

# Partnering for 21<sup>st</sup> Century Prosperity

**UniversityCity**, A Catalytic Local Project  
of Regional Significance



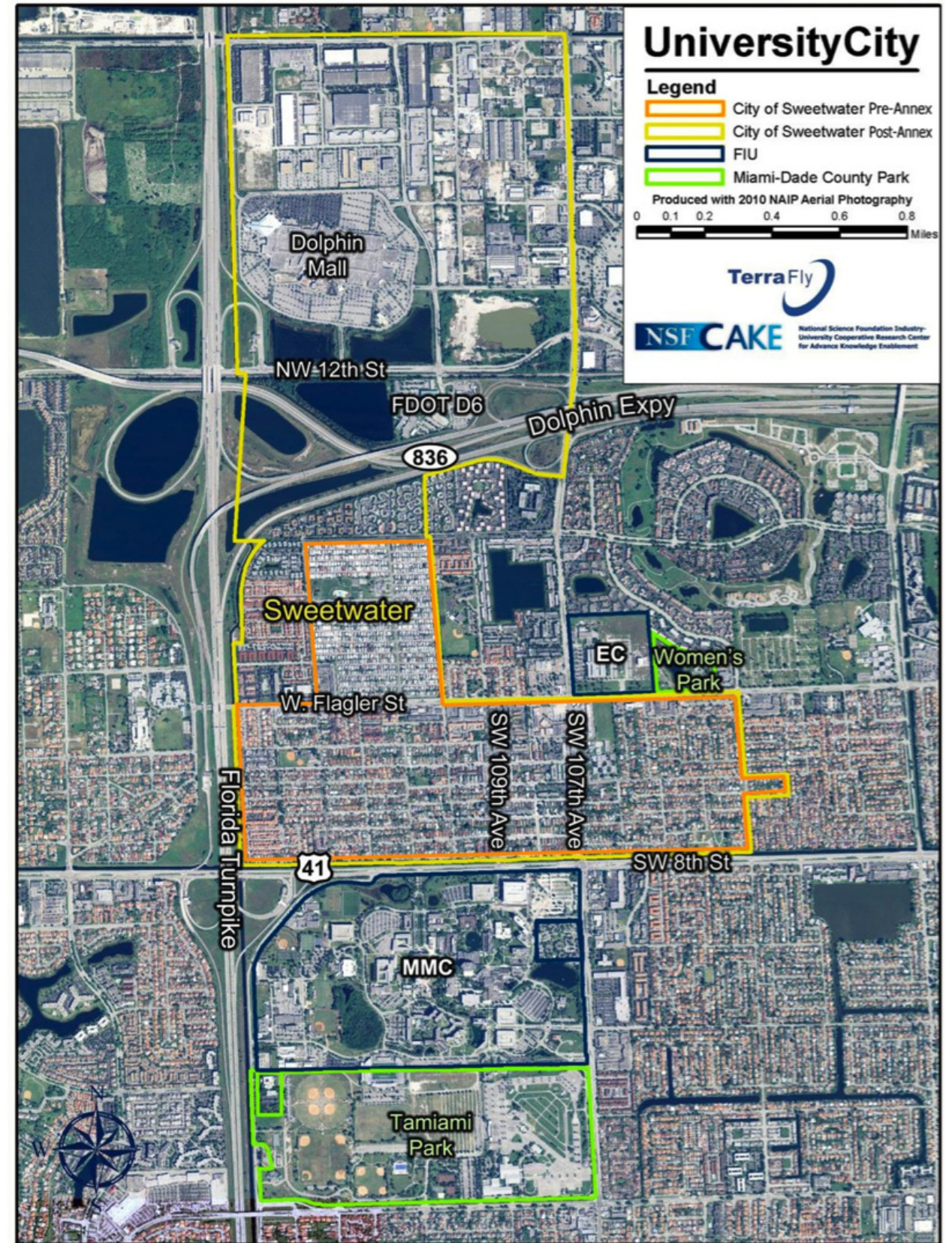
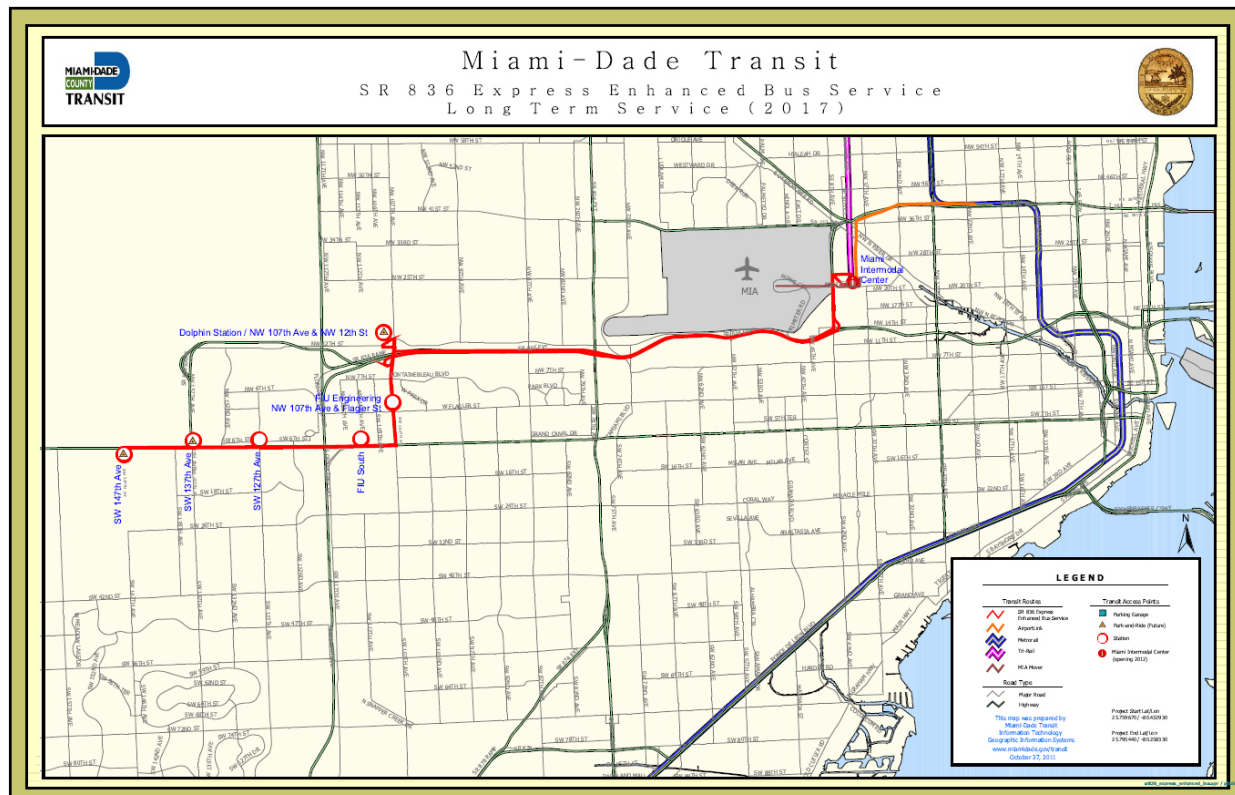
**FIU** | FLORIDA  
INTERNATIONAL  
UNIVERSITY

### The UniversityCity Coalition

A collaboration between Florida International University (FIU), Miami-Dade Expressway Authority (MDX), the City of Sweetwater, Florida DOT, IBM, TY Lin and others including Miami-Dade County, is exploring USDOT support for a project of regional significance which is the missing ingredient for a Southeast Florida multimodal system and could result in an Advanced Transit Oriented Development (ATOD) prototype for the nation and state of the art wayfinder smart phone application.

This project already has been judged in line with USDOT priorities. It supports a Miami-Dade Transit project, MDX interests, FDOT projects and leverages FIU's location as a major educational, cultural, medical, athletic and social destination and its catalytic potential for innovative transportation and urban development solutions for our community.

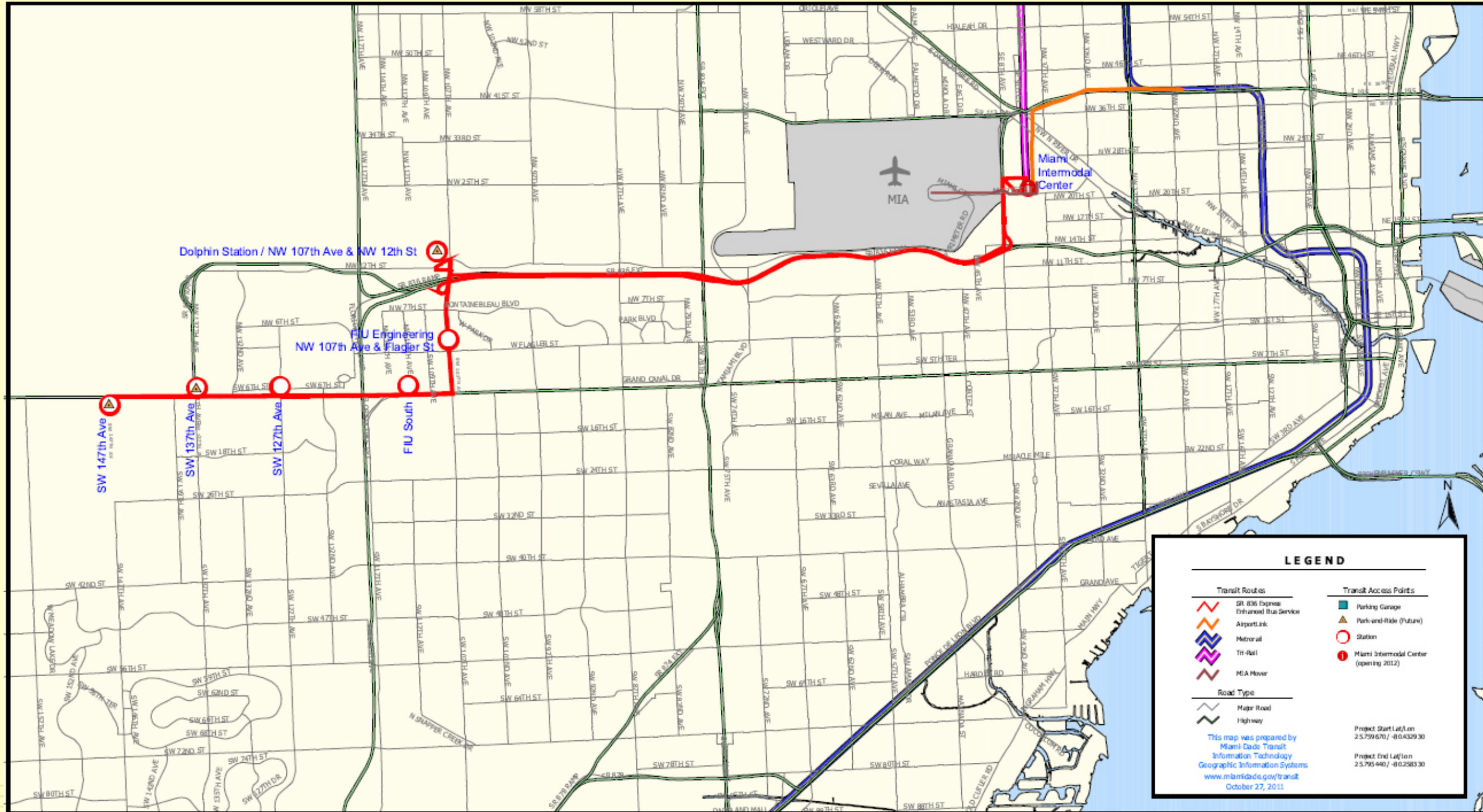
By enhancing ridership of planned SR 836 Enhanced Express Bus Service, connecting two major Miami-Dade County destinations with an alternative to automobiles, and launching a new, comprehensive IT consumer app in partnership with IBM, the project has the potential of winning USDOT support as a project of regional and national significance. A collaborative vision and unified action could be the winning strategy for success.





# Miami-Dade Transit

## SR 836 Express Enhanced Bus Service Long Term Service (2017)



**LEGEND**

<b>Transit Routes</b>	<b>Transit Access Points</b>
SR 836 Express Enhanced Bus Service	Parking Garage
Airport Link	Park-and-Ride (Future)
Metrorail	Station
Tri-Rail	Miami Intermodal Center (opening 2012)
MIA Mover	
<b>Road Type</b>	
Major Road	
Highway	

This map was prepared by  
Miami-Dade Transit  
Information Technology  
Geographic Information Systems  
[www.miamidade.gov/transit](http://www.miamidade.gov/transit)  
October 27, 2011

Project Start Lat/Lon  
25.799670 / -80.432930

Project End Lat/Lon  
25.795440 / -80.258330

## Critical Components of the UniversityCity Vision

- ▶ **FIU Smart Garage**, a \$37 M approved project that will serve to spur a catalytic Advanced Transit Oriented Development (ATOD)
- ▶ **SR 836 Express Enhanced Bus Service** between SW 147th Avenue and the MIC at MIA
- ▶ **Informed Traveler IT apps**, a state of the art “wayfinder” program for transportation customers developed in partnership by FIU, IBM, and MDX will facilitate multi-modal utilization and SR 836 decongestion, with potential benefit for all of South Florida as a critical regional innovation.

The proposed Informed Traveler Program and Applications (ITPA), and ITS facilitated by cutting-edge research, would provide personalized, timely information and advice regarding the most efficient and cost effective travel paths for consumers. The focal point of the system will evolve over time from supporting travel to and from UniversityCity to the Miami Intermodal Center (MIC) to travel anywhere in Miami-Dade County and beyond.

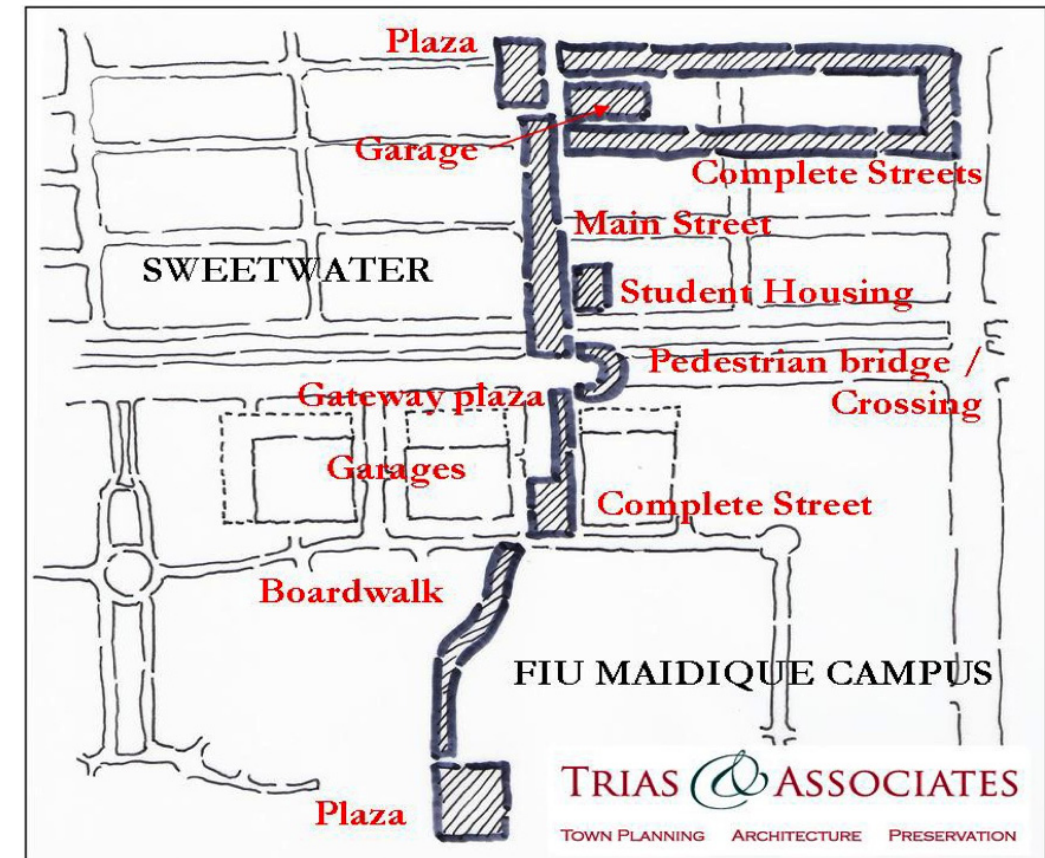
ITS enables transportation agencies to collect the real-time data needed to measure and improve the performance of the transportation system, making ITS the centerpiece of efforts to reform surface transportation systems.

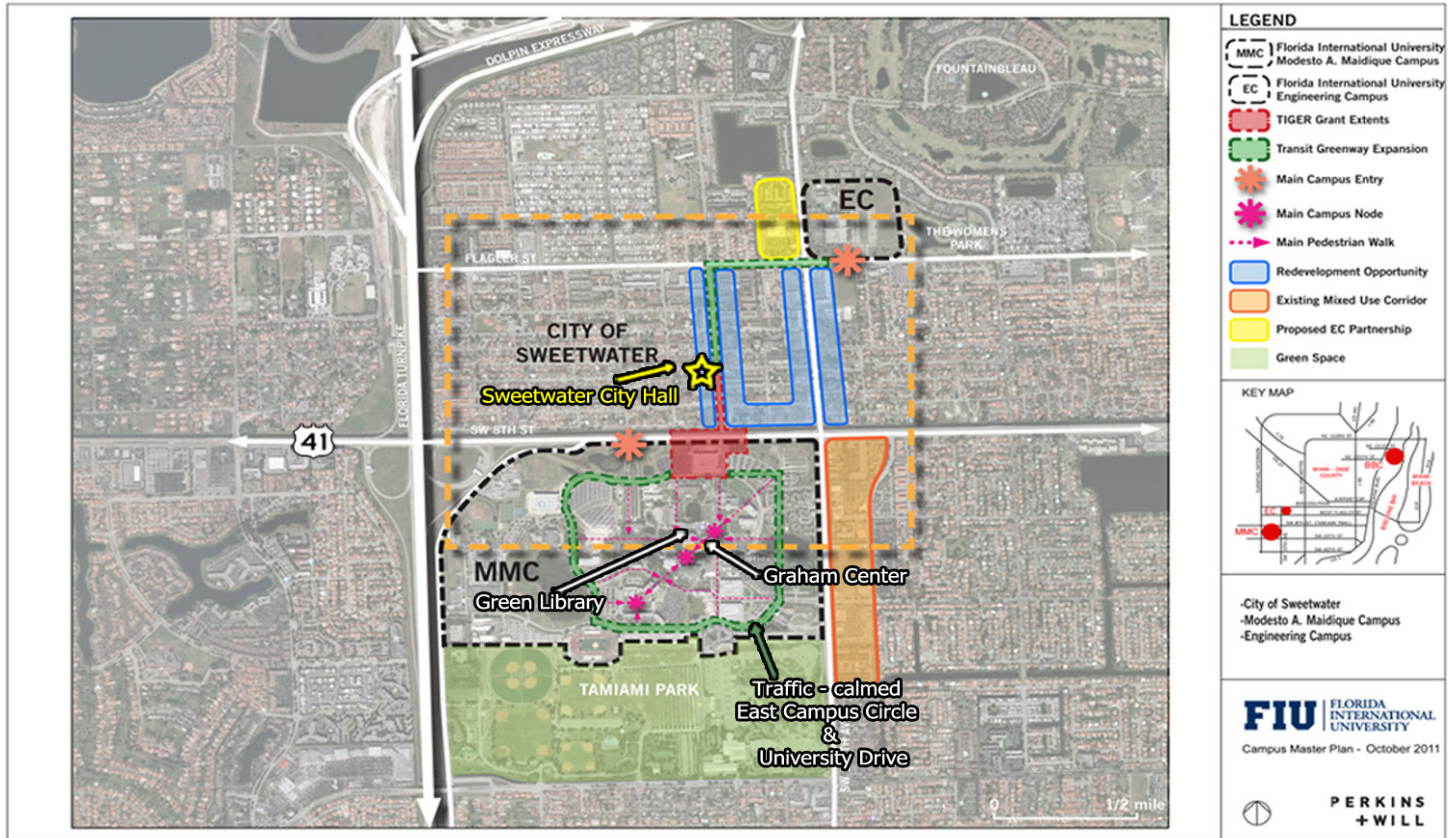
- ▶ **Smart Growth changes to the built environment** on campus and in Sweetwater, including traffic-calming and other safety elements. A critical element is a pedestrian-friendly bridge across 8th Street connecting the FIU campus with 109th Avenue, Sweetwater’s main street, and the new UniversityCity urban center.

### FIU and City of Sweetwater Relationship



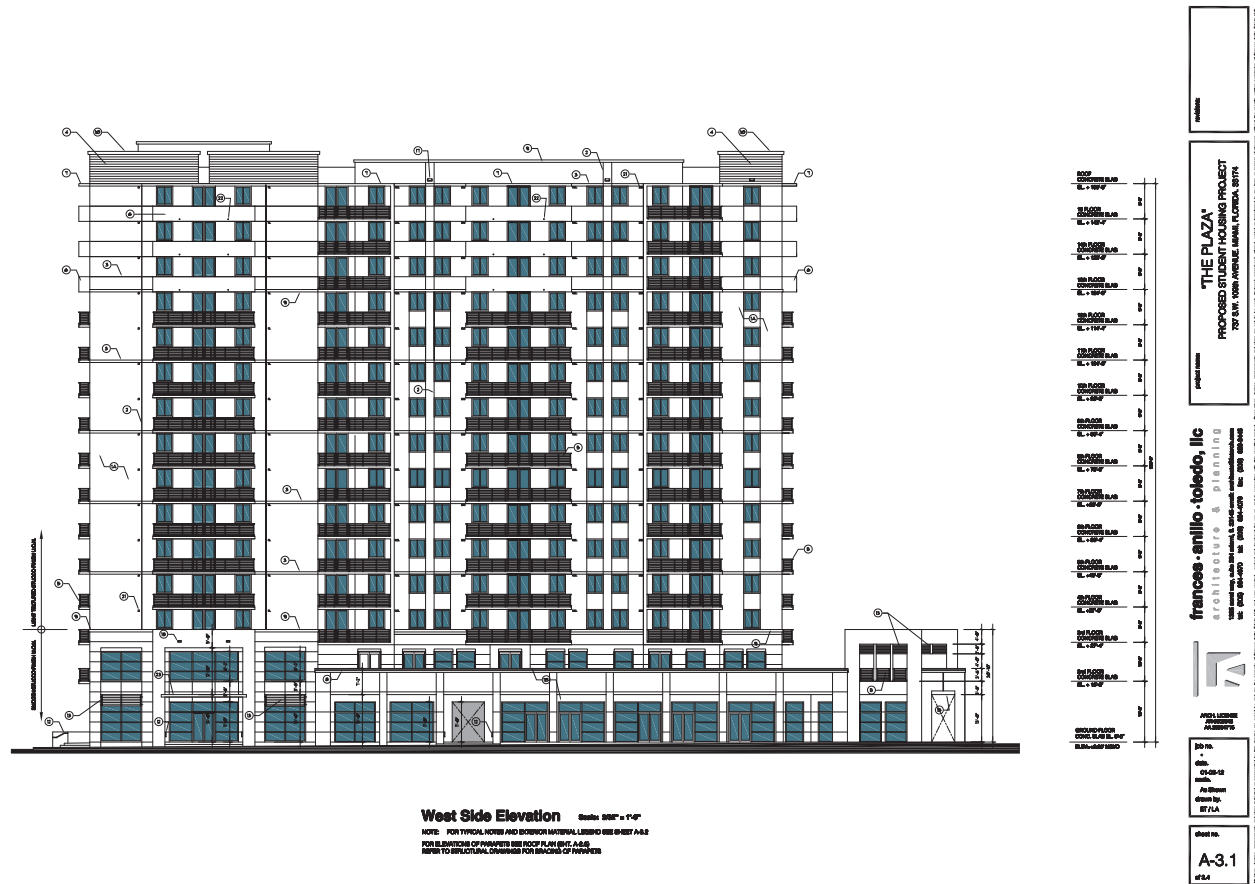
The goal is to aggregate pedestrians, substantially increase transit ridership, increase modal shift by 10% and transform the area into a vibrant hub of culture, education and innovation business incubator district for medical services and health sciences.





### 15 Story Student-Oriented Complex

Construction of the first 15 story student-oriented complex in Sweetwater is already underway. FIU students will park in the university garage.



### Parabola Bridge

Signature Parabolic Pedestrian-friendly bridge between FIU campus and Sweetwater's Main Street designed during FIU leadership charette by FIU architecture students and faculty (Fall 2011).

A pedestrian-friendly bridge is needed to facilitate safe walkability between the campus and Sweetwater's emerging urban center.



A bridge is critical to pedestrian safety.



**West Side Elevation** Scale: 3/32" = 1'-0"

NOTE: FOR TYPICAL NOTES AND EXTERIOR MATERIAL LEGEND SEE SHEET A-3.2  
 FOR ELEVATIONS OF PARAPETS SEE ROOF PLAN (SHT. A-2.6)  
 REFER TO STRUCTURAL DRAWINGS FOR BRACING OF PARAPETS

revisions:

project name:  
**"THE PLAZA"**  
 PROPOSED STUDENT HOUSING PROJECT  
 737 S.W. 108th AVENUE, MIAMI, FLORIDA, 33174

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UniversityCity is the result of a new working relationship between the university and the City of Sweetwater and a Miami-Dade Expressway Authority (MDX) initiative, focused on research and planning for the deployment of a bus rapid transit system between the university's main campus and the Miami Intermodal Center (MIC) at Miami International Airport (MIA).

**FIU and the City of Sweetwater have been working together to pursue joint economic development and urban planning goals, but the initiative also has regional significance.**

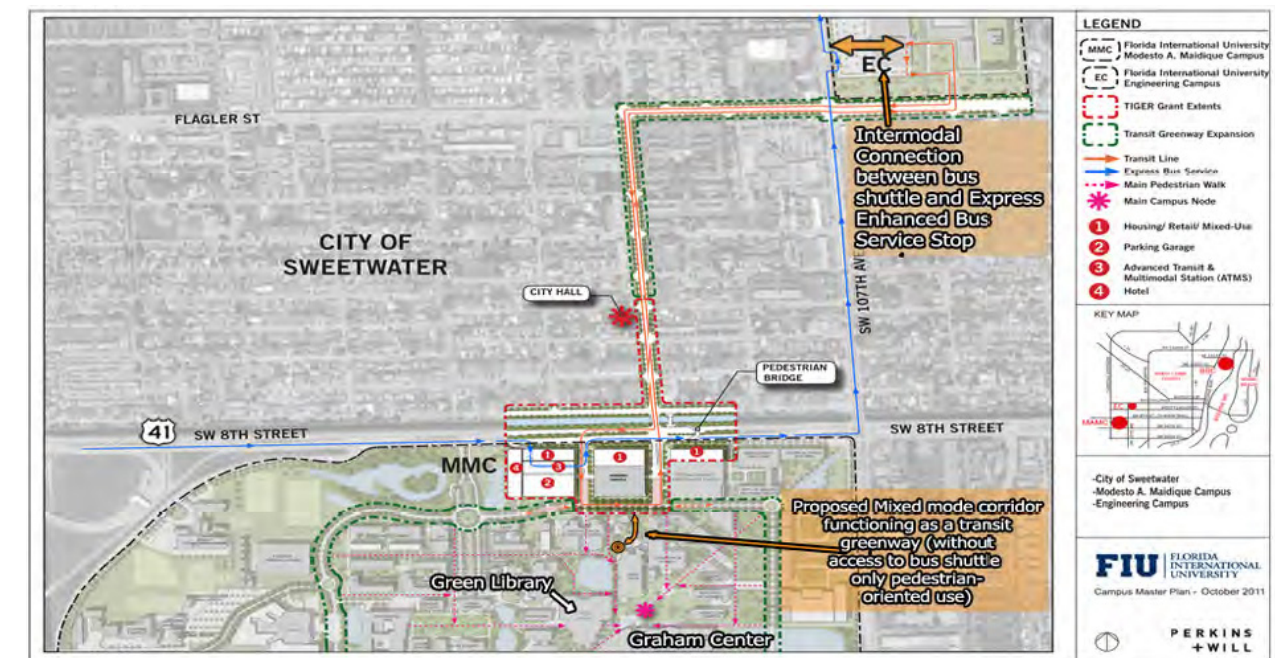
Significant on-going goals include critical transportation investments in the economic development potential of Sweetwater and West Miami-Dade; the deployment of a robust bus rapid transit system; reductions in traffic congestion, travel time, accidents, vehicle miles travelled, and travel costs for business and households; and pedestrian safety for the 50,000 students attending one of the nation's largest universities.



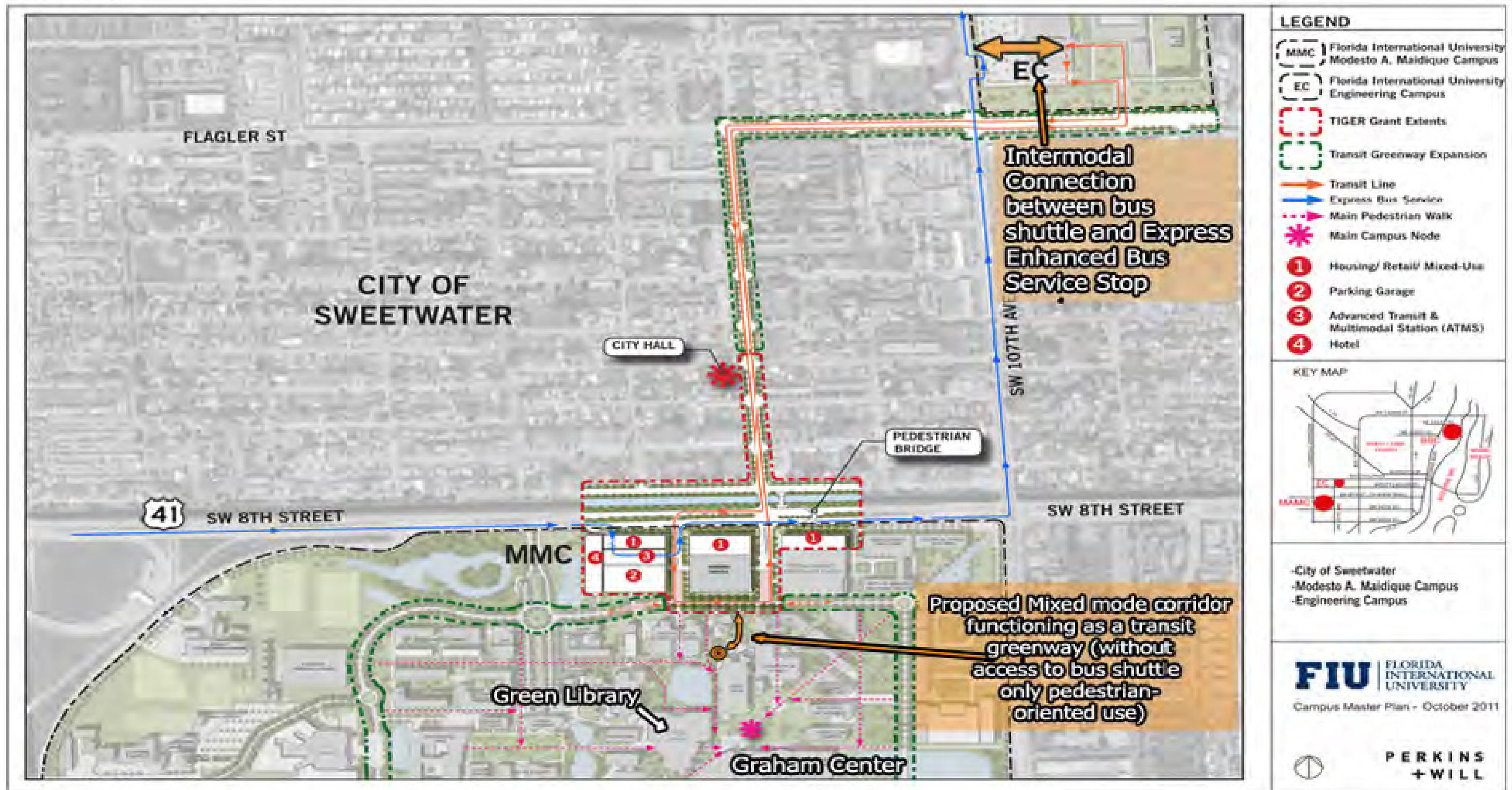
The coalition, having pursued previous rounds of TIGER grants (<http://cake.fiu.edu/TIGER2012/>), and garnered positive reaction from the USDOT Secretary and professional staff, is exploring creative funding strategies that will demonstrate the connections between sustainability, innovative mobility, technology transfer, new urbanism, smart growth and equitable economic prosperity led by the nation's top minority-serving research university and its community and industry partners.

The coalition is coordinating a set of more than **\$100 million in projects** in addition to the most recent federal funding request; however, federal funds could be critical to completing certain elements and the ultimate success of the UniversityCity vision.

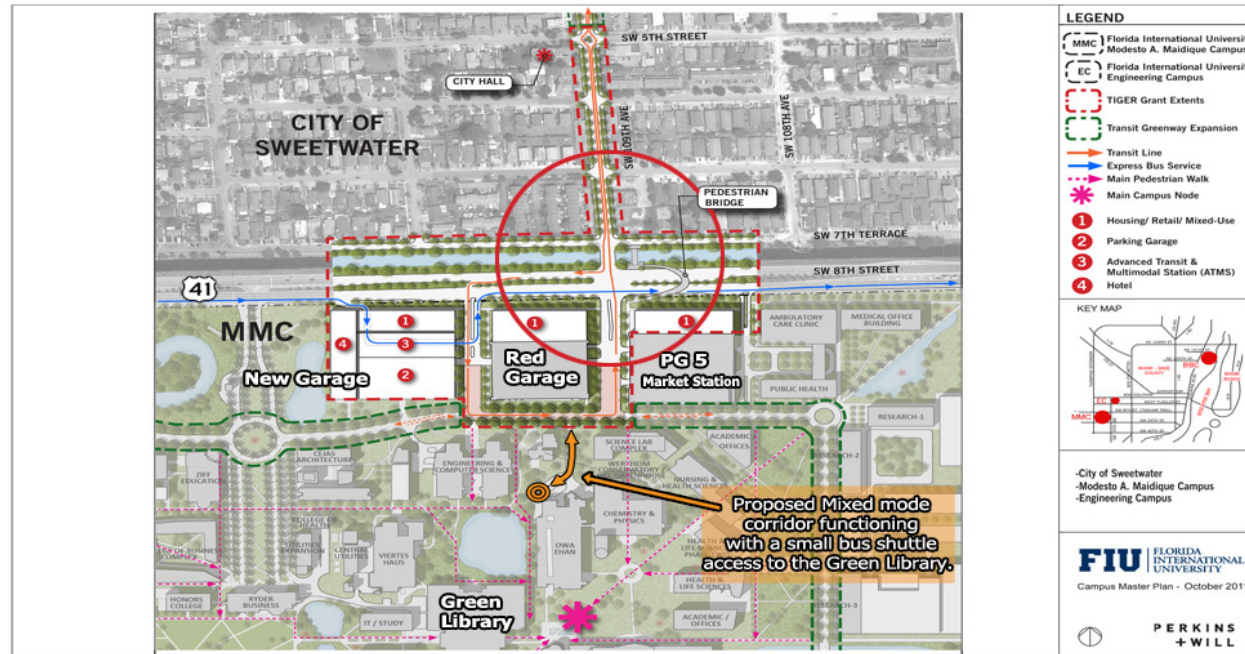
**Express Enhanced Bus Service** proposed by Miami-Dade Transit could enter the ATMS from US 41 and return again quickly to the highway after picking up a load of passengers headed for Miami International Center (MIC) and Downtown Miami, with a mixed-mode corridor.



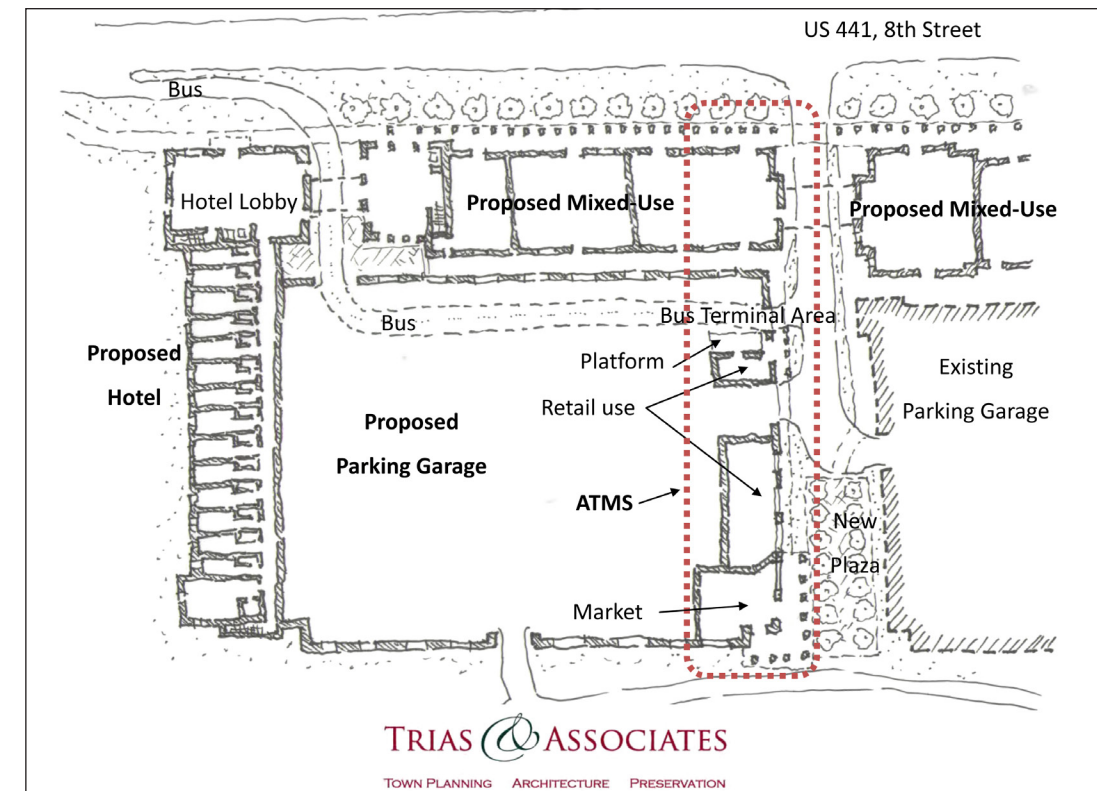




**Express Enhanced Bus Service** proposed by Miami-Dade Transit could enter the ATMS from US 41 and return again quickly to the highway after picking up a load of passengers headed for Miami International Center (MIC) and Downtown Miami, with a small shuttle to the OWA EHAN building on the MMC.



## Proposed FIU Advanced TOD pending further campus master planning review:

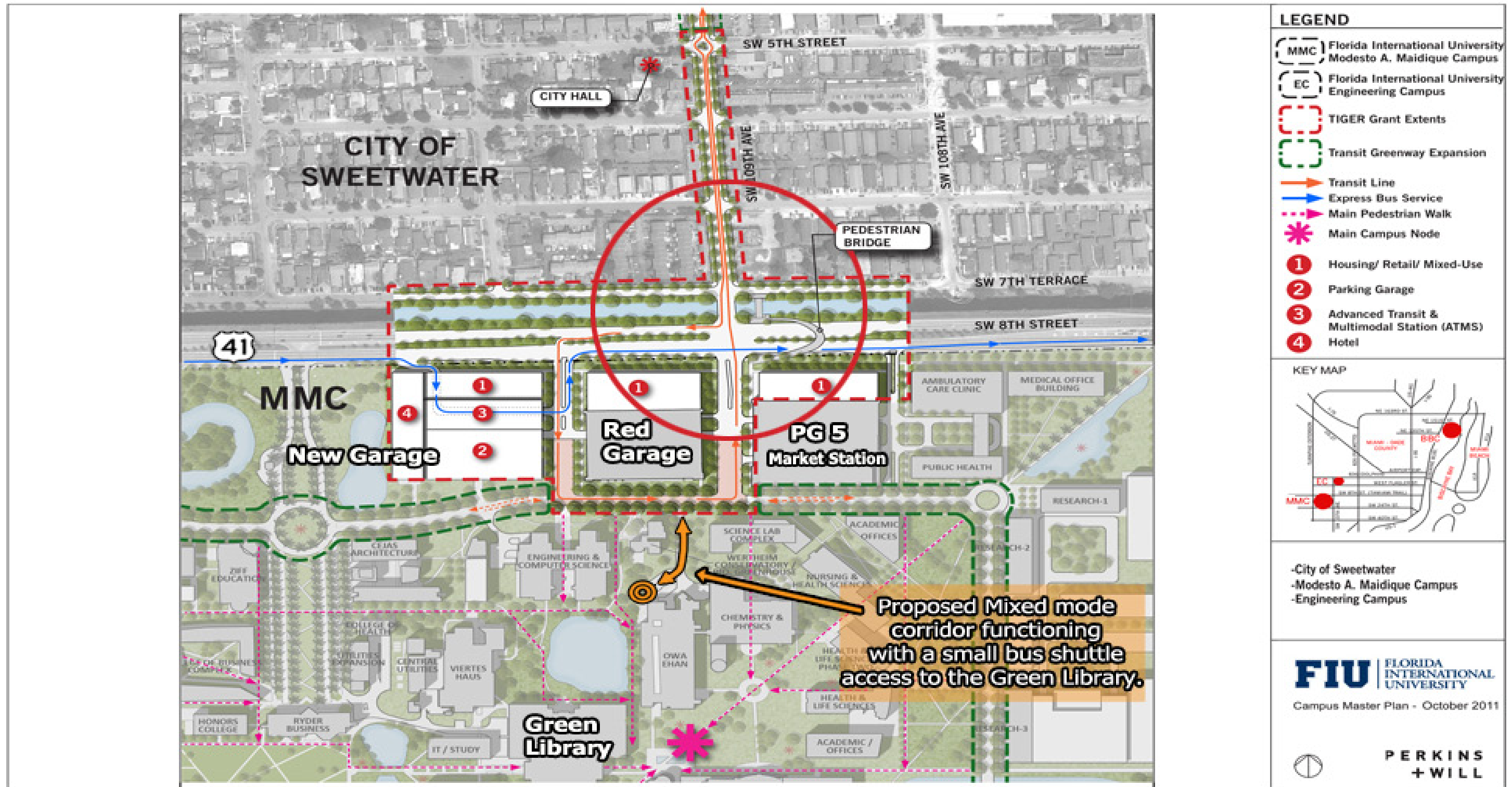


**A close collaborative partnership is essential to leverage planned infrastructure investments and maximize the value of innovative transportation solutions to benefit the citizens of Miami-Dade County and the rest of South Florida.**

**As stated in Miami Dade Transit’s TIGER proposal, “The transit terminals will enhance public safety by providing a centralized location for passengers to transfer safely between bus routes in lieu of high volume traffic roadways.”**

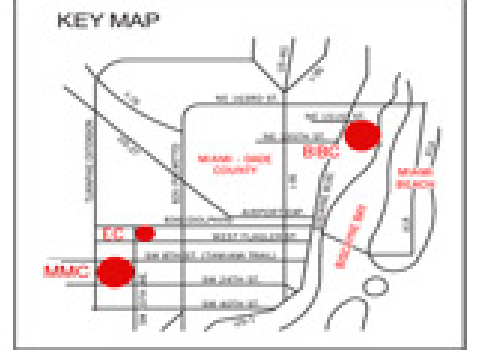
“This route would be unique in that it has the potential to not only feed trips from the west to Metrorail and the Airport but also provide reverse commute services from the MIC to job rich areas in the west side of Doral and the recently annexed north side of the City of Sweetwater. This service will also include a Transit Signal Priority (TSP) system to extend the green phase or shorten the red phase allowing for reduced travel time in the corridor and improved schedule adherence. This service would attract automobile commuters to switch from single occupancy car trips to transit, thus reducing traffic congestion along heavily congested State Highway System Roads (reducing by as many as 1,850 single occupant vehicles). The reduction in single occupant vehicular trips will reduce emissions and help maintain air quality, which will help protect the environment thus improving energy efficiency, reducing dependence on oil, reducing greenhouse gas emissions and benefitting the environment.

The purpose of the proposed SR-836 Express Enhanced Bus Service project is to enhance transit passenger mobility and safety in the area, foster livable communities, increase business opportunities in the area, reduce traffic congestion and contribute to improved air quality.”



**LEGEND**

- MMC Florida International University Modesto A. Maidique Campus
- EC Florida International University Engineering Campus
- TIGER Grant Extents
- Transit Greenway Expansion
- Transit Line
- Express Bus Service
- Main Pedestrian Walk
- ★ Main Campus Node
- 1 Housing/ Retail/ Mixed-Use
- 2 Parking Garage
- 3 Advanced Transit & Multimodal Station (ATMS)
- 4 Hotel



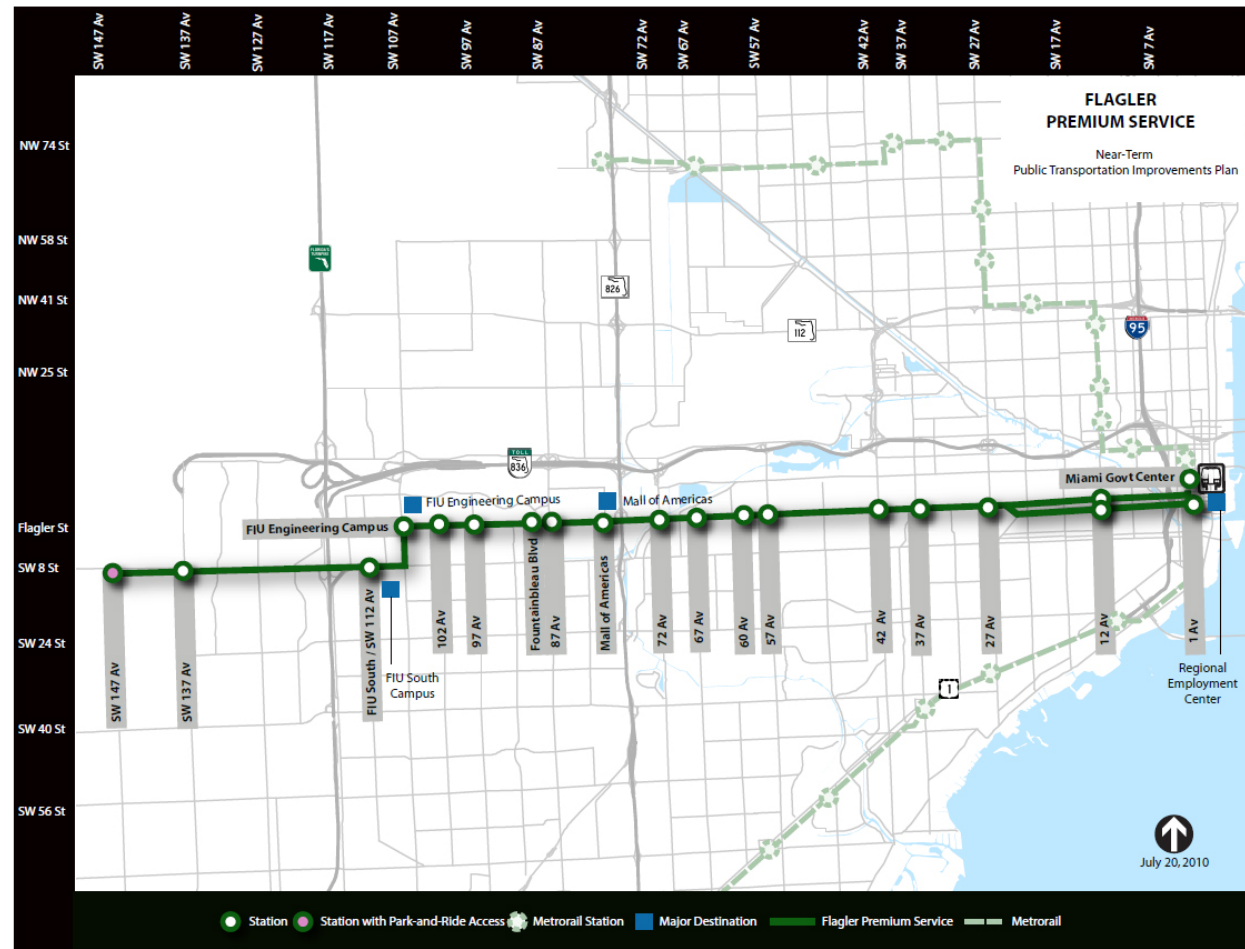
-City of Sweetwater  
 -Modesto A. Maidique Campus  
 -Engineering Campus

**FIU** FLORIDA INTERNATIONAL UNIVERSITY  
 Campus Master Plan - October 2011

**PERKINS + WILL**

FIU is ready to partner with community and regional stakeholders in support of innovative Worlds Ahead transportation solutions that leverage planned infrastructure investments to achieve near-term and long-term goals.

### Near-term Plan



### Long Term Goals for Sustainable Community

1. Provide more transportation choices.
2. Promote equitable, affordable housing.
3. Enhance economic competitiveness.
4. Support existing communities.
5. Coordinate policies and leverage investment.
6. Value communities and neighborhoods.

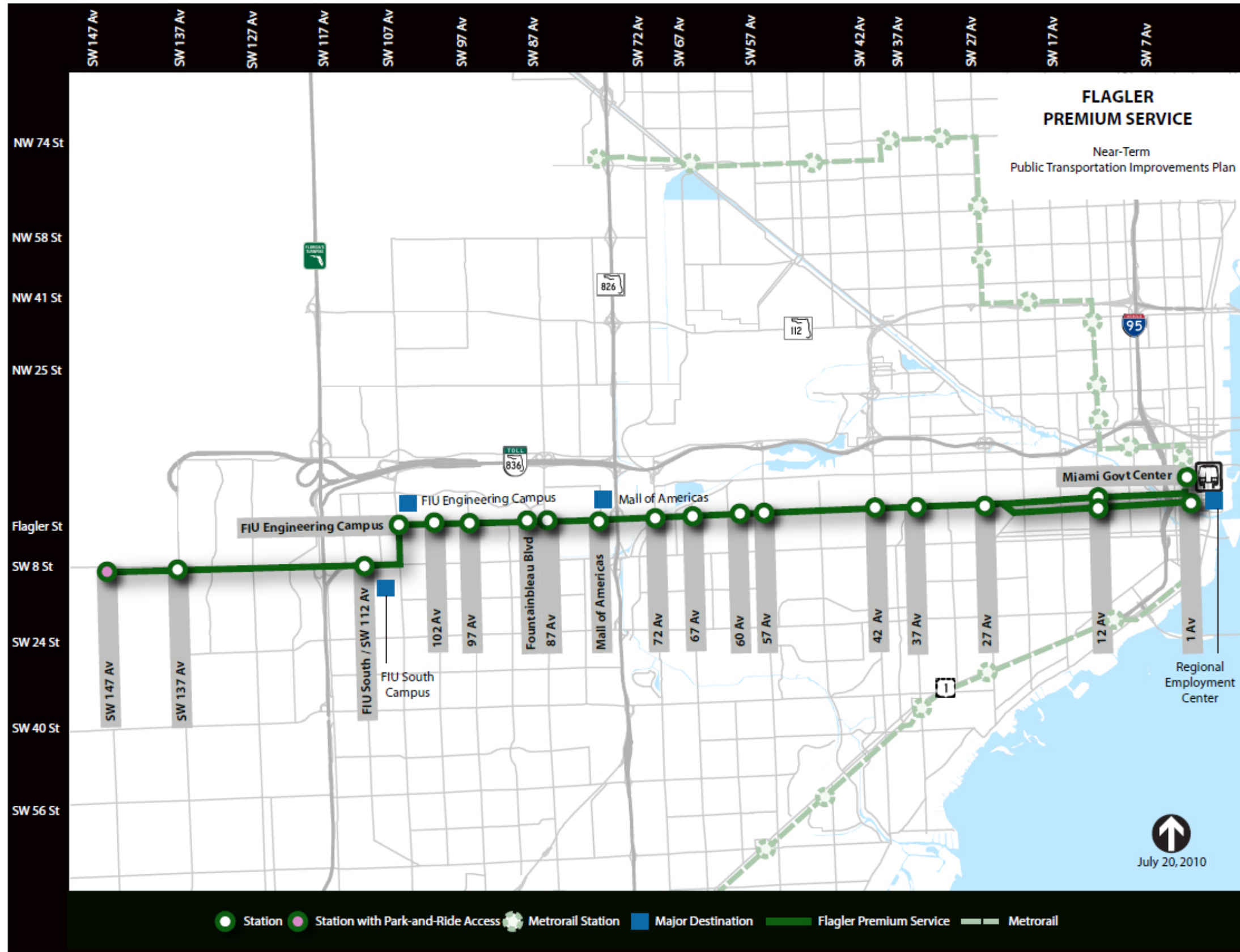
## In Conclusion

The UniversityCity Coalition is exploring multiple sources of funding to implement the features identified in this report that will be a catalyst for a new urban destination in partnership with a large and growing urban research university. A strong collaboration is needed to leverage planned infrastructure investments and innovative technology to develop a viable transit alternative to cars to decongest area highways. As the university grows and Sweetwater develops on both sides of SW 8th Street, careful adjacent improvements and coordinated circulator vehicle networks will be critical to a safe, livable and walkable environment that both reduce congestion and the university's carbon footprint.

Of regional significance, our innovative wayfinder proposal branded as Informed Traveler is being developed with IBM and Miami-Dade Expressway Authority (MDX). Building on a potential customer base of more than 50,000 students, transportation related IT research expertise, and the platform of MDX, FIU is seeking to partner with MDX, FDOT, MDT, and USDOT on a state of the art project that could prove an essential, future decongestion strategy for Miami-Dade County.

Once deployed, and assuming multimodal success, USDOT and regional partners may want to develop more ATODs throughout South Florida and work with FIU to fully deploy ITPA throughout Southeast Florida. As envisioned, this initiative could be a catalytic linchpin to connecting Southeast Florida's emerging multimodal system via: various SR836, I-95, I-595, and I-75 express bus routes to Western and Eastern Broward County, Downtown Miami, the MIC and MIA, Port of Miami, Port Everglades, Amtrak, Metrorail, Tri-Rail, Airport Flyer (to Miami Beach), South Miami-Dade Busway, Kendall Cruiser and the proposed Fort Lauderdale Streetcar service. It's a big vision that could be critical to USDOT support for a project of regional significance.

**But first, we must take the next step together.**



## Informed Traveler Program and Applications (ITPA)

The transportation system benefits of basic intelligent transportation systems (ITS) are well known. They have been found to maximize the capacity of infrastructure and reduce the need to build additional highway capacity. For example, ITS can contribute significantly to reducing congestion, which costs U.S. commuters 4.2 billion hours and 2.8 billion gallons of fuel each year, costing the U.S. economy up to \$200 billion per year. Overall, ITS can reduce congestion by as much as 20 percent or more. ITS also enables transportation agencies to collect the real-time data needed to measure and improve the performance of the transportation system, making ITS the centerpiece of efforts to reform surface transportation systems and hold providers accountable for results.

The proposed **Informed Traveler Program and Applications** (ITPA), an ITS facilitated by cutting-edge research, would provide personalized, timely information and advice regarding the most efficient and cost effective travel paths for consumers. The ITPA will use a smartphone-based interface to provide personalized, timely information and advice regarding the most efficient and cost effective travel paths for users. The software will be predictive in nature, allowing users to make better travel decisions even before they get in their private vehicles. Taking each user's preferences, needs, situational conditions, safety concerns, and schedules into consideration, the system might recommend the use of public transit, a delay to the start of a trip to avoid congestion, or an alternate route that avoids construction, accidents, or other delays. ITPA will also offer its users express transit routes and faster parking in smart garages as major time savers. By giving travelers both the information and the courage to change routes or take transit instead of following a reflective pattern of automotive travel, this unique and innovative combination of technology and transit will be a first-of-its-kind effort that will serve as a model for other communities throughout the nation.

The ITPA is envisioned as a region-wide system for use throughout the eastern South Florida region. The focal point of the system will evolve, over time, from supporting travel to and from UniversityCity, to travel to the Miami Intermodal Center (MIC), to travel anywhere in Miami-Dade County, to travel to and from any regional destination within the Southeast Florida Region. This will greatly expand the usefulness and desirability of the system.

ITPA's technologies are enhanced through the application of cutting-edge research supported by a \$3M National Science Foundation (NSF) multi-institutional grant under the overall directorship by Dr. Naphtali Rishe at Florida International University's (FIU) Industry-University Cooperative Research Center. FIU, the University of Illinois at Chicago, Brown University, and Northwestern University are developing a high-performance model for information processing and fusion in mobile environments, providing a collaborative integration between the real and virtual worlds. This model, applicable to the fields of computational transportation and mobile sensing, enables querying and visualization of moving objects data (MOD) and their relationship to static and dynamic geospatial data. Expected research results include: balancing the processing of location-based data streams coming into MOD servers with efficient processing of visualization-related queries; determining optimal distribution of queries/tasks among multiple regional servers; maximizing the scalability of prediction techniques in terms of efficient management of objects' data and queries; modeling data uncertainty; coupling map generalization with trajectories' data reduction when zooming across different scales; resolving issues of privacy and security; and enabling semantic querying. These research outcomes will be tested in ITPA.