EXHIBIT “A”

SCOPE OF SERVICES

SR 948/NW 36th Street from SR 826/Palmetto Expressway to SR 5/US-1
Roadway ID 87220000 and 87090000
Multimodal Corridor Study
FM No. 436426-1-12-01
Advertisement No. 20601

A. INTRODUCTION

SR 948/NW 36 Street is an east-west corridor in Miami-Dade County traversing several municipalities (the cities of Miami Springs, Virginia Gardens, and Hialeah). Along the western portion of the corridor, it also provides access to numerous aviation businesses and facilities to the south along Miami International Airport’s (MIA’s) 8L/26R runway. In addition, SR 948/NW 36 Street provides indirect access to the Florida East Coast Railroad’s (FEC’s) Hialeah Yard via NW 67 Avenue.

In the eastern portion of the county, SR 948/NW 36 Street parallels I-195 and SR 112 providing access to numerous businesses and residences. Between NW 36 Avenue and SR 5/US-1, it is a multi-lane facility that experiences significant corridor-wide congestion. The existing level of congestion along the corridor impacts commuting travel times, the environment, and overall quality of life. SR 948/NW 36 Street is an important secondary east-west route to the congested I-195/SR 112 corridor providing an alternate route for the movement of people and goods.

The western part of the SR 948/NW 36 Street corridor between SR 826/Palmetto Expressway and SR 953/Le Jeune Road is a six (6) lane divided facility carrying between 50,000 and 64,000 vehicles per day. It also experiences significant corridor-wide recurring congestion. The existing level of congestion along this portion of the corridor impacts commuting travel times, the environment, and overall quality of life. SR 948/NW 36 Street also functions as a secondary east-west route to the congested SR 836 corridor providing an alternate route to both cargo and passenger terminals at MIA. Finally, a two-way parallel roadway (Perimeter Drive) exists immediately south of the corridor from NW 67 Avenue to NW 57 Avenue that connects to SR 948 via NW 67 Avenue, NW 62 Avenue, NW 59 Avenue, and NW 57 Avenue. This parallel facility increases the number of conflict points and contributes to corridor congestion.

B. OBJECTIVE

The primary objective of this scope of services is to provide professional transportation planning and traffic engineering services for the development and evaluation of multimodal improvements that will address the existing and future mobility, operations, and needs along the study corridor. The objectives of this study include:
1. Evaluate existing transportation conditions along the corridor and identify locations of recurring congestion, operational deficiencies, safety issues, and transit/multimodal facilities.

2. Conduct intergovernmental coordination with an emphasis on communication with decision makers and stakeholders.

3. Develop future traffic volume forecasts along the corridor.

4. Identify and evaluate improvements that address existing and future mobility needs along the corridor.

5. Develop prioritized recommendations for improvements and/or further studies/analyses.

This study should provide sufficient detail to feed directly into the Project Development and Environment (PD&E) process for developing the final location and design alternatives (e.g., final typical sections, alignment and intersection layouts).

Study activities are organized into six (6) general tasks:

1. Project Purpose and Need
2. Data Collection
3. Future Traffic and Transit Ridership Forecasts
4. Conceptual Alternatives Strategies, Evaluation, and Analysis
5. Recommendations and Final Report
6. Intergovernmental Coordination/Meetings

C. SCOPE OF SERVICES

Task 1 - Project Purpose and Need

Purpose

The purpose of this task is to clearly determine the purpose of the project and the need for corridor improvements for both transportation needs and future economic development of the Miami International Airport and the adjacent communities along the corridor.

Activities

a. **Project Description**: Based on the data collected in Task 2, a description of the study corridor, its general location, and limits will be prepared.

b. **Project Need Statement**: Based on the data and analysis conducted in Task 2, a Project Need Statement shall be developed, which outlines the rationale for pursuing
corridor improvements. It shall include the degree to which improvements to the corridor are consistent with local transportation planning, local comprehensive planning, land use planning, and growth management efforts. The project need will also include the following freight considerations:

- Transportation system linkage
- Freight demand
- Travel time and service reliability
- Description of project limits
- Modal interrelationships; freight mobility; access to intermodal facilities
- Safety
- CSX/SFRTA and FEC coordination
- CSX/SFRTA existing daily services

The Consultant will develop a set of performance indicators which could be used to identify connectivity issues.

- Land Use livability and compatibility facts
- Frequency of Accidents due to Railroad crossings
- Corridor’s Truck Percentages
- Direct linkages between intermodal facilities
- Economic Impact of “No action”

c. Technical Memorandum No. 1 (Project Need Statement): A technical memorandum will be developed, which summarizes the data collected in Task 2 and incorporates the Project Description and Project Need Statement developed as a part of this task. The content should be sufficient in detail so that it may be used, as is, directly in the PD&E phase of project development, to establish project need as required by Federal Highway Administration (FHWA) Technical Advisory T6640.8A. The content should be sufficient to be used to screen the project through the Efficient Transportation Decision Making (ETDM) process in advance of initiating the PD&E phase.

**Products**

a. Technical Memorandum No. 1 (Project Need Statement) which clearly identifies the corridor/study area, establishes the need for corridor improvements, and which identifies the consistency of corridor improvements with the ongoing planning processes of affected local governments. The CONSULTANT may be required to update Technical Memorandum No. 1 after all tasks are complete.

b. All documentation, files, and presentation materials delivered to the DEPARTMENT in electronic format on a CD-ROM.

**Task 2 - Data Collection**

**Purpose**
The purpose of this task is to collect available data, to inventory physical features along major corridors, and to prepare a preliminary assessment of the corridors' operations, issues, and concerns.

**Activities**

a. **Aerial Photography/Maps:** The CONSULTANT shall obtain copies and electronic files of existing aerial photography/raster images of the study corridor. Copies of relevant and available maps should also be obtained (e.g., right-of-way maps, transit route maps, zoning maps, etc.). The CONSULTANT may be required to collect new or additional aerial photography. Aerials will be needed to depict existing land use, existing approximate right-of-way, highway characteristics, and to present Conceptual Engineering Alternatives and Recommendations. Aerial photography should be at a scale of approximately 1 inch = 100 feet, in order to show sufficient detail of individual lanes for existing and proposed conditions. The aerial photography shall be controlled color digital photography with the capability to utilize as a raster image. The aerial photography will provide for a plan sheet view equal to at least 1 inch = 200 feet and a resolution of 1 inch = 1 foot at a minimum.

b. **Initial Project Issues Identification:** The CONSULTANT shall research known project issues. The focus of the research should be to identify existing issues related to transportation conditions along the corridor. The CONSULTANT should identify any known issues as it relates to jurisdictional policies and or regulations, and public issues such as organized local opposition, either past or present, which are known to exist along the corridor.

c. **Field Reviews:** The CONSULTANT shall conduct and document formal field reviews of the site to coordinate the collection and application of planning and engineering data. The CONSULTANT shall conduct up to three (3) formal field reviews of the corridor.

d. **Existing Conditions:** The CONSULTANT shall obtain available physical and operational data along the corridor from the appropriate local and/or state agencies.

1. **Traffic Data Collection and Analysis** - At a minimum, the following initial data shall be collected within the study limits:

   i. Historical and current Annual Average Daily Traffic (AADT) counts.

   ii. 72-hour machine traffic/classification counts (15-minute interval by direction) will be required at selected locations along the corridor between critical intersections or where volume or roadway characteristics change. This scope of services assumes approximately 62 count locations.

   iii. Turning movement counts including bicycles and pedestrians for AM and PM peak periods will be required at intersections along the corridor.
Selection of peak hours may be based upon comparison of data available from the FDOT Florida Traffic Online website, 72-hour machine counts, and field observations. This scope of services assumes approximately 59 count locations also accounting for adjacent intersections along Perimeter Road. At a minimum, turning movement counts should be collected at the following intersections:

1. SR 826 SB Ramps (unsignalized/signalized)
2. SR 826 NB Ramps (unsignalized/signalized)
3. NW 74 Avenue (unsignalized)
4. Motel 6/Wendy’s Driveway (unsignalized)
5. Palmetto Ford/Atlantic Tower (unsignalized)
6. NW 72 Avenue (signalized)
7. Miami-Dade County S&S Division Driveway (S) (signalized)
8. NW 67 Avenue (S) (signalized)
9. NW 66 Avenue (N) (signalized)
10. Avex Building/NW 6405 Block (N) (unsignalized)
11. Space Coast Credit Union/NW 6301 Block (N) (unsignalized)
12. NW 62 Avenue (unsignalized)
13. NW 5950 Block (N) (unsignalized)
14. NW 59 Avenue/Regions Bank Driveway (unsignalized)
15. Miami Subs Restaurant Driveway (N) (unsignalized)
16. Denny’s Restaurant Driveway (N) (unsignalized)
17. NW 57 Avenue (signalized)
18. NW 5550 Block (S) (unsignalized)
19. Hugh Frank Drive (N) (unsignalized)
20. NW 5300 Block/AAR Driveway (S) (signalized)
21. AeroThrust Driveway (S) (unsignalized)
22. Palmetto Drive (signalized)
23. South Drive (signalized)
24. De Leon Drive (S) (unsignalized)
25. De Soto Drive (N) (unsignalized)
26. NW 4900 Block (S) (signalized)
27. Minola Drive (N) (unsignalized)
28. Mokena Drive (N) (unsignalized)
29. East Drive (signalized)
30. Miller Drive (N) (unsignalized)
31. Forrest Drive (N) (unsignalized)
32. Lee Drive (signalized)
33. Sheridan Drive/ EB Ramp (N) (signalized)
34. Kenmore Drive (N) (unsignalized)
35. Coolidge Drive (N) (unsignalized)
36. LeJeune Road/NW 42 Avenue (signalized)
37. NW South River Drive
38. NW North River Drive
39. NW 37 Avenue
40. NW 36 Avenue
41. NW 32 Avenue  
42. NW 30 Avenue  
43. NW 27 Avenue  
44. NW 22 Avenue  
45. NW 18 Avenue  
46. NW 17 Avenue  
47. NW 14 Avenue  
48. NW 12 Avenue  
49. NW 10 Avenue  
50. NW 7 Avenue/SR 7  
51. NW 5th Avenue  
52. NW 2nd Avenue  
53. N. Miami Avenue  
54. Federal Highway/NE 2nd Avenue (5-legged intersection)  
55. SR 5/US-1/Biscayne Boulevard  

Additional intersection exists along adjacent facilities that influence the operations of the corridor:

56. NW 67 Avenue at Perimeter Road (signalized)  
57. NW 62 Avenue at Perimeter Road (signalized)  
58. NW 59 Avenue at Perimeter Road (unsignalized)  
59. NW 57 Avenue at Perimeter Road (unsignalized)  

iv. Travel time and delay studies or other similar measures during typical peak conditions will be required within the corridor for vehicular modes. Six (6) total runs each will be performed for AM and PM peak period conditions in each travel direction on a Tuesday, Wednesday, or Thursday of a typical week.

v. Lane utilization, intersection movement delay, and any other traffic data collection studies will be required as needed within the corridor as needed for calibration of operational analysis software. A data collection budget for this task will be established as part of the project fee estimate.

vi. Origin-Destination (OD) data for the SR 948/NW 36 Street corridor. The data shall include information regarding the origins and destinations for both passenger vehicles and trucks.

vii. Design factors K, D, and T may be obtained from the FDOT Florida Traffic Online website and the Project Traffic Forecasting Handbook.

viii. Existing operating conditions (LOS, delay, queuing) shall be determined along the corridor using the methodologies contained in the most recent edition of the Highway Capacity Manual, and/or appropriate FDOT analysis software utilizing the collected data.
The operational analysis shall be used to identify operational deficiencies within the corridor. The operational analysis will include conflicts between pedestrians and bicycles and vehicles at intersections and crossings.

At a minimum, the CONSULTANT shall summarize the following performance measures for each time period for existing conditions:

- Signalized intersections – LOS, delay, v/c, queue lengths
- Arterials – LOS, travel time, speed, multimodal LOS

The level of detail required for reporting performance measures should be commensurate with the scope of work; alternatives and modifications being considered, capabilities of the analysis tools, level of detail needed to evaluate and compare alternatives, and other factors such as degree of over saturation.

The CONSULTANT shall 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 shall document and provide support for all input factors such as peak hour factor (PHF) and truck percentages used in the analysis. Electronic copies of all input and output files shall be provided to the DEPARTMENT.

2. Safety Data Collection and Analysis – Collect crash data for the most recent five (5) year period and prepare safety analysis of the corridor. Determine if this corridor is identified within the high crash spot or segment list. Document the safety and/or operational deficiencies along the corridor. Analyze crash data to determine the frequency of crash type (vehicle, bicycle, and/or pedestrian crash; angle, head-on, side-swipe, etc. crash; fatal, injury, or property damage only crash) and the existence of trends that would indicate the potential for a particular improvement type. Where possible, identify countermeasures (design or operational) to address crash patterns for vehicular traffic as well as crashes involving bicycle and pedestrian traffic.

3. Transit Data Collection and Analysis – At a minimum, transit route, schedule, and ridership data shall be collected and summarized. Identify all locations of transit stops/stations, stop amenities including parking facilities, and pedestrian access routes along the corridor.

4. Bicycle/Pedestrian Facility & On-Street Parking Collection and Analysis – Existing pedestrian and bicycle facilities, as well as on-street parking spaces, shall be inventoried, reviewed, and summarized along the corridor.
5. **Roadway Data Collection and Analysis** - Collect data for and summarize existing corridors’ information graphically including, but not limited to:

- Typical Sections
- Right-of-Way - Obtain all right-of-way information for project limits from the Department and from city or county offices. Right-of-way determination shall be made for crossroads, drainage easements, retention areas, etc. Establish property lines based on available existing data. Identify right-of-way for parallel-related transportation corridors. The Consultant shall obtain right-of-way maps/GIS database as available from the DEPARTMENT.
- Lighting - Determine the type of lighting and location of key lighting infrastructure along the corridor.
- Utilities - Identify existing or potential utility structures close to and within the right-of-way from available information. The Consultant shall solicit utility information in coordination with the District Utilities Engineer.
- Posted/Design Speed - Identify posted speed limits throughout the study area from the RCI database or field survey as needed. Convey any discrepancy with the DEPARTMENT’s database that is noted in the process to the responsible District offices. Obtain design speed from as-built/record drawings.
- Pavement Conditions - Identify pavement condition ratings from the DEPARTMENT.
- Drainage System Inventory - Identify existing drainage systems and discharge points from available information.
- Alignment - Identify horizontal and vertical alignment data as necessary. Obtain and identify key sight distances.
- Bridge Structure Information – Identify key elements including typical section, type of structure, conditions, horizontal and vertical clearance, span arrangements, pier location, and channel data (if applicable).

6. **Identify Existing Freight Roadway Infrastructure** - Starting with the roadway network identified within the Southeast Florida Regional Freight Plan and the Florida Strategic Intermodal System (SIS), the following information should be collected from existing sources and field review (if necessary). The data will focus on that which is freight related and contributes to the regional movement of goods.

- Functional classification
- Traffic characteristics
- Traffic signal phasing
- Sight distance
- Turning radii
- Lane storage
- Merging and weaving characteristics
- Truck parking locations and practices
7. **Access Management Data Collection and Analysis** - Access class for the corridor shall be evaluated for compliance with applicable standards.

e. **Existing Planning/Background Documents:** The CONSULTANT shall obtain copies of relevant future plans which may affect the study corridor and any future projected conditions. At a minimum, the following plans and studies should be researched: Long Range Transportation Plan (LRTP), Local Government Comprehensive Plans, Bikeway and Sidewalk Master Plans, local master development plans, local capital improvement plans (CIPs), applicable safety and operational studies, applicable Developments of Regional Impact (DRIs), permit plans, pending or existing Transportation Improvement Programs (TIP), FDOT Work Program Items (WPI), and Transit Development Plans (TDPs). These include planned multimodal transportation improvements at the urban interchange of SR 112/NW 36 Street/Le Jeune Road (FM #438521-1), as well as the Concept Design for the extension of NE 37th Street and Ramp modifications at I-195 and Miami Avenue.

As part of this effort, any future projections which have been conducted by either the state or local agencies shall also be collected. In addition the CONSULTANT will research and document any programmed improvement projects on the corridors identified beyond those reviewed as part of this task.

The Consultant will review previous goods movement studies and study area-related reports conducted by the Department or other agencies including, but not limited to:

- Miami-Dade Freight Plan
- Miami-Dade MPO 2040 Long Range Transportation Plan (focusing on Cost Feasible Projects and Transportation Improvement Plans)
- Miami Intermodal Center
- Strategic Airport Master Planning Study for the Miami International Airport (MIA)
- PortMiami Strategic Plan
- Miami River Corridor Economic Study
- SIS Strategic Plan
- Southeast Florida Regional Freight Plan
- The goods movement portions of the most recent Airport and Seaport Master Plans
- The proposed development of an Intermodal Logistics Hub in the FEC Hialeah Rail Yard.

The Consultant will search for and obtain other relevant freight movement plans and studies either completed or being conducted. Special attention should be paid to freight movement data, identified areas in need of improvement, major freight generators, and projects identified to facilitate the movement of freight.
Cultural/Historic Features: Data is required of the cultural/historical features along the corridor should be identified in sufficient detail to conduct an environmental screening or “fatal-flaw” analysis of the Conceptual Engineering Alternatives, but shall not be to the degree needed to seek National Environmental Policy Act (NEPA) determination or documentation. The goal is to collect data for determining potential impact of corridor improvements and the degree of impact and the potential extent of required mitigation.

Potentially sensitive cultural and historical sites need to be identified along the corridor and depicted on scaled 11-inch x 17-inch maps. Such sites shall include, but may not be limited to:

1. Major or important medical facilities.
2. Educational facilities (public and private).
3. Religious institutions.
4. Cemeteries (public and private).
5. State owned /Publicly-utilized lands (parks, recreation areas, conservation areas, wildlife refuges).
6. Generalized archaeological areas and historical districts or sites. A Cultural Resource Assessment Survey (CRAS) will be performed, if necessary, to locate, document, evaluate, assess potential effects on, and mitigate adverse impacts to historical resources.

Hydrological/Natural Features: Data is required on the Hydrological/Natural features along the corridor in sufficient detail to conduct an environmental impact screening of the Conceptual Engineering Alternatives, but shall not be to the degree needed to seek National Environmental Policy Act (NEPA) determination or documentation. The goal is to collect data for determining the potential impact of corridor improvements and the degree of impact, and the potential extent of required mitigation. These features need to be identified and mapped at an appropriate scale, as outlined below:

- Determine through analysis and comparison of the FLUCFCS (Florida Land Use Cover and Forms Classification System) with aerial photography, the limits of wetlands within or adjacent to the corridor and overlay these areas on appropriately scaled 11-inch x 17-inch maps, to allow for preliminary identification of potential impacts.
- Determine the location and extent of any outstanding Florida waters within the corridor.
- Identify and plot on appropriately scaled 11-inch x 17-inch maps, all base (100-year frequency) floodplains using Flood Insurance Rate Maps (FIRM), Flood
Hazard Boundaries Maps (FHBM), quadrangle maps, water management district topographic maps, FDOT drainage maps, etc. with special regard to use of this roadway for storm evacuation.

- Identify and plot on appropriately scaled 11-inch x 17-inch maps, all floodway using floodway maps or information from Federal Emergency Management Agency (FEMA).

- Obtain stormwater management or master drainage plans prepared by local authorities in order to identify problem areas.

- Identify "critical habitat" by literature search, review of US Fish and Wildlife Service (USFWS) databases and coordination with local governments and the Florida Natural Areas Inventory. Coordinate with the USFWS, Florida Fish and Wildlife Commission (FWC) and National Marine Fisheries Service (NMFS). Prepare a “Listed Species Technical Memorandum” to establish the possible presence of, and potential impacts to identified species, other wildlife, and their critical habitat within the project vicinity. If endangered or threatened species involvement is identified, outline a biological assessment for later formal consultations.

- Perform a Coastal Zone consistency review, if necessary.

h. Other Environmental Features: The CONSULTANT shall collect data, analyze noise impacts, make a conformance determination, and/or assess whether or not there are hazardous waste sites along the corridor which could impact Conceptual Engineering Alternative Analysis. Should subsurface excavations be proposed for drainage, etc., a Contamination Screening Report that includes pre-construction review of site files at Miami-Dade County Department of Regulatory and Economic Resources (RER) should be prepared to determine the potential for contamination impacts during construction.

i. Major Utilities: All major utilities along the corridor, which could have an influence on corridor development or feasibility of Conceptual Engineering Alternatives, need to be identified and denoted on appropriately scaled 11-inch x 17-inch maps. The CONSULTANT will be responsible for obtaining and summarizing the relevant information from the various potentially affected utility companies (including public and private utilities) along the corridor.

j. Right-of-Way: Prepare maps documenting the available ROW in the corridor. This information will need to be plotted at an appropriate scale.

k. Technical Memorandum No. 2 (Existing Conditions): This Technical Memorandum will document Task Activities 2a through 2i and will contain the maps/deliverables developed in Task 2 Activities. The project issues and existing conditions should all be clearly identified at the completion of Task 2.
Products

a. Task 2 provides the initial area information for Technical Memorandum No. 2 (Existing Conditions), which will be completed in Task 2.

b. Draft tables and maps that summarize the data collected during this task. These tables and maps will be incorporated into Technical Memorandum No. 5 (Engineering Alternatives), as part of Task 4.

c. All documentation, graphic files, and presentation materials delivered to the DEPARTMENT in electronic format on CD-ROM or DVD.

Task 3 – Project Traffic Forecasts

Purpose

Future traffic forecasts developed in this task will provide the basis for the development of mobility strategies and conceptual alternatives. Forecasts will account for future traffic demand along the corridor and within the corridor.

Activities

a. Preliminary Project Traffic Report: The CONSULTANT shall document preliminary estimates of future traffic volumes (AADTs, DDHVs, AM/PM peak hour turning movement volumes) for alternatives analysis. The forecasts should include 20-year horizon forecast and an interim year traffic forecast. The forecasts shall be developed consistent with the design traffic factors identified in Task 1. If necessary, the CONSULTANT shall develop projections for various Multimodal Conceptual Engineering Alternatives. The CONSULTANT shall review traffic modeling assumptions and inputs as needed to ensure consistency between the model and individual alternatives. Appropriate subarea modifications to network parameters (area type, facility type, speed, capacity, and centroid connectors) will be performed.

If a historic trend analysis procedure is used, the CONSULTANT shall account for known or potential development projects or land use changes that would affect the results beyond a projection of past conditions. The methodology for traffic projections will be determined and approved at a traffic methodology meeting with the DEPARTMENT. The following typical traffic forecasting methodologies used by the DEPARTMENT should be evaluated and documented by the CONSULTANT for the corridor: historic AADT trends analysis, historic AADT plus model output trends analysis, base year to horizon year FSUTMS model output volume comparison, and socio-economic (Z-DATA) factors comparison.

b. Technical Memorandum No. 3 (Project Traffic Forecasts): This Technical Memorandum (Project Traffic) shall document Task 3a in sufficient detail so that the
process used to develop traffic estimates and transit ridership estimates could be followed by a technical individual who is not involved with the project.

**Products**

a. Technical Memorandum No. 3 (Project Traffic Forecasts)

**Task 4 –Conceptual Alternative Strategies, Evaluation, and Analysis**

**Purpose**

The purpose of this task is to develop preliminary multimodal transportation improvement strategies which could be implemented along the corridor and within the corridor’s influence area. The strategies shall include, but not be limited to; multimodal, roadway network/flow modifications, operational improvements, safety improvements, Transportation System Management (TSM) techniques, Transportation Demand Management (TDM) techniques, and future land use strategies. These strategies will then be developed into a series of Multimodal Conceptual Engineering Alternative packages. These alternatives will be analyzed with regards to the projected traffic and multimodal demand along the corridors, capital and operating cost effectiveness, and effectiveness of mobility enhancement.

**Activities**

The development of the improvement strategies will build upon review of the existing data developed in Tasks 1 through 3. Each alternative will be described in detail, including recommendations for each mode.

1. **Strategy Development:** The CONSULTANT shall outline mobility strategies for the corridor. The development of improvement strategies will build upon review of the existing data developed in Tasks 1 through 3. Each alternative will be described in detail including recommendations for both single occupant vehicles and/or multimodal improvements. Conceptual alternatives should consider freight mobility for current and expected freight movements, as well as a “High” freight growth scenario of post-Panamax vessels entering Florida ports and higher than average overall economic growth, and a “Low” freight growth scenario of post-Panamax vessels entering Florida ports and lower than average overall economic growth.

The CONSULTANT shall start with a wide array of possible strategies and techniques and, through a screening process, choose a reduced set of viable improvements for the corridor. Unit costs for each type of improvement should be defined. Improvements should consider but are not limited to:
1. Strategies that provide additional capacity to address operational deficiencies including, but not limited to: grade separation, managed lanes, widening, and reversible lanes.

2. Strategies to reduce single occupant vehicle usage or as an alternative to any general-purpose lane proposals, including managed lanes.

3. Strategies to increase transit usage. Include operational improvements and special use lanes to increase patronage of transit service. Improve passenger amenities and other features for transit service within the corridor.

4. Traffic operations techniques such as Intelligent Transportation Systems (ITS) strategies, and Transportation Systems Management & Operations (TSM&O) strategies.

5. TDM measures or trip reduction techniques such as car/van pooling, alternative work scheduling or parking management.

6. Pedestrian, transit, and bicycle facilities should include techniques to improve usage, reduce conflicts on existing facilities, and eliminate elements that would deter or make usage unsafe on new facilities.

7. Strategies to address safety deficiencies identified within the limits of this study.

8. Strategies for future land use patterns to encourage transit usage and reduce single occupant vehicle usage.


b. Conceptual Engineering Alternatives Development: The CONSULTANT shall specify alternatives to be analyzed and identify 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. A minimum of a no-build and three (3) build alternatives will be included for the corridor. Build alternatives may include managed lane and reversible lane concepts for all or a portion of the study corridor.

An iterative process will be applied to develop the Multimodal Conceptual Engineering Alternatives. Each alternative should be plotted on aerial photography in sufficient detail for cost estimation and identification of potential impacts. Preliminary cost estimates shall be prepared for each alternative. At a minimum, these preliminary maps shall include centerline alignment, existing and proposed right-of-way lines, typical cross-section, as well as modifications to existing or proposed intersections, interchanges, median treatments, property, approximate area of land per parcel included within any proposed ROW acquisition areas, and the location of existing and
future major public and private utilities. The illustrations shall be sufficient for comparing alternatives and developing recommendations.

Conceptual engineering will concentrate on those elements of the alternatives that influence the evaluation of the alternative’s potential costs, benefits, and impacts.

c. **Technical Memorandum No. 5 (Conceptual Engineering Alternatives):** This Technical Memorandum will document Task Activity 4c.

d. **Environmental Impact Analysis:** Prepare an environmental review and evaluation of the Multimodal Conceptual Engineering Alternatives in sufficient detail to support a Class of Action Determination, or the need for further and more detailed environmental analysis in conjunction with a subsequent study. Include discussion on all topics covered in *Chapter 2, Environmental Class of Action, and Determination of the PD&E guidelines.*

1. **Social Impact - Analysis** of existing and future land use, community cohesion, and relocation potential (to the extent necessary) to identify major problems. Analysis should discuss potential impact on minority groups (environmental justice) or neighborhoods and should evaluate the potential for project controversy. Changes to street patterns, on-street parking, and access modifications to and from neighboring communities could be perceived as a positive or negative impact. The degree and magnitude of these changes would have to be examined during the project development phase in conjunction with a public involvement program in the affected residential and business communities.

2. **Cultural Impact - Analysis** of the impact on Section 4(f) land, archaeological or historic sites and recreation areas, if any.

3. **Natural Environment Impact - Analysis** of the potential impact on wetlands, critical waters and flood plains, wildlife and habitat (endangered species). Identification of environmentally sensitive areas or restrictive areas, such as parklands, recreation lands, wildlife refuges, historic properties, important wetlands, hazardous contamination sites, and significant endangered species critical habitats. This information will aid in determining the appropriate Class of Action and to outline potential permitting requirements and potential mitigation requirements.

4. **Physical Impact - Analysis** of potential noise and air quality impacts. Contamination sites identified in the study area that have the potential to present a constraint shall be discussed. Any additional environmental problems shall be discussed.

e. **Right-of-Way Impact Analysis:** Based on the right-of-way mapping performed in Task 2 Activities and the evaluation performed in Task Activity 3c, the CONSULTANT shall evaluate and document the existing approximate right-of-way conditions for the corridor, as well as the potential required right-of-way necessary for each Conceptual
Engineering Alternative. The CONSULTANT shall identify approximate right-of-way acquisitions needed for each design alternative. The CONSULTANT shall consider access management classifications, bicycle lanes, pedestrian facilities, and adjacent property impacts and access when evaluating the required right-of-way. A scale presentation aerial map of each Conceptual Engineering Alternative which shows conceptual geometric design, approximate right-of-way acquisitions, and adjacent property impacts (access, takings, etc.) shall be prepared for use at meetings and presentations. The map scale should be chosen to ensure features such as access to adjacent lands are easily discernible. All presentation materials must be approved by the DEPARTMENT.

f. Conceptual Multimodal Alternative Analysis: Evaluate each alternative (quantify or ranking) in terms of operational conditions (LOS, delay, queuing, speed), construction cost, right-of-way cost (provided by FDOT), business damage cost (provided by FDOT), community impact, environmental impact, and general constructability. Future operating conditions shall be determined for each Conceptual Alternative using the methodologies contained in the most recent version of the Highway Capacity Manual and/or appropriate analysis software including a comparison between future no-build conditions. The operational analysis shall be performed consistent with Existing Conditions Analysis performed in Task 1.

The cost effectiveness, ratio of benefits to cost, and similar measures for each Multimodal Conceptual Engineering Alternative shall be summarized. The appropriate evaluation matrices shall be prepared that summarize the analyses of the Conceptual Engineering Alternatives performed in Task 3. The CONSULTANT shall review cost estimates with DEPARTMENT personnel to ensure consistency with DEPARTMENT procedures.

g. Conceptual Multimodal Alternative(s) Recommendations: Based on results from the Multimodal Conceptual Engineering Alternative analyses, a selection will be made of the most feasible alternative(s) that are to be further studied during the project development phase. A phasing plan for improvements shall be included along with the recommended alternative(s), and the recommendation will include alternative mode improvements, as appropriate.

h. Technical Memorandum No. 6 (Multimodal Alternatives Analysis): This Technical Memorandum will completely document the analyses undertaken as part of Task Activities 4a through 4h, summarizing the selection of a recommended Conceptual Engineering Alternative(s), inclusive of any maps required as part of the analyses.

Products

a. Technical Memorandum No. 4 (Conceptual Strategies)
b. Technical Memorandum No. 5 (Engineering Alternatives)
c. Technical Memorandum No. 6 (Multimodal Alternatives Analysis)
d. All documentation, Microstation and graphic files, and presentation materials delivered to the DEPARTMENT in electronic format on CD-ROM or DVD.
Task 5 – Development of Recommendations and Final Report

Purpose

The purpose of this task is to document project issues as revealed throughout the study and to document the process followed to reach a decision on the appropriate conceptual improvements that are necessary to enhance the mobility of the corridor.

Activities

a. **Project Traffic Forecasts:** Based on the recommended Conceptual Engineering Alternative, Final Project Traffic Volumes will be developed, and if necessary, an 18-KIP analysis will also be conducted.

b. **Project Issues:** Complete documentation of significant project issues discovered through the course of the project will be assembled. A primary source for this information will be results of the intergovernmental coordination conducted as part of Task 6. Issues discovered in the data collection and analysis tasks will also be included in this documentation. This information is a critical component of the Final Report, as this information will greatly assist the DEPARTMENT in its focus during development of a future phase of the study or design.

c. **Recommended Multimodal Conceptual Engineering Alternative(s):** Complete documentation of the Multimodal Conceptual Engineering Alternative selection process will be developed beginning with the need for improvements through the development of Multimodal Conceptual Engineering Alternatives and to the recommendation of particular alternatives for continued study or design.

   1. All relevant maps developed throughout the study will be finalized and included in this report.

   2. Plan-sized sheets of the Recommended Conceptual Engineering Alternative will be developed depicting the primary design features inherent to the design concept and scope.

   3. An operational analysis of the Recommended Multimodal Conceptual Engineering Alternative (s) will be conducted in accordance with the methodologies contained in the most recent version of the *Highway Capacity Manual* and/or appropriate analysis software.

Products

a. Final report including: detailed project needs statement, project traffic forecasts, alternative analysis, and conceptual (graphic) engineering plans for the selected
alternative(s). All documentation, and graphic files, and presentation materials shall be delivered to the DEPARTMENT in electronic format on a CD-ROM or DVD.

Task 6 – Intergovernmental Coordination

Purpose

To provide notification of project initiation, scope, intent, results and to allow communication among governmental agencies impacted or with an interest in the study. The form and extent of this task shall consist of the components as outlined.

Activities

a. Intergovernmental Agency Coordination: Organize a Project Advisory Team (PAT). The PAT will be comprised of one or more (as appropriate) representatives from: Miami-Dade County Department of Transportation and Public Works, Miami-Dade County Planning and Zoning, Miami-Dade County Transit, Miami-Dade County Bicycle/Pedestrian Coordinator (part of MPO staff), Miami-Dade Aviation Department, FDOT staff, and local municipal representatives. The PAT will meet a maximum of five (5) times and be involved in key decision points and offer advice on project activities. The CONSULTANT will prepare PAT meeting minutes that will be submitted to all PAT members for review, comment and approval before the minutes are finalized.

b. Presentations/Meetings: The CONSULTANT shall organize and conduct presentations/meetings to present results of this study to relevant MPO committees such as FTAC, TPTAC, CTAC, and BPAC. These presentations/meetings will be held during regular MPO meetings so that the public may attend. Prior to the MPO presentation/meeting, the CONSULTANT may be required to present a draft presentation to the PAT. Additionally, the CONSULTANT may be required to present to the local Community Council, municipalities, and impacted Homeowner’s Associations. A total of five (5) presentations/meetings are assumed under this activity.

c. Technical Presentation(s): Present study results to key FDOT personnel and local agencies that will be involved in future project phases. A total of five (5) presentations/meetings are assumed under this activity.

d. Progress Meetings: Meetings with FDOT staff to review project progress. A total of ten (10) meetings are assumed under this activity.

Products

a. PAT Meeting Minutes
b. Intergovernmental Coordination Summary (Technical Memorandum No. 6).
c. Presentation(s) to in-house staff at the end of the study.
d. All documentation and presentation materials delivered to the DEPARTMENT in electronic format on a CD-ROM.