I. OBJECTIVE

The Florida Department of Transportation (FDOT) is conducting a multimodal corridor study along a 1.3-mile section of SR A1A/Collins Avenue from 4700 Block to 5800 Block from MP 7.079 to MP 8.406/Indian Creek Drive. The purpose of this corridor study is to identify, develop and evaluate potential multimodal improvements that will address existing and future mobility focusing on pedestrian, bicycle, and transit needs in the area. The study will also evaluate the feasibility of implementing dedicated transit lanes, bicycle lanes, additional crosswalks, and elimination of the frontage road.

II. BACKGROUND

SR A1A/Collins Avenue is a major north-south corridor located between Interstate 195/Julia Tuttle Causeway and SR 934/NE 79 Street/John F. Kennedy Causeway in the City of Miami Beach. SR A1A/Collins Avenue, from the 4700 Block to the 5800 Block, is currently a six-lane divided roadway. A frontage road exists along the east side of the corridor from the 4700 Block to the 5800 Block, providing access to high density residential development along the Atlantic Ocean. According to most recent traffic data, the corridor carries approximately 39,000 vehicles per day. The SR A1A/Collins Avenue is an attractive multimodal facility for residents, visitors, and tourists utilizing numerous transportation modes.

III. SCOPE OF SERVICES

Task 1 Project Management

Project management is a continuing task throughout the course of the project. This task includes coordination of the work effort with the project team to control scope, schedule, and budget. This task includes project management, administration, and coordination of all work, regular coordination calls/meetings with the FDOT project manager, a review of all work productions, and general project oversight.

The task consists of monthly face-to-face meetings and/or monthly conference calls with the FDOT project manager and/or staff. Monthly progress reports will be developed and submitted to the FDOT project manager which will include description of progress made during the report period for each task, definition of work products delivered, and meetings attended.

The task includes the development and maintenance of a project schedule including calendar deadlines and meeting dates. At the initiation of the project, a ‘critical path method’ schedule of tasks, meetings, presentations, and milestones will be developed. It is anticipated that the schedule will be maintained throughout the duration of the project and updated monthly, as necessary.
SCOPE OF SERVICES

TASK 2  Intergovernmental Coordination
A Public Involvement Program (PIP) will be prepared to identify methods to obtain input from stakeholders in the community. The PIP will also include the development of applicable goals and objectives for the proposed corridor improvement plan in collaboration with the stakeholders.

Public involvement tasks include preparing display graphics and formal audiovisual presentations. It is anticipated that public involvement activities will be primarily directed toward city/county/regional elected and appointed officials consisting of:

- Two (2) meetings during the project with Miami-Dade County Commissioner – District 5.
- Two (2) meetings total with the City of Miami Beach (anticipated to be at the level of mayor and/or manager) during the project.
- Three (3) presentations total to quasi-governmental agencies such as Miami-Dade TPO subcommittees or City of Miami Beach Planning Board.
- Three (3) Project Advisory Team (PAT) meetings. A PAT will be established consisting of, but not limited to, representatives from the Miami-Dade TPO, Miami-Dade Transit, City of Miami Beach, and other project stakeholders within the corridor.
- Two (2) public workshops within the project area will be conducted and advertised appropriately.
- Two (2) City of Miami Beach commission meetings. The CONSULTANT will prepare handouts, presentation graphics, and summary notes of meetings.

TASK 3  Existing Data Collection and Analysis
The purpose of this task is to collect available data and to inventory physical features of the corridor to prepare a preliminary assessment of the corridor’s operations, issues, and concerns.

3.1  Project Description - Based on the boundaries of the corridor and the data collected, a description of the study corridor, its general location, and project limits will be documented.
3.2 **Project Need Statement** - Based on the data and analysis conducted, a Project Need Statement will be developed, which outlines the rationale for pursuing corridor improvements. It shall also include the degree to which improvements to the corridor are consistent with local transportation planning, local comprehensive planning, land use planning, growth management efforts, and the rationale for the lack of need for the frontage road.

3.3 **Existing Planning/Background Documents** - The CONSULTANT shall obtain copies of relevant past studies and future plans which may affect the corridor and any future projected conditions for the corridor. At a minimum, the following plans and studies should be researched:

- Long Range Transportation Plans (LRTPs),
- Local Government Comprehensive Plans,
- Bikeway and Sidewalk Master Plans,
- Local Master Development Plans,
- Local Capital Improvement Plans (CIPs),
- Applicable Safety and Operational Studies,
- All proposed large developments which may generate significant traffic and/or provide mitigation which may include changes to segment or intersection geometry,
- Documentation on the implementation of the frontage road including the identified original need.
- Pending or existing projects within the Transportation Improvement Programs (TIPs),
- FDOT Work Program Items (WPI), and
- Transit Development Plans (TDPs).

As part of this effort, any future projections which have been conducted by either the state or local agencies shall also be collected.

3.4 **Aerial Photographs and Maps** - The CONSULTANT shall obtain copies and electronic files of the existing aerial photography/raster images of the corridor. Copies of relevant and available maps should also be obtained (e.g., right-of-way maps, transit route maps, and zoning maps). Aerials/maps will be needed to depict existing land use, existing corridor right-of-way, and highway characteristics, as well as to present Conceptual Alternatives.

3.5 **Roadway Data Collection** - Collect data for and summarize existing corridor information graphically including, but not limited to:

- Typical sections/design speed/posted speed
SCOPE OF SERVICES

- Intersection laneage
- Drainage structures/system
- Traffic signal timing and phasing

3.6 Traffic Data Collection and Analysis - The CONSULTANT shall obtain available physical and operational data along the corridor from the appropriate local and/or state agencies. The following initial data shall be collected for the corridor.

- Annual Average Daily Traffic (AADT) historical and current counts.
- 96-Hour (Thursday, Friday, Saturday, and Sunday) Speed/Volume/Classification counts (15-minute interval by direction) will be required at selected locations along the corridor, (e.g. between critical intersections or where volume or roadway characteristics change). It is anticipated that they will be required at the following locations along SR A1A/Collins Avenue at a minimum:
  1. Between 4700 Block and 5000 Block
  2. Between 5300 Block and 5800 Block

- Turning Movement Counts – Based on an analysis of the 96-hour traffic machine counts and evaluation of current and future development trends (traffic generation), the CONSULTANT will then perform 4-hour manual vehicle, pedestrian, and bicycle turning movement counts (TMC) including all U-turns to/from the frontage road for peak hours at the following locations, at a minimum:
  1. SR A1A/Collins Avenue at 4700 Block
  2. SR A1A/Collins Avenue at 4900 Block
  3. SR A1A/Collins Avenue at 5000 Block
  4. SR A1A/Collins Avenue at 5200 Block
  5. SR A1A/Collins Avenue at 5300 Block
  6. SR A1A/Collins Avenue at 5330 Block
  7. SR A1A/Collins Avenue at 5445 Extension (South)
  8. SR A1A/Collins Avenue at 5445 Extension (North)
  9. SR A1A/Collins Avenue at 5500 Block
  10. SR A1A/Collins Avenue at 5600 Block
  11. SR A1A/Collins Avenue at 5875 Block

- Additionally, TMCs will be collected at a total 46 unsignalized residential driveways along the corridor to be used as part of the conceptual alternative analyses. Note that it was assumed that the 46 residential driveway locations could be consolidated into 24 TMCs as a result of the close proximity between driveways.
Design factors D and T may be obtained from the FDOT Florida Traffic Online (2018). The Standard K factor will be used consistent with the 2014 Project Traffic Forecasting Handbook.

Field observations of traffic operations, including maximum queue and signal timing observations, should be conducted during the peak periods.

Field observations/data collection on the use of the frontage road for deliveries/loading including location, volume, and dwell times.

The CONSULTANT will conduct an existing operational conditions analysis for the identified peak hours. HCS 7, SYNCHRO 10, or other tools recommended by FDOT for intersection analysis will be used to evaluate existing conditions utilizing the methodologies contained in the 2000 and 6th Editions of the Highway Capacity Manual. The operational analysis shall be used to identify operational deficiencies within the SR A1A/Collins Avenue corridor. The FDOT level of service target for the respective intersections will be identified.

The CONSULTANT will review the analysis to verify if the results reasonably represent the field conditions. Adjustments to input values to achieve a reasonable representation of the field conditions will be documented. Depending on the parameter that is adjusted, corresponding adjustment may be carried over into the future conditions' analysis. The CONSULTANT will document and provide technical justification/support for input factors used in the analysis such as peak hour factor (PHF), truck percentages, pedestrians, and bicyclists. Electronic copies of all input and output files shall be provided to FDOT.

3.7 Mid-Block Crosswalk Warrant Data Collection and Analysis - The CONSULTANT will collect pedestrian and bicyclist crossing data as well as vehicular gap data during a consecutive two (2) 15-hour periods on a weekday and weekend as identified from the 96-hour volume data at the following four (4) mid-block locations along SR A1A/Collins Avenue:

1. Between 4700 Block and 4900 Block
2. Between 4900 Block and 5000 Block
3. Between 5000 Block and 5200 Block
4. Between 5600 Block and 5800 Block

The CONSULTANT shall analyze the collected pedestrian and bicycle volumes consistent with the FDOT’s Traffic Engineering Manual and the Federal Highway Administration’s (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), to determine the potential for implementation of additional mid-block crossing locations to facilitate bicycle and pedestrian mobility along SR A1A/Collins Avenue. The analysis will examine warrants for multiple crossing treatment alternatives and locations.
SCOPE OF SERVICES

3.8 Safety Data Collection and Analysis - Crash data for the most recent five-year period should be collected to prepare a safety analysis of the corridor. The CONSULTANT should coordinate with the Florida Department of Transportation (FDOT) to obtain the most recent crash data. Also, this corridor should be identified to determine if it is within a high crash spot or segment list. Collision diagrams are not included in the scope of services.

The analysis will identify concentrations of crashes along the corridor by frequency, crash type, direction, etc. Field reviews will be conducted to identify improvements based upon the prevalent crash patterns to identify potential causes and countermeasures.

3.9 Transit Data Collection - The data collected in this task will serve to determine the impact of the transit services along the corridor, among them:

- Transit routes serving the corridor and adjacent areas
- Route alignments
- Transit stop locations
- Route length
- Travel time and speed
- Ridership per route
- Headways
- Service hours
- Buses in service (peak and off-peak)
- Passengers’ load during peak and off-peak periods
- Number and location of bus stops and amenities
- Passenger boarding and alighting by bus stop
- Future service changes for the corridor

3.10 Bicycle/Pedestrian Facility Collection

Existing pedestrian and bicycle facilities shall be inventoried, reviewed, and summarized within the study area. Facilities to be collected include but are not limited to sidewalks, curb ramps, crosswalks, push buttons, and bicycle lanes.

3.11 Access Management Data Collection and Evaluation – The Access Class for the corridor shall be evaluated to ascertain compliance with applicable median opening and driveway spacing standards. Note that additional data and analysis may be required along parallel facilities where traffic patterns/volumes may be impacted by proposed improvements.

3.12 Deliverables – The CONSULTANT will prepare Technical Memorandum No. 1: Existing Conditions Data Analysis. This technical memorandum will document the
existing data collected as part of Task 3: Existing planning/background documents, aerial photographs and maps, roadway data collection, traffic data collection and analysis, safety data collection and analysis, transit data collection, bicycle/pedestrian facility collection, and access management data collection and evaluation. The geometric (horizontal and vertical) analysis will be conducted at a level of detail consistent with the data provided by FDOT.

**TASK 4  Project Traffic and Analysis**

The purpose of this task is to evaluate existing and future traffic conditions to assist in developing mobility strategies and conceptual alternatives. Forecasts will account for future traffic demand along the corridor and within the influence area.

**4.1 Design Traffic** - The CONSULTANT is responsible for developing the traffic projections to be used that establish the basic design requirements for roadway typical sections and intersections. The CONSULTANT will prepare Average Daily Traffic (ADT) and Design Hour Volumes (DHV) for the existing year, opening year, long-term design year using TMTool, TURNS5-V2014, or other approved intersection turning movement forecasting tool, as needed. The CONSULTANT shall develop and analyze the traffic data to identify growth rate methods (historic, model, or both) for comparison.

The most recent version of SERPM will be used for traffic demand modeling. The CONSULTANT should consider Existing Plus Committed (E+C), Cost Feasible, and Cost Feasible Plus Improvements networks and verify that all new committed or planned projects (that impact surrounding travel patterns) have been added from the TIP or LRTP that would impact volumes along the corridor; and thus reflected in the modeling analysis. The validated SERPM models and historical count data will be utilized to determine appropriate short-term and long-term growth rates to apply to existing volumes.

**4.2 Transit Ridership Assessment** - The CONSULTANT shall document the methodology and assumptions on assessing transit ridership. Transit ridership may be estimated using a comprehensive four-step multi-modal demand forecast model, or alternative forecasting tool such as T-BEST, or other appropriate methodologies.

**4.3 Deliverables** – The CONSULTANT will prepare Technical Memorandum No. 2: Traffic Methodology. This technical memorandum will document the methodology used in developing the traffic demand and multimodal splits, if applicable. The memorandum shall also identify the traffic volumes for the existing and the future No Build scenario. The future year design traffic will be prepared in accordance with the Project Traffic Forecasting Procedure (# 525-030-120). The CONSULTANT will use the results of the traffic data collection activities previously described in this scope of services, and the initial traffic data furnished by FDOT.

The CONSULTANT will prepare Technical Memorandum No. 3: Design Traffic. After approval of the Traffic Methodology Technical Memorandum, the CONSULTANT will
prepare a Design Traffic Technical Memorandum that will identify the design traffic volumes to be used for each conceptual alternative, developed from Task 4.1. 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. The design traffic will be prepared in accordance with the Project Traffic Forecasting Procedure (# 525-030-120).

**SCOPE OF SERVICES**

**TASK 5 Multimodal Conceptual Alternative Development**

5.1 Multimodal Conceptual Alternative Strategies - The purpose of this task is to initially develop multimodal transportation improvement strategies that could be implemented along the corridor and within the corridor’s influence area. The strategies shall include, but not be limited to, the following:

- Roadway network/flow modifications, operational improvements, and roadway geometric improvements (channelization, intersection improvements and access management improvements)
- Removal or re-purposing of the frontage road
- Providing dedicated transit lane(s)
- Providing adequate service and delivery vehicle access/facilities
- Providing Business Access and Transit (BAT) lane(s)
- Transportation System Management and Operation (TSM&O) techniques
- Strategies to address safety deficiencies identified within the limits of this study
- Improve passenger amenities and other features for existing service within the corridor
- Implementation of pedestrian and bicycle facilities to improve usage, reduce conflicts on existing facilities and eliminate elements that would deter or make usage unsafe on new facilities
- Use of Transit Signal Priority (TSP) and Queue Jump Lanes

5.2 Multimodal Conceptual Alternatives - The CONSULTANT shall develop conceptual alternatives outlining mobility strategies for the corridor and impacted parallel facilities. The CONSULTANT shall specify alternatives to be analyzed and select specific mobility enhancements by mode for the corridor. This activity involves narrowing the range of possible strategies to a list of viable specific strategies appropriate for the corridor and will be based upon the review of the existing data collected, community input, and design traffic.

Each conceptual alternative will be described in detail and their suitability for use in the corridor thoroughly evaluated. The CONSULTANT shall start with a general description of all possible strategies and techniques, and through a screening process choose a specific slate of potential improvements for the corridor. The CONSULTANT will prepare a maximum of three (3) conceptual alternatives including two (2) concepts consisting of
conceptual alternative strategies and one (1) concept combining the strategies from Concept #1 and Concept #2.

5.3 Evaluation of Multimodal Conceptual Alternatives – The CONSULTANT shall evaluate each conceptual alternative in terms of operational conditions, safety conditions, access management, construction cost, business damage cost, community impact, and general constructability. To determine the positive and negative impacts of the developed conceptual alternatives, a No Build alternative will be used as a base line for comparative purposes.

Future operating conditions will be determined for each conceptual alternative, including a comparison between future No Build conditions. The operational analysis shall be performed consistent with the existing operational conditions analysis performed in Task 3.6.

The CONSULTANT will conduct a safety evaluation for each conceptual alternative to identify improvements that specifically address crash patterns along the corridor. This analysis will assist in determining locations with high crash rates and trends that would indicate the need for a conceptual design improvement. Where possible, the analysis should identify general countermeasures to address multimodal crash patterns. The analysis will be conducted using the Highway Safety Manual’s Predictive Method where applicable.

Access management criteria for each conceptual alternative shall be evaluated to ascertain compliance with applicable median opening and driveway spacing standards based on the impact of the specific conceptual alternative strategies.

An iterative process will be used to develop the Multimodal Conceptual Alternatives. Each alternative will be drawn on aerial photography to the conceptual detail required to be able to prepare opinions of probable cost and thorough analysis.

Preliminary opinions of probable costs will be prepared for each alternative. Preliminary maps will include centerline alignment, existing and proposed right-of-way lines, typical cross-sections, modifications to existing intersections/medians, and proposed intersections/medians. The maps will be developed in order to be able to compare alternatives and developing recommendations.

An evaluation matrix will be developed to summarize the analysis results of the conceptual alternatives. Based on results from the conceptual alternative analyses, a preferred conceptual alternative will be selected. A Long Range Estimate (LRE) will be prepared for the preferred alternative. A phasing plan for improvements will be included along with recommendations, and alternative mode recommendations, as appropriate.
5.4 Deliverables
The CONSULTANT will prepare Technical Memorandum No. 4: Conceptual Alternatives Development. This technical memorandum will document the Conceptual Alternatives developed including the details, as described in Task 5.1.

The CONSULTANT will prepare Technical Memorandum No. 5: Conceptual Alternatives Analysis. This technical memorandum will document the analyses undertaken as part of the conceptual alternatives analysis and evaluation activities, as described in Task 5.2.

All documentation, MicroStation and graphic files, and presentation materials should be delivered to the Department in electronic format.

TASK 6 Final Report
The CONSULTANT shall provide a final report summarizing all project issues as well as the technical memorandums listed above. This document should provide sufficient information to be incorporated directly into a potential PD&E Study without any duplication of effort, and demonstrate that all reasonable travel demand and operational management strategies for the corridor were considered in sufficient detail. The estimated completion period for this study will be 18 months.

IV. TIME SCHEDULE
The duration of this study will be 18 months.

V. FUNDING
The estimated cost for this study is $300,000