TASK AUTHORIZATION

Florida International University

PROCUREMENT/CONTRACT NO. MDX-10-09

TASK AUTHORIZATION NO: MDX-10-09/FY10/TA-01
DATE PREPARED: 8-Jan-10
NOT TO EXCEED AMOUNT: $182,306.00
COMPENSATION TYPE: Upper Limiting

SR 836 Express Bus Service Study

BILL TO: HNTB Corporation
START DATE: 8-Jan-10
REVISION DATE: 8-Jan-10
END DATE: 30-Jun-10
END DATE: 8700 W Flagler St, Ste 200
Miami, Florida 33174
Attn: Sandra Herdocia

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<th>Service(s) Description</th>
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TOTAL TASK AUTHORIZATION REQUEST $182,306

Justifications for Revised TA

Approval/Acceptance of Task Authorization Issuance

This Task Authorization is issued pursuant to the above noted Contract by and between MDX and the Consultant, inclusive of any Supplemental Agreement(s).

The Consultant has reviewed this Task Authorization (TA) and, by its execution, acknowledges and certifies that this TA is being issued pursuant to the requirements of the above noted Contract. MDX reserves the right to withhold from and/or deny payment.

Date: 11/2/10 MDX Authorized Representative (Approved)
Date: __________ MDX Authorized Representative (Recommended)
Date: 11/8/10 GEC Project Manager (if applicable) (Recommended) * Work Program related Contracts only
Date: 01/12/10 University Authorized Representative (Approved)

Approval/Certification of Task Authorization Completion

Both the Consultant and MDX confirm that the Service(s) authorized herein have been completed in conformance with the Contract and the requirements of this TA.

FINAL TASK AUTHORIZATION AMOUNT: $182,306

Date: __________ MDX Authorized Representative (Approved)
Date: __________ MDX Authorized Representative (Recommended)
Date: __________ GEC Project Manager (if applicable) (Recommended) * Work Program related Contracts only
Date: __________ University Authorized Representative (Approved)
Task Assignment #1

This first task involves the initial conceptualization of a sustainable Bus Transit (BT) System or a similar sustainable express bus transit system (i.e., using relevant limited stop service or service without stops). Such bus systems hereinafter shall be referenced collectively as an Advanced Bus Transit (Advanced BT) System or service that shall not use a dedicated lane for bus traffic, shall use the Dolphin Expressway/SR 836 with at least two associated Transit Oriented Developments (TODs) - one located at the Florida International University Maidique Campus (FIU MC) and the other at Miami International Airport/Miami Intermodal Center (MIA/MIC). This task will identify opportunities and alternatives to maximize ridership (Demand) while minimizing capital and O&M costs (Supply) of Advanced BT service on SR 836. The sustainability of Advanced BT service is determined by a positive benefit to cost ratio (B/C) based on the anticipated demand/ridership and associated costs. Transit oriented developments (TODs) and park and ride lots (P&Rs) are tools to support/encourage transit ridership. It is recognized that TODs traditionally as described in published literature do not incorporate innovative means to enhance and make abundant parking opportunities while improving pedestrian oriented public space and opportunities so as to extend large scale pedestrian movements and gathering of pedestrians at passenger rail stations and BRT stops. It is expected that such extended large scale pedestrian movements and gathering of pedestrians will be augmented with small community transport vehicles, transit greenway corridors, and advancements in bus transit stations and stops strategies, technologies and communications to improve transit access. For this reason, LCTR will review how best to incorporate these TOD enhancements to establish a basis for Advanced TODS that substantially improve transit access and therefore opportunities to increase passenger revenues such that they exceed costs associated with the proposed Advanced BT. This task will begin to evaluate the project feasibility, including measurement of impacts of potential TODs and P&R on ridership forecasts (at least at a conceptual level based on realistic assumptions and/or referring to other similar and relevant experiences within the US and internationally). Lastly, this task will identify alternative strategies for implementation, including project phasing, delivery options, funding sources and operations responsibilities (MDX, FDOT, MDT, FIU or other).
A. **STUDY OBJECTIVES:**
Research and analysis through the Lehman Center for Transportation Research (LCTR) at the College of Engineering and Computing working in coordination with other academic or research units of Florida International University (FIU) appropriate for work involved to identify a basis for the installation of an Advanced BT system and associated TODs so as to:

1. Advance the goals outlined within the MDX Strategic Plan regarding regional transportation mobility and leveraging public partnerships.
2. Advance the goals of FIU as a Research University.
3. Serve the mobility needs of the Miami-Dade County and South Florida community and support the growth of the local economy in the world marketplace.

Within the initial 4 months after the start date as shown on this Task Authorization (TA), the draft **Project Initial Report** shall be provided to MDX and its General Engineering Consultant (GEC) by the LCTR for review and approval. Once comments are received from MDX and GEC staff, LCTR shall make any needed revisions to finalize the document for timely submittal to MDX.

B. **INITIAL REPORT COMPONENTS:**

1. **A SUMMARY OF THE NATIONAL AND INTERNATIONAL BRT OR SIMILAR EXPRESS BUS SERVICE (I.E., RELEVANT LIMITED STOP SERVICE OR SERVICE WITHOUT STOPS) ON FREEWAYS SUCCESSFUL INSTALLATIONS AND OPERATIONS,** including vehicles used and those elements to which their success may be attributed and a general description of TODs as compared to high quality pedestrian-oriented built environments found in cities around the world.

2. **A STRATEGY FOR IMPLEMENTATION** of an Advanced BT System on the Dolphin Expressway (SR 836) corridor and associated Advanced TODs based upon and including detailed documentation of:
   - Information developed as part of the Miami-Dade Transit (MDT) East West Transit Study where BT options were developed along the SR 836 corridor. Land use and transit ridership projections for the area need to be reviewed and incorporated into the analysis. Any station area planning information and TOD information shall be reviewed as well.
   - Information developed by MDX regarding ridership potential for Advanced BT operations on shoulders along SR 836 (Project 83627).
Information developed by FIU in a study funded by FDOT for densification of land uses along the 107th Avenue study corridor.

- Identified potential Advanced TODs and local land use issues.
- Review of potential sites for park-and-ride facilities along the SR 836 corridor and initial investigation of their potential for development for park-and-ride, including land use issues and public-public or public-private considerations.
- Evaluation of operational, ridership and revenue potentials with such details as are possible given available information gathered during task #1. This will include using the latest version of the SERPM model to make network and land use adjustments consistent with the proposed Advanced TODs and provide results of the impact to ridership for a potential Advanced BT system along MDX facilities. The analysis should also include the potential passenger costs associated with the incremental ridership generated by the proposed Advanced TOD’s and MDX revenue potential associated with the development make up of the Advanced TOD’s. Analysis should identify the increase in population/employment and corresponding transportation demand and transit ridership as a result of potential Advanced TODs and P&R and compare to available ridership analysis.
- Identification of capital and operating costs factors.
- Initial assessment of potential Advanced BT technology and delivery options including a review of MDX data regarding various delivery options based upon assignments MDX has already had undertaken (Miami-Dade Transit, Public-Private Partnership, Public-Public Partnership, turnkey, or other options).
- Initial briefing and level of interest evaluation of additional Public Partners (Sweetwater, Doral, Miami, Miami Beach, Miami-Dade County, FDOT District 6, Miami-Dade MPO, Miami-Dade Aviation Department, and others).

3. OTHERS CONSIDERATIONS
- Correlation factor between Advanced TOD population/employment and ridership per other experiences country wide.
- Components of Benefits (qualitative and quantitative) and Cost.
4. FUTURE INTELLIGENT TRANSPORTATION SYSTEMS (ITS) NEEDS to be addressed during the Project:

- Incorporation of information developed by MDX during completion of the System-wide Master Guide Signs Study that comprehensively assessed the addition of Dynamic Messaging Signs (DMS) within the MDX system roadways (40034).
- Real time information systems, transit specific electronic fare collection systems, passenger counting systems, transit signal priority, and dynamic messaging (traveler information and event signaling, congestion and construction project information, Advanced BT System information as to arrival times, travel times and more, emergency evacuation routes, automatic vehicle location systems, voice and other announcement/communications systems, and other information of use to MDX customers). Transit fare collection information and technology applications being implemented by MDT will also be reviewed for an assessment of compatibility.
- Additional system performance measures (operations and maintenance tracking and incident management).
- Other considerations- Prior to completing the following tasks as listed below, an interim report regarding the above stated research and strategy identification will be provided to MDX.

5. DESIGN STUDIO, CONCEPTUAL DESIGNS, AND ACCESS MAPPING OF TODs:

- Design Studio - FIU School of Architecture (SoA) design studio students and faculty have been developing conceptual designs for a TOD on the FIU Maidique Campus at Dr. Jose A. Marques Boulevard (S.W. 8th Street/Tamiami Trail/US 41) and S.W. 109th Avenue (Andrews Avenue). The studio has encouraged creativity and interaction with Lehman Center personnel and SoA faculty, who have been invited to critique the students work. Based upon the work and interactions, graduate architectural students will be selected to undertake conceptual design and access map work with FIU Professors as described below.
- Conceptual design and rendering of Advanced TODs at FIU MC and MIA/MIC and access mapping other Advanced TODs – Professor Ramon Trias working with selected architectural graduate students will prepare a report, which will include the following: analysis of site conditions and opportunities, a written description of projects and recommendations, general sketches and maps that locate and describe proposed projects, photographs of
existing conditions and of examples of comparable projects. The report will
at least define and illustrate the proposed Advanced TODs at FIU Maidique
Campus (at and adjacent the Gold and Blue Parking Structures and nearby
buildings) and at MIA/MIC and functional design concepts from the point of
view of town planning, architecture and improved transit access. The report
will also provide a broad mapping of access opportunities for other Advanced
TODs sites between Miami Beach and Sweetwater. Potential park-and-ride
opportunities will be explored for the Advanced BT along the SR 836 to the
Advanced TOD areas and investigated for development of park and ride.

- Potential revenue sources available to MDX or another public entity will be
  examined in association with the Advanced TOD opportunities that could be
  used to offset the cost of operating the Advanced BT System.
- The work from the studio, selected architectural graduate students, and FIU
  Professors will result in several options and ideas, which will facilitate the
  process of making decisions to accomplish MDX and FIU transportation
  priorities and goals. Special emphasis will be given to the likely impacts to:
i) the number of customers expected to use the Advanced BT System and
Advanced TODs; ii) the University at large; and, iii) the surrounding
community and municipalities.

6. LOCATE AND BROADLY DESCRIBE OTHER POSSIBLE ADVANCED
TODs provided in the MDX/FIU Partnership PowerPoint presentation dated
May 21, 2009 (slides 6, 7, and 8), additional destinations to be served,
alternatives, and access issues.

7. DRAFT PROPOSED SCOPES OF SERVICES FOR THE 2ND AND 3RD
TASK ASSIGNMENTS to describe more detailed plans for an Advanced BT
System and Advanced TODs, and determine the feasibility of the Project:
Advanced BT System along the Dolphin Expressway Corridor and at least two
associated Advanced TODs.

C. PROJECT ASSUMPTIONS:
It is assumed that the Advanced BT System with Advanced TODs as
conceptualized and planned will provide, in one form or another, the following.
These assumptions will need to be validated as part of these TA#1 efforts:

1. Frequent services on an operationally maximized Dolphin Expressway (based in
   part on planned improvements in the funded MDX Work Program) with
   departures from the Advanced TODs at intervals of 10 minutes or more.
2. Integrated fare systems.
3. ITS components that smartly manage congestion and capacity by closely monitoring facilities, tracking vehicles, and optimizing their utilization through technology and tolling strategies and real-time customer communications.

4. Express movements for cars, trucks, and Advanced BT vehicles along the Dolphin Expressway and adjacent access roadways. Due to ITS improvements and toll based demand management systems the lanes of traffic never congest and car traffic is given at least three timely alternatives to the immediate use of the Dolphin Expressway:
   - use of the local street network options based upon real-time communication of current traffic conditions;
   - direct access to parking within Advanced TODs adjacent to the Dolphin Expressway or adjacent access roads for intermediate shopping and daily destinations that extend trip cycles;
   - direct access to parking within Advanced TODs for immediate transport to other TODs via Advanced BT Systems operating on the Dolphin Expressway and adjacent access roadways;
   - state of the practice Advanced BT and transit greenway vehicles and corridors;
   - Advanced Transit Stops (ATS) to improve access and timely arrival and departures of Advanced BT System vehicles via improved bus transit stations and stops strategies, technologies and communications;
   - state of the practice ITS communications with the customers within the Advanced TODs and ATS; and,
   - improvements to and from state of the practice structural pedestrian-oriented mix-use parking facilities located within the Advanced TODs adjacent the ATS.

D. PROGRESS MEETINGS:
FIU will participate in regularly scheduled (anticipated bi-weekly or monthly as determined by MDX) progress meetings with MDX and GEC staff throughout the duration of the task assignment expected to be completed within 6 months.

E. TASK ASSIGNMENT #1 WORK PRODUCT/Deliverable:
Project Initial Report consisting of relevant information summarizing the work performed in accordance with this Scope of Services.
## F. Preliminary Cost Estimate to Conceptualize an Advanced BT System and Advanced TODs:

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### Labor: $143,062

### Expenses: $15,465

### Subtotal: $158,527

### 15% Indirect Costs: $23,799

### Total Estimated Costs: $182,326
Task Authorization  
TA # 1  
Exhibit B  
Staffhour Forecast

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**TOTAL LABOR PER PROJECT** $152,599.43

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