Manual on Uniform Traffic Studies (MUTS).

The study shall include the following:

- Average delay
- Maximum delay
- Approach volume
- Maximum queue
- Cumulative delay

Results shall specify to which movements the results are applicable.

Task Product

Intersection Delay Analysis
Specify movements and number of lanes for each approach.

Task 4b: INTERSECTION DELAY ANALYSIS (T-Intersection)

An intersection delay analysis shall be made for four consecutive 15-minute periods during morning and afternoon peak hours for movements as determined by FDOT. . Delay analysis should be done on a typical weekday (Tuesday, Wednesday or Thursday). This study shall be performed in accordance with the MUTS.

The study shall include the following:

- Average delay
- Maximum delay
- Approach volume
- Maximum queue
- Cumulative delay

Results shall specify to which movements the results are applicable.

Task Product

Intersection Delay Analysis
Specify movements and number of lanes for each approach.

Task 5: CRASH ANALYSIS

The CONSULTANT, using his own computer equipment and instructions provided by the DPM, will obtain authorization to access the University of Florida's Signal Four Analytics. The CONSULTANT will then obtain electronic copies of crash records from this system. Crash report images can then be viewed, stored electronically, or printed. The CONSULTANT will also contact the local jurisdiction to request local crash information when available.

The CONSULTANT will then prepare collision diagrams in a DPM approved format. The diagrams shall depict the most recent full 5 years for which data is available.

A crash analysis shall be performed based on a review of the crash reports and the prepared diagrams. The crash analysis will identify the source of the crash information and include a summary table of the crashes. The Summary Table should include Annual Injury and Property Damage Only (PDO) crash totals. Identify observable crash patterns and possible contributing causes.

Task Product

Crash Analysis
Collision Diagram

Task 6: WARRANT ANALYSIS AND RECOMMENDATION

The CONSULTANT shall analyze the collected data in light of the warranting conditions for the warrants described in the MUTCD, the Department's MUTS, and accepted traffic engineering practice. The report shall include a statement indicating which Warrants are applicable and which Warrants are satisfied. Attached to this report shall be a completed Departmental Traffic Signal Warrant Form, the condition diagram, the collision diagram, and the products of any authorized supplemental work tasks. Each intersection studied shall be documented in such a package.

Task Product

Warrant Analysis Report with Warrant Analysis Summary Table (1 PDF)

3.4 STUDY TYPE IV: COMPOSITE STUDY

Purpose
The composite study is designed to enable the District Traffic Operations Office to utilize the services of the CONSULTANT in solving a variety of traffic problems. This study requires the DPM and CONSULTANT to develop the study design for a particular traffic problem by selecting appropriate tasks defined herein.

Basis of Payment
This study is designed to be flexible. Therefore, each task shall be priced individually. Any combination of tasks may be selected for a particular composite study. Payment for each composite study will be the summation of the prices for selected tasks. The price for each task is based on its individual unit price, if multiple units are required, the task cost will be the number of units times the individual unit price.

Scope of Work

This section specifies the work tasks that may be performed by the Consultant for a particular composite study; the responsibilities of the CONSULTANT and the Department, and the work task products to be developed by the CONSULTANT and delivered to the Department. A composite study may be made up of only one work task or a combination of the work tasks.

Task 1: 4-HOUR TURNING MOVEMENT COUNTS

Hourly turning movement counts and pedestrian/bicycle counts shall be taken for a total of four hours encompassing the morning and afternoon peak hours, and/or other peak periods as directed by the DPM. The count is intended for use at minor intersections and low volume driveways. The count shall be collected on a typical weekday (Tuesday, Wednesday or Thursday) unless otherwise directed by the DPM. Counts should not be taken during adverse weather conditions or when the intersection is within a construction zone. Turning movement counts shall be provided in 15-minute intervals for all vehicles (automobiles, trucks and buses) and for trucks and buses only. U-turn and right turn on red turning movement counts should also be shown. AM Peak and PM Peak shall be identified and summarized including Peak Hour Factor (PHF) and Heavy Vehicle Percentages.

Task Product

4-hour turning movement volumes
4-hour pedestrian and bicycle volumes
Shall state method of data collection

Task 2: 12-HOUR TURNING MOVEMENT COUNTS

Hourly turning movement counts and pedestrian/bicycle counts shall be taken for a total of twelve hours encompassing the twelve-hour period identified by the Department. The count shall be collected on a typical weekday (Tuesday, Wednesday or Thursday) unless otherwise directed by the DPM. Counts should not be taken during adverse weather conditions or when the intersection is within a construction zone. Turning movement counts shall be provided in 15-minute intervals for all vehicles (automobiles, trucks and buses) and for trucks and buses only. U-turn and right turn on red turning movement counts will also be shown. AM Peak, Midday Peak and PM Peak shall be identified and summarized including Peak Hour Factor (PHF) and Heavy Vehicle Percentages.

Task Product

12-hour turning movement volumes
12-hour pedestrian and bicycle volumes
Shall state method of data collection

Task 3: 24-HOUR APPROACH TRAFFIC COUNT

The CONSULTANT shall collect and summarize hourly traffic count data for a minimum period of 24 hours during typical weekday (Tuesday, Wednesday or Thursday) traffic conditions on all approaches. Count data shall be recorded by automatic devices furnished by the CONSULTANT. The count data shall be presented in tabular form broken down into direction of travel showing 15-minute interval volumes and hourly summaries.

Task Product

24-Hour Approach Volume Counts

Task 4: 3-DAY CONTINUOUS TRAFFIC COUNT

The CONSULTANT shall collect counts for a period of at least three (3) consecutive days for each direction of travel on the main artery. Count data shall be recorded by automatic devices furnished by the CONSULTANT. From the count data, a tabular presentation of directional traffic volumes shall be developed showing 15-minute interval volumes and hourly summaries over the three consecutive day period. A graphical presentation shall be developed showing hourly interval volumes over the three consecutive day period. The 3-day period shall not include a holiday unless otherwise directed by the DPM.

Task Product

3-Day Graph and Table

Task 5: 7-DAY CONTINUOUS TRAFFIC COUNT

The CONSULTANT shall collect counts for a period of at least seven (7) consecutive days for each direction of travel on the main artery. Count data shall be recorded by automatic devices furnished by the CONSULTANT. From the count data, a tabular presentation of directional traffic volumes shall be developed showing 15-minute interval volumes and hourly summaries over the seven consecutive day period. A graphical presentation shall be developed showing hourly interval volumes over the seven consecutive day period. The 7-day period shall not include a holiday unless otherwise directed by the DPM.

Task Product

7-Day Graph and Table

Task 6: NON-MOTORIZED VOLUME STUDIES

The CONSULTANT shall perform a Non-Motorized Volume Studies in accordance with the procedures outlined in Chapter 9 of the MUTS.

Task Product

Report shall include the elements depicted in MUTS 9.1(1).

Task 7: 12-HOUR PEDESTRIAN-BICYCLE COUNT

The CONSULTANT shall perform an hourly manual pedestrian-bicycle count for a total of eight hours encompassing the morning, midday, and evening peak traffic periods and/or other peak periods during which warranting pedestrian-bicycle volumes might exist.

Task Product

12-hour pedestrian-bicycle volumes

Task 8: VEHICLE GAP SIZE STUDY

The CONSULTANT shall conduct a Vehicle Gap Size Study in accordance with the procedures outlined in Chapter 8 of the MUTS.

Task Product

Vehicle Gap Size Study

Task 9: LEFT TURN DELAY STUDY

A left turn delay study consists of reviewing the left turning vehicles at a signalized intersection where this movement is permissive or protected/permissive to determine if there are sufficient gaps in the opposing traffic stream to make this turn. This study consists of documenting how many left turning vehicles per cycle are waiting at the beginning of the green, how many move on the green arrow and/or green ball, how many make their movement on the yellow and red arrow or ball and how many are waiting at the end of the yellow arrow or ball. It also requires counting, per cycle, the opposing right turn, through, and left turn traffic volumes. It is intended for a study to be performed for each separate movement specified and shall be performed in both the morning and afternoon peak hours. This data shall be presented in tabular form showing each cycle counted/observed. Data shall be collected on a typical weekday (Tuesday, Wednesday or Thursday).

Task Product

Left Turn Delay Table (one approach)

Task 10: INTERSECTION DELAY ANALYSIS

An intersection delay analysis shall be made for four consecutive 15-minute periods during morning and afternoon peak hours for movements to be determined by FDOT. The counts shall be collected on a typical weekday (Tuesday, Wednesday or Thursday). This study shall be performed in accordance with the procedures outlined in Chapter 7 of the MUTS.

The study shall include the following:

- Average delay
- Maximum delay
- Approach volume
- Maximum queue
- Cumulative delay

Results shall specify to which movements the results are applicable.

Task Product

Intersection Delay Analysis
Specify movements and number of lanes for each approach.

Task 11: FIELD INVENTORY

The CONSULTANT shall conduct a field inventory of each intersection under study and prepare a condition diagram on standard Department forms contained in the Manual on Uniform Traffic Studies or in another format approved by the Department. Condition diagrams shall include intersection geometry, all traffic control devices, and other roadway or roadside elements which contribute to the quality of intersection operation. The condition diagram shall show lane assignments and lengths of turn lanes. The posted speed on both intersecting roadways shall also be shown. The Context Class shall be included.

Task Product

Condition Diagram

Task 12: CRASH ANALYSIS

The CONSULTANT, using his own computer equipment and instructions provided by the DPM, will obtain authorization to access the University of Florida's Signal Four Analytics. The CONSULTANT will then obtain electronic copies of crash records from this system. Crash report images can then be viewed, stored electronically, or printed. The CONSULTANT will also contact the local jurisdiction to request local crash information when available.

The CONSULTANT will then prepare collision diagrams in a DPM approved format. The diagrams shall depict the most recent full 5 years for which data is available.

When complete crash data is not available from the Department's database, the CONSULTANT will contact local jurisdictions to obtain.

A crash analysis shall be performed based on a review of the crash reports and the prepared diagrams. The crash analysis will identify the source of the crash information and include a summary table of the crashes. The Summary Table should include Annual Injury and Property Damage Only (PDO) crash totals. Identify observable crash patterns and possible contributing causes.

Task Product

Crash Analysis
Collision Diagram

Task 13: QUALITATIVE ASSESSMENT

A qualified Engineer of the firm shall visit the intersection under study during the morning and evening peak traffic periods in the same time period of the data collection in order to make qualitative assessments of intersection operation, particularly in terms of queue lengths, delays, conflicts or any other operational characteristics which should be considered in evaluating the need for a traffic signal. Context Class shall be included.

Photographs shall be taken of any geometric, operations, and/or safety observations of which the DPM should be aware.

The CONSULTANT shall recommend to the DPM the need for supplemental work tasks.

Task Product

Assessment of Intersection Operation
Recommendation for Supplemental Work Tasks

Task 14: DEVELOPMENT OF ALTERNATIVES AND RECOMMENDATIONS

Utilizing the products from other tasks in a composite study, the CONSULTANT will develop and analyze feasible and appropriate alternatives, which address solutions to the defined problem(s). Based on this analysis, the CONSULTANT shall recommend one of the alternatives.

Task Product

Development of Alternatives

Analysis of Alternatives
Recommended Alternative

Task 15: PREPARATION AND SUBMITTAL OF REPORT

The CONSULTANT shall document the results and recommendations from all tasks in a composite study in a bound, written report.

Task Product

Study Report (1 pdf)

Task 16: TRAFFIC SIGNAL EQUIPMENT INVENTORY (with travel time)

The CONSULTANT shall conduct a field inventory of the signal equipment at a specified intersection documenting the number of poles and mast arms, pole type and length, span configuration, cabinet and controller type, pedestrian features, detection type, signal heads, street name signs and pre-emption. The inventory shall be submitted in a format acceptable to FDOT Transportation Systems Management & Operations (TSM&O) Department.

Photographs shall be taken.

Task Product

Signal Equipment Inventory

Task 17: TRAFFIC SIGNAL EQUIPMENT INVENTORY (without travel time)

This task will be used in conjunction with Task 19 when multiple signalized intersections on a highway are to be inventoried. The CONSULTANT shall conduct a field inventory of the signal equipment at a specified intersection documenting the number of poles and mast arms, pole type and length, span configuration, cabinet and controller type, pedestrian features, detection type, signal heads, street name signs and pre-emption. The inventory shall be submitted in a format acceptable to FDOT Transportation Systems Management & Operations (TSM&O) Department.

Photographs shall be taken.

Task Product

Signal Equipment Inventory

Task 18: NO-PASSING ZONE STUDY

The CONSULTANT shall conduct a No-Passing Zone Study for a specified section of State Highway. This type of study will be performed to determine what type of pavement markings should be used in the center line of a roadway, i.e., broken yellow line or solid yellow line, so that motorists have an indication of where it is safe to pass another vehicle. The no-passing areas include vertical and horizontal curves, railroad grade crossings, narrow bridges, intersections, transitions to and from multi-lane sections of roadway, and other locations where passing must be prohibited because of inadequate sight distance or other special conditions. All no-passing zones shall be established in accordance with the guidelines provided in Chapter 11 of the MUTS.

Task Product

No-Passing Zone Study
Graphic depiction of existing zones and proposed changes

Task 19: ADVISORY SPEED STUDY

The CONSULTANT shall conduct an Advisory Speed Study for a specified section of State Highway. This type of study will be performed to determine the safe speed a vehicle can negotiate a given horizontal curve under ideal conditions. The study is also used to determine where turn and curve signs with advisory speed plaques are required for horizontal curves. All advisory speeds on horizontal curves shall be established in accordance with the guidelines provided in Chapter 10 of the MUTS.

Task Product

Advisory Speed Study

Task 20a: SPEED ZONE STUDY REPORT

The CONSULTANT shall prepare a Speed Zone Study report based on the spot speed study and FDOT manual, SPEED ZONING FOR HIGHWAYS, ROADS AND STREETS IN FLORIDA, current version, and in accordance with the MUTS. Using these guidelines, the CONSULTANT shall prepare a report documenting operational speeds and comparing to existing speed zones, and to include recommendations on changes to existing speed zones, if any. Existing speed zone data will be provided by the DEPARTMENT. The inventory of existing speed limit signs will be the responsibility of the CONSULTANT. The CONSULTANT will then prepare collision diagrams in a DPM approved format. The diagrams shall depict the most recent full 5 years for which data is available. Five years of safety history and design elements shall be discussed as pertinent to any speed limit changes recommended.

Task Product

Speed zone study report

Graphic depiction of existing speed limit signs
Graphic depiction of proposed speed zone changes
Graphic depiction of recommended signing improvements

Task 20b: SPEED RELATED CRASH ANALYSIS

The CONSULTANT shall prepare a Speed Related Crash Analysis report documenting the crashes determined to be related to speed. Explain the criteria for inclusion of speed related crashes. The CONSULTANT will prepare collision diagrams in a DPM approved format. The diagrams shall depict the most recent full 5 years for which data is available.

The report shall contain the following information:

- Roadway environment, which includes but not limited to:
  - roadway surface conditions (i.e. dry, wet, etc.)
  - roadway alignment (i.e. curve type, straight, grade)
  - roadway lighting
  - road intersection/intersection-related roadway segment
- Percentage of the total crashes related to speed
- Posted speed limit
- Weather conditions at the time of the crash
- Other contributing factors
- Context Classification
- Speed related injuries
- Speed related property damage

Task Product

Crash Analysis with possible design contributions to crash patterns
Collision Diagram

Task 21: VEHICLE SPOT SPEED STUDY (with travel time)

A vehicle spot speed study is designed to measure the speed characteristics of vehicles in both directions at a specified location under free flow conditions (off peak periods) at the time the study was taken. Studies should be taken on a typical weekday (Tuesday, Wednesday or Thursday) unless otherwise directed by the DPM. Studies should not be conducted during adverse weather conditions, during peak hours, or within a construction project. This study shall be made as directed by the MUTS and should utilize the standard forms contained in this manual, unless the use of other forms is approved by the DPM. The studies will be taken with either a radar or laser speed detection device and the results presented shall document the 85th percentile speed in both directions of the roadway studied. It shall also contain the posted speed, the average speed, the 50th percentile speed, the

10 mile per hour pace with the number of vehicles contained in the pace and the percent of vehicles contained in the pace, for both directions of travel with a minimum of 100 samples for each direction. In addition, the study shall include GPS coordinates for each individual speed study location. Results shall include the percentage of vehicles in compliance with the posted speed limit.

Task Product

Vehicular Spot Speed Study
Summary Table

Task 22: VEHICLE SPOT SPEED STUDY (without travel time)

This task will be used in conjunction with Task 22 when more than one spot speed study is required for a roadway segment.

Task Product

Vehicular Spot Speed Study
Summary Table

Task 23: VEHICLE SPOT SPEED STUDY (24 Hours, All Vehicles, With Travel Time)

This task is similar to Task 22 except it is for a 24-hour period using automated in-road (such as pneumatic tubes) or roadside measurement equipment. The study shall be for vehicles in both directions within a segment of roadway. Studies should be taken on a typical weekday (Tuesday, Wednesday or Thursday) unless otherwise directed by the DPM. This study shall be made as directed by the MUTS and should utilize the standard forms contained in this manual, unless the use of other forms is approved by the DPM. The studies shall document the 85th percentile speed in both directions of the roadway studied. It shall also contain the posted speed, the average speed, the 50th percentile speed, the 10 mile per hour pace with the number of vehicles contained in the pace and the percent of vehicles contained in the pace, for both directions of travel. If a composite study consists of two or more spot speed studies, a summary table shall be provided. In addition, the study shall include GPS coordinates for each individual speed study location. The summary table should include the date, time and speed of every vehicle. Results shall include the percentage of vehicles in compliance with the posted speed limit.

Task Product

Vehicular Spot Speed Study
Summary Table

Task 24: VEHICLE SPOT SPEED STUDY (24 Hours, All Vehicles, Without Travel Time)

This task will be used in conjunction with Task 24 when more than one spot speed study is required for a roadway segment.

Task Product

Vehicular Spot Speed Study
Summary Table

Task 25: VEHICLE CLASSIFICATION COUNT (24 Hours, All Vehicles, With Travel Time)

This task is similar to Task 24 except information regarding vehicle types which pass a particular point on the roadway for a 24-hour period using automated in-road (such as pneumatic tubes) or roadside measurement equipment will also be collected. The purpose of classification counting is to determine the vehicle mix of the traffic stream for axle conversion factors, pavement design and planning purposes. Counters should segregate traffic into the 13 categories used by the Federal Highway Administration (FHWA). The study shall be for vehicles in both directions. Studies should be taken on a typical weekday (Tuesday, Wednesday or Thursday) unless otherwise directed by the DPM. This study shall be made as directed by the MUTS and should utilize the standard forms contained in this manual, unless the use of other forms is approved by the DPM. The studies shall document the 85th percentile speed in both directions of the roadway studied. It shall also contain the posted speed, the average speed, the 50th percentile speed, the 10 mile per hour pace with the number of vehicles contained in the pace and the percent of vehicles contained in the pace, for both directions of travel. If a composite study consists of two or more spot speed studies, a summary table shall be provided. In addition, the study shall include GPS coordinates for each individual vehicle classification count/speed study location. The summary table should include the date, time, speed and classification of every vehicle. Results shall include the percentage of vehicles in compliance with the posted speed limit.

Task Product

Vehicle Classification Count
Vehicular Spot Speed Study
Summary Table

Task 26: VEHICLE CLASSIFICATION COUNT (24 Hours, All Vehicles, Without Travel Time)

This task will be used in conjunction with Task 26 when more than one vehicle classification count is required for a roadway segment.

Task Product

Vehicle Classification Count
Vehicular Spot Speed Study
Summary Table

Task 27a: ROUNDABOUT INVENTORY

The CONSULTANT shall be responsible for determining all input parameters and obtaining all field data for the roundabout analysis. The field review will include identifying any utilities discernible from a ground level view. This may include electrical transmission lines, natural gas pipelines, other utilities (water, wastewater, etc.) correspondent easements, railroads, etc. The review will also document any potential site characteristics that may influence the roundabout feasibility such as adjacent wetlands or other drainage features, parks or historic properties, structures, property access, or other environmental concerns.

The CONSULTANT shall perform a cursory geometric screening to review potential impacts based upon the estimated roundabout size. The review will be conducted over-scaled aerial photography (rectified) with the intent to highlight any potential issues identifiable in this cursory screening. This could include expected needs for additional Right-of-Way (ROW), possible environmental or utility impacts, approach realignments that could impact adjacent properties, etc. These items will be coordinated with appropriate FDOT staff to determine possible options to be explored as part of the concept development.

Task Product

Summary of existing field conditions

Task 27b: SIDRA INTERSECTION ANALYSIS

The CONSULTANT shall use SIDRA computer program to compare the existing conditions of an intersection to the proposed roundabout alternative. The CONSULTANT shall refer to FDOT Design Manual. The CONSULTANT shall run the analysis in HCM mode to be consistent with HCM methodology. The CONSULTANT shall identify the existing operating mode of the intersection and a minimum of three periods will be analyzed (normally the morning, midday and evening peak hours). For existing signalized intersections, the CONSULTANT will obtain existing signal timings from the maintaining agency for use in the analysis. The analysis should include a sensitivity analysis to determine the longevity of the roundabout and its capacity to accommodate future growth. The results of the SIDRA analyses for the existing configuration and proposed roundabout shall be tabulated. The results shall include the volume-to-capacity ratio, average control delay, level of service and 95th percentile queue lengths by approach.

Task Product

Summary of measures of effectiveness

Task 27c: ROUNDABOUT CONCEPT DEVELOPMENT

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, 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 outlined in NCHRP Report 672. Expected Right-Of-Way (ROW) needs shall be calculated and shown in the concept.

Task Product

Roundabout concept drawing

Task 27d: ROUNDABOUT BENEFIT/COST ANALYSIS

The CONSULTANT will develop a benefit cost analysis based on the alternatives proposed. Based on this analysis, the consultant shall recommend one of the alternatives.

Task Product

Roundabout Benefit/Cost Analysis

Task 28a: ICE STAGE 1 - SCREENING

The CAP-X and SPICE tools provided by the Department will be used by the CONSULTANT in this evaluation. The CONSULTANT will select up to four (4) alternatives to be evaluated with the Stage 2 analysis and approved by the Department prior to beginning the Stage 2 analysis.

Task Product

Stage 1 ICE Form
Technical Memorandum
CAP-X Analysis summary and Excel files
SPICE Summary and excel files

Task 28b: ICE STAGE 2 - PRELIMINARY CONTROL STRATEGY ASSESSMENT

The Stage 2 analysis will include the development of concept plans and a cost estimate for up to 3 alternatives. The CONSULTANT will select the preferred alternative based on the ICE analysis. A meeting will be held with the Department to discuss the recommendations prior to finalizing the study. The CONSULTANT will utilize the latest ICE Manual and forms at the start of the evaluation. This task will be negotiated based on a scope of work developed jointly by the Consultant and the Department.

Task Product

Stage 2 ICE Form
Technical Memorandum
SPICE Summary

Intersection Concept Plans
Construction Cost Estimates
FDOT ICE Tool Summary
Stage 2 Meeting

Task 28c: ICE STAGE 3- DETAILED CONTROL STRATEGY ASSESSMENT

The Stage 3 requires a more detailed assessment of remaining viable control strategies, collection of additional data as needed to support analysis and/or public vetting of control strategy options. When Stage 1 or Stage 2 does not identify a selected control strategy, Stage 3 activities may be customized to address the outstanding issues. This task will be negotiated based on a scope of work developed jointly by the Consultant and the Department.

Task Product

Stage 3 ICE Form
Intersection Concept Plan
Cost Estimate
Detailed Capacity Analysis

Task 29: ICE Peer Review

The CONSULTANT will conduct a peer review of all ICE analyses. Review comments will be documented and submitted to the department in a memorandum.

Task Product

Memorandum documenting the ICE peer review comments.

Department Responsibility

The Department will provide the consultant the following applicable files to conduct a complete and thorough review as applicable:

- The Stage 1 CAP-X and SPICE analysis spreadsheets
- The Stage 2 Operations Analysis in Synchro, SIDRA, or HCS
- The Stage 2 SPICE and FDOT ICE Tool in spreadsheet format
- The Stage 2 Concept Plan and Cost Estimate
- The Stage 3 Detailed Analysis, Intersection Concept Plan, and Cost Estimate

Task 30: MANAGEMENT OF SUB CONSULTANT

The CONSULTANT may assign one or multiple tasks for a composite study to a sub consultant. This task will be used for oversight of the sub consultant's work and may include activities such as management and QA/QC.

Task Product

Submittal of Sub Consultant's tasks

Task 31a: MEETINGS

The CONSULTANT shall attend meetings to assist the Department in developing and responding to traffic study issues. Meetings shall be held with but are not limited to: Committees for County MPOs, all District MPOs, all District City Councils, all District Board of County Commissioners, all types of District meetings and the public. The meeting shall be attended by one senior level traffic engineer. The duration of the meetings will be up to 6 hours each (including travel time).

Task Product

Attendance at Meetings
Meeting Minutes

Task 31b. MEETING PREPARATION

The CONSULTANT shall research and prepare for meetings to assist the Department in developing and responding to traffic study issues.

Task Product

Presentation Material/Meeting Notes

Task 32: IN-HOUSE SUPPORT

The CONSULTANT shall assign one (1) staff person to work under the direct management and supervision of the Department Project Manager. This staff person shall be a Professional Engineer licensed in the state of Florida or Engineering Intern (EI) experienced with traffic engineering analysis and the preparation of traffic engineering reports. The work assignments for this staff person can be any tasks related to traffic operations.

Task Product

Miscellaneous in-house staffing assignments.

Department Responsibility

The DEPARTMENT shall specify the duration of the in-house staff support needed, in the task work order.

Task 33: WEAVING ANALYSIS

The Consultant shall prepare a weaving analysis in accordance with current Highway Capacity Manual procedures. The analysis shall be completed for one weaving section using approved highway capacity computer software.

Task Product
Weaving analysis
Computer software files

Task 34: DRIVEWAY CONNECTION STUDY

The purpose of this study is to evaluate driveway connections for Department projects and to determine whether they are in compliance with Access Management Rule, Chapter 14-96 and 14-97, and Department Standard Indexes. The study shall contain a description of the project, the access classification, connection spacing requirements, existing connection locations, recommended connection closings, relocations, and changes in widths, justification for modifying or closing, and all data collected. The recommendations shall be based on field reviews, available traffic volumes, crash information, adjacent land uses, adjacent street system, adjacent connections, safety considerations, site layout, and other pertinent factors. The results shall be documented in a report.

Task Product
Driveway connection study
Concept plan sheets, indicating existing and proposed driveway conditions.

Task 35: DRIVEWAY CONNECTION STUDY – SITE SPECIFIC

This is the same as Task 37 above, except it is directly related to a specific site.

Task Product
Driveway connection study
Concept plan sheets, indicating existing and proposed driveway conditions.

Task 36: PROPERTY OWNER IDENTIFICATION AND NOTIFICATION

The Consultant shall identify the current property owner where driveways/median openings are proposed to be modified or closed. A letter will be prepared with proper backup material for signature by the appropriate Department official.

Task Product
Letter of Intent
Drawings of existing/proposed conditions

Task 37: PUBLIC INFORMATION WORKSHOP/PUBLIC HEARING SUPPORT

Purpose
Consultant Services are required for various public information and public involvement tasks necessary on the design and post design of minor and major projects, including resurfacing projects, intersection improvement projects, widening, reconstruction projects, and safety projects. The tasks will range from support of in-house efforts related to public information to leading the effort of public information as decided by the Department Project Manager (DPM). The Consultant shall furnish all materials, equipment machinery, tools, apparatus, means of transportation, labor, services, and supplies required to perform the services as outlined in this scope of services.

Established Basis for Units
The Consultant shall provide anyone or more of the public information and public involvement tasks in support of the Department. Elements of work may include:

1. Compiling mailing lists
2. Drafting property owner letters
3. Designing, printing and/or mailing collateral pieces such as newsletters or postcards
4. Creating and posting website content
5. Creating and plotting public meeting display graphics
6. Conducting public information workshops and public hearings supporting design and traffic operation projects
7. Developing meeting advertisements
8. Developing and maintaining project and/or corridor websites
9. Responding to public comments
10. Preparing video and PowerPoint presentations for meetings
11. Providing multi-lingual services as needed.

All documentation shall be in accordance with the Plain Language Initiative and all meetings shall be in accordance with federal guidelines for Title VI and Americans with Disabilities Act. All web applications must meet the standards established in Section 508 of the 1998 Rehabilitation Act.

Period of Performance Payment
Period of performance payment for the work accomplished will be in accordance with the method of compensation of this contract.

Scope of Work

Public involvement includes communicating to all interested persons, groups, media, and government organizations information regarding the project. The Consultant shall provide to the Department drafts of all Public Involvement documents (i.e., newsletters, aerials, property owner letters, advertisements, etc.) associated with the following tasks for review and approval at least ten (10) business days prior to printing and/or distribution.

Task 1: PUBLIC INVOLVEMENT PLAN

A Public Involvement Plan (PIP) will be produced that details the following issues:

1. Identification of project partners, project stakeholders, elected and appointed officials, agencies, media partners, public groups and interested parties including non-government organizations (NGOs).
2. Milestones for public meetings.
3. Schedules of Metropolitan Planning Organizations (MPO), Board of County Commissioners (BOCC), city commission meetings, or other meetings to attend or present
4. Suggested small group meetings and presentations
5. Community events to attend
6. Communication strategy and anticipated timelines for distribution/release of newsletters, website, fact sheets, media outreach
7. Correspondence protocols
8. Mailing list upkeep protocol and methodology (how the addresses will be obtained)
9. Comment tracking mechanism
10. Documentation of project team members and Project Management Team (PMT)

The PIP prepared by the Consultant is intended to be an evolving, stand-alone document that is approved by the Department and is regularly updated as the project progresses.

Task 2: PUBLIC OUTREACH DATA COLLECTION AND NOTIFICATIONS

The Consultant will collect and maintain throughout the project's duration the various data needed to complete a comprehensive Public Involvement Plan including, but not limited to: a mailing list comprised of the names and addresses of elected officials, community leaders, study partners, businesses along the existing or proposed right of way; a calendar of regularly scheduled meetings of government elected officials located within the project's boundaries and relevant regulatory agencies; and contact information for various media.

Mailing list preparation involves the identification of any affected, possibly affected and interested parties, which shall include each property owner and tenant within 300 feet of the project limits. Large traffic generators that are outside of the 300-foot corridor, but have a main access to the corridor should be given consideration of notification. Within 15 working days after the Notice to

Proceed, the Consultant shall identify and provide to the Department Project Manager, as an email file attachment, an electronic spreadsheet file with the contact information for each party. The Consultant shall update the mailing list as needed during the life of the project. The final mailing list areas shall be discussed with the Department's Project Manager. In addition to public involvement data collection, the Consultant shall assist the Department in preparing notifications to elected officials, other public officials, property owners, and interested parties that the project is beginning.

Median Modification Letters: The Consultant shall prepare a median modification letter template to send to property owners along the corridor. In addition, the Consultant shall prepare a sketch of each proposed median modification for inclusion in the letter. The letters will be sent by the Consultant on FDOT letterhead with FDOT staff signature (NO ELECTRONIC SIGNATURES).

Driveway Modification Letters: The Consultant shall prepare a driveway modification letter template to send to property owners along the corridor. In addition, the Consultant shall prepare a sketch of each proposed driveway modification for inclusion in the letter. The letters will be sent by the Consultant on FDOT letterhead with FDOT staff signature (NO ELECTRONIC SIGNATURES).

Task 3: SCHEDULED PUBLIC MEETINGS
The consultant will plan for public meetings. For any of these meetings, the consultant shall prepare and/or provide:

1. Scripts or agenda for presentation
2. Handouts and graphics, including project aerials
3. A PowerPoint presentation or video
4. Meeting equipment set-up and tear-down
5. Legal, Florida Administrative Weekly (FAW) and/or display advertisements
6. Letters or postcards for notification of elected and appointed officials, property owners and other interested parties, to be mailed by the Consultant
7. News releases for each meeting to be sent by the Department's Communications Office
8. Procurement of a court reporter, if necessary for the meeting
9. Comment cards and comment box
10. Responses to comments

Task 4: 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 will develop any requested agendas, prepare presentation materials such as PowerPoint presentations or handouts, prepare news releases of the meeting (if required), legal, Florida Administrative Weekly (FAW), and/or display advertisements (if required), participation during the meeting, take meeting notes, and summarizing the meeting in a memo to the

project file.

The Consultant and his/her staff shall be available with no more than a five (5) workday notice to attend meetings or make presentations at the request of the Department. Such meetings and presentations may be held at any hour between 8:00 a.m. and 10:00 p.m. on any day of the week. The Consultant may be called upon to provide maps, press releases, advertisements, audiovisual displays and similar materials for such meetings.

The Consultant may be required to participate in meetings with the local governing authorities and the Metropolitan Planning Organization (MPO)/Transportation Planning Organization (TPO). The Consultant's participation will be limited to participation during the meeting, note taking, and summarizing the meeting in a memo to the file.

Task 5: SPECIAL PUBLIC INVOLVEMENT REQUIREMENTS

Identify and Inspect Public Meeting Sites

The Consultant shall make every attempt to find three suitable locations within 0.50 miles of the project impact area. The sites will be presented to the District Communications Officer for final approval. Prospective meeting sites shall be inspected for suitability. Consideration shall be given to location, seating capacity, sound system, lighting, display space and any other physical characteristics that would influence the suitability of the site, including compatibility with the terms of the Americans with Disabilities Act of 1990. Possible Public Involvement Meeting sites should be catalogued. In addition, meeting sites will be examined to determine their proximity to public transit service. To the extent possible and reasonable, sites near public transit will be favorably considered. 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, procurement of and payment for a court reporter, if applicable.

Correspondence

Within three days of the receipt or mailing of all written correspondence between the Consultant and any party pertaining to the project, copies shall be provided to the Department for their records. The Consultant shall assist the Department in preparing responses to any public inquiries as a result of the public involvement process.

Newsletters, Postcard and Handouts

The Consultant shall prepare newsletters or postcards as requested by the DEPARMTENT. The newsletters or postcard shall be mailed by the Consultant to elected officials, property owners, businesses and interested persons included on the mailing list compiled by the Consultant. The Department's Communications Office will review and edit and should receive it ten (10) days prior to mailing/distribution. Department staff should receive the final version of the newsletters or postcard via e-mail, not hardcopy via the mail.

Project Web Site

The Consultant may be requested to create and maintain project or corridor web sites. Site names will have a distinct address on the World Wide Web (i.e., www.xyz.com). A link will be established on the FDOT website. The website will allow for input via e-mail links. 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 web site must be updated every two weeks at a minimum and within one business day after any Pubic Information Workshop or Public Hearing. All web applications must meet the standards established in Section 508 of the 1998 Rehabilitation Act.

The web site will contain a minimum of four pages:

1. The facts page will be a brief overview of what the project entails, cost, and the need for the project.
2. The public involvement page will contain a general overview of proposed meetings. This will include Public Information Meetings, Public Workshops/Hearings, 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 Project Manager's name will be listed as a contact with his/her FDOT mailing, and email addresses listed as well as his/her telephone number at the District Office. This page will also contain all above information listed for the Department's Project Manager and the Department's Communications Officer on the subscription page. This page will also include the contact information for the project Public Information Officer. All pages will be linked to the public involvement page.
3. The project schedule will contain a brief generalization of the milestones for this project. Milestones will be taken from the schedule developed by the Consultant, as approved by the Department. Shifts in the schedule will be reflected in this page as they occur.

This project will be linked to the FDOT web site and the Efficient Transportation Decision Making (ETDM) Public Access Site in accordance with Department rules and specifications. The Consultant is directed to contact District One's Office of Information Technology (OIT) through the Project Manager before setting up the web site. All web site development activities will be coordinated with OIT in the Bartow District One Headquarters Office.

4. Other website pages will include: Frequently Asked Questions, Related Links, Documents Library, and Contact Us.

All pages will comply with current swflroads.com templates and will be approved by the Communications Office prior to posting.

Visual Presentations (i.e. PowerPoint presentations, Videos, Renderings, etc.)
The Consultant shall prepare visual and/or audio visual presentations and renderings for public meetings as directed by the Department.

Other Public Participation Interaction

The Consultant may be required to actively engage in unique public participation and solicitation techniques either via the web or during public meetings. The techniques may include public surveys on the web or through social media, opinion polls that produce real-time results graphically to the audience at public meetings or other innovative measures to solicit public input.

Media

The Consultant may be required to work with media representatives. Duties shall include providing general project information and responses to project related issues, either in writing, over the telephone, or in person and on-camera.

Multilingual Requirements

Consultant is required to translate and provide multilingual public outreach content to relevant audiences, including website content, mailings. E-mail communication and public notices may be required depending upon the socioeconomic makeup of the areas involved.

Task 6: PROJECT REQUIREMENTS

Liaison Officer

The Department and the Consultant will designate a Liaison Officer, a Project Manager who shall be the representative of their respective organizations for the Project, and a Deputy Project Manager who shall be the representative in the absence of the Project Manager. While it is expected 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 Project Manager.

Key Personnel

The Consultant's work shall be performed and directed by the key personnel identified during negotiations by the Consultant and accepted by the Department. The Consultant shall notify the Department, in writing, of any proposed changes in the indicated personnel, prior to the proposed change. Any proposed change shall be subject to review and written approval by Department's Project Manager. The Consultant shall keep a staff of adequate size to respond to the requirements of this Contract at all times during the term of the Contract. The Consultant shall supply competent and committed staff to the Department at appropriate levels of skill and utilization. The Department requires that the Consultant provide cell phone numbers for all key personnel responsible for answering and responding to the needs of the Department.

The following personnel shall be included in this contract:

Project Manager: Primary point of contact with the Department's Project Manager (or his/her designee) on overall activities of the contract; ensures

contract compliance; manages budget; executes special projects and performs QA/QC on all collateral materials. Responsible for entire staff assigned to this contract to include staff supervision and work production. Works with Department's Project Manager on streamlining processes and developing cost effective methods of doing business. The Project Manager is also expected to develop, direct and coordinate all public information and public relations activities as directed by the District's Communications Officer(s); promote public understanding of the Department's activities; and research, write, edit and disseminate information concerning District operations and project activities to the public and various news media including printing and broadcasting centers, which may include project specific news releases, feature stories, photography and public service announcements.

Public Information Specialist: Acts as the Deputy Project Manager, to be contacted in the event the Project Manager is unavailable. Acts as the source for project related information, bilingual capabilities (English/Spanish) are strongly desired; writes Community Awareness Plans for projects in the design phase; identifies potential impacts to the public as a result of design; prepares and disseminates collateral materials to the public using plain language; develops strategic alliances and corporate partnerships; prepares and presents project information for meetings; coordinates resolution of issues; maintains database of stakeholders; prepares information for updating website; performs media responses by interview or in writing as needed; coordinates and staffs formal and informal public meetings; organizes comments, writes and tracks responses received at meetings; and executes other duties relevant to the position.

Assistant Public Information Specialist: Performs customer satisfaction surveys; supports the activities of the Public Information Specialist as needed and approved; executes other duties relevant to the position.

Graphic Designer: Takes photographs and develops videos of assigned projects; prepares, scripts and edits video presentations; creates and produces computer generated graphics to be used for project needs and public meetings, including but not limited to PowerPoint Presentations and Aerial Display Boards; designs collateral materials, creates templates, newsletter layouts and project information flyers; performs other duties relevant to the position. This position should have the knowledge and ability to utilize Microstation CADD files to assist with the graphics design.

Website Designer/Manager: Develop and maintain project website; appropriate manage internal site links; prepare and maintain corridor websites involving multiple Design and Post Design Projects; coordinate monthly website updates.
Contract Coordinator: Prepares and processes monthly progress reports and monthly invoices; monitors the progress of each task assignment; monitors task assignment direct expenses.

Secretary/Clerical: Maintains contract / task assignment files; develops project mailing lists; processes project mailings, including maintaining the certified mail receipts; assists the other staff by performing general duties such as typing and

drafting responses for review.

Subconsultants: It may be necessary for the Consultant to subcontract portions of the work. The subcontracted firm(s) must be approved and qualified by the Department prior to the initiation of any work. The Consultant shall be fully responsible for the satisfactory completion of all subcontracted work. The Consultant shall provide the Department and/or the Department's Project Manager (or his/her designee) with copies of the names for all the Sub-Consultants or employees who shall be performing the work as required.

Estimate of Fees for Services
The services outlined in the scope of services will be provided for in accordance with Article "4.0" of Exhibit "B" of the Agreement.

Correspondence
Copies of all written correspondence between the Consultant and any party pertaining specifically to this contract shall be provided to the Department for their records. Hard copies of the correspondence shall be provided within one (1) week of the receipt or mailing of said correspondence. Electronic copies of the correspondence shall be provided concurrent with the mailing of said correspondence.

Coordination with Other Consultants
The Consultant is to coordinate his/her work with any and all adjacent and integral Consultants so as to affect complete and homogenous work products. The Department Project Manager shall be copied on all correspondence.

Rules and Regulations
All work performed by the Consultant pursuant to this agreement, including, but not limited to the preparation of all tracings, plans, specifications, maps, computer files and/or reports prepared or obtained under this Agreement, as well as all data collected, together with summaries and charts derived there from, shall be considered works made for hire and shall become the property of the Department upon completion or termination without restriction or limitation on their use and shall be made available, upon request, to the Department at any time during the performance of such services and/or upon completion or termination of this Agreement. Upon delivery to the Department of said document(s), the Department shall become the custodian thereof in accordance with Chapter 119, Florida Statutes. The Consultant shall not copyright any material and products or patent any invention developed under this agreement. The Department shall have the right to visit the site for inspection of the work and the products of the Consultant at any time.

Task 38: CONCEPT PLANS

The CONSULTANT shall develop a concept plan to a level sufficient to verify that the concept will meet the objectives for the design. This could include expected needs for additional Right-of-Way (ROW), possible environmental or utility impacts, approach

realignments that could impact adjacent properties, etc. These items will be coordinated with appropriate FDOT staff to determine possible options to be explored as part of the concept development. The concept shall take into consideration the appropriate size and placement of the proposed improvements, and the alignment and arrangement of approaches to meet the geometric objectives. Expected Right-Of-Way (ROW) needs shall be calculated and shown in the concept.

The CONSULTANT shall perform a cursory geometric screening to review potential impacts.

Concepts may be drawn over aerials or as-built drawings. The typical concept will include, but be not limited to:

1. Directional medians (concrete separator or temporary raised curbing channelizing device)
2. Pedestrian Crossings and control devices such as Rectangular Rapid Flashing Beacons (RRFB)s or Pedestrian Hybrid Beacons (PHB)s.
3. Bulb-outs
4. Roundabouts
5. New Signals
6. New lane configurations
7. School Crossing Modifications
8. Roadway realignments
9. Other miscellaneous concepts, required to assist the Department.

For concepts, the consultant will design the concept plans to the best of their ability and utilize Right of Way, As-Built Plans and utilities provided by the Department. The CONSULTANT shall be responsible for producing a construction cost estimate using historic costs for the appropriate market area.

The consultant shall electronically submit plans and cost estimates in pdf format or as requested by the Department. CADD files shall be submitted if requested from the Department. It is anticipated that there will be two submittals for this task.

1. Initial submittal
2. Virtual meeting as necessary to review Department comments.
3. Final submittal, after addressing all Department comments.

Task Product

Concept Plan
Construction Cost Estimate

Task 39: MISCELLANEOUS STUDIES

The CONSULTANT shall conduct miscellaneous studies based on a scope of work

developed jointly by the Consultant and the Department.

Task Product

Miscellaneous assignments.