University City Bridge and Associated Improvements

Transportation Alternatives Program (TAP)

Application for Fiscal Year FY 2020-21
2016 Application Cycle
Multimodal improvements funded by $11.4 million in TIGER funds, $1 million in 2012 TAP funds, and $3.1 million in match funds are being used to **bridge across a significant barrier (US 41) that exists between FIU & Sweetwater.**

Because approximately $100 million of new development has occurred or is underway in Sweetwater in anticipation of UniversityCity improvements, it is important to understand the **three UniversityCity components** that are being deployed.
1. Pedestrian-Oriented Transit Access Infrastructure to Express Transit

University City Bridge, plaza, complete street & walkway improvements are linked to rapid transit available and proposed at FIU:

- Golden Panther Express
- 836 Express as proposed by MDT for 2019
- 75 Express if extended to University City
- HEFT Express if deployed
2. Informed Traveler Program and Applications (ITPA)

An advanced electronic expert wayfinding system that provides:

- Predictive & multimodal guidance to travelers via smart phones and other electronic devices
- Improved trip characteristics & reduced congestion by dispersing travelers in time, place & mode to alternative destinations
- Large-scale transportation demand management efficiencies starting with smart community transit and smart parking
3. Improved Community Transit

Small shared vehicles that operate as advanced feeder bus services linked to Golden Panther Express, 836 Express & in time the 75 Express and HEFT Express:

- Repaired, rebuilt & enhanced to reduce or eliminate fossil fuel emissions
- Equipped with ITPA technologies; to begin efforts to provide for very smart demand responsive transportation services
- Improved to enhance customer experience

This community transit will eventually become an electric, autonomous, ITPA-enabled, demand responsive 20 vehicle fleet improved to enhance customer experience & operated by the UniversityCity Transportation and Management Association of Sweetwater, Inc. (UTMA)
Panther Station
Miami-Dade County “836 Express”
Location of University City Bridge
West of the US 41/SW 8th Street & SW 109th Avenue intersection
University City Bridge Schedule & Permits

Schedule:
- Begin Design - January 2016
- Complete Design – November 2016
- Foundation Construction – October 2016
- Main Span Construction– July 2017
- Complete Construction – June 2018

Permits:
- FDOT
- SFWMD
- FIU
- Florida State Fire Marshal
- MDC Office of Elevator Safety
- USACE
- Sweetwater
- Others
Question: With students living on both sides of US 41 and a desire to provide educational and job opportunities at FIU to Sweetwater residents, how do you make crossing this highway as safe and attractive as possible for pedestrians and bicyclists?

Answer: Create an attractive, safe, highly visible & well-illuminated nighttime smart urban space at and adjacent to the UniversityCity Bridge with an abundance of places to sit, tree canopies, food vendors, hardscape & water features.

Due to funding constraints, the bridge to be built by MCM/FIGG will meet most, but not all, requirements for a highly successful project.

After a careful design review by FIU, Sweetwater and MCM/FIGG, the following six bridge improvements were identified as being capable of significantly improving the bridge and its usage as highly attractive public space.
1: NORTH PLAZA STAIRCASE ENHANCEMENT:
WE NEED $110,000 NOW OF THE TOTAL COMPONENT
COST OF $110,000

Add a westward oriented staircase in Sweetwater to be used as a place from which to:

- Enter into or exit from Sweetwater
- Easily see people and other items of interest in the expanded Brothers to the Rescue Memorial Plaza that stretches east & west of SW 109th Avenue.
2: USE TITANIUM DIOXIDE (TiO$_2$) CONCRETE: WE NEED $182,500 NOW OF THE TOTAL COMPONENT COST OF $365,000

So as to reduce the down time for bridge maintenance & cleaning and making a clear statement that we are committed to clean air and clean surfaces in public spaces; removes nitric-oxide (NOx) from the air emitted as a toxic air-pollutant by fossil-fuel-burning vehicles and provides self-cleaning properties.

The remaining $182,500 will be paid by FIU as additional match funds.
Design & develop this structurally significant bridge (a 30 feet wide & 260 feet long cable stayed segmental bridge weighing 1525 tons) to allow it to be “smart” and “highly populated” as well as “big”.

These items assure timely bridge maintenance & improve ITPA capacity to give useful travel guidance by increasing the information gained about current conditions as soon as such conditions are apparent so the predictive analytics can be timely put to work. The better the information provided, the more likely the pedestrians will gather at this crossroads (the UniversityCity Bridge) to see and be seen as they consider their transit options & Sweetwater or FIU destinations to complete their daily trips.
4: LED LIGHTING & CONDUIT FOR CAMERAS:
WE NEED $20,000 NOW OF THE TOTAL COMPONENT COST OF $100,000

Basic lighting is nice but additional lighting is better from the standpoint of safety & the ability to attract more people to the bridge due to visual effects at night; additional conduit within the bridge structure needs to be designed for additional electrical & communications cabling.
If you want to have high quality public space & want people to enjoy the view from the bridge & therefore attract others to join them, add tables, chairs, power and connectivity to create study and social gathering space.
The plazas at each end of the University City Bridge need to be entries that attract people; this can best be done using kiosks to provide ITPA information to visitors without smart phones or access to ITPA & allowing for, after project completion, small kiosk structures to be installed in the plazas at the bridge terminal points that would sell snacks & sundries or to rent useful items. Kiosks to sell or rent umbrellas on a rainy day or bicycles to explore University City beyond a comfortable walk.
SUMMARY

- North Plaza Staircase: $110,000
- Titanium Dioxide Concrete (50% match): $182,500
- Bridge Health Sensors/ITPA Cameras: $250,000
- LED Lighting and Conduit for Cameras: $100,000
- Tables, Seating and Electrical Outlets: $227,500
- Power and Data Feeds for Kiosks: $50,000
- Permits and Inspections: $80,000

TOTAL: $1,000,000