Florida Department of Transportation PROJECT REEVALUATION FORM

I. GENERAL INFORMATION (originally approved document)

a. Reevaluation Phase: <u>Design Change</u>

b. Document Type and Date of Approval: <u>Type II Categorical Exclusion, approved</u>

Feb. 25, 2014

c. Project Numbers: N/A Pending 434688-1 N/A

State Federal Aid Financial Project Work Program

d. Project Local Name, Location and Limits: <u>UniversityCity Prosperity Project, SW 109th Avenue from approximately 700 ft south of SW 10th Street (Green Library) to SW 6th Street in Miami-Dade County.</u>

- e. Segments of Highway Being Advanced: <u>SW 109th Avenue from approximately 700 ft south of SW 10th Street (Green Library) to SW 6th Street in Miami-Dade County.</u>
- f. Project Segment Planning Consistency: <u>This is a design change reevaluation, and planning consistency is not required.</u>

Currently Adopted CFP- LRTP		COMMENTS									
Y		U UniversityCity Prosperity Project: PE, Right of Way and Construction: Priority I per 2035 LRTP, as nended 20, February, 2014, MPO Board Resolution #01-14.									
PHASE	Currently Approved TIP	Currently Approved STIP	TIP/STIP	TIP/STIP FY	COMMENTS						
PE (Final Design)	Y	Y	\$467,771	2013-2014							
R/W	Y	Υ	\$1,613,040	2013-2014							
Construction	Y	Y	\$13,292,092	2013-2014							

g. Name of Analyst(s): <u>Steven Craig James</u>, <u>RLA – District Environmental Administrator</u>

II. CONCLUSION AND RECOMMENDATION

The above environmental document has been reevaluated as required by 23 CFR 771 or the Project Development and Environment (PD&E) Manual of the Florida Department of Transportation (FDOT). Through the reevaluation, it was determined that no substantial changes have occurred to the social, economic, or environmental impacts of the proposed action that would significantly affect the quality of the human environment. Therefore, the original Administrative Action remains valid.

It is recommended that the project identified herein be advanced to the next phase of project development.

REVIEWER SIGNATURE BLOCK	RE\	VIEWER	SIGNATI	IRF B	LOCK
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District Intermodal Systems Development Manager

III. FHWA (or Lead Federal Agency) CONCURRENCE BLOCK

Federal Highway Administration, Division Administrator

IV. CHANGES IN IMPACT STATUS OR DOCUMENT COMPLIANCE

	YES/	NO	COMMENTS
A. SOCIAL IMPACTS			
Land Use Changes	[X]	[]	See Section A.1
2. Community Cohesion		įxį	See Section A.2
3. Relocation Potential		[x]	See Section A.3
4. Community Services		[X]	See Section A.4
Title VI Consideration	[]	[X]	See Section A.5
Controversy Potential	[]	[X]	See Section A.6
7. Utilities & Railroads	[]	[X]	See Section A.7
B. CULTURAL IMPACTS			
 Section 4(f) Lands 	[X]	[]	See Section B.1
Historic Sites/Districts		[X]	See Section B.2
Archaeological Sites		[X]	See Section B.3
4. Recreation Areas	[X]	[]	See Section B.4
5. Pedestrian/Bicycle Facilities	[X]		See Section B.5
C. NATURAL ENVIRONMENT			
 Wetlands 	[]	[X]	See Section C.1
Aquatic Preserves		[X]	See Section C.2
3. Water Quality		[X]	See Section C.3
4. Outstanding Florida Waters		[X]	See Section C.4
5. Wild and Scenic Rivers		[X]	See Section C.5
6. Floodplains		[X]	See Section C.6
7. Coastal Zone Consistency		[X]	See Section C.7
8. Coastal Barrier Islands		[X]	See Section C.8
 Wildlife and Habitat Essential Fish Habitat 		[X]	See Section C.9
11. Farmlands		[X]	See Section C.10 See Section C.11
12. Visual/Aesthetics		[X] [X]	See Section C.12
12. Visual/Aesti letics	L J	[/	See Section C.12
D. PHYSICAL IMPACTS			
1. Noise	[]	[X]	See Section D.1
2. Air	[]	[X]	See Section D.2
Construction		[X]	See Section D.3
4. Contamination		[X]	See Section D.4
5. Navigation	[]	[X]	See Section D.5

V. EVALUATION OF MAJOR DESIGN CHANGES AND REVISED DESIGN CRITERIA

The minor Type II Categorical Exclusion (Type II MiCE) document for this project was approved on February 25, 2014 and a subsequent Design change/Construction advertisement reevaluation was approved on May 19, 2014. This project reevaluation documents the design changes associated with the project currently being advanced since the originally approved Type II MiCE. The major design changes as shown on Figures 1 and 2 include the following:

- 1. Relocation of New Pedestrian Bridge Landing: The proposed pedestrian bridge landing has been placed on the north side of the Tamiami (C-4) Canal to facilitate the movement of pedestrian traffic. The placement of the bridge landing north of the Tamiami canal will require a bulkhead along the canal's northern embankment to level the walking surface and provide sufficient space for the landing stairs/elevators. The bulkhead will be constructed at the canal bank toe of slope at the request of South Florida Water Management District (SFWMD) to match future bulkheading of the canal and is not expected to impact the conveyance of the canal.
- **2.** Addition of Plaza on North Side of Tamiami Canal: The placement of the pedestrian bridge landing on the north bank of the Tamiami Canal will extend the pedestrian plaza to the west side of SW 109th Avenue. This will also include closure of SW 7th Terrace for 195 feet west of SW 109th Avenue to thru-traffic. The closure of SW 7th Terrace is based on a coordinated effort between FIU and the City of Sweetwater to create a pedestrian plaza at the bridge landing, which will incorporate access to the existing linear park features. Access will be provided for emergency vehicles and SFWMD maintenance equipment; and access will be maintained to the residents of Grove Estate Condos from the north on SW 7th Street.

A traffic study was completed in April 2015 to evaluate the operational impact of the closure of SW 7th Terrace 195 feet west of SW 109th Avenue, and the possible elimination of one southbound lane at the intersection of SW 8th Street and SW 109th Avenue as part of the FIU UniversityCity project. The analysis consisted of field review, data collection, analysis of the area, Level of Service (LOS) analysis and traffic data forecasting for the years 2015 (opening year) and 2035. The area of the analysis was SW 109th Avenue from SW 8th Street to SW 7th Street, including the closure of SW 7th Terrace. Two scenarios were evaluated; the first scenario included the existing geometry of the southbound approach (three lane configuration; one exclusive right turn lane, one shared thru/left turn lane and one exclusive left turn lane) and the second scenario includes the elimination of the exclusive left turn lane.

Existing conditions (Year 2014) show that the intersection of SW 8th Street and SW 109th Avenue operates at LOS E and F for the AM and PM peak periods, respectively. All the intersection approaches operate at LOS E or better during the AM peak period; however, during the PM peak period, the northbound, outbound and eastbound approaches operate at LOS F. Based on the evaluation results, Scenario 1 (existing configuration) resulted in the best LOS for the southbound approach for the signalized intersection at SW 8th Street and SW 109th Avenue and is recommended for implementation. Scenario 2 would not only deteriorate the LOS of the southbound approach but also would considerable increase the queue length. In addition, based on the results from the two analyzed scenarios it was concluded that the closure of SW 7th Terrace would not have any significant impact to the operation along the local roadway network. The traffic report can be found in Appendix 2.

The proposed project has been determined to be consistent with both the City of Sweetwater's Department of Community Affairs (DCA)-approved Local Government Comprehensive Plans in accordance with Chapter 163, Florida Statues (F.S.) and FIU's University Campus Master Plan in

accordance with Chapter 1013.30, F.S. The proposed project was also determined to be consistent with local government plans including the Miami-Dade County Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP) for fiscal years 2014-2018. The TIP project listing is described as pedestrian overpass. It is listed as Priority I on the TIP Priority List with funding for the Design, Right of Way, and Construction phases with state and federal funds. The City of Sweetwater continues to support the project as stated in a resolution dated October 28, 2014. The project was included in the 2013 - 2014 State Transportation Improvement Program (STIP) and the Long Range Transportation Plan (LRTP) with a total cost estimated at \$15,372,903 (See Appendix 1 for TIP/STIP details). There have been no changes to the project's consistency since the approved document. Project construction is anticipated to begin in February 2017 and be completed by September 2018.

VI. MITIGATION STATUS AND COMMITMENT COMPLIANCE

No mitigation is required for this project. The following commitments were made as part of this project:

- a. Coordination with regulatory agencies will occur to obtain permits for the project from the SFWMD, Florida Department of Transportation (FDOT), and Miami-Dade County Regulatory and Economic Resources (RER) for construction within the right-of-way and water quality impacts. Status: Several meetings and discussions have taken place with FDOT and SFWMD on the project requirements and coordination with the regulatory agencies is ongoing. Permits are to be acquired by the Design/Build firm during the design development phase.
- b. The US Fish and Wildlife Service (USFWS) Eastern Indigo Snake Protection Measures and the Florida Fish and Wildlife Conservation Commission (FWC) Standard Manatee Conditions for In-Water Work will be included into the contract documents and the Contractor will be required to adhere to these conditions during construction. Status: This commitment is included in the Design/Build Request for Proposal (RFP), and will be upheld by the Design/Build firm during construction.
- c. Staging areas and/or off-site pond areas will be reviewed for all National Environmental Policy Act (NEPA) related issues during final design. Status: To be reviewed during the Design/Build process.
- d. Current National Pollutant Discharge Elimination Systems (NPDES) criteria and Best Management Practices will be implemented to avoid impacts to water quality and impacts to existing wetlands and surface waters located within and outside the project limits. Status: Water Quality requirements to be included in the Design/Build RFP. The NPDES Permit is to be acquired by the Design/Build firm prior to construction.
- e. During the design-build phase, the need for Level II testing will be evaluated for all sites ranked as Medium or High contamination risk. Status: To be evaluated during the Design/Build process.
- f. Maintenance of traffic and sequence of construction will be planned and scheduled so as to minimize traffic delays throughout the project. Status: To be reviewed during the Design/Build process.

g. Historic Resources Commitments

FIU will coordinate with Federal Highway Administration (FHWA)/State Historic Preservation Officer (SHPO) during the design process to allow the SHPO the opportunity to review and comment on the pedestrian bridge design plans. Recognizing that the project alternatives have not been fully developed and that the SHPO has requested additional reviews of the proposed pedestrian bridge design in relation to the National Register of Historic Places (NRHP)-Eligible Sweetwater Bridge (8DA3294), FIU will implement all reasonable measures to avoid adverse impacts to the Sweetwater Bridge during the development of the new pedestrian bridge. These measures shall include:

- Provide the SHPO the opportunity to review and comment on the schematic, 75% (design development), and 90% plans for the new pedestrian bridge. Status: SHPO reviewed the original conceptual plans and has reviewed the latest location changes regarding bulkheading the NRHP-eligible Tamiami Canal as well as the new bridge landing location. SHPO has concurred that these changes pose no adverse effect to the Tamiami Canal or the NRHP-eligible Sweetwater bridge. SHPO coordination (December 11, 2014) related to the new bridge design is provided in Appendix 4. With the relocation of the proposed pedestrian bridge, potential impacts to the historic bridge have been eliminated.
- Provide SHPO the opportunity to participate in the design charrette for the new pedestrian bridge. Status: SHPO participated in the February 19, 2014 Design Charrette prior to the relocation of the proposed pedestrian bridge.

During the Design Phase the following considerations shall be taken into account:

- Ensure that the design of the new pedestrian bridge is sympathetic in design, scale, and massing of the Sweetwater Bridge (8DA3294). Status: This will be a consideration during the Design/Build review process but the relocation of the proposed pedestrian bridge eliminates any potential impact to the Sweetwater Bridge. FHWA and SHPO concurred with this determination in an email dated December 11, 2014, see Appendix 4.
- Avoid any adverse visual impacts on the Sweetwater Bridge (8DA3294) from the new pedestrian bridge. Status: This will be a consideration during the Design/Build review process but the relocation of the proposed pedestrian bridge eliminates any potential impact to the Sweetwater Bridge.
- Consider re-using or integrating the Sweetwater Bridge (8DA3294) as part of the proposed pedestrian bridge. Status: The relocation of the proposed pedestrian bridge west of SW 109th Avenue does not allow for the integration of the Sweetwater Bridge as part of the proposed pedestrian bridge; however, the Sweetwater Bridge is planned to be an integral part of the Memorial Plaza (to be constructed by others) as a pedestrian crossing over the Tamiami Canal to a proposed bus shelter (to be constructed by others).
- Avoid any design that would have direct impacts to the Sweetwater Bridge (8DA3294). Status: This will be a consideration during the Design/Build review process but the relocation of the proposed pedestrian bridge avoids any direct

impacts to the Sweetwater Bridge. Safety and functional improvements to the Sweetwater Bridge were performed under a separate contract through the City of Sweetwater.

During the construction phase the following methods shall be used to avoid impacts:

- Implement low-vibratory construction methods to avoid damaging the Sweetwater Bridge. Status: This will be a consideration during the Design/Build review process and is a requirement in the RFP for the selected Design/Build firm to follow.
- Implement staging in a way that will avoid impacting the Sweetwater Bridge. Status: This will be a consideration during the Design/Build review process and is a requirement in the RFP for the selected Design/Build firm to follow.

VII. PERMITS STATUS

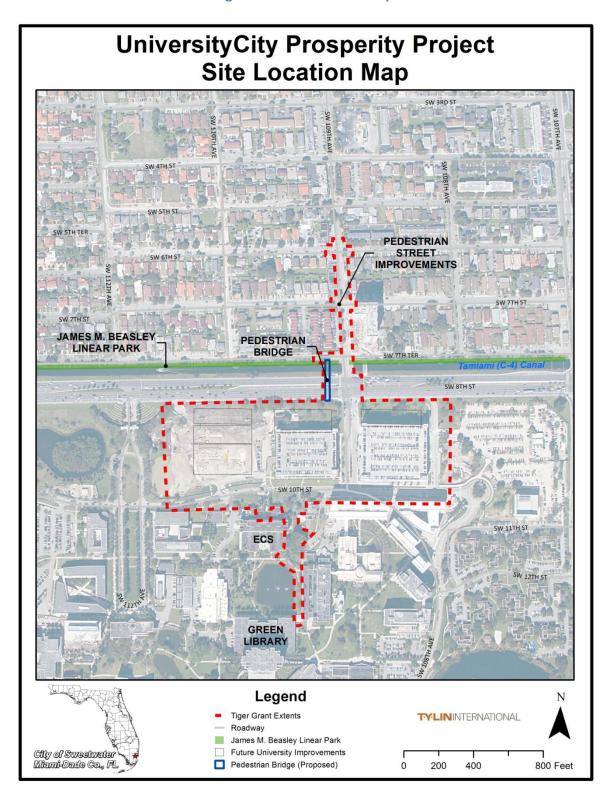
As previously identified, the following permits will need to be applied for in association with this project:

- 1. South Florida Water Management District: A Right of Way permit was issued to Miami-Dade County Department of Public Works on June 9, 1994 (Permit Number 10107) authorizing the relocation of the existing wooden bridge and construction of a new vehicular bridge over the Tamiami (C-4) Canal. As a co-applicant with Miami-Dade County, modification of this permit will be required for construction of the new pedestrian bridge. An Environmental Resource Permit (ERP) will also be required for modifications to the stormwater drainage system.
- 2. Miami-Dade County Regulatory and Economic Resources: A Class II Water Quality Permit was issued to the City of Sweetwater for stormwater improvements between SW 112th Avenue and SW 107th Avenue and SW 8th Street and West Flagler Street (Permit Number CLII-20120045). Modification of the drainage system will require a modification of this permit.
- **3. Florida Department of Environmental Protection**: National Pollutant Discharge Elimination System (NPDES) Notice of Intent to use Construction Generic Permit (CGP), to be acquired by the Design/Build firm prior to construction.
- **4. Florida Department of Transportation**: Right of Way Permit for construction over FDOT right of way), to be acquired by the Design/Build firm prior to construction.

In addition, permits and/or approvals will be required from **Miami-Dade County Department of Public Works** for any modifications to the SW 109th Avenue vehicular bridge and a Section 408 review will be required from the **US Army Corps of Engineers** (USACE) for potential modifications of the Tamiami (C-4) Canal since it was constructed as part of the USACE Central and South Florida (C&SF) federal flood control project.

ATTACHMENTS

Figure 1. Site Location Map



UniversityCity Prosperity Project Pedestrian Bridge Location TO BE COMPLETED BY OTHERS PROPOSED PEDESTRIAN PLAZA S.W. 7th TERRACE SFWMD C-4 CANAL PROPOSED PEDESTRIAN BRIDGE 7 F C US 41 / SW 8 STREET S.W. 109th **TYLIN**INTERNATIONAL

Figure 2. Pedestrian Bridge Location

20

40

80 Feet

City of Sweetwater Mani+Dade Co., FL

A. SOCIAL

A.1 LAND USE CHANGES

A section of SW 7th Terrace (roadway/transportation) will become a plaza (recreation) with the closure of this street. This area will be used for the bridge landing and an extension of the larger proposed pedestrian plaza and includes the installation of hardscape over the existing sod, artificial turf, and asphalt path. The pedestrian plaza will enlarge the existing park footprint and will allow the continued flow of through pedestrian/bicycle traffic around the bridge landing as well as serve as a trailhead with bicycle racks, benches, and water fountains. The proposed changes are considered an enhancement to the park facility and would provide an enhanced level of access to the park by providing a connection to the pedestrian bridge, FIU, and the City of Sweetwater's complete streets improvements. This land, including the closed portion of SW 7th Terrace, is to be transferred to FIU as part of the grant match commitment, either as a perpetual easement or fee interest, for use as a public park. Due to changes from transportation to recreation uses within the section of closed roadway, the impact determination changed from **No Involvement** to **Not Significant** for Land Use Changes.

A.2 COMMUNITY COHESION

With the closure of section of SW 7th Terrace (roadway/transportation), this portion of the street will become a pedestrian plaza. The pedestrian plaza will enlarge the existing park footprint and will allow the continued flow of through pedestrian/bicycle traffic around the bridge landing as well as serve as a trailhead with bicycle racks, benches, and water fountains. Access to the Grove Estates Condominium will remain on the north and east sides, with an exit maintained from the south. The proposed changes are considered an enhancement to the park facility and would provide an enhanced level of access to the park by providing a connection to the pedestrian bridge, FIU, and the City of Sweetwater's complete streets improvements. There has been no change in community cohesion impact status as a result of proposed additional work. The impact determination remains **None** for Community Cohesion.

A.3 RELOCATION POTENTIAL

There has been no change in relocation potential impact status as a result of proposed additional work. The impact determination remains **None** for Relocation Potential.

A.4 COMMUNITY SERVICES

Access for emergency vehicles will be maintained and there will be no impact to response times. The project team met with the Police Chiefs of both the FIU and Sweetwater Police Departments on January 12, 2015 to discuss the proposed street closure along SW 7th Terrace. It was indicated by both departments that there would be no anticipated impacts to response time or ability to respond to calls due to the street closure at SW 7th Terrace. Plans were also submitted to Miami-Dade Fire Rescue for site plan approval and on February 5, 2015 the site plan was approved. There has been no change in community services impact status as a result of proposed additional work. The impact determination remains **None** for Community Services.

A.5 TITLE VI CONSIDERATIONS

There has been no change in Title VI Considerations impact status as a result of proposed additional work. The impact determination remains **None** for Title VI Considerations.

A.6 CONTROVERSY POTENTIAL

There has been no change in controversy potential impact status as a result of proposed additional work. The impact determination remains **None** for Controversy Potential.

A.7 UTILITIES AND RAILROADS

The relocation of Florida Power & Light (FP&L) aerial transmission facilities may occur as a result of this project. Preliminary coordination with FP&L has occurred and correspondence can be found in Appendix 6. There has been no change in utilities and railroads impact status as a result of proposed additional work. The impact determination remains **Not Significant** for Utilities and Railroads.

B. CULTURAL

B.1 Section 4(f)

The extension of the proposed pedestrian bridge associated with the project allows for the landing of the bridge on the north side of the Tamiami Canal. A portion of the pedestrian plaza/bridge landing associated with the new pedestrian bridge would extend into the limits of the existing James M. Beasley linear park. Approximately 2,250 square feet of the linear park would be used to construct the proposed bridge landing, bulkhead, and a portion of the proposed plaza. The area that will be used for the bridge landing currently includes a paved multi-use trail with limited tree cover and landscaping. There are no benches, exercise equipment, or other park amenities in this proposed project area. In addition, any existing trees that may be removed as a result of the project improvements will be replaced in-kind with plans to plant several more trees within and surrounding the proposed plaza.

The pathway associated with the linear park will be rerouted and incorporated into an extension of the larger proposed pedestrian plaza and include the installation of hardscape over the existing sod, artificial turf, asphalt path, benches, and vita course. The pedestrian plaza will enlarge the existing park footprint by approximately 6,750 square feet, and will allow the continued flow of through pedestrian/bicycle traffic around the bridge landing as well as serve as a trailhead with bicycle racks, benches, and water fountains. The proposed changes are considered an enhancement to the park facility and would provide an enhanced level of access to the park by providing a connection to the pedestrian bridge, FIU, and the City's complete streets improvements.

FHWA has reviewed the documentation provided and determined that the proposed impact to the existing linear park would be considered *de minimis* under Section 4(f) as per 23 CFR 774. Appendix 3 contains the complete *de minimis* package and FHWA determination. Due to proposed work within the linear park resulting in a *de minimis* determination, the impact determination changed from **None** to **Not Significant** for Section 4(f).

B.2 HISTORIC SITES

The Tamiami Canal (8DA6453) has been determined eligible for inclusion in the National Register by the State Historic Preservation Office (SHPO). Due to the presence of resources eligible for inclusion in the National Register, coordination with the SHPO was conducted in order to be compliant with the National Historic Preservation Act of 1966 and Section 106 (16 U.S.C. 470). The proposed project was determined to have no adverse effect on the National Register-eligible Tamiami Canal. Correspondence with SHPO concurrence is provided in Appendix 4. The canal will be crossed by the new pedestrian bridge and the landing of the new bridge will be placed on the northern embankment along with a retaining wall. These improvements will not affect the canal to such a degree that it can no longer convey its significance in the areas of engineering, and its integrity will not be notably compromised.

SHPO's office concurred with FHWA's finding of no adverse effect in an e-mail dated December 11, 2014; therefore, the impact determination remains **Not Significant** for Historic Sites.

B.3 ARCHAEOLOGICAL SITES

There has been no change in archaeological sites impact status as a result of proposed additional work. The impact determination remains **No involvement** for archaeological sites.

B.4 RECREATIONAL AREAS

The James M. Beasley Linear Park is the only recreational facility within the study area. This linear park is located along the north bank of the Tamiami Canal (C-4) and SW 7th Terrace between the Homestead Extension of Florida's Turnpike (HEFT) and SW 107th Avenue. The linear park is owned and maintained by the City of Sweetwater. The extension of the proposed pedestrian bridge now allows for the landing of the bridge on the north side of the Tamiami Canal. Therefore, the proposed bridge landing and pedestrian plaza will extend into the limits of the existing linear park. However, this encroachment will enhance bicycle and pedestrian access to the park by providing a connection to the pedestrian bridge and the City's complete streets improvements.

The proposed extension of the plaza would include the installation of hardscape over the existing artificial turf and asphalt path. This activity is considered an enhancement to the park facility and would continue to provide the same level of access to and use of the park for pedestrians and bicyclists. The Mayor of the City of Sweetwater issued a letter stating the City's support and agreement to the proposed enhancements to the linear park. Due to proposed work within the linear park that will enhance the park features, the impact determination changed from **None** to **Not Significant** for Recreational Areas.

B.5 Pedestrian/Bicycle Facilities

The pedestrian plaza will enlarge the existing park footprint and will allow the continued flow of through pedestrian/bicycle traffic around the bridge landing as well as serve as a trailhead with bicycle racks, benches, and water fountains. Due to proposed work within the linear park that

will enhance the pedestrian/bicycle facilities, the impact determination changed from **None** to **Not Significant** for Pedestrian/Bicycle Facilities

C. NATURAL

C.1 WETLANDS

Potential wetland areas within the study area were evaluated using existing information such as aerial photography and SFWMD and National Wetland Inventory (NWI) land use mapping, coupled with groundtruthing. The Tamiami (C-4) Canal provides minimal littoral habitat because it is frequently maintained and has steep side slopes and is not defined as a wetland by US Department of Transportation Order 5660.1A or 33 CFR 328.3(b) or as defined by the USACE in administering the Section 404 permit program.

The proposed improvements would involve construction of a bulkhead along the embankment of the Tamiami (C-4) Canal in the vicinity of the bridge landing on the north side to level the walking surface and provide sufficient space for the landing stairs/elevators. The bulkhead will be constructed at the canal bank toe of slope to match future SFWMD bulkheading of the canal. Correspondence with the SFWMD can be found in Appendix 5. Although no wetlands were identified within the project area, Other Surface Waters (OSW) are present. Since Best Management Practices will be implemented during construction and the capacity of the canal will be maintained, there will be no impacts to wetlands or OSW; therefore, the impact determination remains **None** for wetlands.

C.2 AQUATIC PRESERVES

There has been no change in Aquatic Preserves impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Aquatic Preserves.

C.3 WATER QUALITY

Potential water quality impacts resulting from construction along the embankment will be controlled in accordance with best management practices as required by the FDEP via the NPDES Program, such as floating turbidity barriers along the canal bank to contain any potential discharge of sedimentation or turbidity. There has been no change in water quality impact status as a result of proposed additional work. The impact determination remains **None** for Water Quality.

C.4 OUTSTANDING FLORIDA WATERS

There has been no change in Outstanding Florida Waters impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Outstanding Florida Waters.

C.5 WILD AND SCENIC RIVERS

There has been no change in Wild and Scenic Rivers impact status as a result of proposed additional work. The impact determination remains **No involvement** for Wild and Scenic Rivers.

C.6 FLOODPLAINS

As previously indicated, the proposed improvements would involve construction of a bulkhead along the northside of the embankment of the Tamiami (C-4) Canal. The C-4 Canal was constructed as part of the USACE Central and South Florida (C&SF) federal flood control project. The bulkhead will be constructed at the canal bank toe of slope and is not expected to impact the conveyance of the canal or its capacity to carry floodwater. SFWMD has indicated in an November 6, 2014 letter to FIU that the proposed improvements are permittable in this location (Appendix 5). The USACE will review the project under the 33 C.S.C. Section 408. Depending on the intensity of the proposed work on a C&SF facility, either a minor or major engineering review is required. It is anticipated that a minor review would be conducted for this project and permitted by the District Engineer. The impact determination remains **None** for Floodplains.

C.7 COASTAL ZONE CONSISTENCY

There has been no change in Coastal Zone Consistency impact status as a result of proposed additional work. The impact determination remains **None** for Coastal Zone Consistency.

C.8 COASTAL BARRIER ISLANDS

There has been no change in Coastal Barrier islands impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Coastal Barrier islands.

C.9 WILDLIFE AND HABITAT

Due to the potential for the West Indian manatee to be present during in water work (bulkheading), the "Standard Manatee Conditions for In-Water Work" will be utilized by the Design/Build firm to ensure protection of this species during construction of the project. There has been no change in wildlife and habitat impact status as a result of proposed additional work. The impact determination remains **Not Significant** for Wildlife and Habitat.

C.10 ESSENTIAL FISH HABITAT

There has been no change in Essential Fish Habitat impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Essential Fish Habitat.

C.11 FARMLANDS

There has been no change in farmlands impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Farmlands.

C.12 VISUAL/AESTHETICS

There has been no change in visual/aesthetics impact status as a result of proposed additional work. The impact determination remains **None** for Visual/Aesthetics.

D. PHYSICAL

D.1 NOISE

There has been no change in noise impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Noise.

D.2 AIR

There has been no change in air quality impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Air Quality.

D.3 Construction

There has been no change in construction impact status as a result of proposed additional work. The impact determination remains **None** for Construction.

D.4 CONTAMINATION

There has been no change in contamination impact status as a result of proposed additional work. The impact determination remains **Not Significant** for Contamination.

D.5 NAVIGATION

There has been no change in navigation impact status as a result of proposed additional work. The impact determination remains **No Involvement** for Navigation.

APPENDIX 1 Planning Consistency Information



RICK SCOTT GOVERNOR ANANTH PRASAD, P.E. SECRETARY

Mrs. Irma San Roman, Executive Director, Miami-Dade Metropolitan Planning Organization 111 Northwest 1st Street, Suite 920 Miami, Florida 33128

Subject:

Administrative Modification to the FY 2014 Transportation

Improvement Program (TIP) to Disclose Minor Adjustments to the Limits of the FIU University City Prosperity Project, FM 4346881

Dear Mrs. San Roman,

The Department requests your approval of an administrative modification to the FY 2014 TIP to disclose minor adjustments to the limits of the FIU University City Prosperity Project, FM 4346881.

The project has received funding under the federal Transportation Investment Generating Economic Recovery (TIGER) Grant program and was added to the 2035 LRTP and FY 2014 TIP by way of amendments to those documents on February 20, 2014, Resolution #01-14. Recently, it was determined that minor adjustments to the project limits were necessary to provide connectivity for pedestrians along a project corridor from SW 10th Street to the Green Library on the FIU Campus. Presently, there is no connectivity from south of the Engineering and Computer Science (ECS) Building to the Green Library.

The Department coordinated with Federal Highway Administration (FHWA) to review the change to the project against the criteria which would trigger a TIP/STIP amendment. FHWA has concurred that the minor adjustment can be disclosed by an administrative modification since it will not result in a change in project capacity, type of work, priority order of the project in the TIP/STIP/LRTP, nor will any other project be negatively impacted.

Please acknowledge your approval of this administrative modification by signing in the space provided at the end of this letter and returning same to our office. Please keep a copy for your records. Thank you for your ongoing cooperation and please contact me if you have any questions at (305) 470-5464.

Mrs. San Roman Administrative TIP Modification FM 4346881 May 14, 2014 Page 2

Please acknowledge your approval of this administrative modification by signing in the space provided at the end of this letter and returning same to our office. Please keep a copy for your records. Thank you for your ongoing cooperation and please contact me if you have any questions at (305) 470-5464.

Sincerely,

Harold Desdunes, P.E.

District Director of Transportation Development

Approved:

Irma San Roman

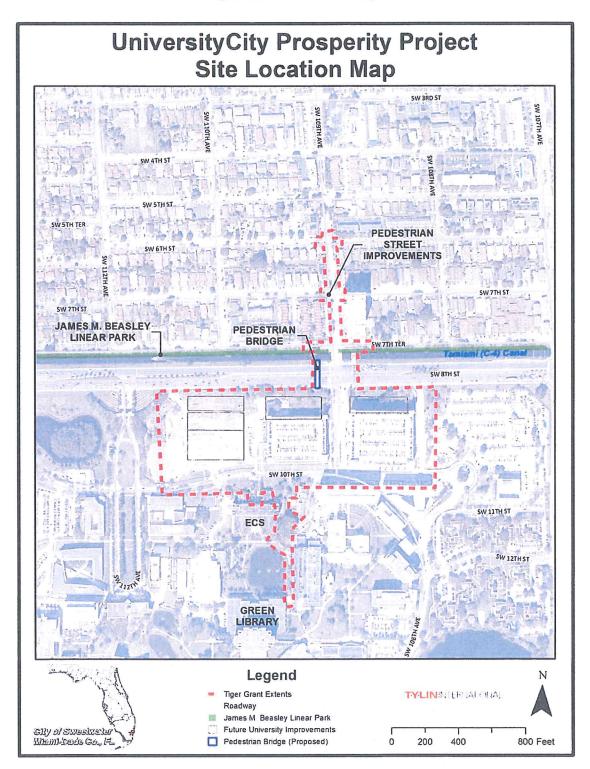
Executive Director,

Miami-Dade Metropolitan Planning

Organization

cc Stacie Blizzard, Federal Highway Administration
Kenneth Jessell, Ph. D., Florida International University
Carlos Roa, Metropolitan Planning Organization
Gus Pego, P.E., Florida Department of Transportation
Debora Rivera, P.E., Florida Department of Transportation
Carl Filer, P.E., Florida Department of Transportation
Aileen Bouclé, AICP, Florida Department of Transportation

Figure 1. Site Location Map





Federal Aid Management Office James Jobe - Manager

Logoff

STIP Amendments

Home

Fiscal Year: 2014
STIPS Listed: Ready for Signature
STIP Amendment #: 14-08

Enter in your password to continue
Approve/Reject

Refresh !

	Amendment					
	#	Project Name	District	FHWA		
Close	14-08	FIU University City Prosperity Project FM# 434688-1	06	Notes:	Reject	S Approve

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code.

The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

Transportation Improvement Program Amendment FY2013/14 - 2017 /18

STIP Amendment Number: 14-08

** This STIP is in an MPO Area **

TIP Page Number: 487

On **Thursday, February 20, 2014**, the **MiamiDade MPO** Metropolitan Planning Organization amended the Transportation Improvement Program that was developed and adopted in compliance with Title 23 and Title 49 in a continuing, cooperative and comprehensive transportation planning process as a condition to the receipt of federal assistance. By signature below, the MPO representative certifies that the TIP amendment was adopted by the MPO Board as documented in the supporting attachments. **This amendment will be subsequently incorporated into the MPOs TIP for public disclosure**.

The amendment does not adversely impact the air quality conformity or financial constraints of the STIP.

The STIP Amendment is consistent with the Adopted Long Range Transportation Plan. (Page Number: 4-58)

This document was electronically signed
2/21/2014
Carlos Roa
MiamiDade MPO

Metropolitan Planning Organization Chairman or Designee MiamiDade MPO

This document was electronically signed
2/24/2014
Richard Luten
FDOT Federal Ald

Federal Aid Management Manager or Designee

This document was electronically signed 2/21/2014
Curlene Thomas
FI DOT

FDOT District Representative or Designee District 06

This document was electronically signed 2/24/2014 Leeann Jacobs FHWA

Federal Highway Authorization

STIP amendment criteria:

A - The change adds new individual projects to the current STIP

An air conformity determination must be made by the MPO on amended projects within the non-attainment or maintenance areas

E - The MPO is not in an air quality non-attainment or maintenance area.

Project NameFIU University City Prosperity Project FM# 434688-1

Project NameFIU Univers					erity Proje	ct FM# 43	<u>4688-1</u>				
Status	ITEM		Ve		Description						
		Fund	Ц	Phase	< FY 2014	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	> FY 2018
Original STIP			Ц								
D	4040	00.4	لح		0.00	0.00					0.00
Proposed Project	4346	88 1	AM	M	SK 90/SW 8	STREET PEDI	ESTRAIN BRI	DGE EAST C)F SW 109 AV	ENUE	
			ı		MANAGED B	Y FLORIDA II	NTERNATION	AL UNIV			
		ACT	U	CST	0.00	696,715.00			0.00	0.00	0.00
		DIH		CST	0.00	10,000.00		0.00	0.00	0.00	0.00
		DS		CST	0.00	40,000.00				0.00	0.00
		LF		CST	0.00						0.00
		TAL	_	CST	0.00	303,285.00					0.00
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Funding Source Balance	Δfto	r Ch	ar	200							
			aı	ige			3,168,599.00	3,216,761.00	2,724,482.00	1,522,192.00	
Net Change to Funding S						-13,759,863.00					
Proposed Project Before	Cha	nge									
Proposed Project After C	hang	ge				13,759,863.00					
Net Change to Project						13,759,863.00					
Net Change to Funding S	our	ce				-13,759,863.00					
Net Change to Proposed						13,759,863.00					
Net Change to STIP		, , , , ,				10,700,000.00					
tot ondigo to o m								<u></u>			

Notes:

STIP Added on: 2/6/2014; By: Aiah.Yassin@dot.state.fl.us; Of: FI DOT STIP Updated on: 2/6/2014; By: Aiah.Yassin@dot.state.fl.us; Of: FI DOT

STIP Note Added on: 2/6/2014; By: Aiah.Yassin@dot.state.fl.us; Of: FI DOT; Comments: THE TIGER (TIGER) FUND IS A NEW ALLOCATION TO BE PROVIDED BY A GRANT EXPECTED TO BE AWARDED AT THE END OF FEBRUARY 2014. NO OTHER PROJECTS WERE AFFECTED BY THIS ADDITIONAL

ALLOCATION.

STIP Updated on: 2/20/2014; By: Aiah.Yassin@dot.state.fl.us; Of: FI DOT STIP Updated on: 2/20/2014; By: Aiah.Yassin@dot.state.fl.us; Of: FI DOT STIP Updated on: 2/20/2014; By: Aiah.Yassin@dot.state.fl.us; Of: FI DOT

STIP Note Added on: 2/20/2014; By: Aiah.Yassin@dot.state.fl.us; Of: FI DOT; Comments: Local Funds(LF) is provided by the Univeristy(FIU). ACTU advanced construction, the Department does not have a box for this fund type.

STIP set to Ready to Process: 2/20/2014; By: Curlene Thomas; Of: FI DOT STIP set to Transmitted: 2/24/2014; By: Sean McAuliffe; Of: FDOT Federal Aid

NOTE: ** 3 Attached documents found **

434688-1 LRTP.PDF (Size: 522 Kbytes)

View in Print Suitable Format

This site is maintained by the Office of Work Progam and Budget - Federal Aid Management Office, located at 605 Suwannee Street, MS 21, Tallahassee, Florida 32399. For additional information please e-mail questions or comments to:

(Richard Luten: Richard Luten@dot.state.fl.us or call 850-414-4463)

Application Home: Return to The STIP Home Page
Office Home: Office of Work Program and Budget
INFONET



MPO RESOLUTION #01-14

RESOLUTION APPROVING AN AMENDMENT TO THE 2035 LONG RANGE TRANSPORTATION PLAN (LRTP) AND THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) TO ADD THE FLORIDA INTERNATIONAL UNIVERSITY (FIU) UNIVERSITYCITY PROSPERITY PROJECT, FM #434688-1

WHEREAS, the Interlocal Agreement creating and establishing the Metropolitan Planning Organization (MPO) for the Miami Urbanized Area requires that the MPO provide a structure to evaluate the adequacy of the transportation planning and programming process; and

WHEREAS, the Transportation Planning Council (TPC) has been established and charged with the responsibility and duty of fulfilling the aforementioned functions; and

WHEREAS, the TPC has reviewed the amendment to the LRTP and TIP, made a part hereof and finds it consistent with the goals and objectives of the Transportation Plan for the Miami Urbanized Area,

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE METROPOLITAN PLANNING ORGANIZATION FOR THE MIAMI URBANIZED AREA, that the attached amendment to the 2035 Long Range Transportation Plan (LRTP) and the FY 2014 Transportation Improvement Program (TIP) to add the Florida International University (FIU) University City Prosperity Project, FM #434688-1 is hereby approved.

The adoption of the foregoing resolution was moved by Board Member Juan C. Zapata. The motion was seconded by Board Member Sally A. Heyman, and upon being put to a vote, the vote was as follows:

Chairwoman Rebeca Sosa-Aye Vice Chairman Oliver G. Gilbert, III-Absent

Board Member Bruno A. Barreiro	-Aye	Board Member Philip Levine	-Absent
Board Member Lynda Bell	-Aye	Board Member Jean Monestime	-Aye
Board Member Esteban Bovo Jr.	-Absent	Board Member Dennis C. Moss	-Aye
Board Member Jose "Pepe" Diaz	-Absent	Board Member Jeff Porter	-Aye
Board Member Audrey M. Edmonson	-Aye	Board Member Javier D. Souto	-Absent
Board Member Maurice Ferre	-Aye	Board Member Francis Suarez	-Absent
Board Member Perla Tabares Hantman	-Aye	Board Member Xavier L. Suarez	-Aye
Board Member Carlos Hernandez	-Absent	Board Member Lucie M. Tondreau	-Aye
Board Member Sally A. Heyman	-Aye	Board Member Juan C. Zapata	-Aye
Board Member Barbara J. Jordan	-Ave		

The Chairperson thereupon declared the resolution duly passed and approved this 20th day of February, 2014.

METROPOLITAN PLANNING ORGANIZATION

M.P.O.

Zainab Salim, Clerk

MPO



Date:

February 10, 2014

To:

Honorable Chairwoman Rebeca Sosa and Members

MPO Governing Board

From: Irma San Roman, Chairperson

Transportation Planning Council

Subject:

Amendment to the 2035 Long Range Transportation Plan (LRTP) and

the FY 2014 Transportation Improvement Program (TIP): Addition of

the FIU UniversityCity Prosperity Project

RECOMMENDATION

The Transportation Planning Council (TPC) recommends approval of an amendment to the 2035 Long Range Transportation Plan (LRTP) and the current Fiscal Year 2014 Transportation Improvement Program (TIP) to add the Florida International University (FIU) UniversityCity Prosperity Project, FM #434688-1.

BACKGROUND

The proposed amendment will add \$11,397,120.00 in federal TIGER Grant funds and \$1,000,000.00 from the Transportation Alternatives Program. Additionally, these federal funds will be matched with local and state support dollars in the amount of \$2,975,783.00 for a grand total funding package of \$15,372,903.00. These TIGER funds will be used to construct a new pedestrian bridge over SW 8th Street which is a busy arterial road and will provide support to an innovative package of technology, streetscaping and transit improvements that will connect the City of Sweetwater to the FIU South campus. It also will link two portions of the campus that are currently disconnected. These infrastructure improvements will support the economic growth of a major public research university and an adjacent small city.

Attached is correspondence from FDOT District 6 providing additional information.

FISCAL IMPACT/FUNDING SOURCE

The proposed amendment will add \$15,372,903.00 to the TIP for the subject project. These funds include: \$11,397,120.00 in federal TIGER Grant funds, \$1,000,000.00 from the Transportation Alternatives Program and \$3,975,783.00 in Local (FIU and City of Sweetwater) and State matched funds. The total project cost is estimated at \$123,397,120.00. No other projects in the TIP will be negatively affected by this amendment.

TRACK RECORD/ MONITOR

This item is sponsored by FDOT District 6 and Mr. Harold Desdunes, Director of Transportation Development, is responsible for monitoring this project.

Agenda Item 4.A.1

MPO RESOLUTION #

RESOLUTION APPROVING AN AMENDMENT TO THE 2035 LONG RANGE TRANSPORTATION PLAN (LRTP) AND THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) TO ADD THE FLORIDA INTERNATIONAL UNIVERSITY (FIU) UNIVERSITYCITY PROSPERITY PROJECT, FM #434688-1

WHEREAS, the Interlocal Agreement creating and establishing the Metropolitan Planning Organization (MPO) for the Miami Urbanized Area requires that the MPO provide a structure to evaluate the adequacy of the transportation planning and programming process; and

WHEREAS, the Transportation Planning Council (TPC) has been established and charged with the responsibility and duty of fulfilling the aforementioned functions; and

WHEREAS, the TPC has reviewed the amendment to the LRTP and TIP, made a part hereof and finds it consistent with the goals and objectives of the Transportation Plan for the Miami Urbanized Area,

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF THE METROPOLITAN PLANNING ORGANIZATION FOR THE MIAMI URBANIZED AREA, that the attached amendment to the 2035 Long Range Transportation Plan (LRTP) and the FY 2014 Transportation Improvement Program (TIP) to add the Florida International University (FIU) UniversityCity Prosperity Project, FM #434688-1 is hereby approved.

The adoption of the foregoing resolution was moved by , and upon being put to a vote, the vote was as follows:

. The motion was seconded by

Chairwoman Rebeca Sosa-Vice Chairman Oliver G. Gilbert, III-

Board Member Bruno A. Barreiro	-	Board Member Philip Levine	-
Board Member Lynda Bell	-	Board Member Jean Monestime	-
Board Member Esteban Bovo Jr.	-	Board Member Dennis C. Moss	-
Board Member Jose "Pepe" Diaz	-	Board Member Jeff Porter	-
Board Member Audrey M. Edmonson	-	Board Member Javier D. Souto	-
Board Member Maurice Ferre	-	Board Member Francis Suarez	-
Board Member Perla Tabares Hantman	-	Board Member Xavier L. Suarez	-
Board Member Carlos Hernandez	-	Board Member Lucie M. Tondreau	-
Board Member Sally A. Heyman	-	Board Member Juan C. Zapata	-
Board Member Barbara J. Jordan	<u>-</u>		

The Chairperson thereupon declared the resolution duly passed and approved this 20th day of February, 2014.

METROPOLITAN PLANNING ORGANIZATION M.P.O.

By_		
•	Zainab Salim, Clerk	
	MPO	



Florida Department of Transportation

RICK SCOTT GOVERNOR 1000 NW 111 Avenue Miami, Florida 33172-5800 ANANTH PRASAD, P.E. SECRETARY

December 23, 2013

Ms. Irma San Roman, Executive Director Miami-Dade Metropolitan Planning Organization 111 Northwest 1st Street, Suite 920 Miami, Florida 33128

Subject:

Amendment to 2035 Long Range Transportation Plan (LRTP) and the FY

2014 Transportation Improvement Program (TIP) to add the

FIU UniversityCity Prosperity Project, FM# 434688-1

Dear Ms. San Roman,

The Department requests an amendment to the adopted 2035 LRTP and the 2014 TIP to add the FIU UniversityCity Prosperity Project, FM# 434688-1.

The project will facilitate transit use and safety pedestrian-oriented transit access via an advanced and comprehensive electronic wayfinding system. Also, the project will provide complete streets improvement along SW 109 Avenue from SW 10 Street (Engineering & Computer Building) to SW 6 Street, and a pedestrian-oriented, shared-use bridge across SR 90/US 41/SW 8 Street.

The funding for this project became available through the federal Transportation Investment Generating Economic Recovery (TIGER) and the Transportation Alternatives (TALU) Program. The federal funds are being matched locally and with State support dollars. No other project will be negatively impacted by this amendment.

The proposed project description in the usual LRTP and TIP forms are attached. The Department appreciates your expeditious handing of this request. Thank you for your ongoing cooperation and if you have any questions, please contact me at (305) 470-5464.

Sincerely,

Harold Desdunes, P.E.

District Director of Transportation Development

Ms. San Roman December 23, 2013 Page 2

Attachment

cc: Karen Brunelle, Federal Highway Administration
Stacie Blizzard, Federal Highway Administration
Kenneth Jessell, Ph.D., Florida International University
Carlos Roa, Metropolitan Planning Organization
Gus Pego, P.E., Florida Department of Transportation
Debora Rivera, P.E., Florida Department of Transportation
Carl Filer, P.E., Florida Department of Transportation
Aileen Bouclé, AICP, Florida Department of Transportation
Linda Glass Johnson, Florida Department of Transportation
Phil Steinmiller, Florida Department of Transportation

Miami-Dade County Metropolitan Planning Organization (MPO)



LRTP AMENDMENT FORM

Date Submit	ted: <u>12/23/13</u> S	Submitted by:	: <u>На</u>	rold l	Desd	unes, P.F	<u>.</u>				
Project Curi	Project Current LRTP Priority: N/A Origin of Request: FDOT										
Project Title: FIU UniversityCity Prosperity Project											
Project Estir	Project Estimated Cost: \$15,372,903										
Amendment Proposed: Add Project to the adopted 2035 LRTP as Priority I Change to Existing LRTP Project: Addition of New LRTP Project: Yes											
PROJECT AMENDMENT:											
Type of Am	endment			Fun	ding		X	Time Sch	edule		X
				Fun	ding	Level		Scope of	Work		X
Justification Investment ((TALU) Pro access via an matched loc improvemen	Amendment Description (brief): Amend 2035 LRTP to add the FIU UniversityCity Prosperity Project Justification for the Amendment: Funds became available through the federal Transportation Investment Generating Economic Recovery (TIGER) program and the Transportation Alternatives (TALU) Program for the above project to facilitate transit use and safe pedestrian-oriented transit access via an advanced and comprehensive electronic wayfinding system. The federal funds are being matched locally and with State support dollars. Also, the project will provide complete streets improvement along SW 109 Avenue from SW 10 Street (Engineering & Computer Science Building) to SW 6 Street, and a pedestrian-oriented, shared-use bridge across SR 90/US 41/SW 8 Street.										
Requested a	amendment affec	t other proje	ects			Yes		If yes	Local		
						No	X		State		
Please, indi	cate affected pro	iects:		1	<u> </u>				***************************************		
2	ente affecteu pro	jeets.		3					The second secon		
Project has been previously amended Yes If yes Date											
				No	X		MI	PO Res. #			
Contact Per	rson:	Harold Des	dune	s, P.E	· .	Title	D	irector of I	Project Dev	eloj	pment
Phone #:	305-470-5464	Fax #:	305-	470-50	610	e-mail:	ha	rold.desdı	ines@dot.s	tat.	fl.us

MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION 2035 Long Range Transportation Plan (LRTP)

			PROJECT A	FTER AMENDMENT		
LRTP Page Reference	- Committee Courty Corridor Committee Committee Committee Committee Committee Committee Committee Committee Co		Funding Priority Requested	Description/Comments		
Not Assigned	Along SW 109 th Avenue	SW 10 th Street (Engineering & Computer Science Building)	SW 6 th Street	Design & Construction	Priority l	This portion of the project will facilitate transit use and safe pedestrian-oriented transit access via an advanced and comprehensive electronic wayfinding system. Also, the project will provide complete streets improvement along SW 109 Avenue from SW 10 Street to SW 6 Street.
Not Assigned	SR 90/SW 8 th Street	East of SW	109 th Avenue	Design & Construction	Priority I	Pedestrian overpass/bridge This portion of the project will facilitate transit use and safe pedestrian-oriented transit access via an advanced and comprehensive electronic wayfinding system. Also, the project will provide a shared-use bridge across SR 90/US 41/SW 8 Street.



Miami-Dade County Metropolitan Planning Organization (MPO)

TIP AMENDMENT FORM

Requesting Entity: Florida Department of Transportation Date Submitted: 12/23/13

Project ID#: 434688-1 Submitted by: <u>Harold Desdunes</u>, P.E.

Project Title: FIU UniversityCity Prosperity Project

Project Estimated Cost: 15,372,903

Project Description (brief): Funds became available through the federal Transportation Investment Generating Economic Recovery (TIGER) program and the Transportation Alternatives (TALU) Program for the above project to facilitate transit use and safe pedestrian-oriented transit access via an advanced and comprehensive electronic wayfinding system. The federal funds are being matched locally and with State support dollars. Also, the project will provide complete streets improvement along SW 109 Avenue from SW 10 Street (Engineering & Computer Science Building) to SW 6 Street, and a pedestrian-oriented, shared-use bridge across SR 90/US 41/SW 8 Street.

Project Schedule (include Year funding requested; estimated completion or implementation date): Funding requested for FY 2013-2014 and 2014-2015, Estimated completion date: April 2017

Project Source of Local Matching Funds: <u>Local Funds by Florida International University and City of Sweetwater</u>

Project Environmental Action Type and Status: Minor Type II Categorical Exclusion

Date of Environmental Assessment (EA) or expected EA approval Date: N/A

If a capital project, provide 2035 LRTP Page Reference: N/A

If MDT operating project provide TDP page reference: N/A

If FTA funds involved; have the funds been transferred to FTA from FHWA? N/A

If Municipality, provide date of study supporting planned service: N/A

Type of Amendment (check applicable)	Funding Source	X	Time Schedule	X
	Phase to be funded		Scope of Work	X

Amendment Description (brief): <u>Amend FY 2014 TIP to add the FIU UniversityCity Prosperity</u> Project

Justification for the Amendment: <u>Funds became available through the federal Transportation Investment Generating Economic Recovery (TIGER) program and the Transportation Alternatives (TALU) Program for the above project to facilitate transit use and safe pedestrian-oriented transit access via an advanced and comprehensive electronic wayfinding system. The federal funds are being matched locally and with State support dollars. Also, the project will provide complete streets improvement along SW 109 Avenue from SW 10 Street (Engineering & Computer Science Building) to SW 6 Street, and a pedestrian-oriented, shared-use bridge across SR 90/US 41/SW 8 Street.</u>

Does the amendment a	Does the amendment affect other projects			Yes		If yes	Local
				No	X		State
Please, indicate affected	d projects:	1	<u> </u>			V 1477	
2		3					
Project has been previo	ously amended	Yes		If yes	Date	e	
		No	X		MPO	O Res. #	
		-					
Contact Person:	Harold Desdu	ines, P.E	·	Title	Dir	ector of Pr	oject Development

305-470-5610

e-mail:

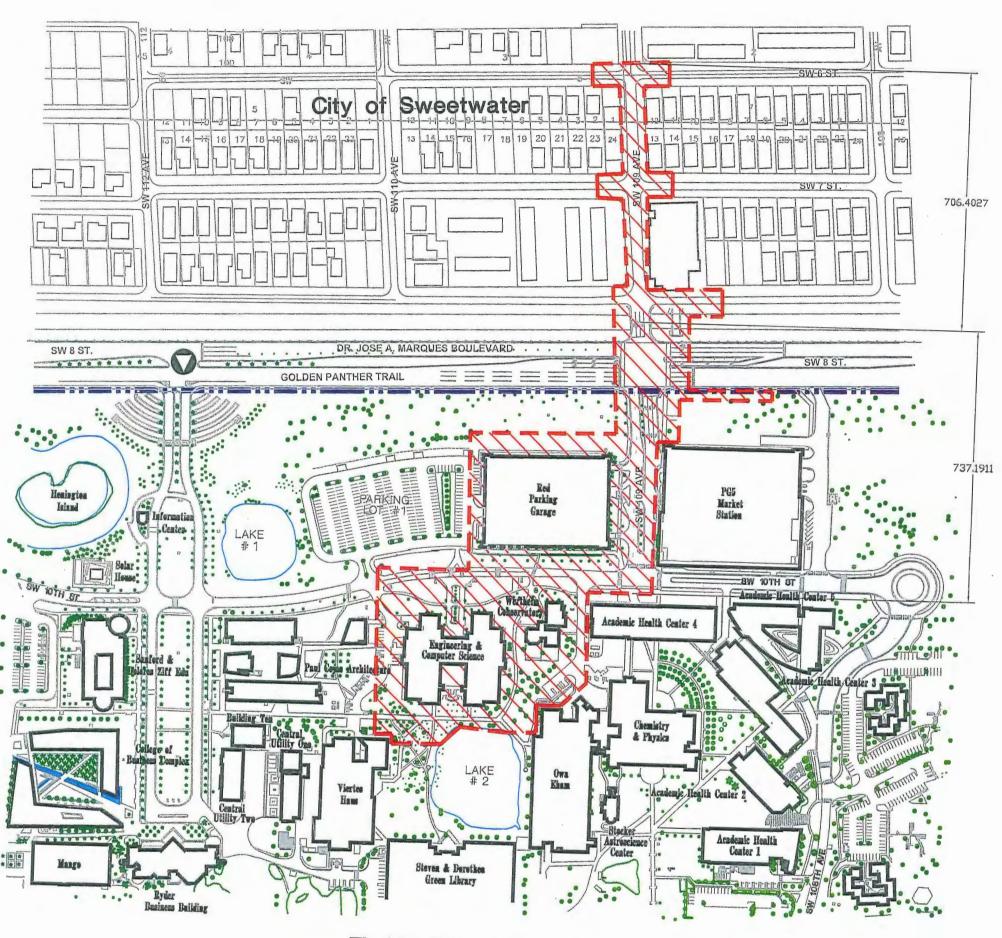
harold.desdunes@dot.state.fl.us

305-470-5464

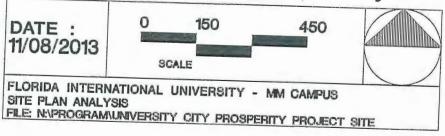
Fax #:

Phone #:

FIU UniversityCity Prosperity Project Location Map



Florida International University



<u>MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION</u> <u>TRANSPORTATION IMPROVEMENT PROGRAM (TIP)</u>



Agency Requesting Amendment: FDOT												
		Project After Amendment										
MPO Project Num: LRTP Ref: County: Roadway ID:	DT4346881 MIAMI-DADE n/a	Project Description:	FIU UniversityCity Prosperity Project					Along SW 109 Avenue To: from SW 10 Street to SW 6 Street			Along SR 90/SW 8 Street east of SW 109 Avenue	
Lanes Exist: Lanes Improved:		Type of Work:	PEDESTRIAN OVERPASS				SIS or Non-S	on-SIS:No Non-SIS Project				
Lanes Added:	0	Type of Amendment:	Add Project to TIP									
Project Length:	0.27 mile											
District:	6											
Amend. Res. #:				Funding Source	<2014	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	>2018	All Years
Amend. Res. Date:		PHASE:	Preliminary Engineering	LF	-	327,771	-	-	-	-	-	327,771
		PHASE:	Preliminary Engineering	TIGER	-	130,000	-	-	-		-	130,000
		PHASE:	Preliminary Engineering	DIH*		10,000						10,000
		PHASE:	Right of Way	LF	-	1,613,040	-	-	-	-	-	1,613,040
•		PHASE:	Construction	LF		632,072	1					632,072
		PHASE:	Construction	TALU**		1,000,000						1,000,000
		PHASE:	Construction	TIGER		11,267,120						11,267,120
		PHASE:	Construction	DIH*		10,000						10,000
		PHASE:	Construction	DS*		40,000						40,000
		PHASE:	Grants and Miscellaneous	ŁF	-		342,900	*	-	-	-	342,900
	RESPONSIBLE AGE	NCY:	Managed by FDOT	Totals		15,030,003	342,900	-	_	-	-	15,372,903
		* FDOT Suppo	rt									

^{**} TALU: Transportation Alternative- Federal funds



Chairwoman

Rebeca Sosa

Vice Chairman Oliver G. Gilbert, III

Voting Members

Bruno A. Barreiro Lynda Bell Esteban Bovo Jr. Jose "Pepe" Diaz Audrey M. Edmonson Maurice Ferre Perla T. Hantman Carlos Hernandez Sally A. Heyman Barbara J. Jordan Philip Levine Jean Monestime Dennis C. Moss Jeff Porter Javier D. Souto Francis Suarez Xavier L. Suarez Lucie M. Tondreau Juan C. Zapata

Non-Voting Members

(FDOT District VI)
Gus Pego, P.E.
Harold Desdunes, P.E.

MPO Executive Director

Irma San Roman

Contact Information

Ms. Zainab Salim, Clerk Miami-Dade MPO 111 NW First Street Suite 920 Miami, Florida 33128 305.375.4507 305.375.4950 (fax) zsalim@miamidade.gov www.miamidade.gov/mpo

MEETING OF THURSDAY, FEBRUARY 20, 2014 AT 2:00 PM

MPO GOVERNING BOARD

STEPHEN P. CLARK CENTER
111 NW FIRST STREET
MIAMI, FLORIDA 33128
COUNTY COMMISSION CHAMBERS

AGENDA

- 1. ROLL CALL
- 2. PLEDGE OF ALLEGIANCE
- 3. APPROVAL OF AGENDA
- 4. ACTION ITEMS
 - A. PUBLIC HEARING ITEM(S)

REQUIRED)

- 1. AMENDMENT TO THE 2035 LONG RANGE TRANSPORTATION PLAN (LRTP) AND THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP): ADDITION OF THE FIU UNIVERSITYCITY PROSPERITY PROJECT
 RESOLUTION APPROVING AN AMENDMENT TO THE 2035 LONG RANGE TRANSPORTATION PLAN (LRTP) AND THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) TO ADD THE FLORIDA INTERNATIONAL UNIVERSITY (FIU) UNIVERSITYCITY PROSPERITY PROJECT, FM #434688-1 (ROLL CALL REQUIRED)
- 2. 2035 LONG RANGE TRANSPORTATION PLAN (LRTP)
 AMENDMENT: ADDITION OF THE IRIS INTERCHANGE TRACK
 PROJECT
 RESOLUTION APPROVING AN AMENDMENT TO THE 2035 LONG
 RANGE TRANSPORTATION PLAN TO ADD THE IRIS
 INTERCHANGE TRACK PROJECT, FM #433514-1 (ROLL CALL
 REQUIRED)
- 3. FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP): MODIFICATION OF PROJECT COST OF AN INTERSECTION IMPROVEMENT PROJECT ON NW 57TH AVENUE RESOLUTION APPROVING AN AMENDMENT TO THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) TO MODIFY THE COST OF AN INTERSECTION IMPROVEMENT PROJECT ON NW 57TH AVENUE, FM #4290141 (ROLL CALL REQUIRED)
- 4. FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM AMENDMENT: ADDITION OF AN INTERSECTION IMPROVEMENT SAFETY PROJECT
 RESOLUTION APPROVING AN AMENDMENT TO THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) TO ADD AN INTERSECTION IMPROVEMENT SAFETY PROJECT ON SR 25/OKEECHOBEE ROAD AND WEST 12TH AVENUE/NW 74TH STREET, FM #4348101 (ROLL CALL REQUIRED)
- 5. FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM AMENDMENT: MODIFICATION OF SCOPE FOR RESURFACING PROJECT ON SR 5/SE 2ND AVENUE

 RESOLUTION APPROVING AN AMENDMENT TO THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) TO MODIFY THE SCOPE OF A RESURFACING PROJECT ON SR 5/SE 2ND AVENUE TO ADD SAFETY IMPROVEMENTS, FM #4124737 (ROLL CALL

6. FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM AMENDMENT: ADDITION OF AN INTERSECTION IMPROVEMENT SAFETY PROJECT

RESOLUTION APPROVING AN AMENDMENT TO THE FY 2014 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) TO ADD AN INTERSECTION IMPROVEMENT SAFETY PROJECT ON SR 5/US 1 AND RIVIERA DRIVE FM #4334552 (ROLL CALL REQUIRED)

B. NON-PUBLIC HEARING ITEM(S)

1. MPO PROSPECTUS FOR TRANSPORTATION IMPROVEMENTS AMENDMENT

RESOLUTION APPROVING AN AMENDMENT TO THE MPO PROSPECTUS FOR TRANSPORTATION IMPROVEMENTS TO INCLUDE THE MIAMI-DADE WATER AND SEWER DEPARTMENT (WASD) AS A FORMAL PARTICIPANT IN THE MPO TRANSPORTATION PLANNING PROCESS AND TO REVISE THE TRANSPORTATION PLANNING COUNCIL SECTION OF THE PROSPECTUS AS APPROPRIATE

2. 2010 FEDERAL FUNCTIONAL CLASSIFICATIONS & URBAN BOUNDARY

RESOLUTION ENDORSING THE 2010 FEDERAL FUNCTIONAL CLASSIFICATIONS AND THE MIAMI-DADE URBAN BOUNDARY AS PROPOSED BY THE FEDERAL HIGHWAY ADMINISTRATION

C. COMMITTEES APPOINTMENTS

1. VACANCY REPORT

D. APPROVAL OF MINUTES

• Meeting of December 12, 2013

5. REPORTS

- A. MPO BOARD MEMBERS
 - Request by MPO Board Member Lynda Bell: Discussion on Krome Avenue Truck Bypass Alternative Proposal
 - Request by MPO Board Member Maurice Ferre: Discussion on Proposed Southeast Florida Outreach Meeting for Freight and Logistics for Miami-Dade and Broward MPOs
- B. MIAMI-DADE PUBLIC SCHOOLS
- C. MIAMI-DADE COUNTY
- D. MUNICIPALITIES
- E. COUNTY ATTORNEY
- F. MIAMI-DADE EXPRESSWAY AUTHORITY
 - 1. Status Report
- G. FLORIDA DEPARTMENT OF TRANSPORTATION (DISTRICT 6)
 - 1. Miami Intermodal Center (MIC) Construction Project Update
 - 2. MIC/25th Street Status Report
 - 3. NW 25th Street Viaduct Project Update
- H. MPO SECRETARIAT
 - 1. MPOAC Weekend Institute Registration
 - 2. MPO December Meeting Follow-up Report

6. MPO COMMITTEES AND SPECIAL REPORTS

- A. CITIZENS' COMMITTEES
 - 1. FREIGHT TRANSPORTATION ADVISORY COMMITTEE (FTAC)
 - 2. TRANSPORTATION AESTHETIC ADVISORY COMMITTEE (TARC)
 - 3. BICYCLE PEDESTRIAN ADVISORY COMMITTEE (BPAC)
 - 4. CITIZENS' TRANSPORTATION ADVISORY COMMITTEE (CTAC)
- B. SPECIAL REPORTS
- 7. CORRESPONDENCE
- 8. ADJOURNMENT

Cost Feasible Plan Amendments [Miami-Dade Long Range Transportation Plan Upate to the Year 2035]

Facility/Corridor	From	То	Description	Priority I 2010-2014	Priority II 2015-2020	Priority III 2021-2025	Priority IV 2026-2035	Date of Amendment/ Resolution No.	Adoption Document Pg. Reference
FIU UniversityCity Prosperity Project	Along SW 109 Avenue from SW 10 Street to SW 6 Street	Along SR 90/SW 8 Street east of SW 109 Avenue	Pedestrian Overpass	P R G				2/20/2014 1-14	n/a
Golden Glades Interchange	SR 826 (EB)	I-95 (NB)	New direct system to system ramp from SR 826 EB to I-95 NB and improvements to Turnpike SB to I-95 SB connection	P	P R G			4/18/2013 23-13	P. 4-39
Krome Ave	SW 296 Street	SW 136 Street	Advance 3 project segments		R	0		7/18/2013 25-13	P. 4-36
SR 826/ Palmetto Expressway (EB) to I-95 (NB)			Operational improvements within the Golden Glades Interchange	P	P B G			7/18/2013 23-13	P. 4-35

Planning & Design P | Right of Way (ROW) R | Construction 6

MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION TRANSPORTATION IMPROVEMENT PROGRAM PRIMARY STATE HIGHWAYS AND INTERMODAL



TRANSPORTATION IMPROVEMENT PROGRAM AMENDMENTS MPO Project Num: Project Description: FIU UniversityCity Prosperity Project Along SW 109 Avenue from Along SR 90/SW 8 Street east DT4346881 LRTP Ref.: p. 4-58 SW 10 Street to SW 6 Street of SW 109 Avenue County: MIAMI-DADE Roadway ID: n/a Lanes Exist: Type of Work: SIS or Non-SIS: 3 PEDESTRIAN OVERPASS No Lanes Improved: 2 Lanes Added: 0 Proposed Funding (in \$000s) Project Length: 0.27 District: **Funding** 6 PHASE: <2014 2013 - 2014 2014 - 2015 2015 - 2016 2016 - 2017 2017 - 2018 >2018 All Years Source **Grants and Miscellaneous** LF 0 0 343 0 0 0 0 343 RESPONSIBLE AGENCY: Managed by FDOT Total 0 0 343 0 0 0 343 **Preliminary Engineering TIGER** 0 130 0 0 0 0 0 130 LF 0 328 0 0 0 0 0 328 **Preliminary Engineering Preliminary Engineering** DIH* 0 10 0 0 0 0 0 10 0 468 0 0 0 0 468 RESPONSIBLE AGENCY: Managed by FDOT Total Right of Way LF 0 1,613 0 0 0 0 0 1,613 RESPONSIBLE AGENCY: Managed by FDOT Total 0 1,613 0 0 0 0 1,613 DIH* 0 10 0 0 0 0 0 10 Construction Construction TALU* 0 1,000 0 0 0 0 0 1,000 LF 0 632 0 0 0 0 0 632 Construction DS* 0 40 0 0 0 0 0 40 Construction 0 11,267 0 0 0 0 0 Construction **TIGER** 11,267

*FDOT Support, **TALU: Transportation Alternative - Federal funds

FY 2014-2018 TIP - Approved May 23, 2013 Section A1 - Page 487 of 490

MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION TRANSPORTATION IMPROVEMENT PROGRAM PRIMARY STATE HIGHWAYS AND INTERMODAL



TRANSPORTATION IMPROVEMENT PROGRAM AMENDMENTS													
MPO Project Num:	DT4346881	Project Description:	FIU UniversityCity P	rosperity	y Project	Project Along SW 109 Avenue from SW 10 Street to SW 6 Street			om	Along SR 90/SW 8 Street east of SW 109 Avenue			
LRTP Ref.:	p. 4-58				-				reet				
County:	MIAMI-DADE												
Roadway ID:	n/a												
Lanes Exist:	3	Type of Work:	PEDESTRIAN OVER	RPASS		SIS or Non-SIS: No							
Lanes Improved:	2												
Lanes Added:	0							Dronocod	Funding (in \$00)()c)			
Project Length:	0.27						•	Proposed	Funding (in \$00	105)			
District:	6		PHASE:	Funding Source	<2014	2013 - 2014	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	>2018	All Years	
RESPONSIBLE AGENCY: Managed by FDOT Total				Total	0	12.949	l 0	0	0	0	0	12,94	

TOTAL ALL Years ALL Phases: 15,373

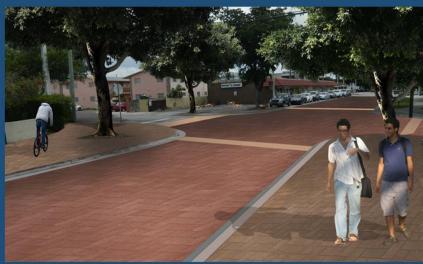
APPENDIX 2

Traffic Study (April 2015)









TRAFFIC STUDY

Pedestrian Bridge Crossing over SW 8th Street/Tamiami Trail at SW 109th Avenue and Complete Street Improvements





City of Sweetwater 500 SW 109th Avenue Sweetwater, FL 33174

TRAFFIC STUDY

Pedestrian Bridge Crossing over SW 8th Street/Tamiami Trail at SW 109th Avenue and Complete Street Improvements

Miami-Dade County, Florida

Prepared for:

TY-LININTERNATIONAL

T.Y.Lin International | H.J. Ross 201 Alhambra Circle, Suite 900, Coral Gables, FL 33134

Bv



GOAL Associates Inc. 14505 Commerce Way, Suite 514, Miami Lakes, FL 33016

April 2015

PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing with GOAL Associates Inc. a corporation, authorized to operate as a an engineering business (EB 30697), FEID No. 46-4949215, by the State of Florida, Department of Professional Regulation, Board of Professional Engineers, and that I have reviewed or approved the evaluation, findings, opinions, conclusions, or technical advice hereby reported for:

Project:

Traffic Study for Florida International University (FIU) Pedestrian Bridge Crossing

over SW 8th Street/Tamiami Trail at SW 109th Avenue and Complete Street

<u>Improvements</u>

Project No.:

N/A

Location:

Miami-Dade County, Florida

Client:

City of Sweetwater, Florida

This **Traffic Study Report** provides a detailed description of the engineering analysis required to support the proposed Florida International University (FIU) Pedestrian Bridge Crossing over SW 8th Street/Tamiami Trail at SW 109th Avenue and Complete Street Improvements along SW 109th Avenue. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering and planning as applied through professional judgment and experience.

Name:

Godfrey Lamptey, P.E., PTOE

Signature

P.E. Number:

Date:

EXECUTIVE SUMMARY

The City of Sweetwater has retained the services of TY Lin International to provide engineering services for the design and construction of the proposed pedestrian bridge and the upgrading of SW 109th Avenue to include complete street features. TY Lin International in association with GOAL Associates Inc. will prepare a traffic study that will evaluate the operational impact of the proposed improvements. These improvements are part of the Florida International University (FIU) UniversityCity Prosperity Project which will improve connectivity between the university's Modesto A. Maidique campus, the neighboring city of Sweetwater and other parts of Greater Miami. The primary objectives of this traffic study is to:

- Evaluate the impact of the permanent closure of approximately 195-ft of SW 7th Terrace
 west of SW 109th Avenue to accommodate the landing and access ramps to the
 pedestrian bridge.
- Evaluate the operational impact of the proposed complete street features along SW 109th Avenue.
- Evaluate the existing four lane configuration and a possible three lane configuration for the north leg of the SW 109th Avenue and SW 8th Street intersection in terms of level of service.

An initial field review and traffic data collection was done as part of the engineering study to observe and document the traffic conditions, pedestrian and physical characteristics of the study area. The study area is boarded by SW 8th Street to the south, SW 110th Avenue to the west, SW 108th Avenue to the east and SW 7th Street to the north. The adjacent land uses within the study area range from urban to institutional. The southern portion is characterized by the FIU Modesto A. Maidique Campus. North of the Tamiami Canal (C -4), consists of a mix of retail/commercial facilities, single family homes, and low-rise, multiple dwelling units. FIU and the City of Sweetwater have been working to change the zoning in the area immediately north of the FIU campus between SW 107th and SW 109th Avenues and between SW 6th and SW 7th streets to what is now called "The University District", to encourage increased density and floor area ratio (FAR) to allow for the construction of taller developments (up to 170 feet). This will encourage student housing/commercial/mixed used developments in anticipation of more students in the future.

As part of the study, traffic forecast analysis, traffic re-assignment and forecast analysis was performed for the 2015 opening year and 2035 design years. Capacity analysis was then performed for the AM and PM peak periods during the 2015 opening year and 2035 design year to determine the impact of the proposed improvements on the operations of the critical signalized and unsignalized intersections identified within the study area.

Two scenarios for the southbound (SB) approach at the SW 8th Street and SW 109th Avenue intersection were evaluated to determine the optimal configuration that will provide the best LOS for this approach. The purpose of this analysis is to evaluate the possibility of accommodating a pedestrian sidewalk on the east side of the bridge without the need to widen the existing structure. Alternative 1 maintains the existing southbound approach configuration with one exclusive left-

turn, one thru-left shared lane and one exclusive right turn lane. Alternative 2 eliminates the exclusive SB left turn lane and provide one thru-left shared lane and one exclusive right turn lane.

The operational analysis results for the signalized intersection at SW 8th Street and SW 109th Avenue indicated that the intersection will operate at an overall LOS E during the AM peak period for the 2015 opening year and LOS F for the PM peak Period for both Alternatives 1 and 2. The intersection will however operate at overall LOS F for the 2035 design year for both Alternatives 1 and 2. In addition, Alternative 2 will result in significant delays and queues for the southbound approach compared to Alternative 1.

The unsignalized intersection at SW 7th Street and SW 109th Avenue will operate at overall LOS B or better for the 2015 opening year and LOS E or better for the 2035 design year under both alternatives. The eastbound and westbound approaches at this unsignalized intersection will experience delays due to the free flow movements along the SW 109th Avenue.

Based on the evaluation results, Alternative 1 (existing configuration) resulted in the best LOS for the southbound approach for the signalized intersection at SW 8th Street and SW 109th Avenue and is recommended for implementation. Furthermore, the proposed permanent closure of the SW 7th Terrace Street intersection with SW 109th Avenue and rerouting of the traffic onto the adjacent intersection will not significantly impact the operations along the local roadway network within the study area compared to the existing condition. Most of the traffic at this intersection is due to drivers using the local road network to avoid the existing congestion along the major arterial such as Flagler Street and SW 109th Avenue. Hence the proposed permanent closure will not significantly alter travel pattern since these drivers will utilize alternate routes.

The proposed upgrading of SW 109th Avenue to provide complete street features which includes elimination of the turn lanes along SW 109th Avenue while providing pedestrian and bicycle friendly features is also not anticipated to result in adverse traffic impact to the unsignalized intersection of SW 7th Street at SW 109th Avenue. As indicated in the operational analysis results, the proposed intersection configuration for the 2015 opening year provides comparable operational results to the existing condition. However, it is recommended to provide a "Do Not Block Intersection" (R10-7) for the southbound approach since the traffic spill back from the SW 8th Street & SW 109th Avenue intersection sometimes southbound queues extends beyond this intersection. This will allow eastbound and westbound through movements across the intersection.

The proposed improvements will facilitate a pedestrian-oriented environment that will significantly enhance the safety of the pedestrians and bicycles. It also supports the City's vision to develop this area into a college town and improve connectivity between the Florida International University and the City of Sweetwater.

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Appendix A – FIU, UniversityCity Prosperity Project

Appendix B – Traffic Data Sources

Appendix C - LOS Standards, All Red & Yellow Clearance Times

Appendix D - Traffic Counts Data & Existing Signal Timing

Appendix E – Existing Intersection LOS Analysis Results

Appendix F – Conceptual Improvement Plans

Appendix G – Traffic Forecast Analysis

Appendix H - Future Condition Intersection LOS Analysis Results

1.0 INTRODUCTION

1.1 Project Background

In September, 2013, the U.S. Department of Transportation approved an \$11.4 Million Transportation Investment Generating Economic Recovery Program (TIGER) grant for the Florida International University (FIU), UniversityCity Prosperity Project (See **Appendix A**). The purpose of this project is to improve connectivity between the university's Modesto A. Maidique campus, the neighboring city of Sweetwater and other parts of Greater Miami.

UniversityCity was conceived as a \$124 million project that will link the Modesto A. Maidique Campus to other key points in South Florida. The project is of regional significance because it will create a transit oriented development district, while connecting east and west Miami-Dade County, further solidifying FIU and its surrounding neighborhoods as the innovation, cultural and athletic center for west Miami-Dade County. Some of the key elements of the project include:

- A pedestrian bridge across SW 8th Street/Tamiami Trail, and streetscape enhancements linking the Modesto A. Maidique Campus with neighboring Sweetwater at 109th Avenue, where privately funded student focused housing apartment buildings are currently under development.
- Access improvements to the entrances of the Modesto A. Maidique Campus and to the SW 109th Avenue area in Sweetwater, across from FIU campus.
- Smart Parking Software System in partnership with IBM that would alert smart phone users as to available spaces in a new FIU garage. The same application would contain real-time information about transportation, including the new advanced bus system with which Miami-Dade Transit is planning to connect west Miami-Dade County with the Miami Intermodal Center at the airport.

1.2 Study Objectives

The City of Sweetwater retained the services of TY Lin International to provide engineering services for the design and construction of the proposed pedestrian bridge and the upgrading of SW 109th Avenue to include complete street features. In November 2014, TY Lin International retained the services of GOAL Associates Inc. to prepare a traffic study that will evaluate the operational impact of the proposed improvements. The primary objectives of this traffic study is to:

- Evaluate the impact of the permanent closure of approximately 195-ft of SW 7th Terrace
 west of SW 109th Avenue to accommodate the landing and access ramps to the
 pedestrian bridge. This will result in the elimination of the SW 7th Terrace Street intersection
 with SW 109th Avenue and rerouting of the existing traffic onto the adjacent local roadway
 network.
- Evaluate the operational impacts of the proposed complete street features along SW 109th Avenue. This includes elimination of the turn lanes along SW 109th Avenue while providing pedestrian and bicycle friendly features.

 Evaluate the existing four lane configuration and a possible three lane configuration for the north leg of the SW 109th Avenue and SW 8th Street intersection in terms of level of service. The purpose of this analysis was to evaluate the possibility of accommodating a pedestrian sidewalk on the east side of the bridge without the need to widen the existing structure

This traffic report details the operational and safety analysis performed as part of the impact evaluation for the study area. It includes, traffic data collection, traffic re-assignment and forecast analysis. In addition, capacity analysis was performed for both the opening and design years to evaluate the operational impacts of the proposed improvements. The report also provides recommendations to enhance operations and safety within the study area.

1.3 Project Study Area

This project is located along SW 109th Avenue from approximately 700-ft south of SW 10th Street (Green Library) to SW 6th Street in Miami-Dade County. The project lies within the City of Sweetwater and the FIU Modesto A. Maidique Campus. The traffic study area is boarded by SW 8th Street to the south, SW 110th Avenue to the west, SW 108th Avenue to the east and SW 7th Street to the north. The adjacent land uses with the study area range from urban to institutional. The southern portion is characterized by the FIU Modesto A. Maidique Campus. North of the Tamiami Canal (C -4) consists of a mix of retail/commercial facilities, single family homes, and low-rise, multiple dwelling units.

FIU and the City of Sweetwater have been working to change the zoning in the area immediately north of the FIU campus between SW 107th and SW 109th Avenues and between SW 6th and SW 7th streets to what is now called "The University District", to encourage increased density and floor area ratio (FAR) to allow for the construction of taller developments (up to 170 feet). This will encourage student housing/commercial/mixed used developments in anticipation of more students in the future. This rezoning has resulted in the recently completed "The 109 Tower", a 15-story student dorm with roughly 180 residential units plus first-floor retail on the east side of SW 109th Avenue between SW 7th Terrace and SW 7th Street. Other high rise developments are also being planned within this area.

Figure 1-1 shows the study area and intersections under consideration.



Figure 1-1 Project Location Map

2.0 ANALYSIS METHODOLOGY

2.1 Analysis years

Traffic operational analysis was performed for the three intersections within the study area for the following years:

- Existing Year 2014
- Opening Year 2015
- Design Year 2035

2.2 Traffic Factors

Traffic factors were developed to adjust the field collected data in order to obtain the design hour traffic for each of the analysis years consistent with the following documents:

- Project Traffic Forecasting Handbook, Published by the FDOT, January 2012
- 2013 Florida Traffic Information Online, Published by the FDOT (2013 FTI Online)

Key traffic parameters used for developing the design hour traffic include the standard K factor, Directional Distribution (D) factor and daily truck factor (T₂₄). The latest traffic factors were obtained from the FDOT count stations located along SW 8th Street/Tamiami Trail and SW 109th Avenue (See **Table 2-1**). The K factor (which is the Standard K Factor) and the D factors are consistent between the two count stations. However, the T₂₄ factor showed significant variations between the count stations. Based on the field review, very few trucks were observed along SW 109th Avenue, as a result, the T₂₄ factor for the Count Station along SW 8th Street was recommended to be used for both roadways. The recommended K, D and T₂₄ factors for the study intersections are provided in **Table 2-1**.

	Table 2-1 Traffic Factors										
Station	Description	K	D	T ₂₄							
870090	SR 90/US-41/SW 8 ST, 500' E SW 109 AV	9.0%	58.9%	5.5%							
878192	SW 109TH AVE, 200' SOUTH OF 4TH STREET	9.0%	58.9%	16.2%							
Recommen	ded Traffic Factors	9.0%	58.9%	5.5%							

The peak hour truck factor (T_f) was estimated as 0.5 times the Daily Truck factor. The recommended D-factor is within the acceptable range provided by the FDOT project traffic forecasting handbook for similar roadways.

The following Seasonal and axle factors were also obtained from the 2013 Florida Traffic Information Online database to convert the daily traffic counts to annual average daily traffic volumes.

- Seasonal Factor (SF) = 1.00 (Counts performed on November 18-20, 2014)
 - = 0.99 (Counts performed on December 3, 2014)
- Axle Factor (AF) = 0.97

The existing intersection peak hour factors (PHF) was used for the existing condition analysis. For the future years analysis, the PHF was set to 0.95 in accordance with the FDOT Traffic Analysis Handbook.

Appendix B provides the sources of the traffic factors as well as the seasonal and axle factors.

2.3 Traffic Forecast Analysis

A traffic forecast analysis was done to determine the future traffic volumes. Historic traffic data from adjacent FDOT count stations as well as population and employment data from the Miami-Dade MPO 2040 Long Range Transportation Plan (LRTP) was obtained to establish an acceptable growth factor. The growth factor was then applied to the existing intersections turning movement volumes to obtain the future traffic volumes.

2.4 Operational Analysis Procedures

Traffic operational analysis for existing and proposed improvements was performed using methodologies outlined in the 2010 Highway Capacity Manual (HCM). Peak period analysis was performed for the existing year (2014) and for the future improvements during the Opening Year (2015) and Design Year (2035).

2.4.1 Performance Measures of Effectiveness

The following performance measures of effectiveness (MOE's) were utilized in this traffic report for both the existing and future conditions:

- Signalized intersection level of service (LOS), delays, and volume-to-capacity (V/C) ratios.
- Unsignalized intersection level of service (LOS), delays, and volume-to-capacity (V/C) ratios.

2.4.2 Level of Service Standards

The FDOT has adopted peak hour LOS D for the State Highway System during peak travel in urbanized areas. The study area falls between the Urban Infill Area (UIA) and the Urban Development Boundary (UDB) as outlined in the Miami-Dade County Comprehensive Development Master Plan (CDMP). According the CDMP, the adopted peak period level of service standards for arterial roadways between the UIA and the UDB is LOS D except that State Urban Minor Arterials (SUMAs) may operate at LOS E (see **Appendix C**).

Within the study limits, SR 90/SW 8th Street is on the State Highway System (SHS) and classified as an Urban Principal Arterial – Other while SW 109th Avenue is not on the SHS and classified as an Urban Collector. Based on the CDMP LOS standards and the FDOT LOS standards, and the availability of transit facilities with less than 20 minutes headway within ½ mile of the study roadways and intersections (Miami-Dade Transit Route 8), LOS E was recommended as the

adopted LOS standard to be used for the existing and future traffic operational analysis as provided in **Table 2-2**.

Table 2-2 Peak Period LOS Standards									
Facility Type	Transit Availability	FDOT	Miami Dade County CDMP	Adopted LOS Standard					
	No Transit Service	LOS D	LOS D (90% of Capacity) LOS E (100% Capacity) on SUMAs						
State and County Roadways between the UIA ¹ and the UDB ²	20 Min. Headway Transit Service Within 1/2 Mile	LOS D	LOS D LOS E (100% of Capacity) Lo						
	Extraordinary Transit Service	LOS D	120% of Capacity						

Notes 1: Urban Infill Area (UIA) is defined as that part of Miami-Dade County located east of, and including, SR 826/Palmetto Expressway

2.4.3 Analysis Tools

The Intersection analysis was performed using the HCM 2010 module within the SYNCHRO 8 Traffic Analysis software.

^{2:} UBD refers to the Urban Development Boundary

^{3:} SUMA refers to State Urban Minor Arterial

3.0 DATA COLLECTION

3.1 Data Requirements and Data Sources

The data requirements for this study include traffic counts, roadway data, proposed land use and crash data. The sources for the data requirement will include, but are not limited to:

- Historical and 2013 traffic counts at count stations obtained from FDOT's Florida Traffic Information (FTI) Online
- Traffic counts collected for this traffic study
- Traffic Counts collected for the Miami-Dade County MPO SW 8th Street Corridor Study
- Existing signal timing obtained from the Miami-Dade County Traffic Engineering Department
- FDOT Straight Line Diagrams (SLD) and Roadway Characteristic Inventory (RCI)
- Conceptual Plans from the University City Complete Streets including Signature Pedestrian Bridge

3.2 Data Collection Methodology

An initial field review and traffic data collection was also done as part of the traffic study to observe and document the traffic conditions, pedestrian characteristics and physical characteristics at the study intersections. Based on preliminary field observations, the following traffic count data were obtained at the key locations and critical time periods indicated:

- 6-hour turning movement counts performed on one weekday during the morning peak period and evening peak period. These counts were done at the following intersections
 - 1. SW 109th Avenue and SW 7th Terrace
 - 2. SW 109th Avenue and SW 7th Street

The traffic data collection was done during the week of December 1, 2014 and December 7, 2014. The traffic counts were also supplemented by previous counts obtained by FDOT for retiming of the signal at SW 8th Street & SW 109th Street intersection. These counts were obtained during the week of November 17, 2014 to November 24, 2014 and it includes the following data:

 4-hour turning movement counts performed on three consecutive weekdays during the morning peak period and evening peak period at the SW 8th Street & SW 109th Avenue (FIU Entrance) intersection.

Additional traffic data from the ongoing traffic study by Miami-Dade County MPO along SW 8th street was also obtained. The traffic counts were performed during the week of March 17, 2014 to March 24, 2014 and include the following counts:

- 72-hour bi-directional volume count recorded by 15 minute intervals performed on three consecutive weekdays at the following locations:
 - 1. SW 8th Street West of SW 112th Avenue
 - 2. SW 8th Street West of SW 107th Avenue

Traffic factors obtained from the Florida Department of Transportation (FDOT) were used to normalize the counts obtained from the different periods to account for seasonal variations in traffic data. The existing signal phasing and timing data for the study intersection was also obtained from Miami-Dade County Traffic Division.

Figure 3-1 shows the locations of the traffic counts. **Appendix D** shows the complete traffic count report and existing signal timings.



Figure 3-1 Traffic Counts Locations

3.3 Field Observations

Generally, the PM peak hour were observed to be slightly higher than the AM peak period. The following observations were noted at the study intersections during our field review conducted on December 3, 2014 along SW 109th Avenue.

SW 8th Street Intersection

- 1. The existing signal timing currently operates as a split phase for the northbound (NB) and SB movements.
- 2. High demand for the SB left turn movement was observed frequently extending beyond the adjacent intersections.
- 3. The SB left turn queues were observed blocking the through and right turn movements (see Figure 3-4).
- 4. Significant pedestrian activity was observed crossing both the east and west legs of the intersection.

SW 7th Terrace Intersection

- The volume of traffic on the SW7th Terrace is relatively low. This roadway is sometimes used as by motorists to cut through the traffic back-up along SW 109th Avenue during the peak periods.
- 2. This intersection operates as a right-in right-out, with no NB to WB movement allowed. However, a vehicle were observed making this illegal turn (See **Figure 3-6**).
- 3. Significant pedestrian activity was observed from the adjacent residential community and student housing facility. A pedestrian bridge is located on the east side to facilitate crossing the Tamiami Canal to access FIU located on the opposite side of SW 8th Street.

SW 7th Street Intersection

- 1. Traffic back-up from the SW 8th Street and SW 109th Avenue signalized intersection frequently extends beyond this intersection during the morning and evening peak periods blocking the EB and WB through and left turn movements.
- 2. EB through and left turn movements have restricted sight distance when the traffic backs up through the intersection and drivers have to maneuver through the gaps in the SB queues.
- 3. Pedestrians were observed crossing the SW 109th Avenue, however, there are no crosswalks across SW 109th Avenue.

Figure 3-2 through Figure 3-7 show the existing condition of the study intersection.

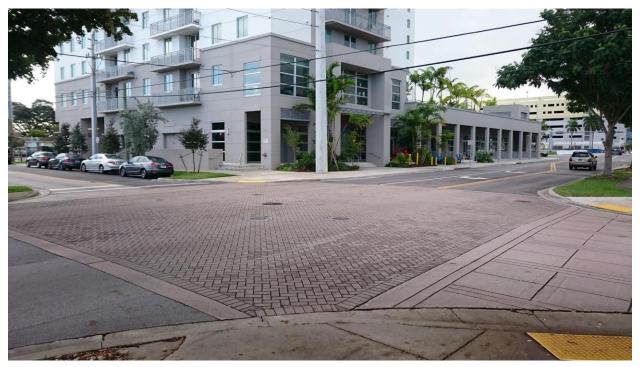


Figure 3-2 SW 7th Street & SW 109th Avenue Intersection looking Southeast



Figure 3-3 SW 7th Terrace & SW 109th Avenue Intersection looking South



Figure 3-4 SB Right Turn Lane at SW 8th Street Intersection



Figure 3-5 Pedestrians Crossing SW 109th Avenue with no Cross Walk at SW 7th Street

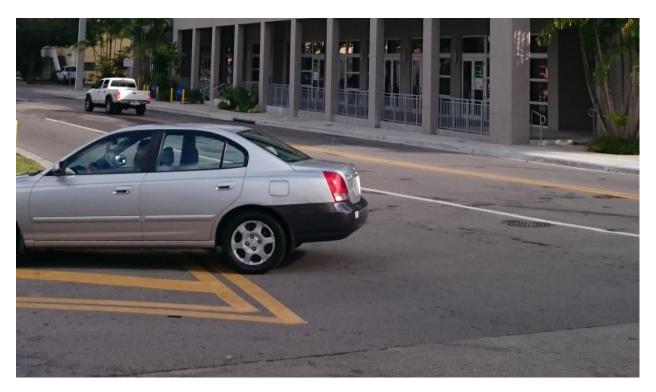


Figure 3-6 Illegal NB to WB movement at SW 109th Avenue and SW 7th Terrace Intersection



Figure 3-7 Existing Pedestrian Bridge Located On the East Side of SW 109th Avenue

4.0 EXISTING CONDITIONS

4.1 Existing Intersection Characteristics

4.1.1 SW 109th Avenue & SW 8th Street Intersection

The Intersection of SW 109th Avenue and SW 8th Street/Tamiami Trail is a four legged signalized intersection. SW 8th Street/Tamiami Trail is part of the state roadway system (SR 90). It is designated as a 'Corridor of Regional Significance' and provides the southernmost route to the west coast of Florida through the Everglades. SW 8th Street/Tamiami Trail is classified as an Urban Principal Arterial - Other with access class 5 designation. It is a six-lane east-west divided roadway with three lanes in each direction separated by a raised grassed median. The posted speed limit within this segment of SW 8th Street/Tamiami Trail is 45 mph.

Within the study area, SW 109th Avenue is a two lane Undivided Urban Collector with one lane in each direction. The posted speed limit along SW 109th Avenue is 30 mph. As part of the Complete Streets improvements proposed for this corridor, the roadway will be upgraded to include several pedestrian and bicycle features.

Figure 4-1 below shows existing condition diagram showing the lane configurations at the SW 109th Avenue and SW 8th Street/Tamiami Trail intersection.

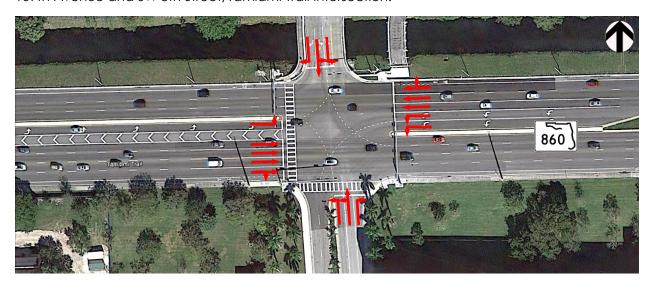


Figure 4-1 SW 109th Avenue & SW 8th Street Intersection Configuration

4.1.2 SW 109th Avenue & SW 7th Terrace Intersection

The Intersection of SW 109th Avenue and SW 7th Terrace is currently a three legged (T) intersection with stop control along SW 7th Terrace. The intersection operates as a right-in-right-out and located approximately 100-ft from the SW 109th Avenue and SW 8th Street/Tamiami Trail Intersection. SW 7th Terrace is a two-lane, two-way urban local road. As part of the proposed construction of the Signature Pedestrian Bridge across SW 8th Street /Tamiami Trail and Canal, this intersection will be permanently closed to enable the construction of landing and access ramps. This will require redistribution of traffic from this roadway to the adjacent roadways.

Figure 4-2 below shows existing condition diagram showing the lane configurations at the SW 109th Avenue and SW 7th Terrace intersection.

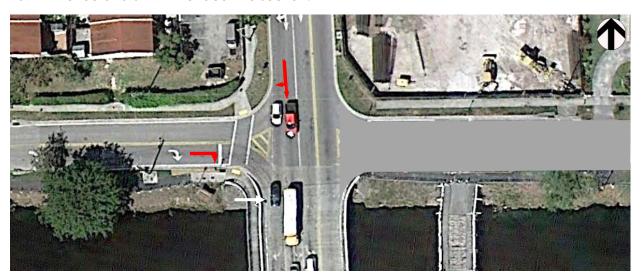


Figure 4-2 SW 109th Avenue & SW 7th Terrace Intersection Configuration

4.1.3 SW 109th Avenue & SW 7th Street Intersection

The Intersection of SW 109th Avenue and SW 7th Street is a four legged intersection with two-way stop control along SW 7th Street. Within the study area, SW 7th Street is a two-lane urban local road with one lane in each direction and parking lanes on each side of the roadway. No posted speed limit signs were observed during our field visit. The intersection includes stamped concrete crosswalks for the north-south movements and pavers within the center of the intersection.

Figure 4-3 below shows existing condition diagram showing the lane configurations at the SW 109th Avenue and SW 7th Street intersection.

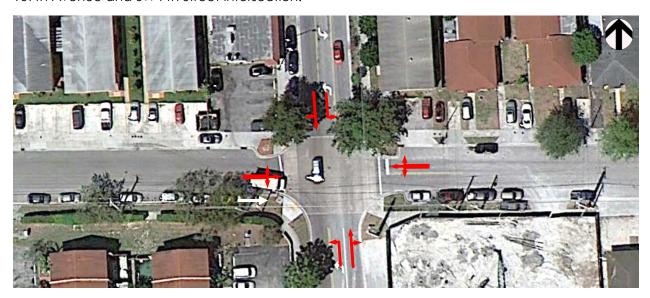


Figure 4-3 SW 109th Avenue & SW 7th Street Intersection Configuration

4.2 Existing Traffic Analysis

4.2.1 Existing Traffic Volumes

The traffic counts obtained were adjusted using seasonal factors to account for seasonal variation in the travel pattern. **Appendix D** shows the details for the turning movement counts. **Figure 4-4** shows the existing peak hour counts adjusted for seasonal and axle factors.

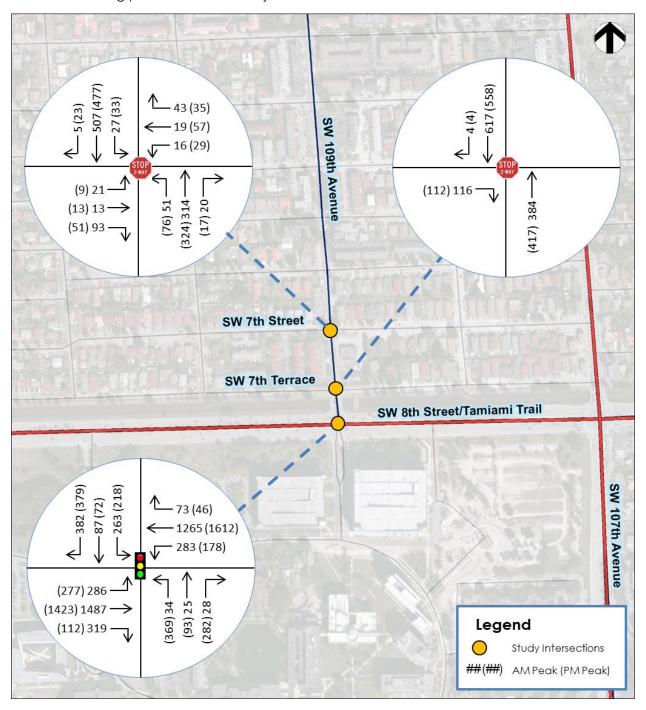


Figure 4-4 Existing Peak Hour Volumes

4.2.2 Existing Intersection Capacity Analysis

Existing traffic conditions were analyzed using Highway Capacity Manual (HCM) 2010 method for signalized and un-signalized intersections. SYNCHRO 8 software was used to perform the analysis. The latest signal timings were used to model the study intersection which were obtained from Miami-Dade County Traffic Signal Operations Engineering division. The analysis was performed for weekday AM and PM peak periods. The peak hour factors were obtained from the traffic counts. **Table 4-1** shows the existing conditions analysis results for the study intersection.

The analysis results show that the overall LOS for the signalized intersection at SW 8th Street & SW 109th Avenue is LOS E and LOS F for the AM and PM peak periods respectively. All the intersection approaches operate at LOS E or better during the AM peak period; however, during the PM peak period, the northbound, southbound and eastbound approaches operates at LOS F.

The two unsignalized intersections at SW 7th Street and SW 7th Terrace with SW 109th Avenue will operate at LOS D or better for all the intersection approaches and movements during both the AM and PM peak periods with the exception of the WB approach at SW 7th Street and SW 109th Avenue intersection that operates at LOS F during the PM peak period. Both intersections operate at an overall LOS A for both the AM and PM peak periods.

The detailed existing intersection operational analysis results are provided in **Appendix E**.

Table 4-1 Existing (2014) Intersections LOS												
Inter-		Move-								Overall Intersection Delay (s/veh)/ LOS		
section	Time	ment	N			В		В	W			_
		L	Delay 68.7	LOS	Delay 69.6	LOS	Delay 70.9	LOS	Delay 144.9	LOS	Delay	LOS
		 Т	68.8	E	72.5	E	43.2	D	48.8	E		
	AM	R	56.1		71.2	E	46.7	D	51.4		58.6	Е
SW 109th		Арр	64.8	E	71.2	E	47.8	D	64.8	E		
Avenue & SW 8th Street		L	79.0	E	66.9	E	427.7	F	90.7	F		
	514	Т	95.5	F	68.5	Е	44.3	С	51.3	D	0.4.7	
	PM	R	80.6	F	144.5	F	46.9	С	55.3	E	84.7	F
		Арр	85.5	F	109.5	F	103.6	F	56.4	Е		
		L	-	-	-	-	-	-		-		
		Т	-	-	-	-	-	-	-	-	1.6	
	AM	R	-	ı	-	-	15.6	С	-	ı	1.0	А
SW 109th Avenue &		Арр	-	ı	-	1	15.6	С	-	ı		
SW 7th Terrace		L	-	-	-	-	-	-	-	-		
	PM	Т	-	ı	-	ı	-	ı	-	ı	1.5	А
	PIVI	R	-	ı	-	i	14.4	В	-	ı	1.5	A
		Арр	-	ı	-	ı	14.4	В	-	ı		
		L	8.8	Α	8.1	Α	25.1	D	25.6	D		
	AM	Т	-	-	-	ı	-	-	-	-	5.2	А
	Alti	R	-	-	-	-	-	-	-	-	5.2	A
SW 109th Avenue &		Арр	1.2	Α	0.4	Α	25.1	D	25.6	D		
SW 7th Street		L	8.9	Α	8.2	Α	23.8	С	59.5	F		
	PM	Т	-	-	-	-	-	-	-	-	8.6	А
	1 111	R	-	-	-	-	-	-	-	-	0.0	٨
		Арр	1.6	Α	0.5	Α	23.8	С	59.5	F		

5.0 PROPOSED CONDITIONS

5.1 Complete Street Improvements

The proposed improvements within the study area includes the construction of a signature pedestrian bridge across SW 8th Street/ Tamiami Canal and the Tamiami/C4 Canal on the west side of the intersection with SW 109th Avenue. The proposed pedestrian bridge will require the permanent closure of approximately 195-ft of SW 7th Terrace west of SW 109th Avenue to accommodate the landing and access ramps to the pedestrian bridge. This will result in the elimination of the SW 7th Terrace Street intersection with SW 109th Avenue. Additional improvements incorporating complete streets features are also proposed along SW 109th Avenue (See **Figure 5-1**). These include:

- Traffic calming through narrowed travel lanes to reduce speed safer for pedestrians
- Landscape and hardscape features to promote pedestrian oriented environment
- Highly visible crosswalks Improved signage
- Higher lighting levels for increased visibility
- Widened and improved sidewalks to comply with ADA.

These proposed improvements will enhance the pedestrian environment, create pedestrian friendly spaces, reduce pedestrian accidents and travel time to and from FIU. The detailed plans are included in **Appendix F**.

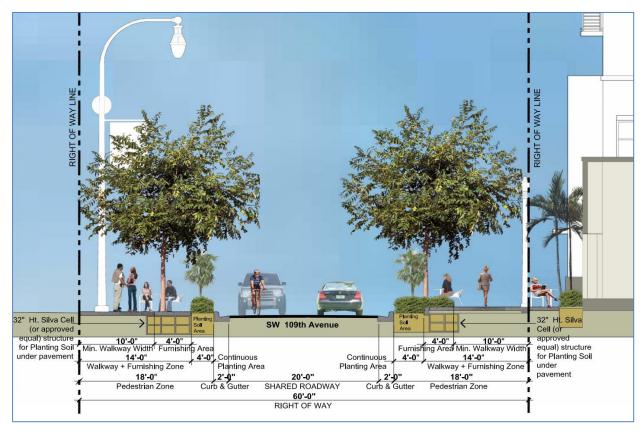


Figure 5-1 Proposed Complete Street Improvements along SW 109th Avenue

5.2 Future Traffic Volumes

5.2.1 Traffic Growth Rate

The traffic forecasting procedure outlined in the FDOT Project Traffic Forecasting Handbook was used to forecast the traffic for the opening year 2015 and design year 2035. The traffic forecasting involves the use of an annual growth rate to adjusted existing turning movement volumes to obtain the background traffic volumes for the future years. The growth rate was established using a regression analysis of 3-5 years of the most recent historical AADTs from the following FDOT traffic count stations as shown in **Table 5-1** and comparison to the population and employment growth within the Northwest Transportation Planning Area for Miami-Dade County from 2010 to 2040.

	Table 5-1 Establishment of Growth Rate								
FDOT Station	Description	Future Growth Rate to 2035 Design Year							
870090	SR 90/US-41/SW 8 ST, 500' E SW 109 AV	-3.03%	-0.71%						
878192	SW 109TH AVE, 200' SOUTH OF 4TH STREET	-1.92%							
	Av	verage Growth Rate	-1.32%						
Northwest T	ransportation Planning Area Annual Population Gr	rowth (2010 – 2040) ¹	0.61%						
Northwest Tra	nsportation Planning Area Annual Employment Gr	rowth (2010 – 2040) ¹	1.17%						
	Recommended Growth Rate								

Note 1: Population and employment numbers obtained from Miami-Dade MPO 2040 LRTP

The trend analysis, shows a negative growth rate for both FDOT Count Stations. For purposes of this traffic study, a 0.89% growth rate was recommended based on the average population and employment growth rates for Miami-Dade County from 2010 to 2040. The trend analysis and growth rate calculations are provided in **Appendix G**.

5.2.2 Traffic Re-assignment

The construction of the signature pedestrian bridge will require the permanent closure of approximately 195-ft of SW 7th Terrace west of SW 109th Avenue to accommodate the access ramps and landing. This will also result in the permanent closure of the intersection of SW 7th Terrace and SW 109th Avenue. As such, re-assignment of the existing traffic at this intersection onto the adjacent intersections and local roadway network will be required. The following assumptions were made for the traffic re-assignments:

- 1. EB right turn movement at SW 7th Terrace and SW 109th Avenue intersection will be rerouted onto SW 7th Street via SW 110th Avenue and re-assigned as EB right turn volume at SW 7th Street and SW 109th Avenue intersection.
- 2. SB right turn movement at SW 7th Terrace and SW 109th Avenue intersection will be reassigned as SB right turn volume at SW 7th Street and SW 109th Avenue intersection.

Appendix G shows the detailed traffic re-assignment for Weekday AM and PM peak hours for the 2015 opening year and 2035 design years.

5.2.3 Future Turning Movement Volumes

To obtain the future peak hour traffic volumes, the recommended growth rate of 0.89% was used to grow the background traffic from 2014 to the 2015 opening year and the 2035 design year. The diverted traffic from the permanent closure of SW 7th Terrace intersection onto the local roadway network was then added to the background traffic volume to obtain the future peak hour traffic volumes. **Figure 5-2** and **Figure 5-3** show the peak hour volumes for opening year (2015) and design year (2035) respectively. The detailed future traffic estimates are provided in **Appendix G.**

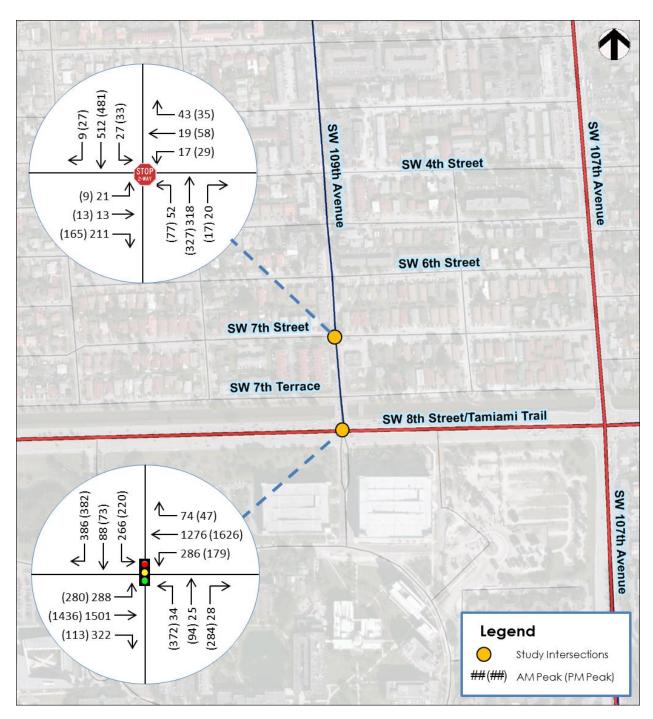


Figure 5-2 Opening Year (2015) Peak Hour Volumes

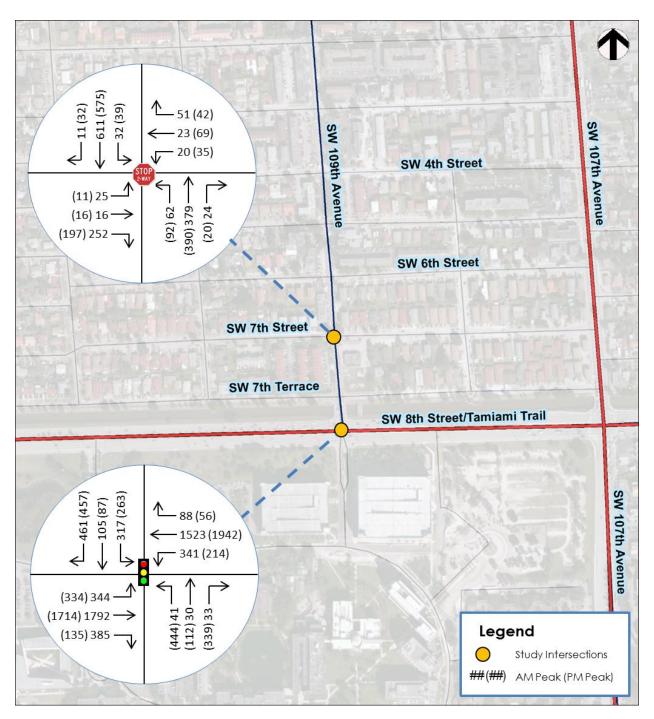


Figure 5-3 Design Year (2035) Peak Hour Volumes

5.3 Future Traffic Operational Analysis

Future traffic conditions for the proposed improvements within the study area were analyzed using Highway Capacity Manual (HCM) 2010 methodologies for signalized and un-signalized intersections in SYNCHRO 8. The all-red and yellow clearance times for the signalized intersection at SW 8th Street and SW 109th Avenue intersection were checked to make sure that they meet the minimum standards in accordance with the guidelines mentioned in the FDOT Traffic Engineering Manual (See **Appendix C**). **Table 5-2** provides the all-red and yellow clearance interval analysis results.

Table 5-2 All-Red and Yellow Clearance Interval											
lakana akan		Requ	uired		Existing						
Intersection	NB	SB	EB	WB	NB	SB	EB	WB			
		All-Red Clearance (Seconds)									
SW 8th Street and SW 109th	3.6	3.6	2.0	2.0	3.6	3.6	2.0	2.0			
Avenue			Yell	ow Clearai	nce (Secor	nds)					
	3.7	3.7	4.8	4.8	4.0	4.0	4.8	4.8			

The FDOT recently completed a signal retiming study for the intersection of SW 8th Street and SW 109th Avenue to provide operational improvements as well as adequately accommodating for pedestrians at this location. The existing signal timing at the intersection is configured to favor the east-west movement which is coordinated with the adjacent signals along the SW 8th Street/Tamiami Trail Corridor.

In order to maintain coordination with adjacent signalized intersections, the existing cycle lengths and offsets for the AM and PM peak periods were utilized for the future year analysis.

5.3.1 Alternatives Considered

As part of this study, two alternative configurations for the SB approach at the SW 8th Street and SW 109th Avenue intersection were considered to determine the optimal configuration that will provide the best LOS for this approach. The purpose of this analysis is to evaluate the possibility of accommodating a pedestrian sidewalk on the east side of the bridge without the need to widen the existing structure. The alternatives considered are shown in **Figure 5-4** and **Figure 5-5** and described below.

- **Alternative 1:** Maintain existing SB approach configuration with one exclusive left-turn, one thru-left shared lane and one exclusive right turn lane.
- **Alternative 2**: Eliminate exclusive SB left turn and provide one thru-left shared lane and one exclusive right turn lane.

Both alternatives include the complete street improvements along SW 109th Avenue and the permanent closure of the SW 109th Avenue and SW 7th Terrace intersection.

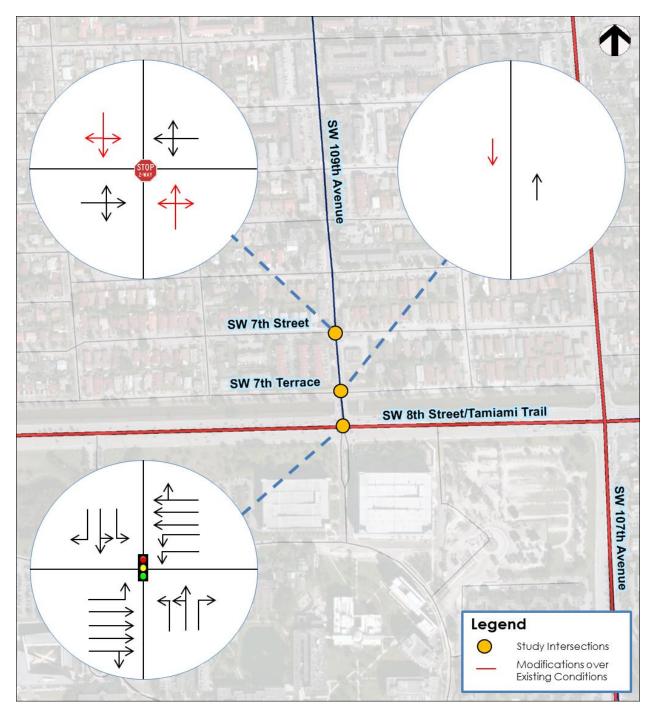


Figure 5-4 Alternative 1: Proposed Intersections Configuration

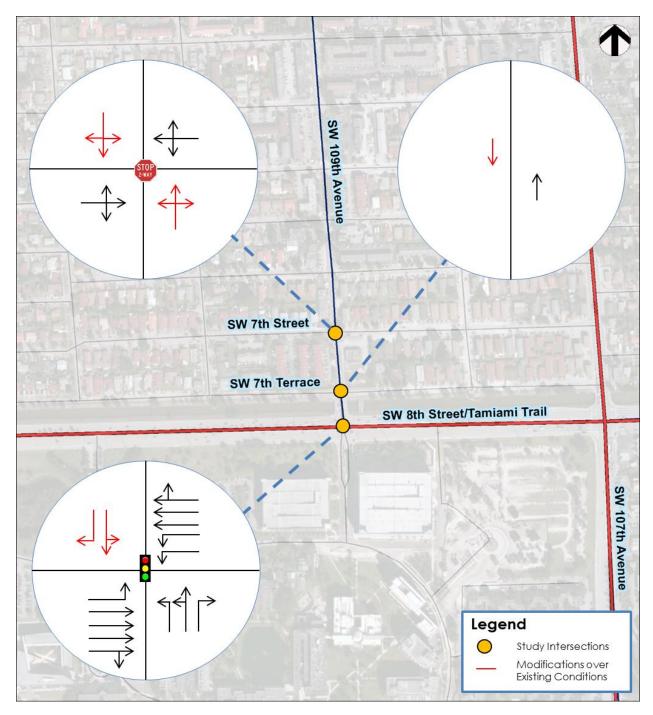


Figure 5-5 Alternative 2: Proposed Intersections Configuration

5.3.2 Future Intersection Capacity Analysis

Table 5-3 and **Table 5-4** show the level of service results at the study intersections for the 2015 opening and 2035 design years during the AM and PM peak periods for Alternatives 1 and 2 respectively. For the SW 8th Street & SW 109th Avenue signalized intersection, the existing cycle lengths and offsets for the AM and PM peak periods were used. The detailed future analysis results are provided in **Appendix H**.

The operational analysis results for the signalized intersection at SW 8th Street & SW 109th Avenue indicated that the intersection will operate at an overall LOS E during the AM peak period for the 2015 opening year and LOS F for the PM peak Period for both Alternatives 1 and 2. The intersection will however operate at overall LOS F for the 2035 design year for both Alternatives 1 and 2. The southbound approach under Alternative 1 will operate at LOS E during AM peak period and LOS F during the PM peak period for the 2015 opening year and 2035 design year. For Alternative 2, the southbound approach will operate at LOS F during both the AM and PM peak periods for the 2015 opening year and 2035 design year. Alternative 2 will also result in significant delays and queues for the southbound approach compared to Alternative 1. Based on the evaluation results, it is evident that Alternative 1 provides the best configuration for the southbound approach at this intersection. Consequently, Alternative 1 is recommended for implementation.

The unsignalized intersection at SW 7th Street and SW 109th Avenue will operate at overall LOS B or better for the 2015 opening year and LOS E or better for the 2035 design year. The eastbound approach at SW 7th Street at SW 109th Avenue intersection will operate at LOS F during the AM peak period for the 2035 design year while the westbound approach will operate at LOS F during PM peak period for the 2015 opening year and during both peak periods for the 2035 design year. A comparison of the 2015 opening year traffic operational analysis to the existing conditions indicates that the proposed permanent closure of the SW 7th Terrace Street intersection with SW 109th Avenue and rerouting of the traffic onto the adjacent intersection will not significantly impact the operations along the local roadway network within the study area. As previously noted, most of the traffic at this intersection is due to drivers using the local road network to avoid the existing congestion along the major arterial such as Flagler Street and SW 109th Avenue.

The proposed upgrading of SW 109th Avenue to provide complete street features is also not anticipated to result in adverse traffic impact to the unsignalized intersection at SW 7th Street at SW 109th Avenue since the proposed intersection configuration for the 2015 opening year provides comparable operational results to the existing condition. However it is recommended to provide a "Do Not Block Intersection" (R10-7) for the northbound approach since the traffic spill back from the SW 8th Street & SW 109th Avenue intersection sometimes extends beyond this intersection. This will allow eastbound and westbound through movements across the intersection.

				Alt	ternativ	Table e 1 - In	5-3 tersecti	ons LO	S			
Inter-		Move-			Overall Intersection							
	Time	ment	NB		SB		EB		WB		Delay (s/veh)/ LOS	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
					201	L5 Oper	ning Yea	r				
		L	68.7	Е	69.8	Е	72.7	Е	147.9	F		
	0.04	Т	68.8	Е	72.9	Е	43.5	D	49.6	D	F0 3	F
CW 100+h	AM	R	56.1	Е	70.9	Е	47	D	52.3	D	59.3	E
SW 109th Avenue &		Арр	64.8	Е	71.2	Е	48.2	D	67.6	Е		
SW 8th Street		L	79.8	Е	67.1	Е	443.7	F	90.9	F	86.2	
Street	PM	Т	97.1	F	68.7	Е	44.6	D	51.8	D		F
	PIVI	R	81.4	F	147.3	F	47.2	D	55.9	Е	00.2	Г
		Арр	86.6	F	111.0	F	106.3	F	56.9	Е		
		L	8.7	Α	8.1	Α	27.4	D	30.4	D		Δ.
	0.04	Т	-	-	-	=-	-	-	-	-	7.8	
	AM	R	-	-	-	-	-	-	-	-	7.8	Α
SW 109th Avenue &		App	1.2	Α	0.4	Α	27.4	D	30.4	D		
SW 7th Street	PM	L	8.8	Α	8.1	Α	21.5	С	65.8	F		ļ
Street		Т	-	-	-	-	-	-	-	-	10.2	В
		R	-	-	-	1	1	1	1	1	10.2	В
		Арр	1.6	Α	0.5	Α	21.5	С	65.8	F		
					20	35 Des	ign Yeaı	•				
		L	67.5	Е	74.5	Е	146.4	F	219.3	F	80.3	F
	0.04	Т	67.4	Е	80.7	F	51.5	D	72.3	Е		
	AM	R	54.9	D	78.0	Е	59.4	Е	81.0	F		
SW 109th Avenue &		App	63.6	Е	78.0	Е	66.2	Е	100.5	F		
SW 8th Street		L	99.6	F	69.6	Е	814.1	F	96.5	F		
Street	DM	Т	142.4	F	72.5	Е	50.7	D	70.2	Е	126.6	-
	PM	R	109.5	F	235.6	F	55.5	Е	79.2	Е	126.6	F
		Арр	118.4	F	160.5	F	168.7	F	75.6	Е		
		L	9.2	Α	8.3	Α	74.3	F	90.2	F		
		Т	-	-	-	i	-	1	-	-	20.6	
	AM	R	-	-	-	-	-	-	-	-	20.6	С
SW 109th Avenue &		Арр	1.2	Α	0.4	Α	74.3	F	90.2	F		
SW 7th		L	9.3	Α	8.3	Α	49.0	Е	296.1	F		
Street		Т	-	-	-	-	-	-	-	-	5.5.5	
	PM	R	-	-	-	-	-	-	-	-	36.5	E
		Арр	1.7	Α	0.5	Α	49.0	Е	296.1	F		

				Alt	ternativ	Table e 2 - In	5-4 tersecti	ons LO	S			
Inter-		Move-	Approach Delay (s/veh)/LOS									tersection
	Time	ment	NB		SB		EB		WB		Delay (s/veh)/ LOS	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
					201	L5 Oper	ning Yea	ır				
		L	68.7	Е	155.3	F	72.7	Е	147.9	F		
SW 109th Avenue &	0.04	Т	68.8	Е	-	-	43.5	D	49.6	D	65.7	_
	AM	R	56.1	Е	70.9	Е	47.0	D	52.3	D	65.7	E
		App	64.8	Е	111.3	F	48.2	D	67.6	Е		
SW 8th Street		L	79.8	Е	102.2	F	443.7	F	90.9	F		
Street	DM	Т	97.1	F	-	-	44.6	D	51.8	D	00.3	-
	PM	R	81.4	F	147.3	F	47.2	D	55.9	Е	88.3	F
		App	86.6	F	127.7	F	106.3	F	56.9	Е		
		L	8.7	Α	8.1	Α	27.4	D	30.4	D		
	0.04	Т	-	-	-	-	-	-	-	-	7.8	
	AM	R	-	-	-	-	-	-	-	-	7.8	Α
SW 109th Avenue &		Арр	1.2	Α	0.4	Α	27.4	D	30.4	D		
SW 7th Street	PM	L	8.8	Α	8.1	Α	21.5	С	65.8	F		
Street		Т	-	-	-	-	-	-	-	-	10.2	В
		R	-	-	ı	1	1	1	1	1	10.2	В
		Арр	1.6	Α	0.5	Α	21.5	С	65.8	F		
					20	35 Des	ign Yeaı	•				
		L	67.5	Е	238.6	F	146.4	F	219.3	F		-
	0.04	Т	67.4	Е	-	-	51.5	D	72.3	Е	92.7	
	AM	R	54.9	D	78.0	Е	59.4	Е	81.0	F		F
SW 109th Avenue &		App	63.6	Е	154.8	F	66.2	Е	100.5	F		
SW 8th Street		L	99.6	F	151.3	F	814.1	F	96.5	F		
Street	DM	Т	142.4	F	-	-	50.7	D	70.2	Е	121.4	_
	PM	R	109.5	F	235.6	F	55.5	Е	79.2	Е	131.4	F
		App	118.4	F	199.0	F	168.7	F	75.6	Е		
		L	9.2	Α	8.3	Α	74.3	F	90.2	F		
		Т	-	-	-	-	-	-	-	-	20.6	6
	AM	R	-	-	-	-	-	-	-	-	20.6	С
SW 109th Avenue &		Арр	1.2	Α	0.4	Α	74.3	F	90.2	F		
SW 7th Street		L	9.3	Α	8.3	Α	49.0	Е	296.1	F		E
Sueer	D	Т	-	-	-	-	-	-	-	-	26.5	
	PM	R	-	-	-	-	-	-	-	-	36.5	
		Арр	1.7	А	0.5	Α	49.0	Е	296.1	F		

5.3.3 Queue Length Analysis

A queuing analysis for Alternatives 1 and 2 was performed for the 2015 opening year to determine the impact of the reducing the number of lanes on the southbound approach at SW 8th Street and SW 109th Avenue intersection. The 95th percentile queues are reported by SYNCHRO 8 in the unit of vehicles per lane as per HCM 2010 procedures. A vehicle length of 25-ft as recommended by Florida Intersection Design Guide, was used to estimate the queue lengths. The results for are shown in **Table 5-5**.

				Que	Table ue Leng	e 5-5 jth Anal	ysis					
					Q	ueue Le	ngth (f	t)				
Peak Period									WB			
	L	T	R	L	T	R	L	T	R	L	Т	R
Existing conditions (2014)												
AM	63	65	53	335	400	695	603	663	705	435	675	730
PM	453	590	555	280	330	1158	940	558	628	210	850	938
Max	453	590	555	335	400	1158	940	663	705	435	850	938
			Alt	ernativ	e 1 (20	15 Oper	ing Yea	ar)				
AM	63	65	53	340	408	703	608	670	710	440	685	740
PM	458	598	560	283	335	1170	960	565	633	213	863	950
Max	458	598	560	340	408	1170	960	670	710	440	863	950
			Alt	ernativ	e 2 (20	15 Oper	ing Yea	ar)				
AM	63	65	53	10	1098		608	670	710	440	685	740
PM	458	598	560	62	23	1170	960	565	633	213	863	950
Max	458	598	560	10	98	1170	960	670	710	440	863	950

Bases on the queue length analysis results, Alternative 2 with the lane reduction on the southbound approach to accommodate a potential sidewalk on the east side of the bridge will result in significant increase in queue length for the shared thru-left lane on the southbound approach compared to Alternative 1. This will exacerbate the existing condition which currently experiences southbound queues sometimes extending beyond the upstream intersection at SW 7th Street and SW 109th Avenue. Consequently, Alternative 1 which maintains the exclusive southbound left turn lane is recommended for implementation.

6.0 RECOMMENDATIONS & CONCLUSIONS

This study involved a traffic operational analysis to evaluate the operational impact of the proposed pedestrian bridge on the permanent closure of approximately 195-ft of SW 7th Terrace west of SW 109th Avenue and the upgrading of SW 109th Avenue to include complete street features. It also included the determination of the optimal configuration for SW 109th Avenue southbound approach at SW 8th Street without significant impact to the level of service of the intersection. As part of the study, traffic forecast analysis, traffic re-assignment and forecast analysis was performed for the 2015 opening year and 2035 design years. Capacity analysis was then performed for the AM and PM peak periods during the 2015 opening year and 2035 design year to determine the impact of the proposed improvements on the operations of the critical signalized and unsignalized intersections identified within the study area.

Two scenarios for the SB approach at the SW 8th Street and SW 109th Avenue intersection were evaluated to determine the optimal configuration that will provide the best LOS for this approach. The purpose of this analysis is to evaluate the possibility of accommodating a pedestrian sidewalk on the east side of the bridge without the need to widen the existing structure. Alternative 1 maintains the existing southbound approach configuration with one exclusive left-turn, one thruleft shared lane and one exclusive right turn lane. Alternative 2 eliminates the exclusive SB left turn lane and provide one thru-left shared lane and one exclusive right turn lane.

The operational analysis results for the signalized intersection at SW 8th Street and SW 109th Avenue indicated that the intersection will operate at an overall LOS E during the AM peak period for the 2015 opening year and LOS F for the PM peak Period for both Alternatives 1 and 2. The intersection will however operate at overall LOS F for the 2035 design year for both Alternatives 1 and 2. In addition, Alternative 2 will result in significant delays and queues for the southbound approach compared to Alternative 1.

The unsignalized intersection at SW 7th Street and SW 109th Avenue will operate at overall LOS B or better for the 2015 opening year and LOS E or better for the 2035 design year under both alternatives. The eastbound and westbound approaches at this unsignalized intersection will experience delays due to the free flow movements along the SW 109th Avenue.

Based on the evaluation results, Alternative 1 (existing configuration) resulted in the best LOS for the southbound approach for the signalized intersection at SW 8th Street and SW 109th Avenue and is recommended for implementation. Furthermore, the proposed permanent closure of the SW 7th Terrace Street intersection with SW 109th Avenue and rerouting of the traffic onto the adjacent intersection will not significantly impact the operations along the local roadway network within the study area compared to the existing condition. Most of the traffic at this intersection is due to drivers using the local road network to avoid the existing congestion along the major arterial such as Flagler Street and SW 109th Avenue. Hence the proposed permanent closure will not significantly alter travel pattern since these drivers will utilize alternate routes.

The proposed upgrading of SW 109th Avenue to provide complete street features which includes elimination of the turn lanes along SW 109th Avenue while providing pedestrian and bicycle

friendly features is also not anticipated to result in adverse traffic impact to the unsignalized intersection of SW 7th Street at SW 109th Avenue. As indicated in the operational analysis results, the proposed intersection configuration for the 2015 opening year provides comparable operational results to the existing condition. However, it is recommended to provide a "Do Not Block Intersection" (R10-7) for the southbound approach since the traffic spill back from the SW 8th Street & SW 109th Avenue intersection sometimes southbound queues extends beyond this intersection. This will allow eastbound and westbound through movements across the intersection.

The proposed improvements will facilitate a pedestrian-oriented environment that will significantly enhance the safety of the pedestrians and bicycles. It also supports the City's vision to develop this area into a college town and improve connectivity between the Florida International University and the City of Sweetwater.

7.0 REFERENCES

- 1. Manual on Uniform Traffic Control Devices (MUTCD 2009), Revised January 2010, US Department of Transportation (USDOT) Federal Highway Administration (FHWA)
- 2. Highway Capacity Manual 2010, Transportation Research Board
- 3. Florida Department of Transportation Traffic Engineering Manual, March 2014
- 4. Florida Department of Transportation Traffic Analysis Handbook, May 2014
- 5. Florida Department of Transportation Design Standards, 2015
- 6. Miami-Dade County 2040 Long Range Transportation Plan

Traffic Study for FIU Pedestrian Bridge & Complete Street Improvemen
APPENDIX A
(FIU, UniversityCity Prosperity Project)

Partnering for 21st Century Prosperity

UniversityCity, A Catalytic Local Project of Regional Significance















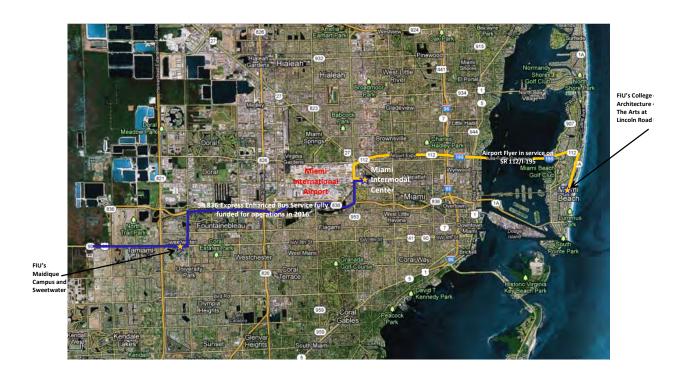


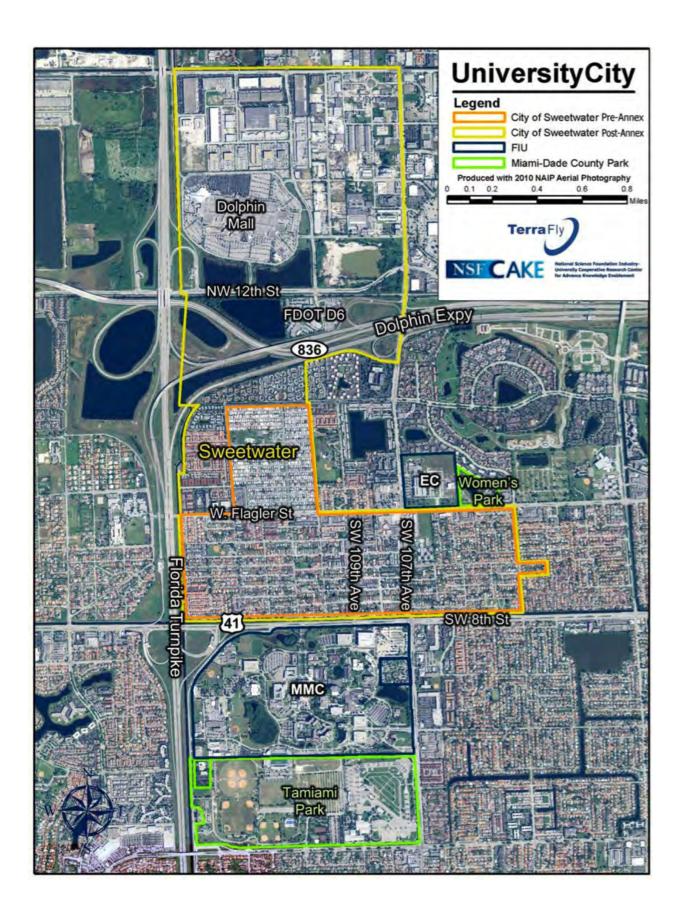
UniversityCity

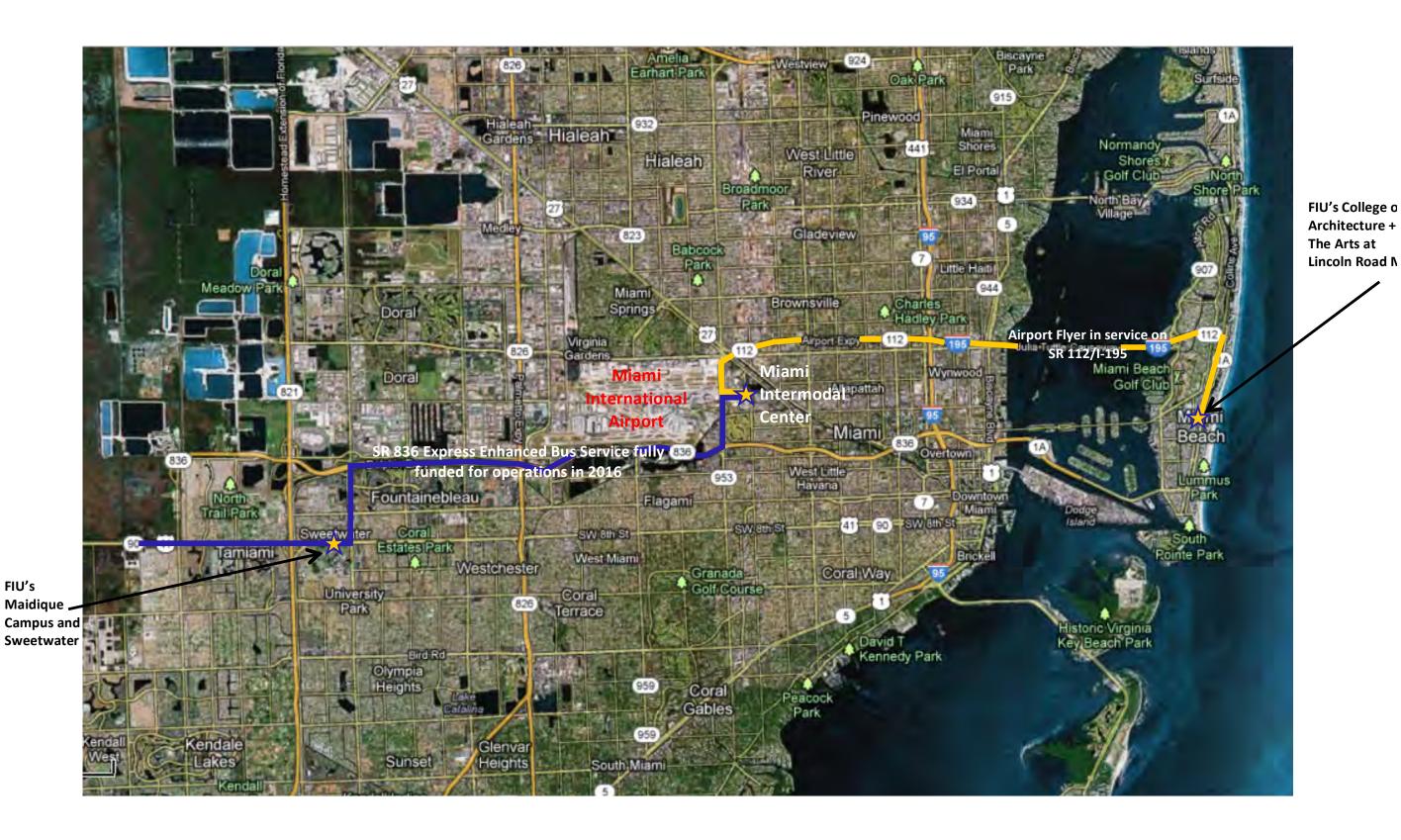
A collaboration between Florida International University (FIU), Miami-Dade Expressway Authority (MDX), Miami-Dade County, the City of Sweetwater, Florida DOT, IBM, TY Lin and others, UniversityCity is seeking USDOT support for a catalytic project of regional significance. UniversityCity is the missing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

This project is in line with USDOT priorities and congruent with the vision of the HUD-DOT-EPA Partnership for Sustainable Communities. It supports a Miami-Dade Transit project, MDX decongestion strategies, FDOT projects and has been designated a priority project for Seven50, the Southeast Florida Partnership's Sustainable Communities coalition. It leverages UniversityCity's location and FIU's standing both as the major educational, cultural, medical, athletic and social destination in Western Miami-Dade County and its success at providing innovative transportation and urban development solutions for South Florida.

By aggregating ridership of planned SR 836 Enhanced Express Bus Service in an Advanced Transit Oriented Development at a large public university; 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 catalyzing transformation in South Florida. A collaborative vision, unified action and USDOT support is the winning strategy for success.







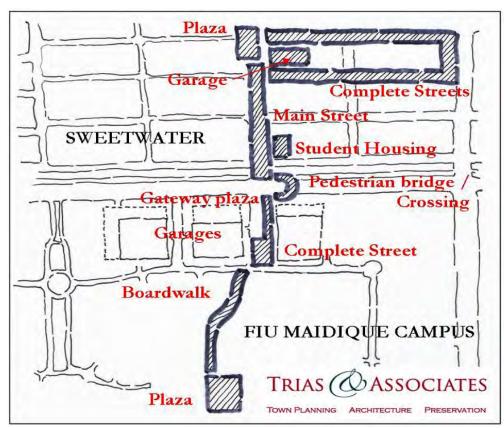
UniversityCity, A Catalytic Local Project of Regional Significance

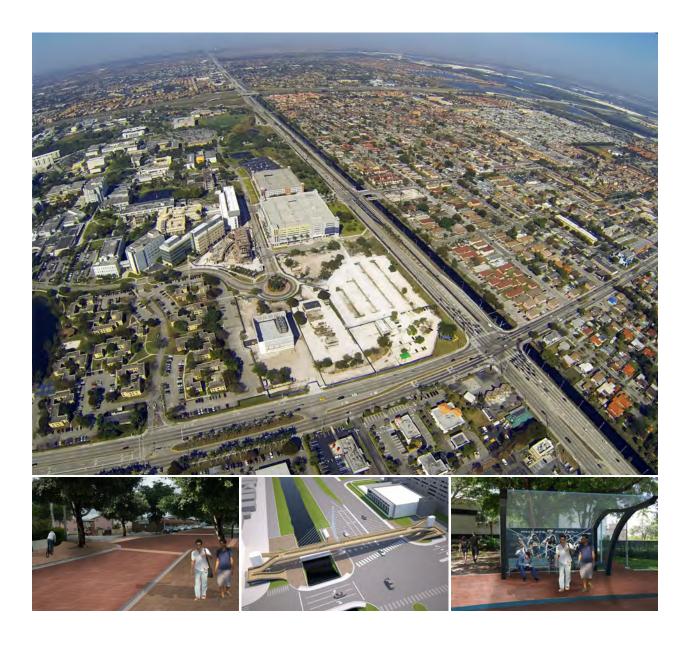
Critical Components of the UniversityCity Vision

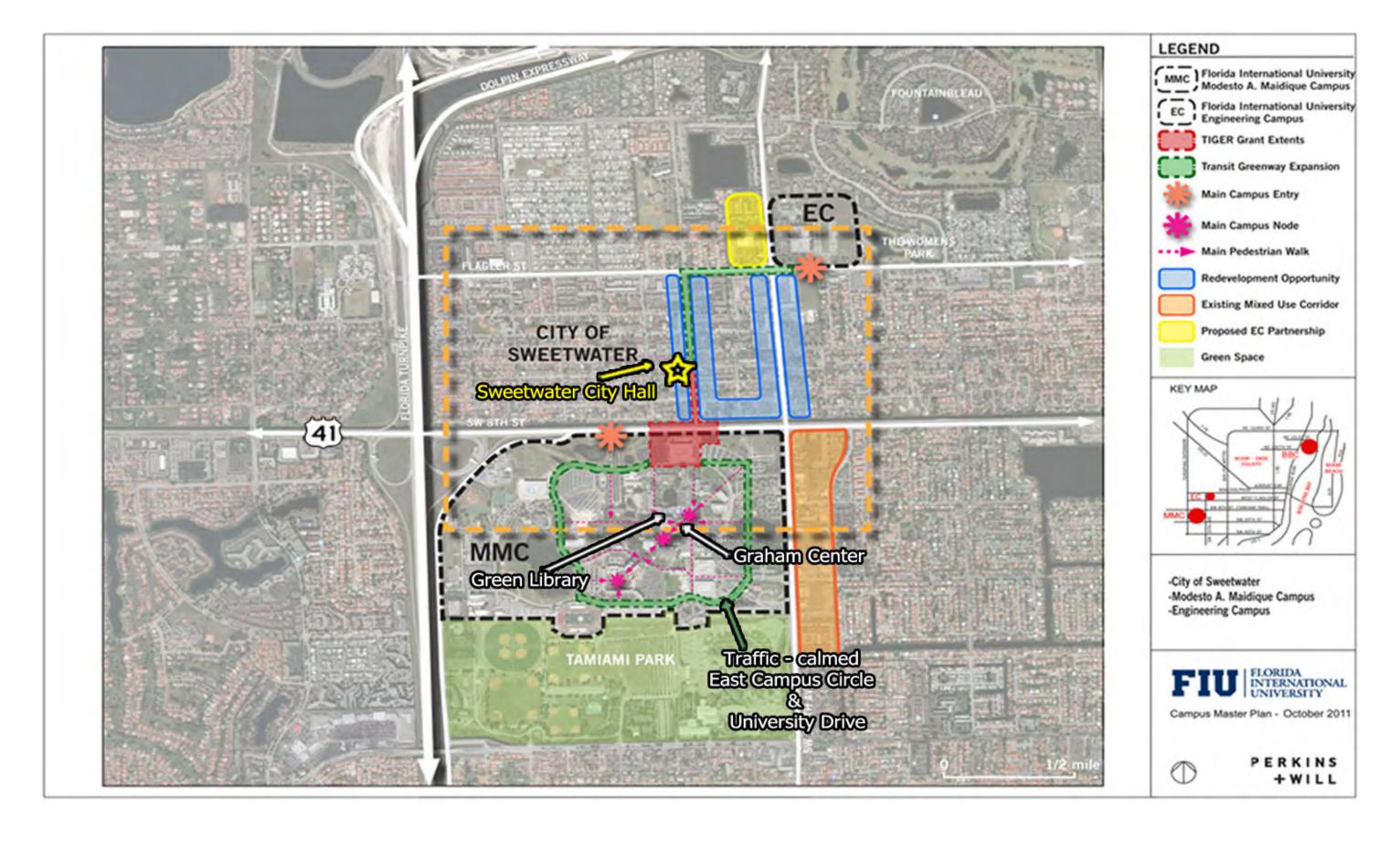
The goal is to aggregate pedestrians and commuters; substantially increase transit ridership; increase modal shift by 10%; and transform the area into a vibrant hub of culture, education with an innovative business incubator district for medical services and health sciences.

- ▶ FIU Smart Garage, a \$37 M approved project that will anchor a catalytic Advanced Transit Oriented Development (ATOD) and serve as a multi-modal transportation hub adjacent to US-41, Florida's Turnpike and nearby SR-836.
- ▶ SR 836 Express Enhanced Bus Service between SW 147th Avenue and the Miami Intermodal Center (MIC) at Miami International Airport; this service will benefit from increased ridership aggregated in UniversityCity and a multi-modal hub at the FIU Smart Garage.
- ▶ Smart Growth changes to the built environment on FIU campus and in the City of Sweetwater, including traffic-calming and other safety elements which will further fuel investment for mixed-use development. Construction of the first 15 story student-oriented complex in UniversityCity is already underway. 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.
- ▶ 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.









Smart Growth changes to the built environment

on FIU campus and in the City of Sweetwater, including traffic-calming and other safety elements.





Smarth Growth changes will propel private investment: 15 Story Student-Oriented Complex

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



West Side Elevation Substitute AND POTE FOR THE ADDRESS OF SHEET AND POTENTIAL LEGISLA SEE SHEET AND POTENTIAL LEGISLA SHE

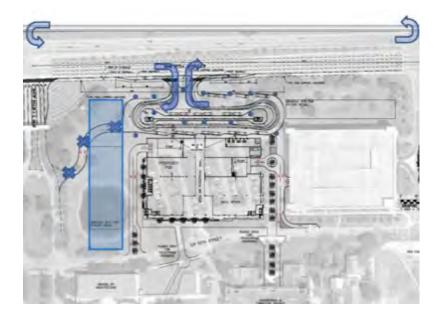
Bridge provides safe passage and serves as connection point

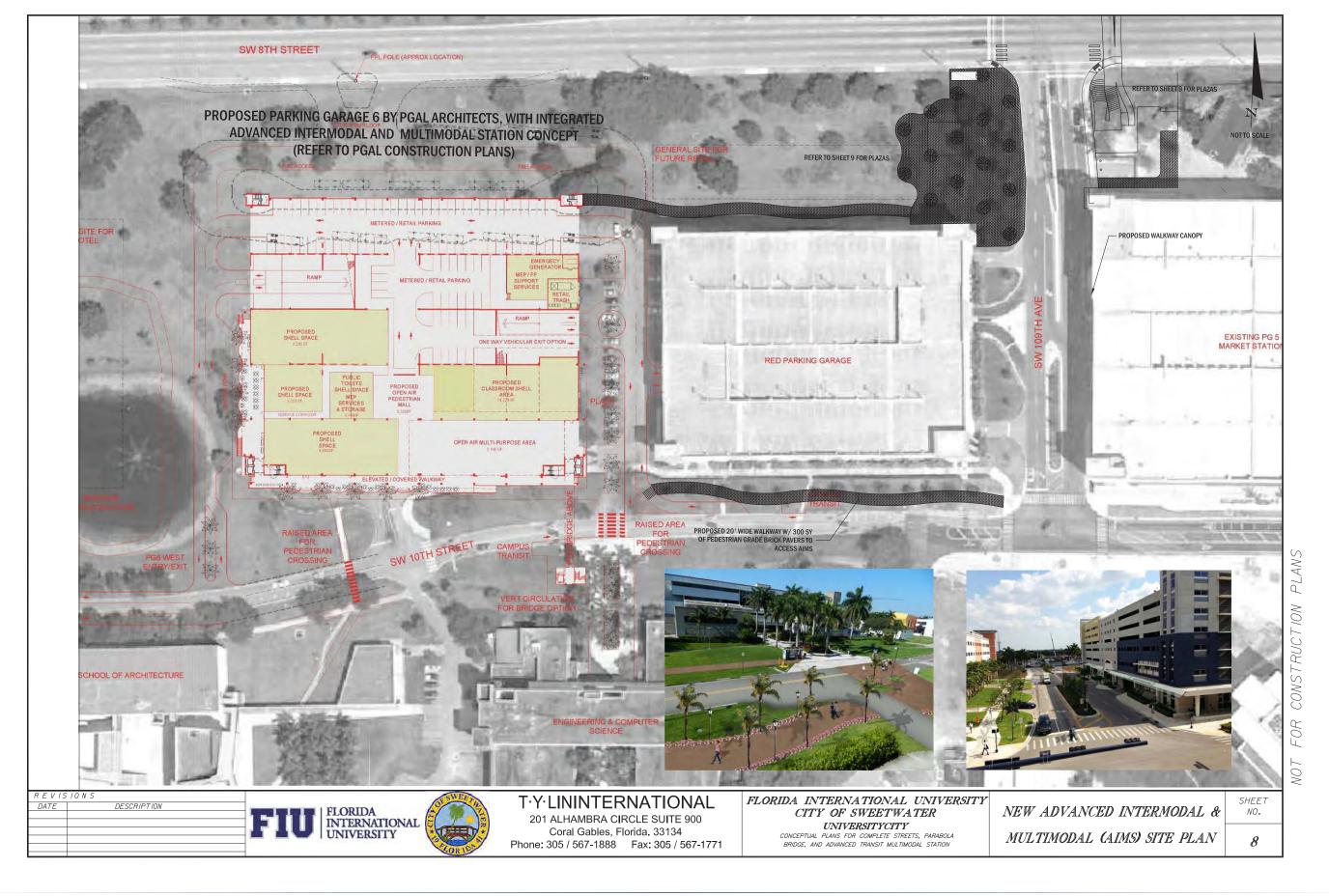
Signature pedestrian-friendly bridge between FIU campus and Sweetwater's Main Street conceptualized during charettes by FIU architecture students, faculty and community residents. A pedestrian-friendly bridge is needed to facilitate safe walkability between the campus and Sweetwater's emerging urban center.



FIU Smart Garage supporting UniversityCity Advanced Transit-Oriented Development

The transit terminal will enhance public safety by providing a centralized location for passengers to transfer safely between bus routes in lieu of high volume traffic roadways.





Express Enhanced Bus Service proposed by Miami-Dade Transit will provide a safe, mixed-mode corridor for the 50,000 students attending one of the nation's largest universities and commuters along the east-west axis of travel in Miami-Dade County.

Collecting commuters at UniversityCity's Smart Garage adjacent to US 41,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 City of Sweetwater and the City of Doral.

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, thus improving energy efficiency, reducing dependence on oil, reducing greenhouse gas emissions and benefitting the environment.

SR-836 Express Enhanced Bus Service project will 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.

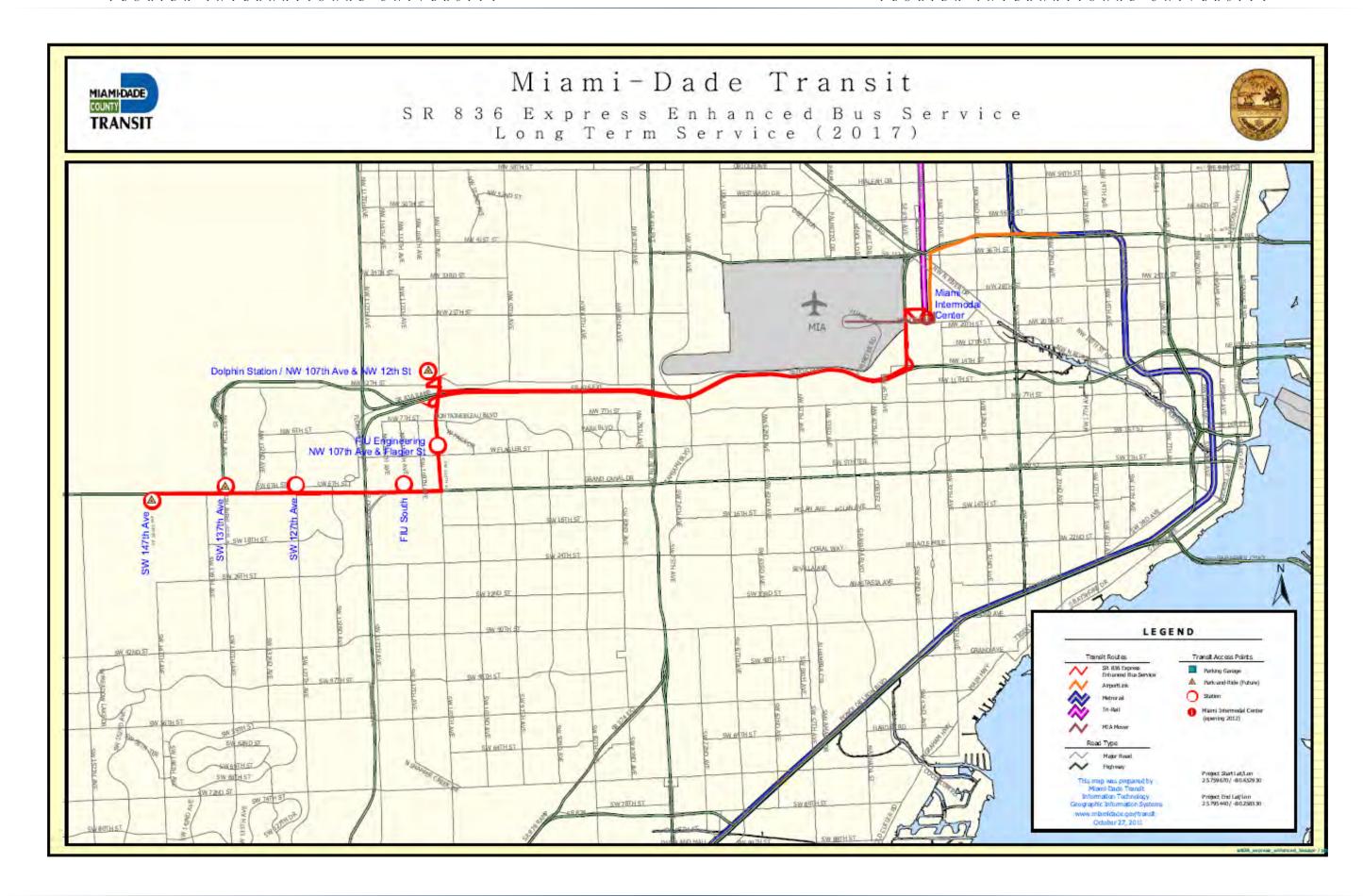
Near-term Plan



Long-term Plan







Informed Traveler Program and Applications (ITPA)

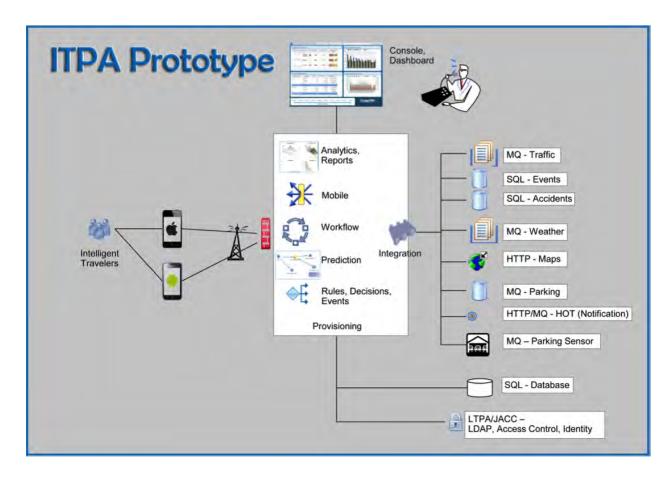
The benefits of basic intelligent transportation systems (ITS) are well known. They have been found to maximize the capacity of infrastructure and reduce the need to build additional highway capacity. For example, ITS can contribute significantly to reducing congestion, which costs U.S. commuters 4.2 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) 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.

UniversityCity's ITPA technologies are powered by FIU's Industry-University Cooperative Research Center, funded by the National Science Foundation and in partnership with the University of Illinois at Chicago, Brown University, Northwestern University and IBM. These partners are developing a high-performance model for information processing and fusion in mobile environments to providing a collaborative integration between the real and virtual worlds.

First in U.S. Application

The focal point of the system will evolve, over time, from supporting travel to and from UniversityCity and the Miami Intermodal Center (MIC); ultimately supporting travel anywhere in Miami-Dade County and the Southeast Florida Region.



UniversityCity meets Goals of the Partnership for Sustainable Communities

UniversityCity has been designated a priority project for **Seven50**, the **Southeast Florida Partnership's Sustainable Communities** coalition.

- ✓ 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



The UniversityCity Coalition

The UniversityCity Coalition is the result of a new working relationship between Florida International University, the City of Sweetwater and the Miami-Dade Expressway Authority (MDX), Miami-Dade County and the privtae sector, 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, households and pedestrians.

The coalition, having garnered positive encouragement 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.

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.

For more information on UniversityCity Submitted TIGER Grant: cake.fiu.edu/TIGER2013/

In Conclusion

The UniversityCity Coalition is exploring multiple sources of funding to implement our vision, which will serve as 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 UniversityCity 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, both Express Bus Service and our innovative wayfinder proposal, developed with IBM and Miami-Dade Expressway Authority (MDX), will leverage a potential customer base of more than 50,000 students, transportation related IT research expertise, and the platform of MDX.

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.

2013 TIGER/UniversityCity Summary

Overview

Florida International University (FIU), Miami-Dade Expressway Authority (MDX), Miami-Dade County (MDC), the City of Sweetwater (Sweetwater), Florida Department of Transportation (FDOT), IBM, T.Y. LIN International (TYLI) and others have been collaborating to develop **UniversityCity as a project of regional significance**. This UniversityCity team is pursuing USDOT FY13 TIGER funds to help:

- ▶ Construct an Advanced Transit Oriented Development (ATOD) prototype and propel a multimodal system of transport
- ▶ Deploy Informed Traveler Program and Applications (ITPA) as a state-of-the-art electronic predictive wayfinder smart phone technology
- ▶ Catalyze innovations for a resilient and financially self-sufficient multimodal transportation system built to suit the Southeast Florida needs well into the 21st century

This project is in line with USDOT priorities and congruent with the vision of the US HUD-DOT-EPA Partnership for Sustainable Communities. It supports the Miami-Dade Transit (MDT) SR 836 Enhanced Express Bus (HYPERLINK "http://www.miamidade.gov/citt/library/5_year_plan/rapid_transit_improvements.pdf" 836 Express) project, MDX interests to reduce congestion on it toll road system, and FDOT's managed lane and highway improvement projects.

UniversityCity has been identified as a priority project for Seven50's SE Florida Prosperity Plan (the Southeast Florida Regional Partnership planning effort funded by a US HUD Sustainable Communities Regional Planning Grant). It will leverage: the location of FIU and Sweetwater adjacent the SR836 (Dolphin Expressway), Florida Turnpike Homestead Extension, and an underutilized freight rail corridor; FIU's standing as the major educational, cultural, medical, athletic and social destination in western Miami-Dade County and capacity to providing innovative transportation and urban development solutions for South Florida; and, the international reach and relationships of FIU students and faculty members as well as the residents of Sweetwater.

Goal & Vision

The goal is to: extend the travel shed of pedestrians and aggregate them at express transit stations; substantially increase transit ridership; increase modal shifts by 10%; and, transform the area into a vibrant hub of culture, education and research as well as an innovation business incubator district for medical services and health sciences.

UniversityCity becomes a project of regional and national significance by using: a) ATODs to increase express bus ridership; b) Advanced Intermodal and Multimodal Station (AIMS) to access 836 Express; and, c) ITPA as a new, comprehensive ITS consumer app to improve multimodal access to major Southeast Florida destinations (FIU, Miami Intermodal Center, Miami Beach, and destinations available via Amtrak, Tri-Rail, Metrorail, and the Golden Panther Express).

In the very near term, UniversityCity will allow transportation services to be optimized through interrelated initiatives:

- ▶ a \$36 million FIU commitment for FIU Smart Garages linked via ITPA with the \$21 million Sweetwater commitment for City Hall Intelligent Plaza and Parking Area (CHIPPA)
- ▶ a \$24.6 million MDT commitment for 836 Express bus service linked via ITPA with the Airport Express bus service to Miami Beach and the many transportation options available at the Miami-Intermodal Center
- ▶ Smart Growth changes to the built environment on FIU Maidique Campus and in Sweetwater (e.g., pedestrian-oriented plazas, transit stops and AIMS; pedestrian corridor, complete street, traffic-calming and highway intersection safety improvements; community transit and metropolitan bus services as feeders to multimodal stations and regional express bus services; and a very attractive, shared-use, pedestrian-oriented, single-pylon, and cable-stayed bridge across US41 connecting the FIU campus with Sweetwater along the 109th Avenue main street as an iconic symbol of the new UniversityCity multimodal urban center.

UniversityCity Funds to Construct an Advanced Transit Oriented Development (ATOD)

\$20,980,273 TIGER funds with local match and other funds of \$102,829,521 totals \$123,809,794 in project costs.

US DOT TIGER Funds	FIU	Sweetwater	MDX	Florida DOT	Project Total	% of Project Total
				* \$32,875,708	\$32,875,708	26.6%
\$12,775,737	\$35,407,356	\$23,376,014			\$71,559,107	57.8%
\$8,204,536	\$497,443		\$10,265,000		\$18,966,979	15.3%
	\$102,000	\$102,000		** \$204,000	\$408,000	0.3%
\$20,980,273 16,9%	. , ,	. , ,	. , , ,	. , ,	. , , ,	100.0%
	\$12,775,737 \$8,204,536	\$12,775,737 \$35,407,356 \$8,204,536 \$497,443 \$102,000 \$20,980,273 \$36,006,799	\$12,775,737 \$35,407,356 \$23,376,014 \$8,204,536 \$497,443 \$102,000 \$102,000 \$20,980,273 \$36,006,799 \$23,478,014	Funds FIU Sweetwater MDX \$12,775,737 \$35,407,356 \$23,376,014 \$8,204,536 \$497,443 \$10,265,000 \$102,000 \$102,000 \$20,980,273 \$36,006,799 \$23,478,014 \$10,265,000	Funds FIU Sweetwater MDX Florida DOT *\$32,875,708 \$12,775,737 \$35,407,356 \$23,376,014 \$8,204,536 \$497,443 \$10,265,000 \$102,000 \$102,000 ** \$20,980,273 \$36,006,799 \$23,478,014 \$10,265,000 \$33,079,708	Funds FIU Sweetwater MDX Florida DOT Project Total *\$32,875,708 \$32,875,708 \$32,875,708 \$12,775,737 \$35,407,356 \$23,376,014 \$71,559,107 \$8,204,536 \$497,443 \$10,265,000 \$18,966,979 \$102,000 \$102,000 *** \$204,000 \$408,000 \$20,980,273 \$36,006,799 \$23,478,014 \$10,265,000 \$33,079,708 \$123,809,794

^{*} A mix of state of Florida and federal funds to help provide automotive, pedestrian and bicycle access to Sweetwater's City Hall Intelligent Plaza and Parking Area (CHIPPA) and FIU's Advanced Intermodal and Multimodal Station (AIMS) in Parking Garage 6 (PG6) which are specific components of UniversityCity expenditures referenced in item 2 above.

Project Impacts

- ▶ Modal Diversion: From the projected two-way trips to/from UniversityCity as a result of interrelated, unique, useful and new: changes the character of the neighborhood from vehicle-centric to pedestrian-oriented multimodal; a shared-use pedestrian-oriented bridge over US41; at-grade intersection improvements; community transit and metropolitan feeder bus services; increased usage of express buses at the AIMS; and, ITPA deployment
- ▶ Safety: With the construction of the RRAC University Apartments, 1000 student trips across US 41 can be expected each day. In the last five years there were: 18 traffic accidents at the US41/SW 109th Avenue intersection; 19 traffic accidents at the US 41/SW 112th Avenue intersection; and, 20 traffic accidents at the US41/SW 107th Avenue intersection. With bridge, community transit and at-grade crossing improvements, no pedestrians or bicyclists are expected to be involved in traffic accidents (all pedestrian/bike movements are safely diverted to multimodal, multilevel and traffic-calmed SW 109th Avenue intersection with US41).
- ▶ Pedestrian-Oriented Shared-Use Bridge Crossings: To accommodate up to 1000 trips per day. Currently only 2% of the affected population or 71 individuals cross US 41 per day
- ▶ Travel Time Reduction (10% Overall): Current Miami-Dade average commute time is 28.9 minutes-
 - ITPA: 10% reduction in travel time for an estimated 20,000 users and an increase by 10% in users per year.
 - SW 107Avenue Improvements: Reduced traffic time of 1 minute for 2,600 of the current Annual Average Daily Traffic figure of 5200.
- ▶ Environment: Reduced Emissions (GHG and non-GHG): Reductions in VMT results in reduced emission benefits. Landscaping and other sustainable surface treatments will be preferred throughout this project in lieu of traditional hardscape.
- ▶ **Jobs:** UniversityCity will generate approximately 527 short-term jobs. Beyond construction, there will be new jobs created for people hired to operate the improved community transit created through this TIGER grant and further expansions of thereafter.

^{**} All Federal funds

Benefit Cost Analysis

Based on major project components (complete street Improvements, attractive pedestrian-oriented shared-use bridge, community transit, smart parking garages with advanced intermodal and multimodal station, Informed Traveler Program & Applications, and SW 107th Avenue improvements) the following benefit-cost ratios are established:

	3% discount rate	7% discount rate
Present Value of Total Benefits	\$492,683,197.60	\$216,914,618.52
Present Value of Total Costs	\$115,852,548.71	\$103,717,484.41
Benefit-Cost Ratio	4.25	2.09

Costs and benefits derived from previous years were adjusted to 2013 dollars through inflation calculations based on GDP Price Deflators as reported by the US Department of Commerce's Bureau of Economic Analysis. The 2013 price deflator factor was based on the 2013 first quarter deflator.

Project Readiness

All local, state and federal requirements will be met by June 2014 in order for USDOT to obligate funding in advance of September 30, 2014

- ▶ Legislative approvals: None required
- ▶ Environmental Approvals: UniversityCity would use infrastructure associated with existing or planned projects that have either already gone through the regulatory permitting process or has begun initial coordination with the affected resource agencies
- ▶ State and Local Planning: In addition to Sweetwater and the private developer RRAC, Miami-Dade County (MDC), FDOT, MDT, MDX, and Miami Dade Aviation Department have all agreed to assist with this Project
- ▶ Technical Feasibility: TYLI, IBM, Ouri Wolfson, Perkins + Will, FIU's I/UCRC-CAKE and Lehman Center for Transportation Research (LCTR), Trias and Associates and others have provided the professional and expert information needed to ensure technical feasibility for the Project
- Financial Feasibility: The budgets allocated for the critical components of the UniversityCity project have been approved and will be sufficient to complete the projects to their full expectations and positive impact
- Project Risks and Mitigation Strategies: Detailed work analysis already undertaken with primary vendors, partners and others to assure contracting for capital improvements can quickly be undertaken once TIGER awarded and in-depth ITPA risk assessment, planning and data availability and analysis will begin using MDX funds (\$265,000) immediately upon TIGER award announcement and before TIGER funds are available.

Traffic Study for FIU Pedestrian Bridge & Complete Street Improvements
APPENDIX B
(Traffic Data Sources)

FLORIDA DEPARTMENT OF TRANSPORTATION TRANSPORTATION STATISTICS OFFICE 2013 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 0090 - SR 90/US-41/SW 8 ST, 500' E SW 109 AV

YEAR	AADT	DII	RECTION 1	DI	RECTION 2	*K FACTO	R D FACTOR	T FACTOR
2013 6 2012 6 2011 5 2010 6 2009 6 2008	50000 F 50000 C 58500 C 52000 C 58500 C	E E E E E	30500 30500 31000 32500 33500 31500	 W W W W W	29500 29500 27500 29500 35000 34500	9.00 9.00 9.00 7.8 7.90 8.00	58.90 59.70 58.20 7 58.27 8 59.96 7 66.31	5.50 5.50 6.60 6.60 4.60 5.00
2006 2005 2004 2003 2002 2001 2000 1999	54500 C 56000 C 56500 C 59000 C 54000 C 48000 C 49500 C 46500 C		31500 28000 28000 37000 27000 23000 29000 27000 25000 27000	W W W W W W W	33000 28000 28500 32000 27000 25000 27000 22500 21500 24000	7.9 7.3 7.7 8.2 8.1 9.2 8.2 9.1	58.66 55.70 67.10 72.30 68.00 53.50 53.10 52.70	5.00 4.10 6.10 6.10 4.70 4.50 4.50 5.70 4.80 5.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE

S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE

V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION TRANSPORTATION STATISTICS OFFICE 2013 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8192 - SW 109TH AVE, 200' SOUTH OF 4TH STREET

YEAR	AADT	DII	RECTION 1	DIE	RECTION 2	*K FACTOR	D FACTOR	T FACTOR
2013	11500 C	N	5600	S	5900	9.00	58.90	16.20
2012	14900 F	N	7400	S	7500	9.00	59.70	16.00
2011	14700 C	N	7300	S	7400	9.00	58.20	14.70

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE

S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = FOURTH YEAR ESTIMATE

V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

2013 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL

CATEGORY: 8701 MIAMI-DADE SOUTH

^{*} PEAK SEASON

5.3. Planning Analysis Hour Factor (K)

The Planning Analysis Hour Factor, or **K Factor**, is the ratio of the traffic volume in the study hour to the annual average daily traffic (AADT). Historically, FDOT has used a variety of study hours and K factors depending upon the application. Frequently used K factors included the 30th highest volume hour of the year (K_{100}), highest hourly volume to daily volume ($K_{p/d}$), 5-6 p.m. weekday volume to AADT (K_{5-6pm}), average p.m. weekday peak volume to AADT (K_{pm}), average a.m. peak weekday volume to AADT (K_{noon}). In general, K factors are used for peak hour traffic analyses, but analyses can also be based on low volume conditions, such as the analysis of truck travel in early morning hours. Roadway, traffic, and control conditions vary considerably during the day, potentially affecting capacity values and service volume thresholds.

Standard K is the primary planning analysis hour factor used in Florida, and the value is set based on the area type and facility type. The use of Standard K represents a design approach in which the K factor for a roadway is established from planning through design. Rather than being a variable, Standard K values are a fixed, cost-effective parameter, much like the use of 12-foot through lanes on a major high-speed roadways. Unless otherwise noted, all references in this Q/LOS Handbook and accompanying LOSPLAN software to an hour or K factor refer to Standard K.

The Standard K factor is used to convert a peak hour volume to an AADT and vice-versa. The Standard K factors used in the Generalized Service Volume Tables were obtained through a methodical process to obtain accurate, representative Standard K factors. On the freeways in the seven largest urbanized areas in Florida, Standard K represents a peak study period. For all other facilities, Standard K represents a peak hour not within the peak season.

The K factor generally drops as an area becomes more urbanized and high traffic volumes are spread out over longer time periods. If adequate documentation is provided, FDOT would consider deviations from the Standard K table for special facility types or multimodal transportation districts (MMTD).

The K factor is the ratio of the traffic volume in the study hour to the annual average daily traffic (AADT).

Standard K is FDOT's standard peak hour to annual average daily traffic ratio (K), based on a roadway's characteristics (facility type) and location (area type).

The K factor generally drops as an area becomes more urbanized and high traffic volumes are spread out over longer time periods.

With the release of the 2012 LOSPLAN programs, FDOT has shifted away from demand-based K values to a more cost-effective analysis structure based on Standard K values by area and facility type. Although FDOT has established an exemption process, exemptions will be limited to special cases such as emergency evacuation routes and managed lanes. The updated LOSPLAN software automatically enters the correct Standard K value based on the selected area and facility type, using the following values:

- Urbanized and transitioning areas (all facility types) 0.090
- Large urbanized 0.080-0.090
- Urban
 - Freeways 0.105
 - Highways 0.090
 - Arterials 0.090
- Rural developed and rural undeveloped
 - Freeways 0.105
 - Highways 0.095
 - Arterials 0.095

For major, non-toll freeways going through the urbanized core areas of the largest metropolitan areas, such as I-4 in Orlando, FDOT has adopted lower K values. Standard K values on freeways in large urbanized areas range from 8.0 to 9.0 percent, while Standard K values on these "core freeways" in large urbanized areas are typically lower within this range. The lower K values signify a peak period as opposed to a peak hour, a common observation in these areas is a rush "hour" that lasts from 4:00 to 6:00 p.m. The urban core freeway K values in large urbanized areas are available on Florida Traffic Online.

Chapter 6 **Traffic Analysis using Analytical Tools**

This chapter provides additional guidance on analytical tools that are used to perform traffic analysis. Users of this handbook are advised to consult each specific tool's User Guides and Manuals for details of the analytical procedures.

6.1 **HCM** and HCS

When the context of the project does not justify the use of microscopic traffic simulations, analytical (deterministic) tools should be used. Guidance on how to conduct analytical analysis is provided in the HCM and its accompanied software HCS. Despite its strength to analyze quality of service on transportation facilities from sketch-level planning to high-level operational evaluations, HCM procedures have limitations of analyzing oversaturated conditions and time-varying demand. Methodology limitations for each system element analysis are further identified and discussed throughout Volumes 2 and 3 of the HCM.

The HCM methodologies contain default values which represent nationally accepted values. Since typical conditions within the state of Florida may be different from national values, the analyst may be required to change some of the default parameters to Florida based values. When HCM default values or assumptions are changed, justification for such should be documented.

Irrespective of the tool used in preliminary engineering, design or operational analyses, input parameters that represent basic segment, intersection geometry, and demand flow rates should always be measured in the field or drawn from the best available evidence. The analyst should refrain from using "rules of thumb estimates" to obtain the values of these parameters because such methods usually produce incorrect estimates of the performance measures.

Special considerations should be given to the following parameters:

Peak Hour Factor (PHF)

HCM methodologies use demand flow rates for the 15 minutes peak period. If flow rates have been measured from the field the flow rates for the worst 15 minutes should be used in operational analyses. PHF is used to calculate the equivalent hourly flow rate.

When the 15-minute forecast demands are not available, conceptual planning and preliminary engineering levels of analyses may use a PHF of 1.0. However, it is advantageous to use lower PHF values consistent with field observations at locations that may experience capacity problems.

In absence of field measurements of the PHF, design analyses may use a default PHF of 0.95 on freeway facilities and urban arterials. A PHF value of 0.92 may be used on other facilities; however, data shows that PHF increases as demand volume

Approval entity must concur with the PHF values prior to their use in the analysis

increases. Lower PHF signifies greater variability of flow while higher PHF signifies less

Traffic Study for FIU Pedestrian Bridge & Complete Street Improvements
APPENDIX C
AFFENDIAC
(LOS Standards, All Red & Yellow Clearance Times)

10 FLORIDA'S LOS STANDARDS FOR THE STATE

It is the Department's intent to plan, design, and operate the State Highway System at an acceptable level of service for the traveling public. Level of service standards for the State Highway System during peak travel hours are D in urbanized areas and C outside urbanized areas. For additional information, refer to FDOT's Procedure on Level of Service Standards and Highway Capacity Analysis for the State Highway System (Topic No. 525-000-006).

10.1. Application of Standards

The use of standard LOS is intended to promote public safety and general welfare, ensure the mobility of people and goods, and preserve the facilities on the State Highway System. The standards are to be applied to FDOT's planning activities. Unless otherwise provided by law, the minimum LOS standards for the State Highway System will be used by FDOT in review of local government comprehensive plans, assessing impacts related to developments of regional impact (DRI), and assessing other developments affecting the State Highway System.

The standards require all LOS determinations be based on the latest edition of the HCM, this FDOT Q/LOS Handbook or a methodology determined by FDOT as having comparable reliability. There are only two FDOT supported highway capacity and LOS analysis tools for generalized and conceptual planning: FDOT's Generalized Service Volume Tables and FDOT's LOSPLAN software. These two tools form the core for all FDOT's highway capacity and LOS analyses and reviews in planning stages.

10.1.1. Area Type

The area and roadway types in the LOS standards match well with FDOT's Generalized Service Volume Tables appearing at the end of this Q/LOS Handbook; however, subtleties exist on delineation of areas, as discussed in **Chapter 4**.

While the standards are applicable at the facility and section levels, there may be small lengths of roadways (e.g., 2 miles) between area types that from a logical and analytical perspective should be combined into one area type or another. This situation typically happens in transitioning areas, but may also occur elsewhere. FDOT District LOS Coordinators should be consulted for applicable boundaries within their districts.

Urban State Highway
System LOS Standard
= LOS D

Outside Urban Areas = LOS C

Policies

- TC-1A. Miami-Dade County will continue to update and readopt a Long Range Transportation Plan, as periodically required, that will achieve Traffic Circulation Objective TC-1 above, in a manner consistent with the other objectives of the Comprehensive Development Master Plan (CDMP). Upon completion of each update of the Long Range Transportation Plan, Miami-Dade County shall prepare for submittal, pursuant to Chapter 163, Part II, F.S., proposals to enhance and revise the Traffic Circulation and Mass Transit Subelements of the Transportation Element as warranted by said technical findings and policy proposals, consistent with the goals, objectives and policies of the CDMP.
- TC-1B. The minimum acceptable peak period* operating level of service for all State and County roads in Miami-Dade County outside of the Urban Development Boundary (UDB) identified in the Land Use Element shall be LOS C. The minimum acceptable peak-period LOS for all State and County roads inside the UDB shall be the following:
 - 1) Within the Urban Infill Area (UIA)2
 - (a) Where no public mass transit service exists, roadways shall operate at or above LOS E.
 - (b) Where mass transit service having headways of 20 minutes or less is provided within 1/2-mile distance, roadways shall operate at no greater than 120 percent of their capacity.
 - (c) Where extraordinary transit service such as rapid transit (e.g., commuter rail, Metrorail and People Mover), or premium bus service (e.g., bus rapid transit, express bus and enhanced bus systems) exists, parallel roadways within 1/2 mile shall operate at no greater than 150 percent of their capacity.

2) Between the UIA and the UDB

- (a) Roadways shall operate at no worse than LOS D (90 percent of their capacity) except that State Urban Minor Arterials (SUMAs) may operate at LOS E (100 percent of their capacity);
- (b) Where public mass transit service exists having headways of 20 minutes or less within 1/2-mile distance, roadways shall operate at or above LOS E:
- (c) Where extraordinary transit service such as rapid transit (e.g., commuter rail, Metrorail and People Mover), or premium bus service (e.g., bus rapid transit, express bus and enhanced bus systems) exists, parallel roadways within 1/2 mile shall operate at no greater than 120 percent of roadway capacity.
- 3) Notwithstanding the foregoing, the following standards established by the Florida Department of Transportation (FDOT), are adopted by Miami-Dade County as

^{*} Peak period means the average of the two highest consecutive hours of traffic volume during a weekday. Note: LOS will be measured based on the latest edition of the Highway Capacity Manual.

² UIA is defined as that part of Miami-Dade County located east of, and including, SR 826 (Palmetto Expressway) and NW/SW 77 Avenue, excluding the area north of SR 826 and west of I-95.

its minimum LOS standards for Florida Strategic Intermodal System (SIS) highway corridors in Miami-Dade County:

(a) Outside the UDB

- 1. Limited access State highways shall operate at LOS C or better;
- Controlled access State highways shall operate at LOS C or better; and
- Constrained or backlogged limited and controlled access state highways operating below LOS C, must be managed to not cause significant degradation.

(a) Inside the UDB

- Limited access State highways shall operate at LOS D or better, except where exclusive through lanes exist, roadways may operate at LOS E.
- Controlled access State highways shall operate at LOS D or better, except where such roadways are parallel to exclusive transit facilities or are located inside designated transportation concurrency management areas (TCMA's), roadways may operate at LOS E.
- 3. Constrained or backlogged limited and controlled access State highways operating below the foregoing minimums must be managed to not cause significant deterioration.
- TC-1C. The County shall continue to maintain and enhance as necessary, a comprehensive traffic counting system for annually monitoring the level of service on, at a minimum, the County roadway system.
- TC-1D. Issuance of all development orders for new development or significant expansions of existing development shall be contingent upon compliance with the Level of Service standards contained in Policy TC-1B, except as otherwise provided in the "Concurrency Management Program" section of the Capital Improvements Element.
- TC-1E. The County shall, to the maximum extent feasible, improve the operating efficiency of the existing thoroughfare system and reduce peak hour congestion by encouraging the application of low-cost transportation system management techniques including, but not limited to, improved signal timing, and intersection signing, marking, channelization, and on-street parking restrictions.
- NOTES: Constrained SIS facilities are roadways that FDOT has determined will not be expanded by the addition of two or more through lanes because of physical, environmental or policy constraints.

Backlogged SIS facilities are roadways operating below the minimum LOS standards, not constrained, and not programmed for addition of lanes in the first three years of FDOT's adopted work program or the five-year CIE.

For roadways outside the UDB significant degradation means an average annual daily traffic increase in two-way traffic volume of 5 percent, or a 5 percent reduction in operating speed for the peak direction in the 100th highest hour. For roadways inside the UDB, roadways parallel to exclusive transit facilities or roadways in transportation concurrency management areas, significant degradation means an average annual daily traffic increase in two-way traffic volume of 10 percent, or a 10 percent reduction in operating speed for the peak direction in the 100th highest hour.

SUMMARY MIAMI-DADE COUNTY TRAFFIC CIRCULATION LEVEL OF SERVICE STANDARDS

Peak Period* LOS Standards Non-SIS Roadways

		Transit Availability	
Location	No Transit Service	20 Min. Headway Transit Service Within 1/2 Mile	Extraordinary Transit Service (Commuter Rail, Metrorail, People Mover, Bus Rapid Transit, Express Bus, or Enhanced Bus Service)
Outside UDB	LOS C-State Minor Arterials LOS C-County Roads and Sta	ate Principal Arterials	
Between UIA and UDB	LOS D (90% of Capacity); or LOS E (100% Capacity) on SUMAs	LOS E (100% of Capacity)	120% of Capacity
Inside UIA	LOS E (100% of Capacity)	120% of Capacity	150% of Capacity

SIS Roadways

SIS Facility	Location				
	Outside UDB	Inside UDB	Roadways Parallel to Exclusive Transit Facilities	Inside Transportation Concurrency Management Areas	Constrained or Backlogged Roadways
Limited Access Facilities	С	D [E]	D [E]	D [E]	Manage
Controlled Access Facilities	С	D	Е	Е	Manage

NOTES: LOS inside of [brackets] applies to general use lanes only when exclusive thru lanes exist.

SIS= Strategic Intermodal System

UIA= Urban Infill Area--Area east of, and including NW/SW 77 Avenue and SR 826 (Palmetto Expressway), and excluding the area north of SR 826 and west of I-95.

UDB=Urban Development Boundary

SUMA=State Urban Minor Arterial

^{*}Peak-period means the average of the two highest consecutive hours of traffic volume during a weekday.

3.6.2.1 Yellow Change Interval

- (1) Recent research has found that the 85th percentile PRT value was 1.33 seconds. Based on the research results, a PRT of 1.4 seconds shall be used.
- (2) The Florida yellow change intervals shown in *Table 3.6-1*, are computed using *Formula 3.6-1* (found in *ITE's Traffic Engineering Handbook*) with a PRT of 1.4 seconds and a grade of 0%. These intervals are the required standard minimum values.

Table 3.6-1. Florida Yellow Change Interval (0.0 % Grade) Standards

APPROACH SPEED (MPH)	YELLOW INTERVAL (SECONDS)										
25	3.4										
30	3.7										
35	4.0										
40	4.4										
45	4.8										
50	5.1										
55	5.5										
60	5.9										
65 6.0											
* For approach grades other than 0%, use	e ITE Formula.										

Formula 3.6-1

$$Y = t + \frac{1.47v}{2(a + Gg)}$$

Where:

Y = length of yellow interval, sec.

t = perception-reaction time (use 1.4 sec.)

v = speed of approaching vehicles, in mph.

a = deceleration rate in response to the onset of a yellow indication (use 10 ft/sec²)

g = acceleration due to gravity (use 32.2 ft/sec²)

G= grade, with uphill positive and downhill negative (percent grade /100)

3.6.2.2 Red Clearance Interval

A red clearance interval must be used. Providing adequate red clearance intervals can significantly impact intersection safety by reducing the probability of occurrence of right angle crashes, even if drivers run the red signal indication. The red clearance interval shall be

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Revised: September 2013

determined using engineering practices. The values are typically computed using *Formula 3.6-***2**, found in *ITE's Traffic Engineering Handbook*.

Formula 3.6-2

$$R = \frac{W + L}{1.47v}$$

Where:

R = length of red interval, sec.

W =width of the intersection, in feet, measured from the near-side stop line to the far edge of the conflicting traffic lane along the actual vehicle path.

L = Length of vehicle (Use 20 ft.)

v = speed of approaching vehicles, in mph.

The minimum red clearance interval shall be 2.0 seconds and the maximum red clearance interval should normally not exceed 6.0 seconds. Longer red intervals than the minimum 2.0 seconds can be used at the engineer's discretion where width of intersection, sight distance, complex intersections, crash history and any unique conditions exist that may warrant longer red times. The determination shall be based on engineering judgment. The National Cooperative Highway Research Program (NCHRP) Report 731 recommends using a modified ITE formula that allows for 1.0 second reduction due to reaction time delay from the conflicting movement. Therefore, a 1.0 second reduction may be made in the values computed from Formula 3.6-2 and applying engineering judgment. However, the red clearance interval shall be no less than 2.0 seconds.

June 2002

Revised: September 2013

Traffic Study for FIU Pedestrian Bridge & Complete Street Improvements
APPENDIX D
(Traffic Counts Data & Existing Signal Timing)
(Indine Cooms Daid & Existing signal filming)

SW 109th Street & SW 8th Street Intersection - Tuesday

Start	Timo		North	bound			South	bound			Eastl	oound				Int. Total		
Start	Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	IIIL TOLAL
7:00	AM	6	2	5	0	47	2	47	1	34	346	47	0	19	222	13	0	791
7:15	AM	5	2	3	0	62	12	61	0	41	385	68	2	62	330	9	2	1044
7:30	AM	7	6	8	0	57	19	83	0	40	312	73	1	86	247	7	6	952
7:45	AM	10	7	15	0	40	37	90	1	39	268	65	0	104	264	9	20	969
To	tal	28	17	31	0	206	70	281	2	154	1311	253	3	271	1063	38	28	3756
8:00	AM	19	10	7	0	37	24	114	0	40	229	36	9	51	187	7	11	781
8:15	AM	3	10	8	0	31	26	68	0	56	167	20	0	65	161	13	7	635
8:30	AM	13	9	6	0	48	25	55	0	46	170	18	2	34	159	6	1	592
8:45	AM	4	8	9	0	28	27	41	0	53	134	18	4	48	185	8	5	572
To	tal	39	37	30	0	144	102	278	0	195	700	92	15	198	692	34	24	2580
Grand	Total	67	54	61	0	350	172	559	2	349	2011	345	18	469	1755	72	52	6336

Start	Timo		North	bound			South	bound			Eastl	bound				Int. Total		
Start	Tille	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	IIII. TOLAI
4:00	PM	70	22	59	1	25	14	89	2	62	375	41	3	49	383	11	8	1214
4:15	PM	72	19	52	0	25	34	66	10	58	398	60	8	47	370	22	20	1261
4:30	PM	48	18	57	0	35	48	89	1	62	369	61	12	90	430	8	39	1367
4:45	PM	64	31	59	0	34	21	96	0	74	358	68	8	43	444	23	42	1365
To	tal	254	90	227	1	119	117	340	13	256	1500	230	31	229	1627	64	109	5207
5:00	PM	56	21	81	0	36	13	120	0	62	370	31	14	40	450	15	15	1324
5:15	PM	57	12	49	0	48	18	81	1	63	449	29	4	40	480	17	16	1364
5:30	PM	60	19	66	0	59	17	104	0	79	470	39	4	44	445	4	12	1422
5:45	PM	70	30	53	0	66	32	105	0	59	396	38	4	65	518	9	2	1447
To	tal	243	82	249	0	209	80	410	1	263	1685	137	26	189	1893	45	45	5557
Grand	Total	497	172	476	1	328	197	750	14	519	3185	367	57	418	3520	109	154	10764

SW 109th Street & SW 8th Street Intersection - Wednesday

Stort	Time		North	bound			South	bound			Eastl	bound			West	bound		Int. Total
Start	Tille	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	IIII. TOLAI
7:00	AM	4	3	5	0	63	7	47	0	73	484	56	9	46	302	12	2	1113
7:15	AM	3	0	2	0	55	14	58	0	95	501	61	3	45	339	18	5	1199
7:30	AM	8	5	4	0	72	20	90	0	92	462	59	5	75	369	20	7	1288
7:45	AM	6	5	3	0	54	13	83	0	80	430	87	6	63	348	20	15	1213
То	tal	21	13	14	0	244	54	278	0	340	1877	263	23	229	1358	70	29	4813
8:00	AM	9	16	12	0	59	27	135	0	90	382	78	4	62	376	44	9	1303
8:15	AM	16	17	8	0	52	27	82	0	116	344	86	3	88	253	44	12	1148
8:30	AM	12	12	5	0	58	43	65	0	66	318	125	8	105	237	37	18	1109
8:45	AM	18	20	28	0	52	28	51	0	62	339	98	9	115	320	24	30	1194
То	tal	55	65	53	0	221	125	333	0	334	1383	387	24	370	1186	149	69	4754
Grand	l Total	76	78	67	0	465	179	611	0	674	3260	650	47	599	2544	219	98	9567

1282 1198 1228
1198 1228
1228
1270
4978
1381
1277
1131
1160
4949
+++++++++++++++++++++++++++++++++++++++

SW 109th Street & SW 8th Street Intersection - Thursday

Start	Timo		North	bound			South	bound			Eastl	oound				Int. Total		
Start	Tille	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	IIII. TOtal
7:00	AM	7	5	14	0	82	6	29	0	46	415	96	3	51	296	9	4	1063
7:15	AM	6	2	8	0	69	14	62	0	64	409	49	2	82	372	14	12	1165
7:30	AM	7	7	7	0	101	26	125	0	83	377	143	8	88	365	12	12	1361
7:45	AM	17	7	11	0	93	36	127	0	69	335	130	13	68	310	20	19	1255
To	tal	37	21	40	0	345	82	343	0	262	1536	418	26	289	1343	55	47	4844
8:00	AM	4	6	3	1	91	19	119	0	97	372	109	9	63	287	33	11	1224
8:15	AM	9	16	19	1	83	27	71	0	105	348	140	2	75	319	21	16	1252
8:30	AM	23	12	17	1	78	31	74	0	89	354	111	12	80	281	17	37	1217
8:45	AM	10	12	15	0	75	21	56	0	80	394	132	8	51	244	19	13	1130
To	tal	46	46	54	3	327	98	320	0	371	1468	492	31	269	1131	90	77	4823
Grand	Total	83	67	94	3	672	180	663	0	633	3004	910	57	558	2474	145	124	9667

Start	Timo		North	bound			South	bound			Eastl	bound				Int. Total		
Start	Tille	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	IIII. TOlai
4:00	PM	85	15	44	0	59	18	89	4	71	22	85	0	90	365	42	9	998
4:15	PM	93	26	68	1	57	19	83	1	65	21	113	0	68	299	99	6	1019
4:30	PM	109	31	68	2	43	39	75	0	55	9	114	0	79	297	69	13	1003
4:45	PM	116	29	62	0	50	16	112	0	55	22	97	2	88	305	56	14	1024
To	tal	403	101	242	3	209	92	359	5	246	74	409	2	325	1266	266	42	4044
5:00	PM	153	37	83	0	71	22	85	0	89	320	27	6	47	367	16	33	1356
5:15	PM	96	23	44	1	65	21	113	0	69	307	25	7	37	390	15	27	1240
5:30	PM	79	26	46	0	55	9	114	0	69	307	24	11	37	363	15	35	1190
5:45	PM	89	21	60	0	55	22	97	2	92	291	30	4	55	372	12	16	1218
То	tal	417	107	233	1	246	74	409	2	319	1225	106	28	176	1492	58	111	5004
Grand	l Total	820	208	475	4	455	166	768	7	565	1299	515	30	501	2758	324	153	9048

SW 109th Street & SW 8th Street Intersection - 3-Day Average

Start	Timo		North	bound			South	bound			Eastb	oound			West	bound		Int. Total
Start	Tille	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	IIIL. TOLAI
7:00	AM	6	3	8	0	64	5	41	0	51	415	66	4	39	273	11	2	989
7:15	AM	5	1	4	0	62	13	60	0	67	432	59	2	63	347	14	6	1136
7:30	AM	7	6	6	0	77	22	99	0	72	384	92	5	83	327	13	8	1200
7:45	AM	11	6	10	0	62	29	100	0	63	344	94	6	78	307	16	18	1146
Tot	tal	29	17	28	0	265	69	301	1	252	1575	311	17	263	1255	54	35	4471
8:00	AM	11	11	7	0	62	23	123	0	76	328	74	7	59	283	28	10	1103
8:15	AM	9	14	12	0	55	27	74	0	92	286	82	2	76	244	26	12	1012
8:30	AM	16	11	9	0	61	33	65	0	67	281	85	7	73	226	20	19	973
8:45	AM	11	13	17	0	52	25	49	0	65	289	83	7	71	250	17	16	965
Tot	tal	47	49	46	1	231	108	310	0	300	1184	324	23	279	1003	91	57	4052
Grand	Total	75	66	74	1	496	177	611	1	552	2758	635	41	542	2258	145	91	8523
Peak	Hour	34	24	28	0	263	87	382	0	277	1487	319	21	283	1265	71	43	4585
(7:15 -	8:15)	34	24	28	"	203	67	382	U	211	1487	3/19	21	283	1265	/1	43	4585
PH	lF	0.77	0.57	0.72		0.86	0.76	0.78		0.91	0.86	0.85		0.85	0.91	0.63		0.95

Start	Timo		North	bound			South	bound			Eastl	bound			West	bound		Int. Total
Start	Tille	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	IIII. TOlai
4:00	PM	99	21	65	1	43	21	84	3	67	242	57	4	61	363	22	12	1165
4:15	PM	79	21	69	1	37	24	70	4	63	245	77	4	57	346	45	17	1159
4:30	PM	84	23	63	1	41	35	82	0	60	239	82	8	71	356	30	25	1199
4:45	PM	93	30	66	0	42	20	94	0	64	244	68	6	65	371	30	27	1220
Tot	tal	355	95	263	2	164	101	330	7	254	970	283	22	255	1436	127	81	4743
5:00	PM	122	28	93	0	55	18	100	0	72	345	28	8	44	403	13	25	1354
5:15	PM	87	21	66	0	53	17	91	0	67	368	25	6	41	416	15	21	1294
5:30	PM	74	21	59	0	57	13	96	0	69	369	28	8	41	380	9	23	1248
5:45	PM	85	23	64	0	54	24	92	1	70	341	32	6	52	413	10	10	1275
Tot	tal	369	93	282	0	218	72	379	1	277	1423	112	27	178	1612	46	79	5170
Grand	Total	724	188	545	2	382	173	709	8	531	2393	396	49	432	3048	173	160	9913
Peak (5:00 -		369	93	282	0	218	72	379	1	277	1423	112	27	178	1612	46	79	5170
PH	lF	0.75	0.84	0.75	0.25	0.96	0.76	0.95	0.38	0.97	0.96	0.89	0.85	0.86	0.97	0.77	0.78	0.95

SW 109th Street & SW 7th Terrace Intersection

Start	Timo		١	Northboun	d			S	Southboun	d				Eastboun	d			1	Vestboun	t		Int. Total
Start	Tille	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	IIII. TOlai
6:00	AM	0	58	0	0	58	0	59	0	1	59	0	0	18	0	18						135
6:15	AM	0	64	0	0	64	0	68	0	0	68	0	0	15	0	15						147
6:30	AM	0	67	0	0	67	0	74	1	1	75	0	0	31	0	31						173
6:45	AM	0	71	0	2	71	0	81	0	6	81	0	0	28	1	28						180
To	tal	0	260	0	2	260	0	282	1	8	283	0	0	92	1	92						635
7:00	AM	0	67	0	0	67	0	115	2	3	117	0	0	35	1	35						219
7:15	AM	0	76	0	0	76	0	113	1	5	114	0	0	32	1	32						222
7:30	AM	0	84	0	1	84	0	151	1	4	152	0	0	30	0	30						266
7:45	AM	0	91	0	2	91	0	151	0	6	151	0	0	32	0	32						274
To	tal	0	318	0	3	318	0	530	4	18	534	0	0	129	2	129						981
8:00	AM	0	109	0	3	109	0	157	0	3	157	0	0	28	2	28						294
8:15	AM	0	104	0	0	104	0	143	3	6	146	0	0	22	0	22						272
8:30	AM	0	80	0	1	80	0	120	2	4	122	0	0	20	0	20						222
8:45	AM	0	95	0	2	95	1	102	1	2	104	0	0	17	1	17						216
To	tal	0	388	0	6	388	1	522	6	15	529	0	0	87	3	87						1004
Grand	Total	0	966	0	11	966	1	1309	11	41	1346	0	0	308	6	308						2620
Peak (7:30 -		0	388	0	6	388	0	602	4	19	606	0	0	112	2	112						1106
PH	łF .	0.00	0.89	0.00		0.89	#DIV/0!	0.96	0.33		0.96	0.00	0.00	0.88		0.88						0.94

Start	Timo		١	Northboun	d			S	outhboun	d				Eastbound	t			1	Westboun	d		Int. Total
Start	Time	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	IIII. TOla
4:00	PM	0	86	0	1	86	0	109	3	1	112	0	0	15	0	15						213
4:15	PM	0	81	0	0	81	0	113	2	3	115	0	0	19	0	19						215
4:30	PM	0	100	0	3	100	0	119	1	2	120	0	0	31	1	31						251
4:45	PM	0	96	0	1	96	0	121	0	2	121	0	0	27	0	27						244
To	tal	0	363	0	5	363	0	462	6	8	468	0	0	92	1	92						923
5:00	PM	0	101	0	2	101	0	131	0	2	131	0	0	31	0	31						263
5:15	PM	0	99	0	3	99	0	125	1	3	126	0	0	33	1	33						258
5:30	PM	0	98	0	0	98	0	131	1	1	132	0	0	30	0	30						260
5:45	PM	0	111	0	1	111	0	147	1	4	148	0	0	25	1	25						284
To	tal	0	409	0	6	409	0	534	3	10	537	0	0	119	2	119						1065
6:00	PM	0	113	0	1	113	0	149	1	0	150	0	0	23	1	23						286
6:15	PM	0	90	0	1	90	0	125	1	2	126	0	0	21	0	21						237
6:30	PM	0	80	0	3	80	0	114	2	0	116	0	0	16	0	16						212
6:45	PM	0	73	0	2	73	1	118	0	1	119	0	0	18	1	18						210
To	tal	0	356	0	7	356	1	506	4	3	511	0	0	78	2	78						945
Grand	Total	0	1128	0	18	1128	1	1309	13	21	1516	0	0	289	5	289						2933
Peak (5:15 -		0	421	0	5	421	0	552	4	8	556	0	0	111	3	111	0	0	0	0	0	1088
PH	łF		0.93			0.93		0.93	1.00		0.93			0.84		0.84						0.95

SW 109th Street & SW 7th Street Intersection

Start	Timo		N	Northboun	d			S	Southboun	d				Eastbound	d			1	Vestboun	d		Int. Total
Start	Time	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	iiii. Tola
6:00	AM	10	47	1	0	58	3	42	1	1	46	3	5	15	0	23	2	2	5	0	9	136
6:15	AM	12	51	1	0	64	6	50	1	1	57	6	8	17	0	31	1	4	3	0	8	160
6:30	AM	13	41	13	0	67	4	52	0	1	56	1	5	18	1	24	4	3	6	1	13	160
6:45	AM	7	59	5	2	71	5	63	1	6	69	2	7	16	0	25	2	4	9	0	15	180
То	tal	42	198	20	2	260	18	207	3	9	228	12	25	66	1	103	9	13	23	1	45	636
7:00	AM	9	54	4	1	67	4	91	1	3	96	6	4	15	0	25	9	9	6	0	24	212
7:15	AM	12	62	2	0	76	9	96	0	5	105	5	5	14	2	24	3	4	7	1	14	219
7:30	AM	11	68	5	1	84	9	120	1	5	130	3	2	25	1	30	6	1	2	1	9	253
7:45	AM	8	77	6	2	91	2	126	0	8	128	3	5	18	0	26	7	4	7	0	18	263
То	tal	40	261	17	4	318	24	433	2	21	459	17	16	72	3	105	25	18	22	2	65	947
8:00	AM	16	88	5	3	109	9	131	4	4	144	11	3	25	1	39	1	6	15	0	22	314
8:15	AM	17	83	4	0	104	7	118	0	6	125	4	3	23	0	30	2	8	19	1	29	288
8:30	AM	8	68	4	2	80	6	93	8	4	107	3	1	22	2	26	5	6	7	0	18	231
8:45	AM	13	74	8	2	95	5	82	2	4	89	2	3	17	1	22	3	5	6	0	14	220
То	tal	54	313	21	7	388	27	424	14	18	465	20	10	87	4	117	11	25	47	1	83	1053
Grand		136	772	58	13	966	69	1064	19	48	1152	49	51	225	8	325	45	56	92	4	193	2636
Peak (7:30 -		52	316	20	6	388	27	495	5	23	527	21	13	91	2	125	16	19	43	2	78	1118
PH	łF	0.76	0.90	0.83	0.50	0.89	0.75	0.94	0.31	0.72	0.91	0.48	0.65	0.91	0.50	0.80	0.57	0.59	0.57	0.50	0.67	0.89

Start ⁻	Timo		١	Northboun	d			S	Southboun	ıd				Eastbound	t			\	Vestboun	d		Int. Tota
Start	Time	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	Left	Thru	Right	Peds	App. Tota	IIII. TOIA
4:00	PM	13	72	1	3	86	7	85	6	2	98	2	2	12	0	16	12	15	6	0	33	233
4:15	PM	11	68	2	0	81	5	88	6	9	99	1	3	15	0	19	10	11	12	1	33	232
4:30	PM	24	73	3	2	100	4	96	5	3	105	3	2	12	3	17	11	14	9	1	34	256
4:45	PM	18	77	1	3	96	5	102	7	7	114	1	2	13	0	16	6	9	8	0	23	249
Tot	tal	66	290	7	8	363	21	371	24	21	416	7	9	52	3	68	39	49	35	2	123	970
5:00	PM	20	78	3	4	101	6	109	6	6	121	2	1	14	1	17	8	10	6	6	24	263
5:15	PM	15	82	2	3	99	5	116	4	9	125	2	3	10	0	15	7	11	12	4	30	269
5:30	PM	17	74	7	1	98	9	111	4	3	124	2	5	13	0	20	7	21	7	1	35	277
5:45	PM	23	85	3	2	111	9	123	8	7	140	5	2	15	1	22	9	13	9	0	31	304
Tot	tal	75	319	15	10	409	29	459	22	25	510	11	11	52	2	74	31	55	34	11	120	1113
6:00	PM	22	86	5	2	113	10	129	7	4	146	0	3	14	0	17	6	13	7	1	26	302
6:15	PM	13	75	2	0	90	5	106	6	5	117	4	4	10	1	18	9	5	13	0	27	252
6:30	PM	15	62	3	3	80	2	95	8	3	105	2	5	12	2	19	7	8	10	1	25	229
6:45	PM	11	58	4	0	73	3	98	5	4	106	2	3	13	0	18	7	5	14	0	26	223
Tot	tal	61	281	14	5	356	20	428	26	16	474	8	15	49	3	72	29	31	44	2	104	1006
Grand	Total	202	890	36	23	1128	70	1258	72	62	1400	26	35	153	8	214	99	135	113	15	347	3089
Peak (5:15 -		77	327	17	8	421	33	479	23	23	535	9	13	52	1	74	29	58	35	6	122	1152
PH	IF	0.84	0.95	0.61	0.67	0.93	0.83	0.93	0.72	0.64	0.92	0.45	0.65	0.87	0.25	0.84	0.81	0.69	0.73	0.38	0.87	0.95

File Name: SW 8th Street & SW 109th Avenue Tuesday

Site Code : 00000000 Start Date : 11/18/2014

Page No : 1

								Group	s Prin	ted- Ver	ı - Truc	cks - T	urns								
		SW 1	09th A	venue)		SW 1	09th A	Avenue)		SV	V8thS	treet			SV	V8thS	treet		
		Sc	outhbo	und			N	orthbo	und			V	/estbo	und			Е	astbou	ınd		
Start Time	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Int. Total
07:00 AM	47	2	47	1	97	6	2	5	0	13	19	222	13	0	254	34	346	47	0	427	791
07:15 AM	62	12	61	0	135	5	2	3	0	10	62	330	9	2	403	41	385	68	2	496	1044
07:30 AM	57	19	83	0	159	7	6	8	0	21	86	247	7	6	346	40	312	73	1	426	952
07:45 AM	40	37	90	1_	168	10	7	15	0	32	104	264	9	20	397	39	268	65	0	372	969
Total	206	70	281	2	559	28	17	31	0	76	271	1063	38	28	1400	154	1311	253	3	1721	3756
08:00 AM	37	24	114	0	175	19	10	7	0	36	51	187	7	11	256	40	229	36	9	314	781
08:15 AM	31	26	68	0	125	3	10	8	0	21	65	161	13	7	246	56	167	20	0	243	635
08:30 AM	48	25	55	0	128	13	9	6	0	28	34	159	6	1	200	46	170	18	2	236	592
08:45 AM	28	27	41	0	96	4	8	9	0	21	48	185	8	5	246	53	134	18_	4	209	572
Total	144	102	278	0	524	39	37	30	0	106	198	692	34	24	948	195	700	92	15	1002	2580
*** BREAK **	*																				
DIVEAR																					
04:00 PM	25	14	89	2	130	70	22	59	1	152	49	383	11	8	451	62	375	41	3	481	1214
04:15 PM	25	34	66	10	135	72	19	52	0	143	47	370	22	20	459	58	398	60	8	524	1261
04:30 PM	35	48	89	1	173	48	18	57	0	123	90	430	8	39	567	62	369	61	12	504	1367
04:45 PM	34	21	96	0	151	64	31	59	0	154	43	444	23	42	552	74	358	68	8	508	1365
Total	119	117	340	13	589	254	90	227	1	572	229	1627	64	109	2029	256	1500	230	31	2017	5207
05:00 PM	36	13	120	0	169	56	21	81	0	158	40	450	15	15	520	62	370	31	14	477	1324

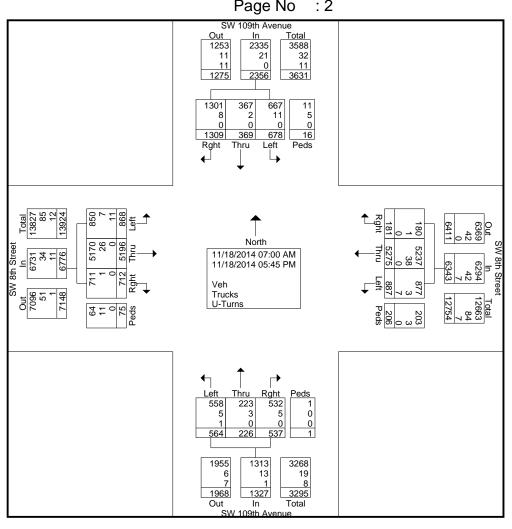
05:30 PM	59	17	104	0	180	60	19	66	0	145	44	445	4	12	505	79	470	39	4	592	1422
05:45 PM	66	32	105	0	203	70	30	53	0	153	65	518	9	2	594	59	396	38	4	497	1447
Total	209	80	410	1	700	243	82	249	0	574	189	1893	45	45	2172	263	1685	137	26	2111	5557
										1										1	
Grand Total	678	369	1309	16	2372	564	226	537	1	1328	887	5275	181	206	6549	868	5196	712	75	6851	17100
Apprch %	28.6	15.6	55.2	0.7		42.5	17	40.4	0.1		13.5	80.5	2.8	3.1		12.7	75.8	10.4	1.1		
Total %	4	2.2	7.7	0.1	13.9	3.3	1.3	3.1	0	7.8	5.2	30.8	1.1	1.2	38.3	5.1	30.4	4.2	0.4	40.1	
Veh	667	367	1301	11	2346	558	223	532	1	1314	877	5237	180	203	6497	850	5170	711	64	6795	16952
% Veh	98.4	99.5	99.4	68.8	98.9	98.9	98.7	99.1	100	98.9	98.9	99.3	99.4	98.5	99.2	97.9	99.5	99.9	85.3	99.2	99.1
Trucks	11	2	8	5	26	5	3	5	0	13	3	38	1	3	45	7	26	1	11	45	129
% Trucks	1.6	0.5	0.6	31.2	1.1	0.9	1.3	0.9	0	1	0.3	0.7	0.6	1.5	0.7	0.8	0.5	0.1	14.7	0.7	0.8
U-Turns	0	0	0	0	0	1	0	0	0	1	7	0	0	0	7	11	0	0	0	11	19
% U-Turns	0	0	0	0	0	0.2	0	0	0	0.1	0.8	0	0	0	0.1	1.3	0	0	0	0.2	0.1

40 480

05:15 PM

File Name: SW 8th Street & SW 109th Avenue Tuesday

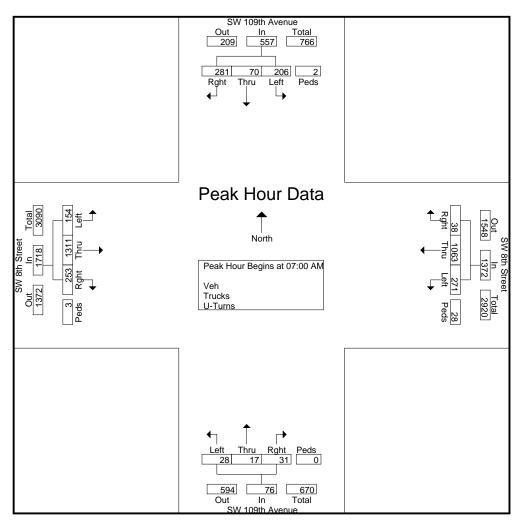
Site Code : 00000000 Start Date : 11/18/2014



File Name: SW 8th Street & SW 109th Avenue Tuesday

Site Code : 00000000 Start Date : 11/18/2014

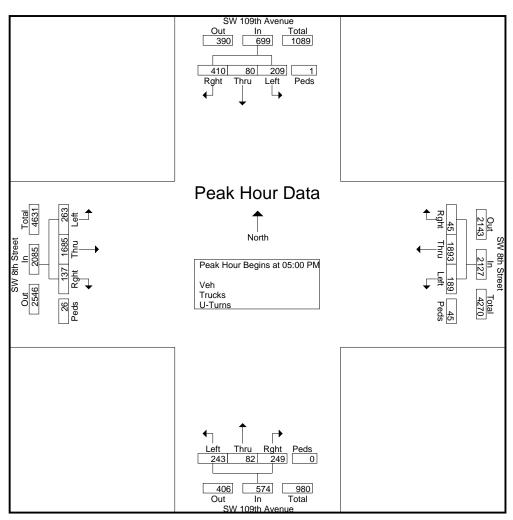
		SW 1	09th A	venue			SW 1	09th A	venue			SV	V 8th S	treet			SV	/ 8th S	treet		
		Sc	outhbo	und			No	orthbo	und			V	/estbo	und			Е	astbou	ınd		
Start Time	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Int. Total
Peak Hour Ar	nalysis	From (07:00 A	AM to C	8:45 AM	1 - Pea	k 1 of 1	1													
Peak Hour fo	r Entire	Inters	ection	Begins	at 07:0	MA 0															
07:00 AM	47	2	47	1	97	6	2	5	0	13	19	222	13	0	254	34	346	47	0	427	791
07:15 AM	62	12	61	0	135	5	2	3	0	10	62	330	9	2	403	41	385	68	2	496	1044
07:30 AM	57	19	83	0	159	7	6	8	0	21	86	247	7	6	346	40	312	73	1	426	952
07:45 AM	40	37	90	1	168	10	7	15	0	32	104	264	9	20	397	39	268	65	0	372	969
Total Volume	206	70	281	2	559	28	17	31	0	76	271	1063	38	28	1400	154	1311	253	3	1721	3756
% App. Total	36.9	12.5	50.3	0.4		36.8	22.4	40.8	0		19.4	75.9	2.7	2		8.9	76.2	14.7	0.2		
PHF	.831	.473	.781	.500	.832	.700	.607	.517	.000	.594	.651	.805	.731	.350	.868	.939	.851	.866	.375	.867	.899



File Name: SW 8th Street & SW 109th Avenue Tuesday

Site Code : 00000000 Start Date : 11/18/2014

			09th A		!				venue)		_	8th S				_	8th S			
		Sc	<u>outhbo</u>	<u>und</u>			No	orthbo	und			W	<u>′estboι</u>	ınd			E	<u>astboι</u>	ınd		
Start Time	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Int. Total
Peak Hour Ar	nalysis	From (04:00 F	PM to 0	5:45 PM	1 - Peal	k 1 of 1														
Peak Hour fo	r Entire	Inters	ection	Begins	at 05:0	0 PM															
05:00 PM	36	13	120	0	169	56	21	81	0	158	40	450	15	15	520	62	370	31	14	477	1324
05:15 PM	48	18	81	1	148	57	12	49	0	118	40	480	17	16	553	63	449	29	4	545	1364
05:30 PM	59	17	104	0	180	60	19	66	0	145	44	445	4	12	505	79	470	39	4	592	1422
05:45 PM	66	32	105	0	203	70	30	53	0	153	65	518	9	2	594	59	396	38	4	497	1447
Total Volume	209	80	410	1	700	243	82	249	0	574	189	1893	45	45	2172	263	1685	137	26	2111	5557
% App. Total	29.9	11.4	58.6	0.1		42.3	14.3	43.4	0		8.7	87.2	2.1	2.1		12.5	79.8	6.5	1.2		
PHF	.792	.625	.854	.250	.862	.868	.683	.769	.000	.908	.727	.914	.662	.703	.914	.832	.896	.878	.464	.891	.960



File Name: SW 8th Street & SW 109th Avenue Wednesday

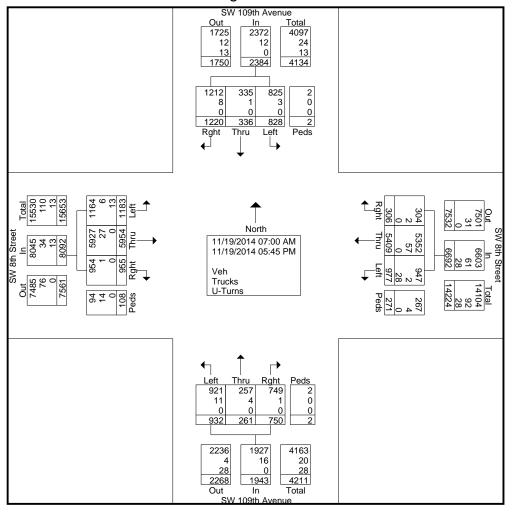
Site Code : 00000000 Start Date : 11/19/2014

Groups	Printed-	Veh -	Trucks -	Turns

		SW 1	09th A	venue			SW 1		venue	ica voi	i iiu		/ 8th S	treet			SW	/ 8th S	treet		
		_	outhbo				_	orthbo					/estbo				_	astbou			
Start Time	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Int. Total
07:00 AM	63	7	47	0	117	4	3	5	0	12	46	302	12	2	362	73	484	56	9	622	1113
07:15 AM	55	14	58	0	127	3	0	2	0	5	45	339	18	5	407	95	501	61	3	660	1199
07:30 AM	72	20	90	0	182	8	5	4	0	17	75	369	20	7	471	92	462	59	5	618	1288
07:45 AM	54	13	83	0	150	6	5	3	0	14	63	348	20	15	446	80	430	87	6	603	1213
Total	244	54	278	0	576	21	13	14	0	48	229	1358	70	29	1686	340	1877	263	23	2503	4813
08:00 AM	59	27	135	0	221	9	16	12	0	37	62	376	44	9	491	90	382	78	4	554	1303
08:15 AM	52	27	82	0	161	16	17	8	0	41	88	253	44	12	397	116	344	86	3	549	1148
08:30 AM	58	43	65	0	166	12	12	5	0	29	105	237	37	18	397	66	318	125	8	517	1109
08:45 AM	52	28	51	0	131	18	20	28	0	66	115	320	24	30	489	62	339	98	9	508	1194
Total	221	125	333	0	679	55	65	53	0	173	370	1186	149	69	1774	334	1383	387	24	2128	4754
*** BREAK **	*																				
						1															
04:00 PM	46	32	75	2	155	141	26	93	1	261	43	341	12	18	414	69	328	45	10	452	1282
04:15 PM	30	20	61	0	111	73	19	87	1	180	57	369	14	24	464	65	317	57	4	443	1198
04:30 PM	45	18	82	0	145	95	19	64	0	178	45	340	14	23	422	63	338	70	12	483	1228
04:45 PM	42	24	73_	0	139	100	29	76	0	205	65	364	11_	26	466	62	352	39	7	460	1270
Total	163	94	291	2	550	409	93	320	2	824	210	1414	51	91	1766	259	1335	211	33	1838	4978
				_	1				_				_		1				_		
05:00 PM	57	19	95	0	171	158	25	116	0	299	45	391	8	28	472	64	345	26	4	439	1381
05:15 PM	45	13	79	0	137	109	28	104	0	241	46	379	13	19	457	68	347	21	6	442	1277
05:30 PM	56	14	71	0	141	83	18	64	0	165	42	333	7	23	405	60	331	20	9	420	1131
05:45 PM	42	17	73	0	132	97	19	79	0	195	35	348	8	12	403	58	336	27	9	430	1160
Total	200	63	318	0	581	447	90	363	0	900	168	1451	36	82	1737	250	1359	94	28	1731	4949
0 17.1		000	4000	0	0000	000	004	750	0	4045	077	5.400	000	074	0000	4400	5054	055	400	0000	40404
Grand Total	828	336	1220	2	2386	932	261	750	2	1945	977	5409	306	271	6963	1183	5954	955	108	8200	19494
Apprch %	34.7	14.1	51.1	0.1	40.0	47.9	13.4	38.6	0.1	40	14	77.7	4.4	3.9	25.7	14.4	72.6	11.6	1.3	40.4	
Total %	4.2	1.7	6.3	0	12.2	4.8	1.3	3.8	0	10	5	27.7	1.6	1.4	35.7	6.1	30.5	4.9	0.6	42.1	40040
Veh	825 99.6	335 99.7	1212	2	2374	921 98.8	257	749	2 100	1929	947	5352	304	267	6870	1164	5927	954	94	8139	19312
% Veh		99.7	99.3	100	99.5		98.5	99.9		99.2	96.9	98.9	99.3	98.5	98.7	98.4	99.5 27	99.9	87 14	99.3	99.1
Trucks % Trucks	0.4	0.3	8 0.7	0	12 0.5	11 1.2	4 1.5	1 0.1	0	16 0.8	2 0.2	57 1.1	0.7	4 1.5	65 0.9	6 0.5	0.5	1 0.1	13	48 0.6	141 0.7
U-Turns	0.4	0.3	0.7	0	0.5	0	0	0.1	0	0.8	28	0	0.7	1.5_ 0	28	13	0.5	0.1	0	13	41
% U-Turns	0	0	0	0	0	0	0	0	0	0	2.9	0	0	0	0.4	1.1	0	0	0	0.2	0.2
70 U-1 uillS	ı U	U	U	U	0	U	U	U	U	U	2.9	U	U	U	0.4	1.1	U	U	U	0.2	0.2

File Name: SW 8th Street & SW 109th Avenue Wednesday

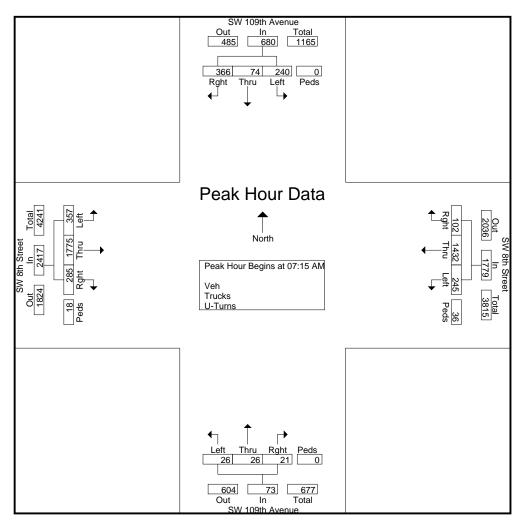
Site Code : 00000000 Start Date : 11/19/2014



File Name: SW 8th Street & SW 109th Avenue Wednesday

Site Code : 00000000 Start Date : 11/19/2014

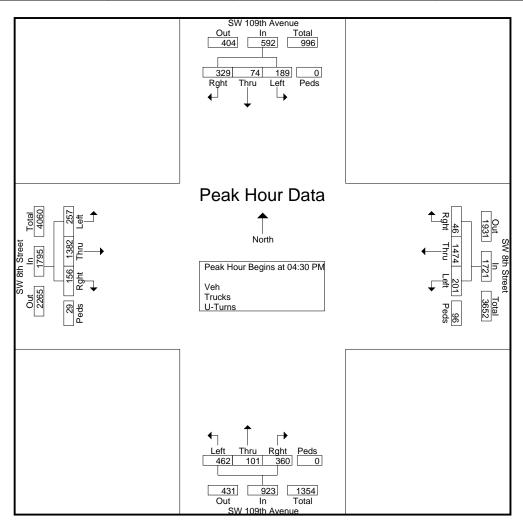
		SW 1	09th A	venue			SW 1	09th A	venue			SV	/ 8th S	treet			SV	/ 8th S	treet]
		Sc	outhbo	und			No	orthbo	und			V	/estbou	und			Е	astbou	ınd		
Start Time	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Int. Total
Peak Hour Ar	nalysis	From (07:00 A	AM to C	08:45 AM	1 - Pea	k 1 of 1	1													
Peak Hour fo	r Entire	Inters	ection	Begins	at 07:1	5 AM															
07:15 AM	55	14	58	0	127	3	0	2	0	5	45	339	18	5	407	95	501	61	3	660	1199
07:30 AM	72	20	90	0	182	8	5	4	0	17	75	369	20	7	471	92	462	59	5	618	1288
07:45 AM	54	13	83	0	150	6	5	3	0	14	63	348	20	15	446	80	430	87	6	603	1213
08:00 AM	59	27	135	0	221	9	16	12	0	37	62	376	44	9	491	90	382	78	4	554	1303
Total Volume	240	74	366	0	680	26	26	21	0	73	245	1432	102	36	1815	357	1775	285	18	2435	5003
% App. Total	35.3	10.9	53.8	0		35.6	35.6	28.8	0		13.5	78.9	5.6	2		14.7	72.9	11.7	0.7		
PHF	.833	.685	.678	.000	.769	.722	.406	.438	.000	.493	.817	.952	.580	.600	.924	.939	.886	.819	.750	.922	.960



File Name: SW 8th Street & SW 109th Avenue Wednesday

Site Code : 00000000 Start Date : 11/19/2014

				venue	!		_	09th A)		_	/ 8th S				_	/ 8th S			
			<u>outhbo</u>	<u>una</u>			INC	<u>orthbo</u>	<u>una</u>				<u>estbo</u>	una				<u>astbοι</u>	ına		
Start Time	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Int. Total
Peak Hour Ar	nalysis	From (04:00 F	PM to 0	5:45 PM	1 - Pea	k 1 of 1														
Peak Hour fo	r Entire	Inters	ection	Begins	at 04:3	0 PM															
04:30 PM	45	18	82	0	145	95	19	64	0	178	45	340	14	23	422	63	338	70	12	483	1228
04:45 PM	42	24	73	0	139	100	29	76	0	205	65	364	11	26	466	62	352	39	7	460	1270
05:00 PM	57	19	95	0	171	158	25	116	0	299	45	391	8	28	472	64	345	26	4	439	1381
05:15 PM	45	13	79	0	137	109	28	104	0	241	46	379	13	19	457	68	347	21	6	442	1277
Total Volume	189	74	329	0	592	462	101	360	0	923	201	1474	46	96	1817	257	1382	156	29	1824	5156
% App. Total	31.9	12.5	55.6	0		50.1	10.9	39	0		11.1	81.1	2.5	5.3		14.1	75.8	8.6	1.6		
PHF	.829	.771	.866	.000	.865	.731	.871	.776	.000	.772	.773	.942	.821	.857	.962	.945	.982	.557	.604	.944	.933



File Name: SW 8th Street & SW 109th Avenue Thursday

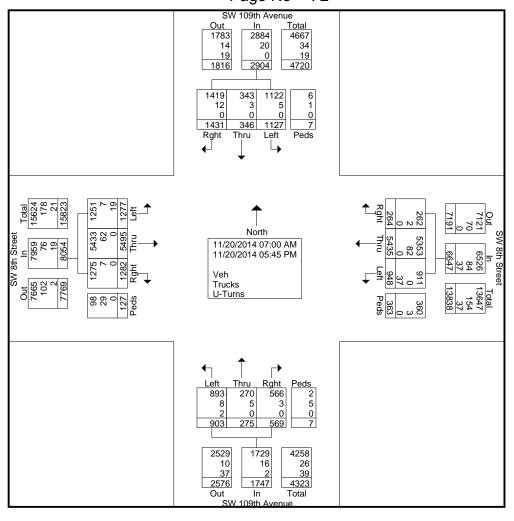
Site Code : 00000000 Start Date : 11/20/2014

Groups	Printed-	Veh -	Trucks -	Turns

		SW 109th Avenue					SW 1	09th A	venue			SW	/ 8th S	treet			SW	/ 8th S	treet		
		Sc	outhbo	und			N	orthbo	und			W	estbou	und			E	astbou	und		
Start Time	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Int. Total
07:00 AM	82	6	29	0	117	7	5	14	0	26	51	296	9	4	360	46	415	96	3	560	1063
07:15 AM	69	14	62	0	145	6	2	8	0	16	82	372	14	12	480	64	409	49	2	524	1165
07:30 AM	101	26	125	0	252	7	7	7	0	21	88	365	12	12	477	83	377	143	8	611	1361
07:45 AM	93	36	127	0	256	17	7	11	0	35	68	310	20	19	417	69	335	130	13	547	1255
Total	345	82	343	0	770	37	21	40	0	98	289	1343	55	47	1734	262	1536	418	26	2242	4844
08:00 AM	91	19	119	0	229	4	6	3	1	14	63	287	33	11	394	97	372	109	9	587	1224
08:15 AM	83	27	71	0	181	9	16	19	1	45	75	319	21	16	431	105	348	140	2	595	1252
08:30 AM	78	31	74	0	183	23	12	17	1	53	80	281	17	37	415	89	354	111	12	566	1217
08:45 AM	75	21	56	0	152	10	12	15	0	37	51	244	19	13	327	80	394	132	8	614	1130
Total	327	98	320	0	745	46	46	54	3	149	269	1131	90	77	1567	371	1468	492	31	2362	4823
*** BREAK ***	*																				
,						1															
04:00 PM	59	18	89	4	170	85	15	44	0	144	43	389	17	23	472	90	365	42	9	506	1292
04:15 PM	57	19	83	1	160	93	26	68	1	188	47	372	12	14	445	68	299	99	6	472	1265
04:30 PM	43	39	75	0	157	109	31	68	2	210	57	329	21	42	449	79	297	69	13	458	1274
04:45 PM	50	16	112	0	178	116	29	62	0	207	67	379	11_	49	506	88	305	56	14	463	1354
Total	209	92	359	5	665	403	101	242	3	749	214	1469	61	128	1872	325	1266	266	42	1899	5185
05:00 PM	71	22	85	0	178	153	37	83	0	273	47	367	16	33	463	89	320	27	6	442	1356
05:15 PM	65	21	113	0	199	96	23	44	1	164	37	390	15	27	469	69	307	25	7	408	1240
05:30 PM	55	9	114	0	178	79	26	46	0	151	37	363	15	35	450	69	307	24	11	411	1190
05:45 PM	55	22	97	2	176	89	21	60	0	170	55	372	12	16	455	92	291	30	4	417	1218
Total	246	74	409	2	731	417	107	233	1	758	176	1492	58	111	1837	319	1225	106	28	1678	5004
						ı															ı
Grand Total	1127	346	1431	7	2911	903	275	569	7	1754	948	5435	264	363	7010	1277	5495	1282	127	8181	19856
Apprch %	38.7	11.9	49.2	0.2		51.5	15.7	32.4	0.4		13.5	77.5	3.8	5.2		15.6	67.2	15.7	1.6		
Total %	5.7	1.7	7.2	0	14.7	4.5	1.4	2.9	0	8.8	4.8	27.4	1.3	1.8	35.3	6.4	27.7	6.5	0.6	41.2	
Veh	1122	343	1419	6	2890	893	270	566	2	1731	911	5353	262	360	6886	1251	5433	1275	98	8057	19564
% Veh	99.6	99.1	99.2	85.7	99.3	98.9	98.2	99.5	28.6	98.7	96.1	98.5	99.2	99.2	98.2	98	98.9	99.5	77.2	98.5	98.5
Trucks	5	3	12	1	21	8	5	3	5	21	0	82	2	3	87	7	62	7	29	105	234
% Trucks	0.4	0.9	0.8	14.3	0.7	0.9	1.8	0.5	71.4	1.2	0	1.5	0.8	0.8	1.2	0.5	1.1	0.5	22.8	1.3	1.2
U-Turns	0	0	0	0	0	2	0	0	0	2	37	0	0	0	37	19	0	0	0	19	58
% U-Turns	0	0	0	0	0	0.2	0	0	0	0.1	3.9	0	0	0	0.5	1.5	0	0	0	0.2	0.3

File Name: SW 8th Street & SW 109th Avenue Thursday

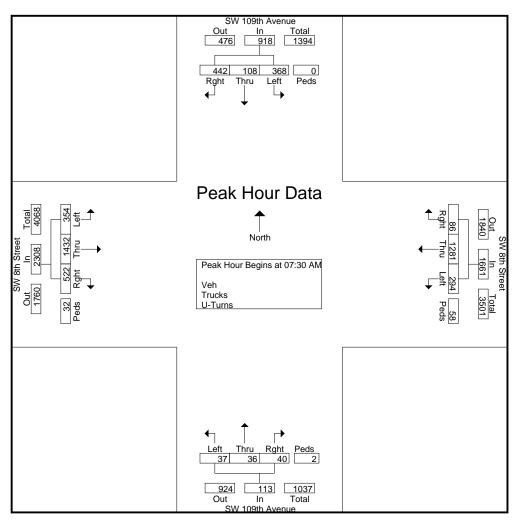
Site Code : 00000000 Start Date : 11/20/2014



File Name: SW 8th Street & SW 109th Avenue Thursday

Site Code : 00000000 Start Date : 11/20/2014

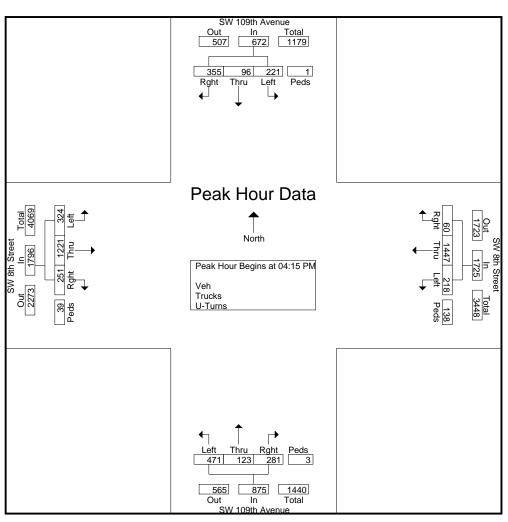
		SW 1	09th A	venue)		SW 1	09th A	venue			_	/ 8th S				SV	/ 8th S	treet		
		Sc	<u>outhbo</u>	<u>und</u>			No	orthbo	und			V	<u>/estbo</u>	<u>ınd</u>			E	astbou	ınd		
Start Time	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Left	Thru	Rght	Peds/Bike	App. Total	Int. Total
Peak Hour Ar	nalysis	From (07:00 <i>F</i>	AM to 0)8:45 AM	1 - Pea	k 1 of 1	1													
Peak Hour fo	r Entire	Inters	ection	Begins	at 07:3	0 AM															
07:30 AM	101	26	125	0	252	7	7	7	0	21	88	365	12	12	477	83	377	143	8	611	1361
07:45 AM	93	36	127	0	256	17	7	11	0	35	68	310	20	19	417	69	335	130	13	547	1255
08:00 AM	91	19	119	0	229	4	6	3	1	14	63	287	33	11	394	97	372	109	9	587	1224
08:15 AM	83	27	71	0	181	9	16	19	1	45	75	319	21	16	431	105	348	140	2	595	1252
Total Volume	368	108	442	0	918	37	36	40	2	115	294	1281	86	58	1719	354	1432	522	32	2340	5092
% App. Total	40.1	11.8	48.1	0		32.2	31.3	34.8	1.7		17.1	74.5	5	3.4		15.1	61.2	22.3	1.4		
PHF	.911	.750	.870	.000	.896	.544	.563	.526	.500	.639	.835	.877	.652	.763	.901	.843	.950	.913	.615	.957	.935



File Name: SW 8th Street & SW 109th Avenue Thursday

Site Code : 00000000 Start Date : 11/20/2014

		_	09th A	venue	!			09th <i>A</i>	venue)			/ 8th Si				_	/ 8th S astbou			
		_		unu					unu					iiiu					iiiu	$\overline{}$	
Start Time	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Left	Thr u	Rgh t	Peds/Bike	App. Total	Int. Total
Peak Hour Ar	nalysis	From (04:00 F	PM to 0	5:45 PN	1 - Pea	k 1 of 1						•								
Peak Hour fo	r Entire	Inters	ection	Begins	at 04:1	5 PM															
04:15 PM	57	19	83	1	160	93	26	68	1	188	47	372	12	14	445	68	299	99	6	472	1265
04:30 PM	43	39	75	0	157	109	31	68	2	210	57	329	21	42	449	79	297	69	13	458	1274
04:45 PM	50	16	112	0	178	116	29	62	0	207	67	379	11	49	506	88	305	56	14	463	1354
05:00 PM	71	22	85	0	178	153	37	83	0	273	47	367	16	33	463	89	320	27	6	442	1356
Total Volume	221	96	355	1	673	471	123	281	3	878	218	1447	60	138	1863	324	1221	251	39	1835	5249
% App. Total	32.8	14.3	52.7	0.1		53.6	14	32	0.3		11.7	77.7	3.2	7.4		17.7	66.5	13.7	2.1		
PHF	.778	.615	.792	.250	.945	.770	.831	.846	.375	.804	.813	.954	.714	.704	.920	.910	.954	.634	.696	.972	.968



COUNTY: 8192 STATION:

DESCRIPTION: SW 109TH AVE, 200' SOUTH OF 4TH STREET START DATE: 04/16/2013

START TIME: 2345

		DIR	ECTION:	N			DIR	ECTION:	S		COMBINED
TIME	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL
0000	18	8	 5	 5	36	12	 5	8	11	36	72
0100	3 5	6	8	5	22	2	3	1	3	9	31
0200	5	4	6	3	18	1	0	3	3	7	25
0300	4	3	7	4	18	5	4	3	0	12	30
0400	4	11	8	4	27	4	11	6	1	22	49
0500	12	18	28	28	86	15	19	27	24	85	171
0600	52	54	66	78	250	48	64	71	70	253	503
0700	87	78	88	130	383	88	130	124	132	474	857
0800	150	120	106	94	470	110	112	92	106	420	890
0900	97	86	83	90	356	89	70	64	70	293	649
1000	64	78	97	79	318	82	80	60	52	274	592
1100	90	91	99	88	368	72	70	93	86	321	689
1200	92	84	104	100	380	106	94	84	90	374	754
1300	69	84	124	118	395	96	128	107	102	433	828
1400	95	104	100	116	415	91	92	100	128	411	826
1500	117	105	94	100	416	116	142	112	112	482	898
1600	101	112	96	97	406	104	162	110	123	499	905
1700	92	88	78	84	342	112	152	124	143	531	873
1800	84	80	83	75	322	140	127	112	106	485	807
1900	94	65	78	65	302	94	98	88	67	347	649
2000	76	70	70	70	286	52	67	58	76	253	539
2100	56	48	52	50	206	80	51	52	44	227	433
2200	49	40	32	43	164	46	38	27	17	128	292
2300	25	21	22	22	90	19	22	15	8	64	154
24-HOUI	R TOTALS	5:		_	6076	·				6440	12516

24-HOUR TOTALS:	6			6440	12516
	PEAK	VOLUME	INFORMATION		

	DIREC	TION: N	DIREC'	TION: S	COMBINED	DIRECTIONS
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	745	506	715	496	730	966
P.M.	1330	441	1715	559	1445	930
DAILY	745	506	1715	559	730	966

County: 99
Station: 0067
Description: SW 8 STREEET WEST OF SW 112 AVENUE

Start Date: 03/18/2014

		Dire	ection:	E			Dire	ection:	W		Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	52	42	41	38	173	26	24	16	15	81	254
0100	26	29	30	30	115	11	14	14	13	52	167
0200	35	24	32	40	131	7	6	13	7	33	164
0300	46	37	49	62	194	12	8	12	16	48	242
0400	72	115	169	216	572	16	23	36	38	113	685
0500	280	425	542	581	1828	41	60	94	82	277	2105
0600	705	756	870	914	3245	117	118	157	202	594	3839
0700	831	876	801	712	3220	170	126	135	130	561	3781
0800	813	814	695	556	2878	142	152	192	150	636	3514
0900	576	592	686	666	2520	120	107	122	167	516	3036
1000	516	423	438	481	1858	156	160	161	190	667	2525
1100	488	550	495	466	1999	208	345	432	402	1387	3386
1200	502	505	555	599	2161	420	515	491	533	1959	4120
1300	489	445	442	498	1874	672	559	530	560	2321	4195
1400	492	528	481	470	1971	590	644	705	585	2524	4495
1500	514	539	574	581	2208	634	701	590	637	2562	4770
1600	525	512	498	578	2113	687	683	624	631	2625	4738
1700	569	463	482	477	1991	671	779	644	392	2486	4477
1800	434	417	470	422	1743	285	318	297	531	1431	3174
1900	320	289	317	313	1239	462	194	177	195	1028	2267
2000	305	277	226	256	1064	271	215	209	154	849	1913
2100	240	230	198	159	827	154	148	136	100	538	1365
2200	152	145	140	131	568	83	65	65	53	266	834
2300	89	100	70	59	318	52	47	34	25	158	476
24-Hou	r Totals	 s:			36810					23712	60522

			Peak Volume	Information		
	Direc	tion: E	Direc	tion: W	Combined	Directions
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	645	3422	800	636	645	4055
P.M.	1515	2219	1645	2725	1515	4834
Daily	630	3491	1645	2725	1515	4834

County: 99
Station: 0067
Description: SW 8 STREEET WEST OF SW 112 AVENUE

Start Date: 03/19/2014

			ection:					ection:			Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	54	43	47	38	182	22	17	11	13	63	245
0100	31	33	39	36	139	15	11	3	14	43	182
0200	27	28	30	38	123	10	3	7	12	32	155
0300	37	34	65	83	219	6	14	11	17	48	267
0400	72	111	157	209	549	18	26	41	30	115	664
0500	277	416	509	605	1807	51	57	77	86	271	2078
0600	657	687	831	806	2981	108	174	175	231	688	3669
0700	743	803	802	823	3171	199	205	135	164	703	3874
0800	775	647	785	713	2920	225	156	217	410	1008	3928
0900	612	566	680	598	2456	411	369	374	366	1520	3976
1000	496	460	493	554	2003	442	338	363	385	1528	3531
1100	447	506	505	472	1930	459	393	367	441	1660	3590
1200	452	423	572	543	1990	492	456	467	487	1902	3892
1300	467	442	424	523	1856	513	500	519	570	2102	3958
1400	444	524	499	439	1906	571	592	612	547	2322	4228
1500	471	501	511	521	2004	712	595	611	644	2562	4566
1600	507	521	491	615	2134	713	701	592	640	2646	4780
1700	513	497	470	441	1921	623	708	564	384	2279	4200
1800	426	401	432	391	1650	358	307	358	174	1197	2847
1900	347	321	280	292	1240	205	169	139	160	673	1913
2000	292	249	237	229	1007	149	152	136	140	577	1584
2100	210	253	209	196	868	113	123	110	88	434	1302
2200	165	173	115	113	566	80	78	78	72	308	874
2300	108	91	78	83	360	75	51	43	29	198	558
24-Hou	r Totals	 5:			35982					24879	60861

			Peak Volume	Information		
	Direc	tion: E	Direc	tion: W	Combined	Directions
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	3203	845	1564	845	4135
P.M.	1615	2140	1530	2669	1600	4780
Daily	715	3203	1530	2669	1600	4780

County: 99
Station: 0067
Description: SW 8 STREEET WEST OF SW 112 AVENUE

Start Date: 03/20/2014

		Dire	ection:	E			Dire	ection:	W		Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	48	36	52	41	177	31	22	20	16	89	266
0100	42	38	36	34	150	18	10	7	12	47	197
0200	37	30	37	38	142	4	8	12	9	33	175
0300	40	53	73	69	235	j 9	11	16	16	52	287
0400	78	123	174	233	608	29	19	40	29	117	725
0500	291	415	505	585	1796	50	51	88	89	278	2074
0600	682	741	812	842	3077	102	124	159	182	567	3644
0700	784	752	752	771	3059	182	182	166	126	656	3715
0800	797	652	738	614	2801	128	265	239	342	974	3775
0900	601	538	621	587	2347	347	312	298	350	1307	3654
1000	479	501	503	531	2014	438	361	380	376	1555	3569
1100	430	451	467	475	1823	424	443	365	425	1657	3480
1200	489	437	558	515	1999	446	425	458	462	1791	3790
1300	445	485	451	526	1907	595	473	494	527	2089	3996
1400	470	464	501	515	1950	644	575	627	597	2443	4393
1500	513	538	541	523	2115	702	646	597	601	2546	4661
1600	547	476	493	491	2007	747	704	597	654	2702	4709
1700	507	486	482	407	1882	644	695	617	529	2485	4367
1800	365	407	417	402	1591	512	489	444	334	1779	3370
1900	296	329	273	269	1167	312	241	182	200	935	2102
2000	236	240	243	186	905	228	242	165	139	774	1679
2100	223	219	209	156	807	155	158	139	90	542	1349
2200	177	132	101	111	521	j 89	113	89	49	340	861
2300	83	94	52	67	296	99	47	26	37	209	505
24-Hou	r Total	 s:			35376					25967	61343

			Peak Volume	Information		
	Direc	tion: E	Direc	tion: W	Combined	Directions
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	645	3130	845	1299	645	3842
P.M.	1515	2149	1600	2702	1515	4740
Daily	630	3190	1600	2702	1515	4740

County: 99
Station: 0068
Description: SW 8 STREET WEST OF SW 107 AVENUE

Start Date: 03/18/2014

			ection:					ection:			Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	61	46	44	42	193	61	60	 39	38	198	391
0100	28	33	30	32	123	31	42	28	29	130	253
0200	34	27	28	45	134	21	24	27	17	89	223
0300	45	38	51	57	191	j 37	30	31	52	150	341
0400	69	105	158	195	527	45	61	95	88	289	816
0500	250	345	482	532	1609	109	158	250	221	738	2347
0600	578	592	615	573	2358	259	334	432	449	1474	3832
0700	500	543	531	459	2033	358	320	342	359	1379	3412
0800	494	486	391	369	1740	320	384	355	341	1400	3140
0900	385	452	420	452	1709	294	347	360	369	1370	3079
1000	442	351	377	389	1559	339	315	350	311	1315	2874
1100	457	488	498	421	1864	374	340	343	357	1414	3278
1200	440	417	400	516	1773	344	420	365	426	1555	3328
1300	458	418	417	451	1744	384	404	415	459	1662	3406
1400	439	503	509	500	1951	455	416	441	403	1715	3666
1500	483	470	511	507	1971	469	471	462	465	1867	3838
1600	511	542	451	503	2007	462	468	466	467	1863	3870
1700	505	506	534	458	2003	492	471	472	463	1898	3901
1800	414	384	427	500	1725	410	431	416	408	1665	3390
1900	426	333	396	357	1512	392	364	327	370	1453	2965
2000	457	374	345	290	1466	317	314	276	284	1191	2657
2100	275	304	240	229	1048	262	276	252	193	983	2031
2200	171	171	139	136	617	185	182	175	140	682	1299
2300	114	103	74	68	359	121	112	82	67	382	741
24-Hou	r Total	 5:			32216					26862	59078

			Peak Volume	Information		
	Direc	tion: E	Direc	tion: W	Combined	Directions
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	645	2147	645	1469	645	3616
P.M.	1530	2071	1645	1902	1645	3950
Daily	600	2358	1645	1902	1645	3950

County: 99
Station: 0068
Description: SW 8 STREET WEST OF SW 107 AVENUE

Start Date: 03/19/2014

		Dire	ection:	 Е			Dire	ection:	 W		Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	61	43	58	38	200	71	39	47	42	199	399
0100	39	34	38	38	149	45	33	26	24	128	277
0200	27	36	25	38	126	22	21	24	20	87	213
0300	36	32	60	81	209	24	32	45	53	154	363
0400	70	112	149	182	513	42	63	89	100	294	807
0500	245	340	488	491	1564	118	173	227	244	762	2326
0600	573	579	580	585	2317	234	372	454	473	1533	3850
0700	574	548	521	445	2088	381	443	437	393	1654	3742
0800	502	451	420	493	1866	345	321	337	394	1397	3263
0900	407	406	390	463	1666	328	342	354	345	1369	3035
1000	438	379	389	425	1631	345	329	372	361	1407	3038
1100	529	390	465	406	1790	335	343	339	390	1407	3197
1200	472	416	401	500	1789	372	404	406	394	1576	3365
1300	501	401	411	507	1820	349	359	460	466	1634	3454
1400	471	521	505	455	1952	386	407	440	382	1615	3567
1500	472	502	464	526	1964	466	471	463	470	1870	3834
1600	534	557	499	496	2086	456	449	450	470	1825	3911
1700	469	509	472	461	1911	464	472	461	447	1844	3755
1800	477	446	442	470	1835	414	441	431	381	1667	3502
1900	450	367	325	383	1525	377	362	346	352	1437	2962
2000	371	324	317	244	1256	325	310	311	296	1242	2498
2100	306	319	248	242	1115	275	250	240	212	977	2092
2200	187	166	137	131	621	184	178	199	152	713	1334
2300	132	105	89	80	406	163	113	101	73	450	856
24-Hou	r Total	 5:			32399					27241	59640

Peak Volume Information	

	Direc	tion: E	Direc	tion: W	Combined	Directions
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	645	2228	645	1734	645	3962
P.M.	1545	2116	1500	1870	1545	3941
Daily	615	2318	1500	1870	630	4038

County: 99
Station: 0068
Description: SW 8 STREET WEST OF SW 107 AVENUE

Start Date: 03/20/2014

		Dire	ection:	 Е			Dire	ection:	 W		Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	65	43	50	52	210	83	47	53	48	231	441
0100	50	36	38	37	161	50	32	25	35	142	303
0200	31	34	36	39	140	20	29	32	32	113	253
0300	42	50	72	70	234	21	40	45	44	150	384
0400	72	111	154	200	537	42	63	106	104	315	852
0500	258	319	468	491	1536	116	170	243	239	768	2304
0600	583	594	597	602	2376	254	331	479	434	1498	3874
0700	582	475	582	468	2107	400	393	405	408	1606	3713
0800	500	524	447	439	1910	370	379	353	321	1423	3333
0900	400	425	356	453	1634	282	359	365	340	1346	2980
1000	438	399	405	392	1634	324	310	352	333	1319	2953
1100	467	386	477	406	1736	335	363	368	346	1412	3148
1200	473	392	389	496	1750	355	385	414	404	1558	3308
1300	489	472	448	453	1862	394	396	389	461	1640	3502
1400	509	509	505	494	2017	413	415	457	394	1679	3696
1500	543	501	497	509	2050	482	476	478	464	1900	3950
1600	547	508	474	468	1997	480	471	461	477	1889	3886
1700	438	495	474	458	1865	474	471	455	439	1839	3704
1800	382	440	440	430	1692	398	406	379	375	1558	3250
1900	358	368	315	329	1370	350	356	309	321	1336	2706
2000	360	310	279	248	1197	305	295	272	248	1120	2317
2100	257	256	246	194	953	255	238	214	192	899	1852
2200	215	178	120	115	628	176	190	160	128	654	1282
2300	88	96	50	68	302	118	92	73	86	369	671
24-Hou	r Total	 5:			31898					26764	58662

			Peak Volume	Information		
	Direc	tion: E	Direc	tion: W	Combined	Directions
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	645	2241	645	1632	645	3873
P.M.	1530	2061	1500	1900	1530	3954
Daily	600	2376	1500	1900	615	4019

TOD Schedule Report for 5430: SW 109 Av&SW 8 St

Print Date: 1/9/2015

Print Time 2:49 PM

Asset		Intersectio	<u>n</u>	<u>s</u>	TOD Schedule	Op Mode	<u>Plan #</u>	Cycle	Offset	TOD Setting	Activ PhaseE	e <u>Active</u> Sank <u>Maximum</u>
5430	SW	109 Av&SV	V 8 St	DO	OW-6	TOD	[09] MID-AFT./AFTNOO	150	27	N/A	2	Max 2
			9	Splits								
PH 1 EBL	PH 2 WBT	<u>PH 3</u>	PH 4 NBT	PH 5 WBL	PH 6 EBT	<u>PH 7</u>	PH 8 SBT					
15	44	0	30	13	46	0	31					

Active Phase Bank: Phase Bank 2

<u>Phase</u>	Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow Red
	Phase Bank						
	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
1 EBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	3 - 2 - 2	7 - 7 - 5	36 - 20 - 36	4.8 2
2 WBT	5 - 5 - 5	20 - 20 - 20	5 - 7 - 7	2.5 -2.5 - 2.5	45 - 45 - 26	0 - 60 - 60	4.8 2
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 0
4 NBT	5 - 5 - 5	28 - 28 - 28	7 - 7 - 7	2.5 -2.5 - 2.5	10 - 10 - 10	30 - 15 - 32	4 3.6
5 WBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	3 - 2 - 2	7 - 7 - 5	47 - 20 - 27	4.8 2
6 EBT	5 - 5 - 5	20 - 20 - 20	5 - 7 - 7	2.5 -2.5 - 2.5	45 - 45 - 26	0 - 60 - 60	4.8 2
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 0
8 SBT	5 - 5 - 5	29 - 29 - 29	7 - 7 - 7	2.5 - 5 - 2.5	12 - 12 - 10	40 - 25 - 32	4 3.6

Last In Service Date: 05/20/2014 14:58

Permitted Phases	
	12345678
Default	12-456-8
External Permit 0 External Permit 1	
External Permit 1	-2-4-6-8
External Permit 2	-2-4-6-8

TOD Schedule Report for 5430: SW 109 Av&SW 8 St

Print Date: 1/9/2015

Print Time 2:49 PM

					- 7	Green 7	Γime					
Current TOD Schedule	<u>Plan</u>	Cycle	1 EBL	2 WBT	3	4 NBT	5 WBL	6 EBT	7	8 SBT	Ring Offset	Offset
	Free											
0500	Free											
0530	2	120	17	28	0	22	7	38	0	23	0	83
0630	3	180	28	61	0	30	15	74	0	31	0	68
0930	24	140	19	30	0	30	18	31	0	31	0	55
1400	9	150	15	44	0	30	13	46	0	31	0	27
1500	11	160	15	54	0	30	13	56	0	31	0	126
1600	12	180	9	80	0	30	17	72	0	31	0	127
1900	13	150	17	42	0	30	17	42	0	31	0	120
2030	14	135	19	27	0	29	19	27	0	30	0	10
2130	15	120	6	29	0	27	6	29	0	28	0	3
2230	16	110	7	27	0	22	7	27	0	24	0	32
	1	110	12	35	0	11	12	35	0	22	0	33
	4	140	9	65	0	14	32	42	0	22	0	51
	6	120	14	49	0	12	14	49	0	15	0	105
	7	120	14	40	0	14	14	40	0	22	0	5
	8	120	14	36	0	18	14	36	0	22	0	1
	10	130	12	55	0	11	30	37	0	22	0	16
	17	135	7	73	0	12	7	73	0	13	0	3
	18	110	7	27	0	22	7	27	0	24	0	0
	19	100	8	42	0	6	8	42	0	14	0	95
	20	125	6	34	0	27	6	34	0	28	0	27
	21	135	19	27	0	29	19	27	0	30	0	9
	22	115	7	31	0	22	7	31	0	25	0	3
	23	110	12	41	0	8	12	41	0	19	0	71

Local TO	D Schedule		
<u>Time</u>	Plan	DOW	
0000	Free	M T W Th F	
0000	Free	Su S	
0100	Free	Su S	
0500	Free	MTWThF	
0530	2	MTWThF	
0600	18	Su S	
0630	3	MTWThF	
0930	24	MTWThF	
1000	20	Su S	
1400	9	MTWThF	
1500	11	MTWThF	
1500	21	Su S	
1600	12	MTWThF	
1900	13	MTWThF	
2030	14	MTWThF	
2100	22	Su S	
2130	15	MTWThF	
2230	16	MTWThF	

TOD Schedule Report for 5430: SW 109 Av&SW 8 St

Print Date: 1/9/2015

Print Time 2:49 PM

Curre	nt Time of Day Function	on		Local	Time of Day Function			* Settings
Time 0000 0730 0830 0900 0915 1630 1800 1900	Function TOD OUTPUTS TOD OUTPUTS VEH MAX RECALL TOD OUTPUTS VEH MAX RECALL TOD OUTPUTS TOD OUTPUTS TOD OUTPUTS	Settings *22222-	Day of Week SuM T W ThF S M T W ThF	Time 0000 0730 0830 0900 0915 1630 1800 1900	Function TOD OUTPUTS TOD OUTPUTS VEH MAX RECALL TOD OUTPUTS VEH MAX RECALL TOD OUTPUTS TOD OUTPUTS TOD OUTPUTS TOD OUTPUTS	Settings *	Day of Week SuM T W ThF S M T W ThF	Blank - FREE - Phase Bank 1, Max 1 Blank - Plan - Phase Bank 1, Max 2 1 - Phase Bank 2, Max 1 2 - Phase Bank 2, Max 2 3 - Phase Bank 3, Max 1 4 - Phase Bank 3, Max 2 5 - EXTERNAL PERMIT 1 6 - EXTERNAL PERMIT 2 7 - X-PED OMIT
								8 - TBA

No Calendar Defined/Enabled

Timing Phases	,							SIG	ANG	L O	PEF	RATI	NG	PL/	NA					f
(1+5)	4 (descriptions)	D	irection		EB			WB			SB			NB		Ī	Ped l	-lead	s] N
EWLTs SW 8 St (2+6) -VMR R - V R R R R R R G R R WY DW DW (Actuated) (Actuated) (1+6) - Gold R R V R R R R R R R R R R W DW DW DW (Actuated) (1+6) - Owell - Gold G - R R R R R R R R R R R DW DW DW (2+5) - VMG R - V G - R R R R R R R R DW DW DW (2+5) - VMG R - V G - R R R R R R R R R DW DW DW (2+5) - VMG R - V G - R R R R R R R R R R R R R R R R R R	Timing Phases	Н	ead No.	1/6	6	500 p. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5	2	new historical St	3	3/8	8R	4/7	4R	ayaaaa ahaa ah	P6	P8	P4		Movements/Display/Actuation
EMUTS SW 8 St (2+6) -4/N R	(1+5)	¢(n===nunn	Dwell	<g r<="" td=""><td>R</td><td>Japan etter</td><td><g< td=""><td>R</td><td></td><td>R</td><td>R</td><td>R/G></td><td>R</td><td>R/G></td><td></td><td>DW</td><td>DW</td><td>DW</td><td></td><td>8R 🖵</td></g<></td></g>	R	Japan etter	<g< td=""><td>R</td><td></td><td>R</td><td>R</td><td>R/G></td><td>R</td><td>R/G></td><td></td><td>DW</td><td>DW</td><td>DW</td><td></td><td>8R 🖵</td></g<>	R		R	R	R/G>	R	R/G>		DW	DW	DW		8R 🖵
SW 8 St	E/WLTs	_	(1+6)	<g r<="" td=""><td>R</td><td></td><td><y< td=""><td>R</td><td></td><td>R</td><td>R</td><td>R/G></td><td>R</td><td>R/Y></td><td></td><td>DW</td><td>DW</td><td>DW</td><td></td><td>,</td></y<></td></g>	R		<y< td=""><td>R</td><td></td><td>R</td><td>R</td><td>R/G></td><td>R</td><td>R/Y></td><td></td><td>DW</td><td>DW</td><td>DW</td><td></td><td>,</td></y<>	R		R	R	R/G>	R	R/Y>		DW	DW	DW		,
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APPENDIX E
(Existing Intersection LOS Analysis Results)
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Lane Configurations		۶	→	•	1	+	•	1	1	<i>></i>	7	ļ	-√
Volume (vph) 286 1487 319 283 1265 73 34 25 28 263 87 382 126a Flow (vphp) 1900	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph) 286 1487 319 283 1265 73 34 25 28 263 87 382 126a Flow (vphp) 1900	Lane Configurations	*	tttt _b		77	ቀ ቀሴ		*	र्स	7	*	र्स	7
Ideal Flow (ryphpy)	•			319			73						
Storage Langth (ft) 600 0 0 0 0 150 250 0 1 1 1 1 1 1 1 1	,	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Lanes	,	600		0	300		0	0		150	250		0
Taper Length (ff)		1		0	2		0	1		1	1		1
Lane Util. Factor		25			25			25			25		
Firth		1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	0.95	0.95	1.00
Fit Protected	Ped Bike Factor		1.00			1.00				0.92			0.96
Satd. Flow (prot) 1752 6159 0 3400 4990 0 1665 1737 1568 1665 1709 1568 Fli Permitted 0.105 0.950 0.950 0.995 0.	Frt		0.973			0.992				0.850			0.850
Fit Permitted	Flt Protected	0.950			0.950			0.950	0.991		0.950	0.975	
Satd. Flow (perm) 194 6159 0 3400 4990 0 1665 1737 1441 1665 1709 1498 Right Turn on Red Yes Yes Yes Yes Yes Yes Yes Yes 30 317 Link Distance (ft) 1975 45 45 30 179 179 179 179 179 179 20 179 179 179 179 179 179 179 179 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 180 <td< td=""><td>Satd. Flow (prot)</td><td>1752</td><td>6159</td><td>0</td><td>3400</td><td>4990</td><td>0</td><td>1665</td><td>1737</td><td>1568</td><td>1665</td><td>1709</td><td>1568</td></td<>	Satd. Flow (prot)	1752	6159	0	3400	4990	0	1665	1737	1568	1665	1709	1568
Right Turn on Red	Flt Permitted	0.105			0.950			0.950	0.991		0.950	0.975	
Satd. Flow (RTOR) 35 5 5 110 30 30 Link Speed (mph) 45 45 50 30 172 Link Distance (ft) 1975 1327 562 179 172 Travel Time (s) 29.9 20.1 1.8 1.8 4.1 Confl. Peds. (#/hr) 0.95	Satd. Flow (perm)	194	6159	0	3400	4990	0	1665	1737	1441	1665	1709	1498
Link Speed (mph) 45 45 45 562 179 Link Distance (ft) 1975 1327 562 179 Travel Time (s) 29.9 20.1 12.8 4.1 Confl. Peds. (#/hr) 1 0.95	Right Turn on Red			Yes			Yes			Yes			Yes
Link Distance (ft)	Satd. Flow (RTOR)		35			5				110			317
Travel Time (s)	Link Speed (mph)		45			45			30			30	
Confil Peds. (#hr)	Link Distance (ft)		1975			1327			562			179	
Confil Peds. (#/hr) I 1 1 1 43 21 Peak Hour Factor 0.95	Travel Time (s)		29.9			20.1			12.8			4.1	
Adj. Flow (vph) Sol				1			1			43			21
Adj. Flow (vph) 301 1565 336 298 1332 77 36 26 29 277 92 402 Shared Lane Traffic (%) Lane Group Flow (vph) 301 1901 0 298 1409 0 30 32 29 183 186 402 Enter Blocked Intersection No	, ,	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%) Shared Lane Group Flow (vph) 301 1901 0 298 1409 0 30 30 32 29 183 186 402	Adj. Flow (vph)	301	1565	336	298	1332		36	26	29		92	
Lane Group Flow (vph) 301 1901 0 298 1409 0 30 32 29 183 186 402								16%			34%		
Enter Blocked Intersection No No No No No No No		301	1901	0	298	1409	0	30	32	29	183	186	402
Left Left Left Right Left Right Left Right Left Right Left Left Right Median Width(ft) 24		No	No	No	No	No	No	No	No	No	No	No	No
Median Width(ft) 24 24 24 12 12 12 Link Offset(ft) 0 0 0 0 0 0 Crosswalk Width(ft) 10 10 10 10 10 10 10 Two way Left Turn Lane Headway Factor 1.00 <td>Lane Alignment</td> <td>Left</td> <td></td> <td>Right</td> <td>Left</td> <td>Left</td> <td>Right</td> <td>Left</td> <td></td> <td>Right</td> <td>Left</td> <td></td> <td>Right</td>	Lane Alignment	Left		Right	Left	Left	Right	Left		Right	Left		Right
Link Offset(ft) 0 0 0 0 0 Crosswalk Width(ft) 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 100 1.00			24						12			12	
Crosswalk Width(ft) 10 10 10 10 10 10 100 1.00 <			0			0			0			0	
Two way Left Turn Lane Headway Factor 1.00 9 15 9 15 9 15 9 15 9 15 9 15 9 15 9 15 9 14 4 4 5 5 10 10 10 10 10 10 10 10 10 10 10			10			10						10	
Headway Factor 1.00	` ,												
Turning Speed (mph) 15 9 15 9 15 9 15 9 Turn Type pm+pt NA Prot NA Split NA pm+ov Split NA pm+ov Protected Phases 5 2 1 6 8 8 1 4 4 5 Permitted Phases 2 8 4 4 4 5 Permitted Phases 5 2 1 6 8 8 1 4 4 5 Permitted Phases 2 2 1 6 8 8 1 4 4 5 Switch Phase 5 2 1 6 8 8 1 4 4 5 Switch Phase 5 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 <td></td> <td>1.00</td>		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turn Type pm+pt NA Prot NA Split NA pm+ov Split NA pm+ov Protected Phases 5 2 1 6 8 8 1 4 4 5 Permitted Phases 2 8 8 1 4 4 5 Switch Phase 8 8 1 4 4 5 Minimum Initial (s) 5.0 7.0 5.0 7.0													
Protected Phases 5 2 1 6 8 8 1 4 4 5 Permitted Phases 2 8 4 Detector Phase 5 2 1 6 8 8 8 1 4 4 5 Switch Phase Minimum Initial (s) 5.0 7.0 5.0 7.0 7.0 7.0 5.0 7.0 7.0 5.0 Minimum Split (s) 11.8 31.8 11.8 31.8 40.6 40.6 11.8 41.6 41.6 11.8 Total Split (s) 35.0 75.8 22.0 62.8 40.6 40.6 22.0 41.6 41.6 35.0 Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4% Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2 Yellow Time (s) 4.8 4.8 4.8 4.8 4.8 4.0 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0 2.0 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			NA			NA			NA	pm+ov		NA	pm+ov
Permitted Phases 2 1 6 8 8 1 4 4 5											•		•
Detector Phase 5 2 1 6 8 8 1 4 4 4 5 Switch Phase Minimum Initial (s) 5.0 7.0 5.0 7.0 7.0 7.0 5.0 7.0 7.0 5.0 Minimum Split (s) 11.8 31.8 11.8 31.8 40.6 40.6 11.8 41.6 41.6 11.8 Total Split (s) 35.0 75.8 22.0 62.8 40.6 40.6 22.0 41.6 41.6 35.0 Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4% Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2 Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.8 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0										8			
Switch Phase Minimum Initial (s) 5.0 7.0 5.0 7.0 41.6 41.6 41.6 41.6 41.6 41.6 41.6 41.6 41.6 41.6 41.6 41.6			2		1	6		8	8		4	4	
Minimum Initial (s) 5.0 7.0 5.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 5.0 Minimum Split (s) 11.8 31.8 11.8 31.8 40.6 40.6 11.8 41.6 41.6 11.8 Total Split (s) 35.0 75.8 22.0 62.8 40.6 40.6 22.0 41.6 41.6 35.0 Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4% Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2 Yellow Time (s) 4.8 4.8 4.8 4.8 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.													
Minimum Split (s) 11.8 31.8 11.8 31.8 40.6 40.6 41.6 41.6 41.6 11.8 Total Split (s) 35.0 75.8 22.0 62.8 40.6 40.6 22.0 41.6 41.6 35.0 Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4% Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2 Yellow Time (s) 4.8 4.8 4.8 4.8 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		5.0	7.0		5.0	7.0		7.0	7.0	5.0	7.0	7.0	5.0
Total Split (s) 35.0 75.8 22.0 62.8 40.6 40.6 22.0 41.6 41.6 35.0 Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4% Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2 Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4% Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2 Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	,												
Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2 Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.8 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.8 4.0 4.0 4.8 All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0													
	Total Lost Time (s)	6.8	6.8		6.8	6.8		7.6	7.6	6.8	7.6	7.6	6.8
Lead/Lag Lead Lag Lead Lag Lead Lag	. ,												
Lead-Lag Optimize?		_000	_~3		_544	_~9				_500			_544
Vehicle Extension (s) 2.0 2.5 2.0 2.5 2.5 2.0 5.0 5.0 2.0		2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Recall Mode None C-Max None C-Max None None None None None None													

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	123.7	95.3		23.3	87.1		8.7	8.7	31.2	26.9	26.9	59.2
Actuated g/C Ratio	0.69	0.53		0.13	0.48		0.05	0.05	0.17	0.15	0.15	0.33
v/c Ratio	0.74	0.58		0.68	0.58		0.38	0.39	0.08	0.73	0.73	0.56
Control Delay	44.3	30.7		83.2	37.4		95.8	95.7	0.4	89.9	88.9	9.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	30.7		83.2	37.4		95.8	95.7	0.4	89.9	88.9	9.1
LOS	D	С		F	D		F	F	Α	F	F	Α
Approach Delay		32.6			45.4			65.4			47.5	
Approach LOS		С			D			Е			D	

Intersection Summary

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 68 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 150

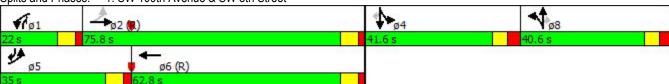
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74 Intersection Signal Delay: 40.2

Intersection LOS: D
ICU Level of Service F

Intersection Capacity Utilization 91.7% Analysis Period (min) 15

Splits and Phases: 1: SW 109th Avenue & SW 8th Street



	•	-	1	•	4	†	-	-	ļ	1	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	301	1901	298	1409	30	32	29	183	186	402	
v/c Ratio	0.74	0.58	0.68	0.58	0.38	0.39	0.08	0.73	0.73	0.56	
Control Delay	44.3	30.7	83.2	37.4	95.8	95.7	0.4	89.9	88.9	9.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.3	30.7	83.2	37.4	95.8	95.7	0.4	89.9	88.9	9.1	
Queue Length 50th (ft)	212	443	176	453	36	40	0	220	223	57	
Queue Length 95th (ft)	337	547	229	594	77	83	0	308	309	115	
Internal Link Dist (ft)		1895		1247		482			99		
Turn Bay Length (ft)	600		300				150	250			
Base Capacity (vph)	418	3275	439	2416	305	318	357	314	322	726	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.72	0.58	0.68	0.58	0.10	0.10	0.08	0.58	0.58	0.55	
Intersection Summary											

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	###		44	ተ ተጉ		7	ર્ન	7	7	્રની	7
Volume (veh/h)	286	1487	319	283	1265	73	34	25	28	263	87	382
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.90	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	301	1565	336	298	1332	77	31	33	29	184	221	402
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	319	2276	489	288	1911	110	237	249	324	332	348	480
Arrive On Green	0.12	0.43	0.43	0.08	0.39	0.39	0.13	0.13	0.13	0.19	0.19	0.19
Sat Flow, veh/h	1757	5272	1132	3408	4870	282	1757	1845	1418	1757	1845	1516
Grp Volume(v), veh/h	301	1413	488	298	918	491	31	33	29	184	221	402
Grp Sat Flow(s),veh/h/ln	1757	1586	1644	1704	1679	1795	1757	1845	1418	1757	1845	1516
Q Serve(g_s), s	20.0	43.2	43.2	15.2	41.2	41.2	2.8	2.8	2.9	17.1	19.9	34.0
Cycle Q Clear(g_c), s	20.0	43.2	43.2	15.2	41.2	41.2	2.8	2.8	2.9	17.1	19.9	34.0
Prop In Lane	1.00		0.69	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	319	2055	710	288	1317	704	237	249	324	332	348	480
V/C Ratio(X)	0.94	0.69	0.69	1.04	0.70	0.70	0.13	0.13	0.09	0.55	0.63	0.84
Avail Cap(c_a), veh/h	377	2055	710	288	1317	704	322	338	392	332	348	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	41.3	41.3	82.4	45.7	45.7	68.6	68.6	56.0	66.1	67.3	57.8
Incr Delay (d2), s/veh	28.1	1.9	5.4	62.5	3.1	5.6	0.2	0.2	0.1	3.5	5.3	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.1	26.5	28.2	17.4	27.0	29.2	2.5	2.6	2.1	13.4	16.0	27.8
LnGrp Delay(d),s/veh	70.9	43.2	46.7	144.9	48.8	51.4	68.7	68.8	56.1	69.6	72.5	71.2
LnGrp LOS	E	D	D	F	D	D	Е	Е	E	E	E	Е
Approach Vol, veh/h		2202			1707			93			807	
Approach Delay, s/veh		47.8			66.3			64.8			71.2	
Approach LOS		D			Е			Е			Е	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	84.5		41.6	29.1	77.4		31.9				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	15.2	69.0		34.0	28.2	56.0		33.0				
Max Q Clear Time (g_c+l1), s	17.2	45.2		36.0	22.0	43.2		4.9				
Green Ext Time (p_c), s	0.0	19.4		0.0	0.2	11.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			58.6									
HCM 2010 LOS			Е									
Notes												

Godfrey Lamptey, P.E., PTOE GOAL Associates Inc.

User approved volume balancing among the lanes for turning movement.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		*	1		*	f)	
Volume (vph)	21	13	93	16	19	43	51	314	20	27	507	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.902			0.926			0.991			0.998	
Flt Protected		0.992			0.990		0.950			0.950		
Satd. Flow (prot)	0	1651	0	0	1691	0	1752	1828	0	1752	1841	0
Flt Permitted		0.992			0.990		0.950			0.950		
Satd. Flow (perm)	0	1651	0	0	1691	0	1752	1828	0	1752	1841	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			307			252	
Travel Time (s)		8.2			9.6			7.0			5.7	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	24	15	104	18	21	48	57	353	22	30	570	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	143	0	0	87	0	57	375	0	30	576	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0	_		0			12			12	_
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type: C	ther											

Control Type: Unsignalized

Intersection Capacity Utilization 49.8%

ICU Level of Service A

Analysis Period (min) 15

Intersection														
Int Delay, s/veh	5.2													
Movement	EBL	EBT	EBR	V	NBL	WBT	WBR		NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	13	93		16	19	43		51	314	20	27	507	5
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0	0		0
Sign Control	Stop	Stop	Stop	5	Stop	Stop	Stop		Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None	-	-	None
Storage Length	-	-	-		-	-	-		120	-	-	120	-	-
Veh in Median Storage, #	<u>.</u>	0	-		-	0	-		-	0	-	-	0	-
Grade, %	-	0	-		-	0	-		-	0	-	-	v	-
Peak Hour Factor	89	89	89		89	89	89		89	89	89	89		89
Heavy Vehicles, %	3	3	3		3	3	3		3	3	3	3		3
Mvmt Flow	24	15	104		18	21	48		57	353	22	30	570	6
Major/Minor	Minor2			Mir	nor1			Ma	ajor1			Major2		
Conflicting Flow All	1146	1123	572	1	172	1115	364		575	0	0	375	0	0
Stage 1	633	633	-		479	479	-		-	-	-	-	-	_
Stage 2	513	490	-		693	636	-		-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7	7.13	6.53	6.23		4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6	6.13	5.53	-		-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6	6.13	5.53	-		-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327		.527			2	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	176	205	518		168	207	679		993	-	-	1178	-	-
Stage 1	466	472	-		566	553	-		-	-	-	-	-	-
Stage 2	542	547	-		432	470	-		-	-	-	-	-	-
Platoon blocked, %										-	-		-	-
Mov Cap-1 Maneuver	140	188	518		118	190	679		993	-	-	1178	-	-
Mov Cap-2 Maneuver	140	188	-		118	190	-		-	-	-	-	-	-
Stage 1	439	460	-		534	521	-		-	-	-	-	-	-
Stage 2	455	516	-		325	458	-		-	-	-	-	-	-
Approach	EB				WB				NB			SB		
HCM Control Delay, s	25.1			2	25.6				1.2			0.4		
HCM LOS	D				D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WB	Ln1	SBL	SBT	SBR						
Capacity (veh/h)	993	-	-		261	1178	-	-						
HCM Lane V/C Ratio	0.058	-	-	0.447 0.			-	-						
HCM Control Delay (s)	8.8	-	_		25.6	8.1	-	-						
HCM Lane LOS	А	-	-	D	D	Α	-	-						
HCM 95th %tile Q(veh)	0.2	-	-	2.2	1.4	0.1	-	-						

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7		^	ĵ»	
Volume (vph)	0	116	0	384	617	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1596	0	1845	1843	0
Flt Permitted						
Satd. Flow (perm)	0	1596	0	1845	1843	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	362			179	307	
Travel Time (s)	8.2			4.1	7.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	123	0	409	656	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	0	409	660	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0	, ,		12	12	Ĭ
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type: (Other					
Control Type: Unsignalized	• •					

Control Type: Unsignalized

Intersection Capacity Utilization 46.6% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	1.6					
, , , ,						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	116	0	384	617	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	9 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	123	0	409	656	4
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1068	659	661	0	_	0
Stage 1	659	-	-	-	-	-
Stage 2	409	-	_	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	244	462	923	-	-	-
Stage 1	513	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	244	462	923	-	-	-
Mov Cap-2 Maneuver	244	-	-	-	-	-
Stage 1	513	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	15.6		0		0	
HCM LOS	С					
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	923	- 462				
HCM Lane V/C Ratio	-	- 0.267				
HCM Control Delay (s)	0	- 15.6				
HCM Lane LOS	A	- C				
HCM 95th %tile Q(veh)	A	- 0				

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	1111		ሻሻ	ተተሱ		*	सी	7	*	र्स	7
Volume (vph)	277	1423	112	178	1612	46	369	93	282	218	72	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600	1000	0	300	1000	0	0	1500	150	250	1300	0
Storage Lanes	1		0	2		0	1		130	1		1
Taper Length (ft)	25			25		U	25		'	25		
Lane Util. Factor	1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00	1.00	0.00	0.51	1.00	0.31	0.55	0.55	0.86	0.55	0.33	0.95
Frt		0.989			0.996				0.850			0.850
Flt Protected	0.950	0.909		0.950	0.990		0.950	0.971	0.000	0.950	0.975	0.000
Satd. Flow (prot)	1752	6269	0	3400	5013	0	1665	1702	1568	1665	1709	1568
Flt Permitted	0.049	0203	U	0.950	3013	U	0.950	0.971	1300	0.950	0.975	1300
Satd. Flow (perm)	90	6269	0	3400	5013	0	1665	1702	1351	1665	1709	1483
Right Turn on Red	90	0209	Yes	3400	3013	Yes	1005	1702	Yes	1000	1709	Yes
•		11	165		3	165			78			110
Satd. Flow (RTOR)		45			3 45			30	70		30	110
Link Speed (mph)												
Link Distance (ft)		1975			1327			562			179	
Travel Time (s)		29.9	4		20.1	4		12.8	70		4.1	07
Confl. Peds. (#/hr)	0.05	0.05	1	0.05	0.05	1	0.05	0.05	79	0.05	0.05	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	292	1498	118	187	1697	48	388	98	297	229	76	399
Shared Lane Traffic (%)	200	1010	_	40=	4-4-		38%	0.45	207	34%	4=4	200
Lane Group Flow (vph)	292	1616	0	187	1745	0	241	245	297	151	154	399
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Prot	NA		Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8	1	4	4	5
Permitted Phases	2				_		_		8		_	4
Detector Phase	5	2		1	6		8	8	1	4	4	5
Switch Phase		_			_							
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0	5.0	7.0	7.0	5.0
Minimum Split (s)	11.8	31.8		11.8	31.8		40.6	40.6	11.8	41.6	41.6	11.8
Total Split (s)	16.0	73.8		24.0	81.8		40.6	40.6	24.0	41.6	41.6	16.0
Total Split (%)	8.9%	41.0%		13.3%	45.4%		22.6%	22.6%	13.3%	23.1%	23.1%	8.9%
Maximum Green (s)	9.2	67.0		17.2	75.0		33.0	33.0	17.2	34.0	34.0	9.2
Yellow Time (s)	4.8	4.8		4.8	4.8		4.0	4.0	4.8	4.0	4.0	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.6	3.6	2.0	3.6	3.6	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.6	7.6	6.8	7.6	7.6	6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None

	•	-	*	1	-	*	1	†	1	1	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	98.9	83.0		14.0	75.0		30.4	30.4	45.3	23.8	23.8	46.6
Actuated g/C Ratio	0.55	0.46		0.08	0.42		0.17	0.17	0.25	0.13	0.13	0.26
v/c Ratio	1.16	0.56		0.71	0.83		0.86	0.85	0.72	0.69	0.68	0.84
Control Delay	152.9	37.7		95.3	51.3		99.2	98.2	50.2	89.9	89.2	44.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.9	37.7		95.3	51.3		99.2	98.2	50.2	89.9	89.2	44.9
LOS	F	D		F	D		F	F	D	F	F	D
Approach Delay		55.3			55.6			80.3			64.3	
Approach LOS		Е			Е			F			Е	

Intersection Summary

Area Type: Other

Cycle Length: 180 Actuated Cycle Length: 180

Offset: 127 (71%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16 Intersection Signal Delay: 60.3

Intersection Signal Delay: 60.3 Intersection LOS: E
Intersection Capacity Utilization 102.2% ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: SW 109th Avenue & SW 8th Street



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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	292	1616	187	1745	241	245	297	151	154	399	
v/c Ratio	1.16	0.56	0.71	0.83	0.86	0.85	0.72	0.69	0.68	0.84	
Control Delay	152.9	37.7	95.3	51.3	99.2	98.2	50.2	89.9	89.2	44.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	152.9	37.7	95.3	51.3	99.2	98.2	50.2	89.9	89.2	44.9	
Queue Length 50th (ft)	~359	400	113	673	293	297	223	183	186	216	
Queue Length 95th (ft)	#734	509	157	735	401	405	314	260	264	#469	
Internal Link Dist (ft)		1895		1247		482			99		
Turn Bay Length (ft)	600		300				150	250			
Base Capacity (vph)	252	2895	324	2090	315	322	441	314	322	475	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.16	0.56	0.58	0.83	0.77	0.76	0.67	0.48	0.48	0.84	

Intersection Summary

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	††††		44	^		7	स	7	7	सी	7
Volume (veh/h)	277	1423	112	178	1612	46	369	93	282	218	72	379
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	292	1498	118	187	1697	48	243	301	297	152	183	399
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	2428	191	225	2098	59	322	338	354	332	348	364
Arrive On Green	0.05	0.40	0.40	0.07	0.42	0.42	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1757	6044	476	3408	5034	142	1757	1845	1365	1757	1845	1501
Grp Volume(v), veh/h	292	1179	437	187	1132	613	243	301	297	152	183	399
Grp Sat Flow(s),veh/h/ln	1757	1586	1760	1704	1679	1819	1757	1845	1365	1757	1845	1501
Q Serve(g_s), s	9.2	35.5	35.5	9.8	53.4	53.4	23.6	28.7	33.0	13.8	16.1	34.0
Cycle Q Clear(g_c), s	9.2	35.5	35.5	9.8	53.4	53.4	23.6	28.7	33.0	13.8	16.1	34.0
Prop In Lane	1.00		0.27	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	162	1912	707	225	1399	758	322	338	354	332	348	364
V/C Ratio(X)	1.80	0.62	0.62	0.83	0.81	0.81	0.75	0.89	0.84	0.46	0.53	1.10
Avail Cap(c_a), veh/h	162	1912	707	326	1399	758	322	338	354	332	348	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	42.8	42.9	83.0	46.2	46.2	69.7	71.7	64.8	64.8	65.7	68.6
Incr Delay (d2), s/veh	382.4	1.5	4.0	7.7	5.1	9.1	9.3	23.7	15.9	2.1	2.8	76.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	37.6	22.3	25.1	8.4	34.0	37.5	18.1	23.6	22.2	11.2	13.2	46.3
LnGrp Delay(d),s/veh	427.7	44.3	46.9	90.7	51.3	55.3	79.0	95.5	80.6	66.9	68.5	144.5
LnGrp LOS	F	D	D	F	D	Е	Е	F	F	Е	Е	F
Approach Vol, veh/h		1908			1932			841			734	
Approach Delay, s/veh		103.6			56.4			85.5			109.5	
Approach LOS		F			Е			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	•	8				
Phs Duration (G+Y+Rc), s	18.7	79.1		41.6	16.0	81.8		40.6				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	17.2	67.0		34.0	9.2	75.0		33.0				
Max Q Clear Time (g_c+l1), s	11.8	37.5		36.0	11.2	55.4		35.0				
Green Ext Time (p_c), s	0.1	23.2		0.0	0.0	16.6		0.0				
Intersection Summary												
			84.7									
HCM 2010 Ctrl Delay HCM 2010 LOS			84. <i>1</i> F									
			Г									
Notes												

Godfrey Lamptey, P.E., PTOE

GOAL Associates Inc.

User approved volume balancing among the lanes for turning movement.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4		7	1 >		7	7	
Volume (vph)	9	13	51	29	57	35	76	324	17	33	477	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.906			0.961			0.993			0.993	
Flt Protected		0.994			0.988		0.950			0.950		
Satd. Flow (prot)	0	1661	0	0	1751	0	1752	1832	0	1752	1832	0
Flt Permitted		0.994			0.988		0.950			0.950		
Satd. Flow (perm)	0	1661	0	0	1751	0	1752	1832	0	1752	1832	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			307			252	
Travel Time (s)		8.2			9.6			7.0			5.7	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	10	15	57	33	64	39	85	364	19	37	536	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	136	0	85	383	0	37	562	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											

Area Type: Othe

Control Type: Unsignalized

Intersection Capacity Utilization 52.4%

ICU Level of Service A

Analysis Period (min) 15

Intersection													
Int Delay, s/veh	8.6												
inc Bolay, or von	0.0												
Movement	EBL	EBT	EBR	١	WBL	WBT	WBR	NB	L NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	13	51		29	57	35	7	324	17	33	477	23
Conflicting Peds, #/hr	0	0	0		0	0	0		0 0	0	0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Fre	e Free	Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None			None	-	-	None
Storage Length	-	-	-		-	-	-	12) -	-	120	-	-
Veh in Median Storage, #	- +	0	-		-	0	-		- 0	-	-	0	-
Grade, %	-	0	-		-	0	-		- 0	-	-	0	-
Peak Hour Factor	89	89	89		89	89	89	8	9 89	89	89	89	89
Heavy Vehicles, %	3	3	3		3	3	3		3 3	3	3	3	3
Mvmt Flow	10	15	57		33	64	39	8	5 364	19	37	536	26
Major/Minor	Minor2			Mi	inor1			Major	1		Major2		
Conflicting Flow All	1219	1177	549	,	1203	1180	374	56	2 0	0	383	0	0
Stage 1	623	623	-		544	544	-			-	-	-	_
Stage 2	596	554	-		659	636	-			-	-	_	-
Critical Hdwy	7.13	6.53	6.23		7.13	6.53	6.23	4.1	3 -	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-		6.13	5.53	-			-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-		6.13	5.53	-			-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3	3.527	4.027	3.327	2.22	7 -	-	2.227	-	-
Pot Cap-1 Maneuver	156	190	534		160	189	670	100	4 -	-	1170	-	-
Stage 1	472	477	-		521	517	-			-	-	-	-
Stage 2	488	512	-		451	470	-			-	-	-	_
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	95	168	534		122	168	670	100	4 -	-	1170	-	-
Mov Cap-2 Maneuver	95	168	-		122	168	-			-	-	-	-
Stage 1	432	462	-		477	473	-			-	-	-	-
Stage 2	364	469	-		378	455	-			-	-	-	-
Approach	EB				WB			N	3		SB		
HCM Control Delay, s	23.8				59.5			1.	<u> </u>		0.5		
HCM LOS	С				F								
Minor Lane/Major Mvmt	NBL	NBT	NBR E	EBLn1WE	3 <u>L</u> n1	SBL	SBT	SBR					
Capacity (veh/h)	1004	-	-	273	192	1170	-	-					
HCM Lane V/C Ratio	0.085	-	-			0.032	-	-					
HCM Control Delay (s)	8.9	-	-		59.5	8.2	-	-					
HCM Lane LOS	Α	-	-	С	F	Α	-	-					
HCM 95th %tile Q(veh)	0.3	-	-	1.2	4.5	0.1	-	-					

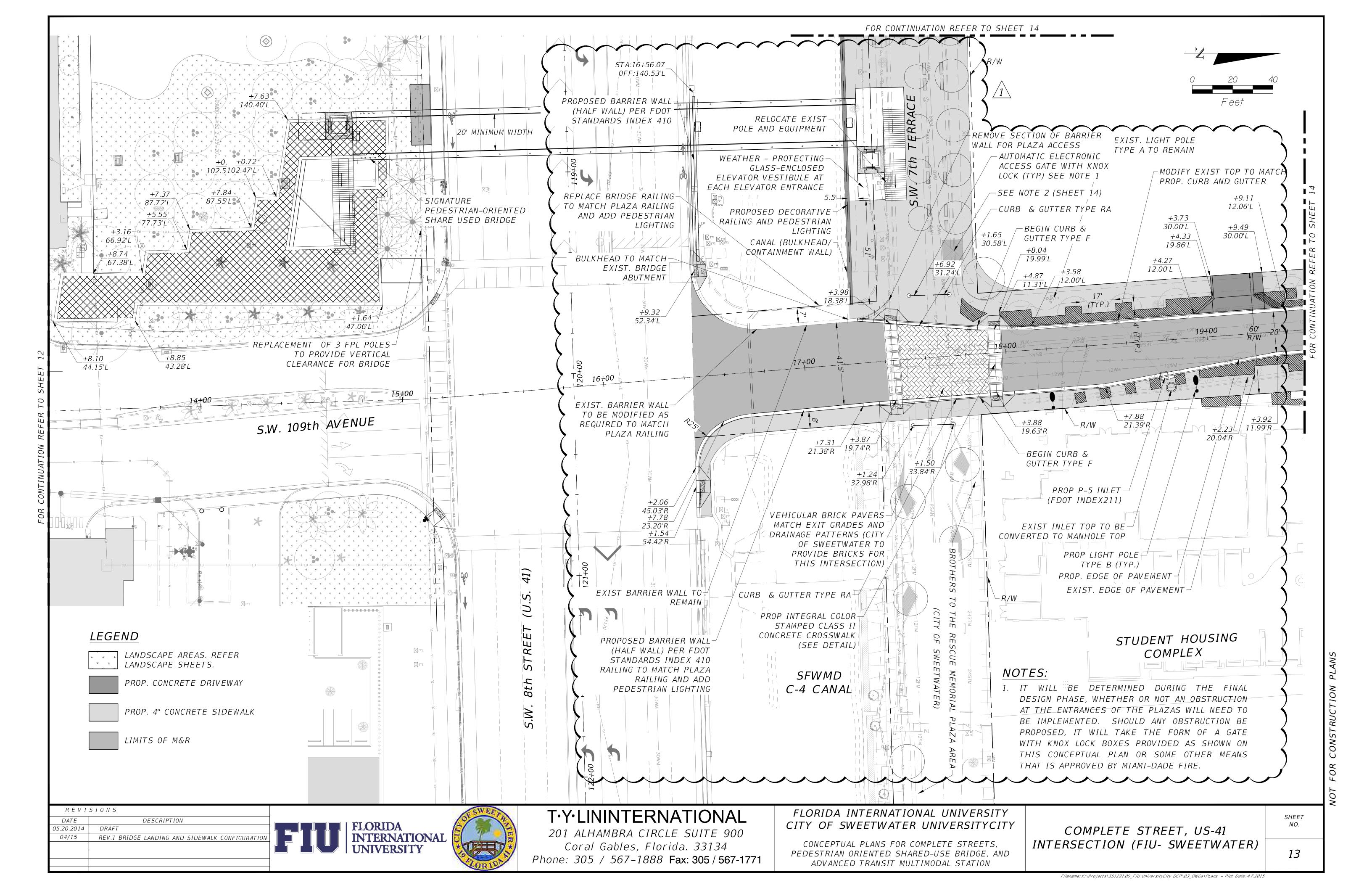
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		7	_	^	f)	_
Volume (vph)	0	112	0	417	558	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			100
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.999	
Flt Protected						
Satd. Flow (prot)	0	1596	0	1845	1843	0
Flt Permitted						
Satd. Flow (perm)	0	1596	0	1845	1843	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	362			179	307	
Travel Time (s)	8.2			4.1	7.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	119	0	444	594	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	119	0	444	598	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	10			10	10	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						

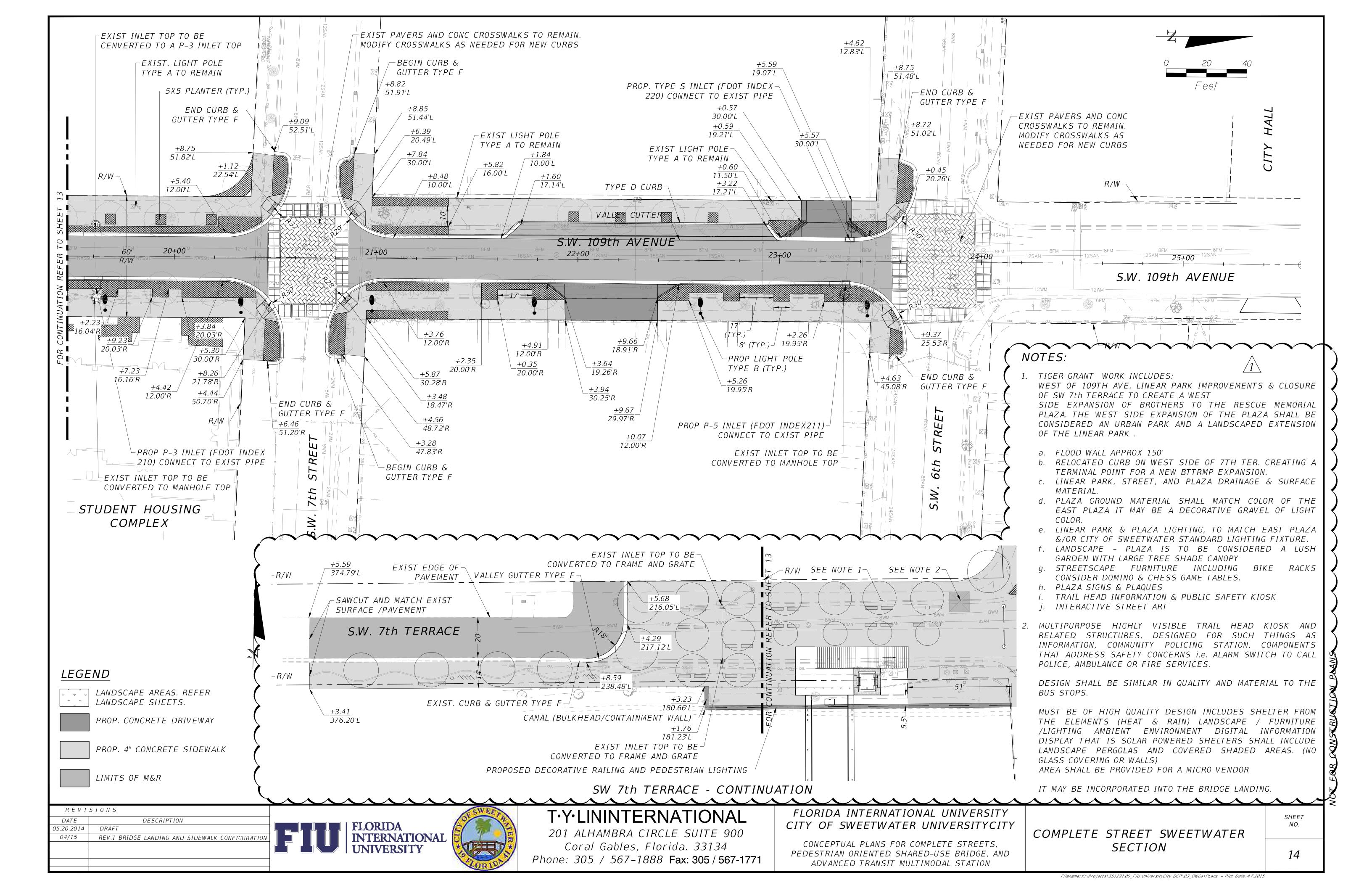
ICU Level of Service A

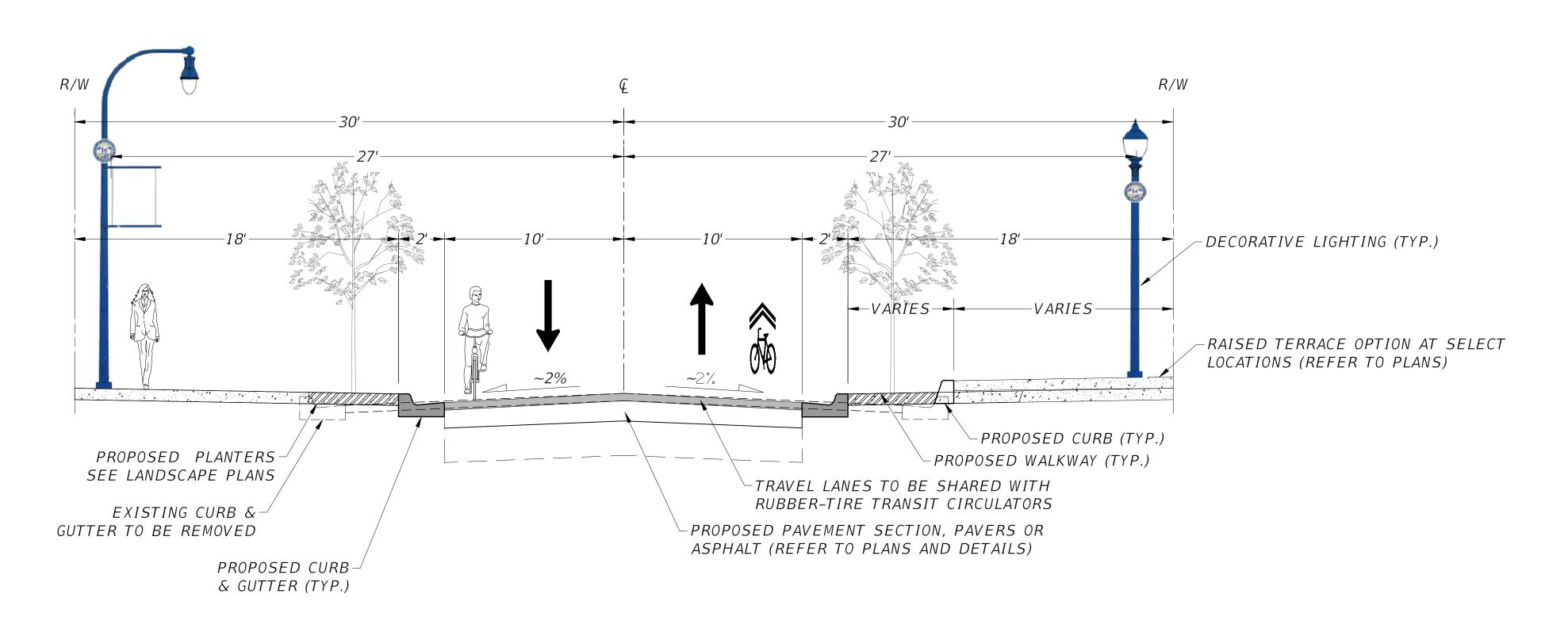
Intersection Capacity Utilization 43.2% Analysis Period (min) 15

Intersection	1 =					
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	112	0	417	558	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	ŧ 0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	119	0	444	594	4
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1040	596	598	0	IVIAJOIZ	0
Stage 1	596	- 390	390	-	<u> </u>	-
Stage 2	444	-	<u>-</u>	-	<u>-</u>	-
Critical Hdwy	6.43	6.23	4.13	_	_	_
Critical Hdwy Stg 1	5.43	- 0.23		_		
Critical Hdwy Stg 2	5.43	<u>-</u>	<u>-</u>	_	-	_
Follow-up Hdwy	3.527	3.327	2.227	-	_	_
Pot Cap-1 Maneuver	254	502	974	_	-	_
Stage 1	548	-	-	-		_
Stage 2	644	-	-	-	-	_
Platoon blocked, %	V 1 1			-	_	-
Mov Cap-1 Maneuver	254	502	974	-	-	-
Mov Cap-2 Maneuver	254	-	-	-	_	-
Stage 1	548	-	-	-	-	-
Stage 2	644	-	-	-	_	-
Annroach	EB		NB		SB	
Approach						
HCM LOS	14.4 B		0		0	
HCM LOS	В					
Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT SBR			
Capacity (veh/h)	974	- 502				
HCM Lane V/C Ratio	-	- 0.237				
HCM Control Delay (s)	0	- 14.4				
HCM Lane LOS	Α	- B				
HCM 95th %tile Q(veh)	0	- 0.9				

Traffic Study for FIU Pedestrian Bridge & Complete Street Improvement
APPENDIX F
(Conceptual Improvement Plans)

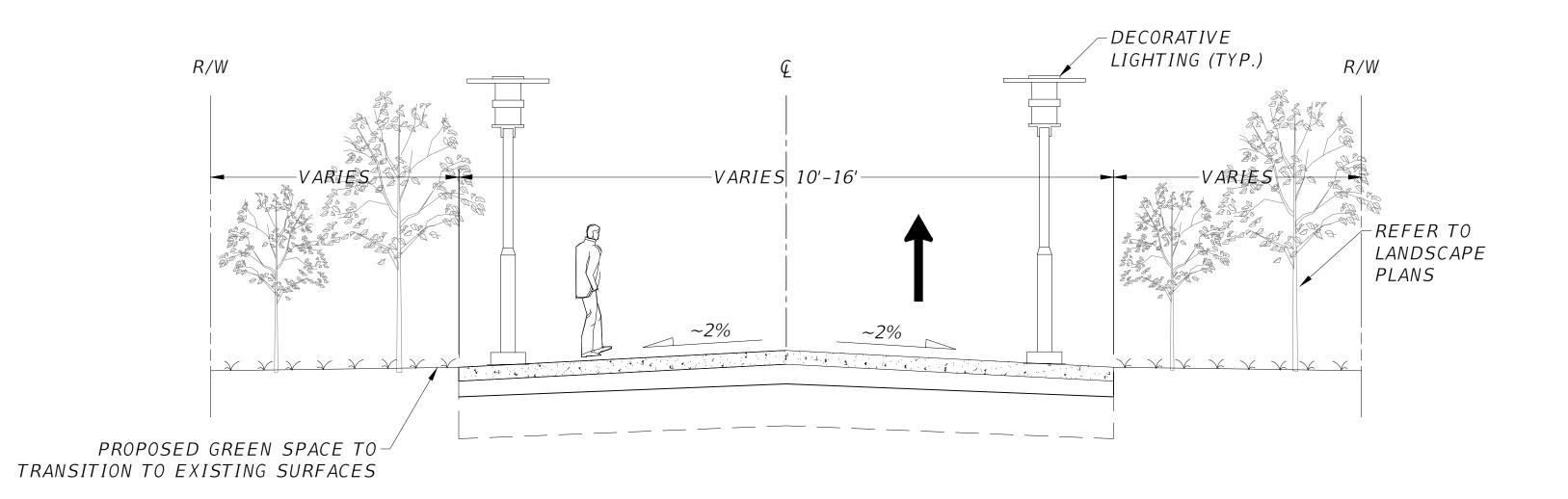






SW 109TH AVE FROM 7TH TERR TO 6TH ST TYPICAL SECTION FOR COMPLETE STREET WITHIN CITY OF SWEETWATER

NTS



NOTE:

FIU TRANSIT GREENWAY TO BE CONSTRUCTED WITHIN UNIVERSITY R/W

TYPICAL SECTION FOR COMPLETE STREET THROUGH FIU GREEN SPACES

NTS

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast. It's free. It's the law.
www.callsunshine.com

REVIS	SIONS	
DATE	DESCRIPTION	
05.20.2014	DRAFT	FLORIDA
		INTERNATIONAL
		UNIVERSITY



T·Y·LININTERNATIONAL

201 ALHAMBRA CIRCLE SUITE 900 Coral Gables, Florida. 33134 Phone: 305 / 567-1888 Fax: 305 / 567-1771

FLORIDA INTERNATIONAL UNIVERSITY CITY OF SWEETWATER UNIVERSITYCITY

CONCEPTUAL PLANS FOR COMPLETE STREETS,
PEDESTRIAN ORIENTED SHARED-USE BRIDGE, AND
ADVANCED TRANSIT MULTIMODAL STATION

TYPICAL	SECTION
I I I I I I I I I I	JECTION

SHEET NO.	
15	



DATE DESCRIPTION

05.20.2014 DRAFT

04/15 REV.1 ROADWAY CONFIGURATION

INTERNATIONAL UNIVERSITY



T-Y-LININTERNATIONAL

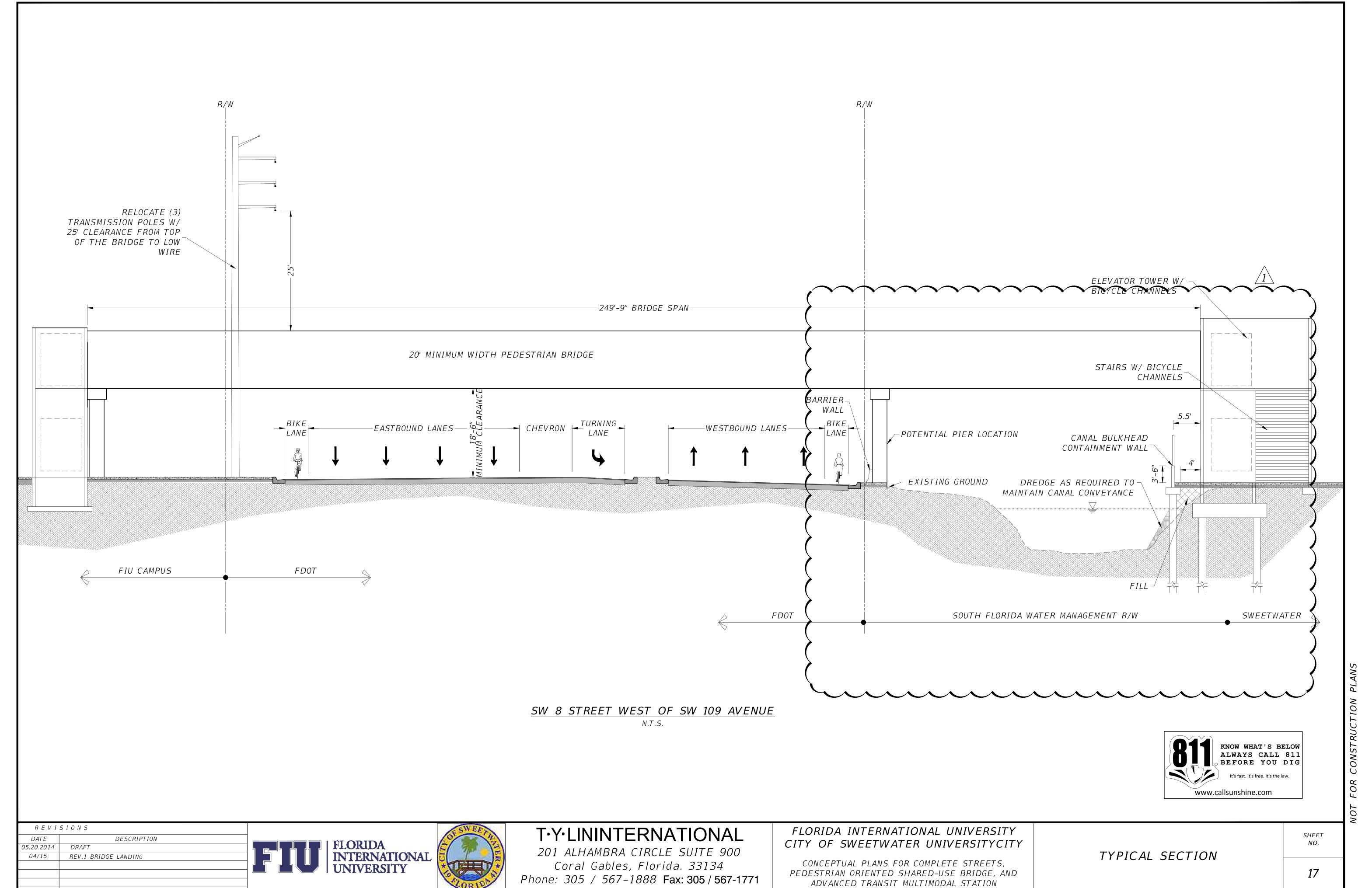
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FLORIDA INTERNATIONAL UNIVERSITY CITY OF SWEETWATER UNIVERSITYCITY

CONCEPTUAL PLANS FOR COMPLETE STREETS,
PEDESTRIAN ORIENTED SHARED-USE BRIDGE, AND
ADVANCED TRANSIT MULTIMODAL STATION

$TYPIC\Delta I$	SECTION	
$IIIIC \land L$	JECTION	

SHEET NO.	
16	



Filename: K:\Projects\551221.00_FIU UniversityCity DCP\03_DWGs\Typical Section - 1 - Plot Date: 4.7.2015

SECTION A-A - ACROSS THE CONSERVATORY PLAZA - FLORIDA INTERNATIONAL UNIVERSITY / SCALE 1"=10'-0"



SECTION B-B - ACROSS THE LAKE

FLORIDA INTERNATIONAL UNIVERSITY / scale 1"=10'-0"

REVISIONS DESCRIPTION 03.06.2014 DRAFT







FERNANDEZ-BERAUD INC. Landscape Architecture and Planning LC26000233

2333 Brickell Avenue #216 Ph: 786-314-5906 Fax: 305-854-8777

Leticia Fernandez-Beraud Registered Landscape Architect LA6666730

FLORIDA INTERNATIONAL UNIVERSITY **CITY OF SWEETWATER UNIVERSITYCITY**

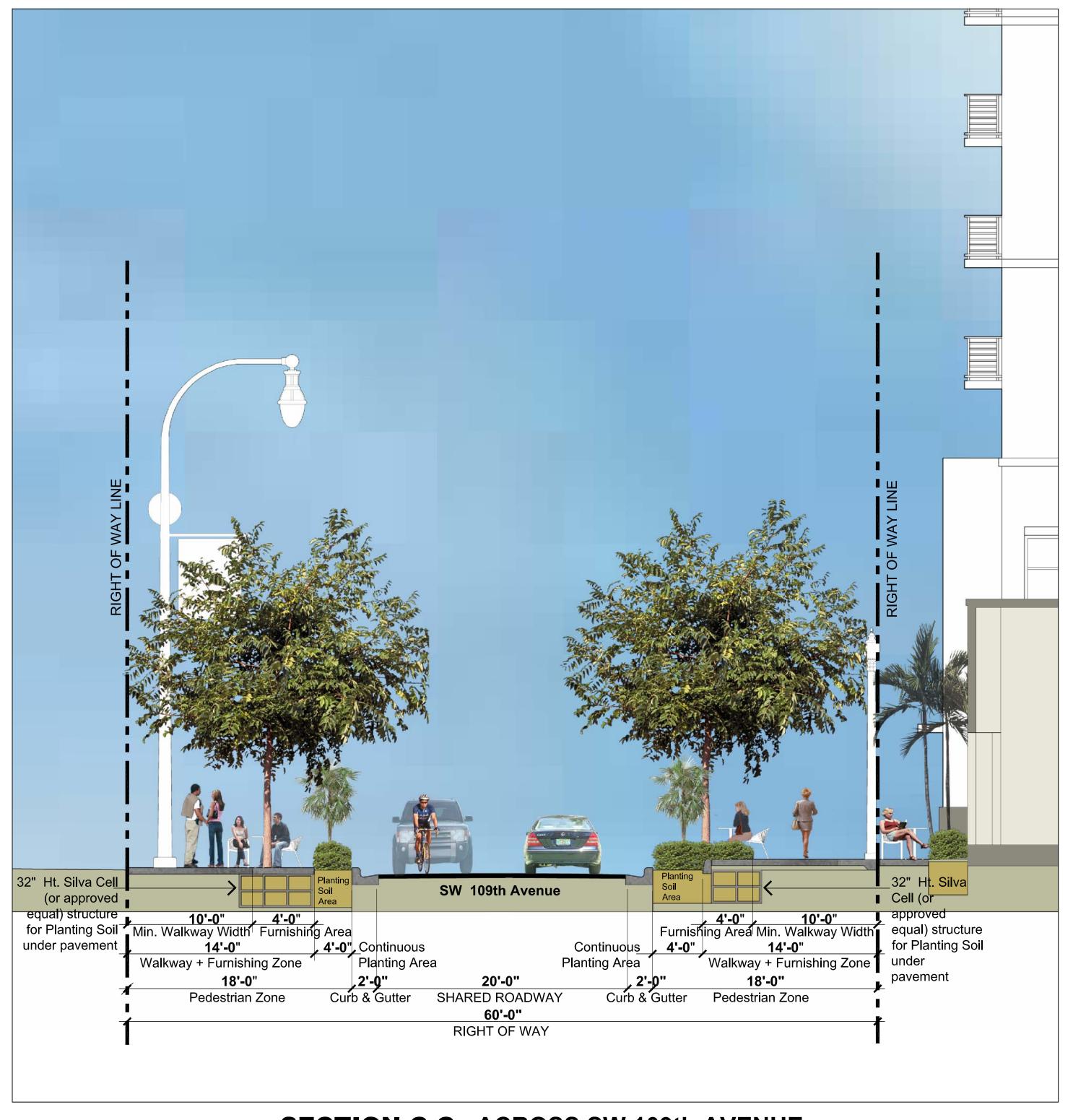
CONCEPTUAL PLANS FOR COMPLETE STREETS, PEDESTRIAN ORIENTED SHARED-USE BRIDGE, AND ADVANCED TRANSIT MULTIMODAL STATION

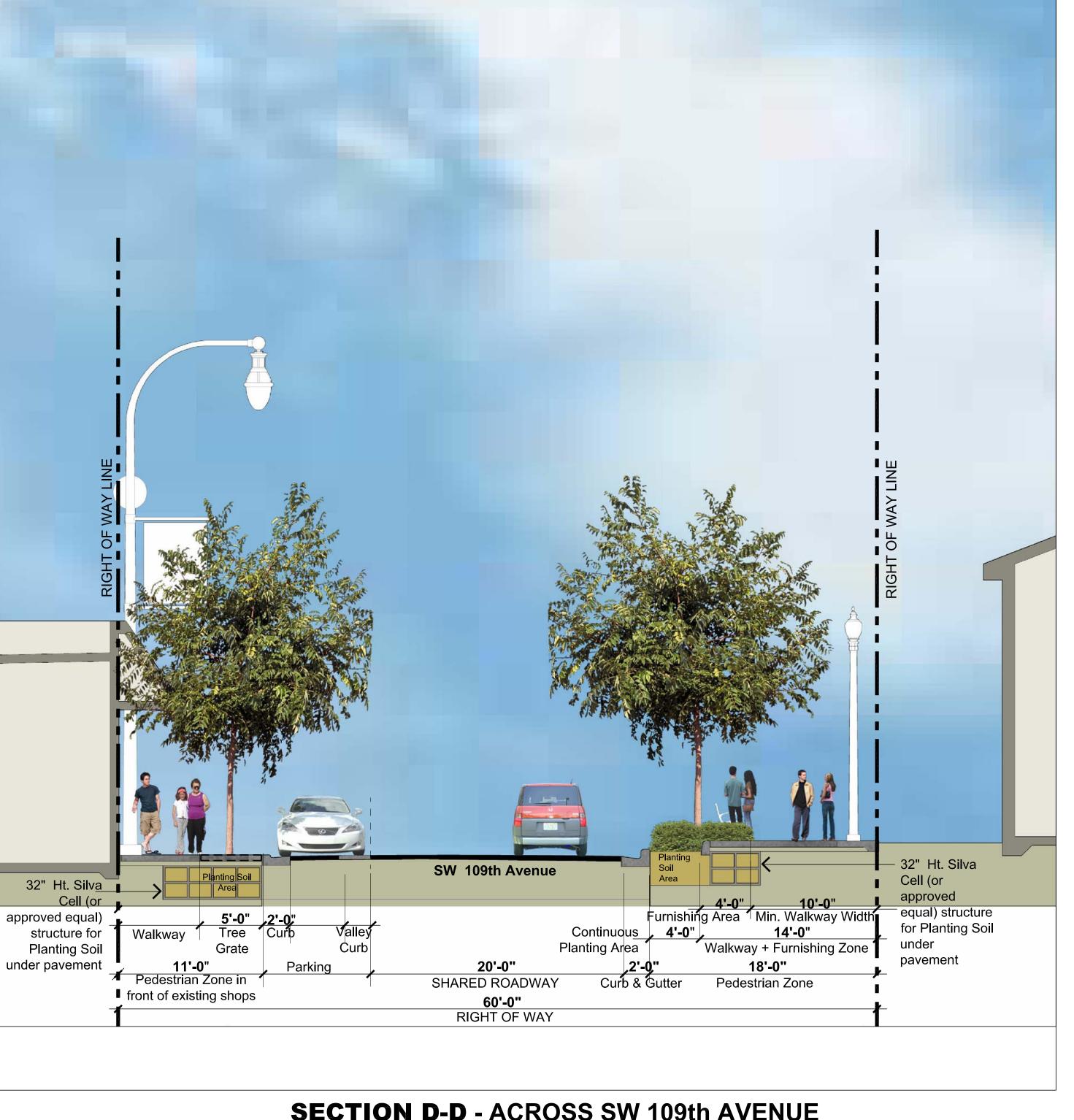
UNIVERSITY CITY IMPROVEMENTS FLORIDA INTERNATIONAL UNIVERSITY

CONCEPTUAL CROSS SECTIONS 05-20-2014

SHEET NO.

LH-10





SECTION C-C - ACROSS SW 109th AVENUE CITY OF SWEETWATER / Not to Scale

SECTION D-D - ACROSS SW 109th AVENUE
CITY OF SWEETWATER / Not to Scale

R E VISIO N S

DATE DESCRIPTION

03.06.2014 DRAFT







FERNANDEZ-BERAUD INC.

Landscape Architecture and Planning

LC26000233

2333 Brickell Avenue #216 Miami, Florida 33129 Ph: 786-314-5906 Fax: 305-854-8777

Leticia Fernandez-Beraud Registered Landscape Architect LA6666730

FLORIDA INTERNATIONAL UNIVERSITY CITY OF SWEETWATER UNIVERSITYCITY

CONCEPTUAL PLANS FOR COMPLETE STREETS, PEDESTRIAN ORIENTED SHARED-USE BRIDGE, AND ADVANCED TRANSIT MULTIMODAL STATION

UNIVERSITY CITY IMPROVEMENTS
SW 109th AVENUE (SWEETWATER)
CONCEPTUAL CROSS SECTIONS

05-20-2014

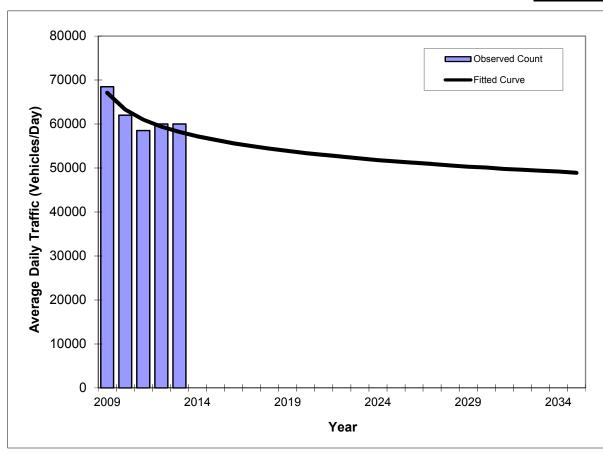
SHEET NO.

LH-11

Traffic Study for FIU Pedestrian Bridge & Complete Street Improvements
APPENDIX G
(Traffic Forecast Analysis)

TRAFFIC TRENDS SR 90/US-41/SW 8 ST -- 500' E SW 109 AV

County: Station #: Highway: Miami-Dade 870090 SR 90/US-41/SW 8 ST



	Traffic (ADT/AADT)					
Year	Count*	Trend**				
2009	68500	67100				
2010	62000	63300				
2011	58500	61000				
2012	60000	59400				
2013	60000	58200				
	5 Opening Yea					
2015	N/A	56400				
2025	025 Mid-Year T N/A	51500				
2025						
2035	N/A	48900				
	PLAN Forecas					
		to/Tronds				

Trend R-squared: 78.3%
Compounded Annual Historic Growth Rate: -3.03%
Compounded Growth Rate (2013 to Design Year): -0.71%
Printed: 12-Dec-14

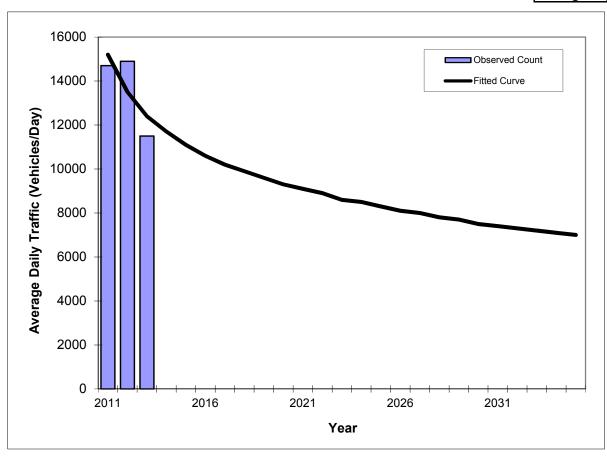
Decaying Exponential Growth Option

*Axle-Adjusted

TRAFFIC TRENDS SW 109TH AVE -- 200' SOUTH OF 4TH STREET

County: Station #: Highway: Miami-Dade 878192 SW 109TH AVE

Traffic (ADT/AADT)



Year	Count* Trend*					
2011	14700	15200				
2012	14900	13500				
2013	11500	12400				
	5 Opening Yea					
2015	N/A	11100				
	025 Mid-Year T					
2025	N/A	8300				
2035	85 Design Year N/A	7000				
	PLAN Forecas					
		tor-monds				

Trend R-squared: 55.9%
Compounded Annual Historic Growth Rate: -11.07%
Compounded Growth Rate (2013 to Design Year): -1.92%
Printed: 12-Dec-14

Decaying Exponential Growth Option

*Axle-Adjusted

What Is The MPO and The LRTP?

The Metropolitan Planning Organization (MPO) for the Miami-Urbanized Area guides the transportation process in Miami-Dade County. MPOs are federally mandated agencies for metropolitan areas with more than 50,000 total population. A primary function for the MPOs are to produce and update (every 5 years) a Long Range Transportation Plan (LRTP) with a minimum time horizon of 20 years. The LRTP is a comprehensive transportation infrastructure plan that includes, at a minimum, highway and transit infrastructure improvements. The Miami-Dade LRTP includes highway, transit, freight, and non-motorized components, a truly multimodal plan that covers a broad range of issues including the environment, economic development, mobility, safety, security, and quality of life.

The Miami-Dade Long Range Transportation Plan Update to the Year 2040, hereto referred to as the 2040 LRTP, commenced in December 2012 and involves a major update of the 2035 LRTP, which was adopted in October 2009. The 2040 LRTP's primary purpose is to assist citizens, businesses, and elected o cials in cultivating their transportation vision for the County through the next 26 years. The 2040 LRTP serves as an instrument to identify the needed improvements to the transportation network, and provides a long-term investment framework to address current and future challenges.

In light of Miami-Dade's bright and prosperous future as a global hub, the 2040 LRTP is focused on Providing Mobility Options, with Eyes on the Future, as depicted by the plan logo. The plan is also guided by a comprehensive vision to...

"Provide mobility options for Miami-Dade County residents and visitors and promote economic competitiveness by investing in the County's transportation infrastructure while protecting the environment and maximizing the efficiency of the existing transportation system."

The key vision elements which are also central to the 2040 LRTP Goals and Objectives outlined in Chapter 2, include mobility, economy, environment, and e⁻cienc y. These are the focal points for an e⁻ ective transportation system in Miami-Dade County to the year 2040.

Transportation Planning Areas

For the practical purposes of administering transportation programs and studies, the MPO divided Miami-Dade County into six distinct geographic units identiÿed as Transportation Planning Areas (TPAs), illustrated in **Figure 1-1**. Each planning area presents its own unique transportation challenges.



Transportation Planning Areas

2040 SNAPSHOT

BEACH/CBD

543,800 Population SQM 390,500 Employment

Bay Harbour Downtown Miami Little Havana Miami Beach Port of Miami Sunny Isles Beach

CENTRAL

480,400 Population SQM 407,600 Employment Coconut Grove
Coral Gables
Key Biscayne
Miami International
Miami Springs
South Miami
University of Miami

NORTH

712,000 Population SQM 361,700 Employment

Civic Center Little Haiti Miami Gardens Miami Shores North Miami Opa-Locka

NORTHWEST

478,900 Population SQM 428,000 Employment Doral Hialeah Hialeah Gardens Miami Lakes Sweetwater Virginia Gardens

SOUTH

654,900 Population SQM 290,300 Employment Cutler Bay Florida City Homestead Kendall Palmetto Bay Zoo Miami

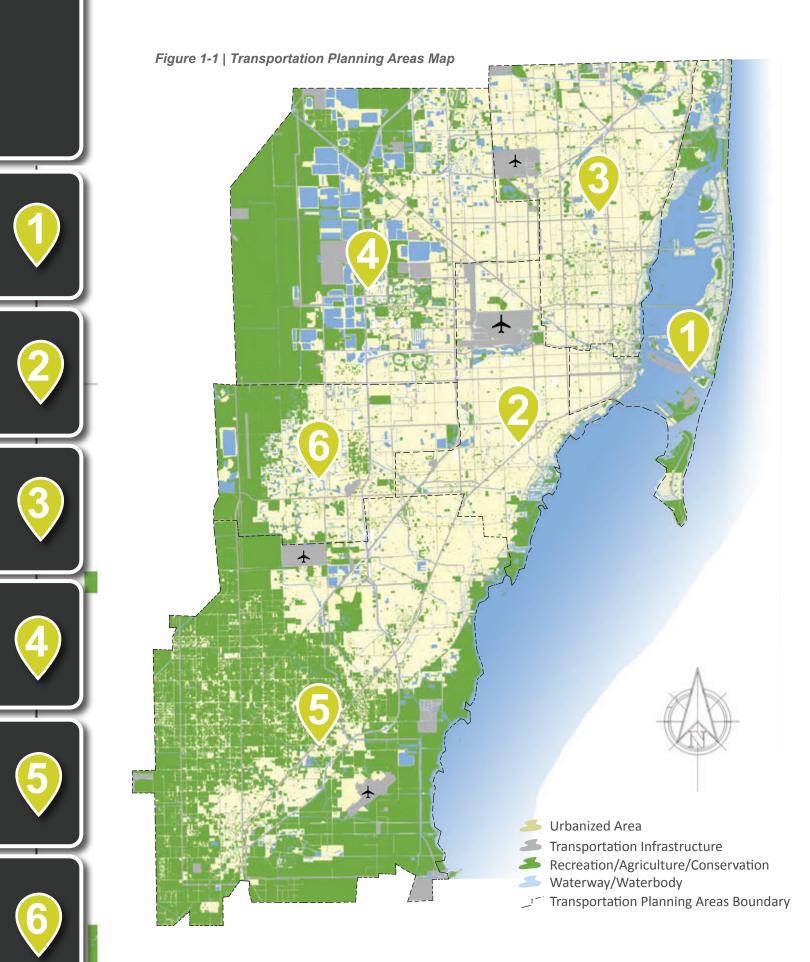
WEST

435,300 Population SQM 172,900 Employment

Square Miles (SQM)

Florida International Kendall Lakes Kendall-Tiami Executive Airport Tamiami The Hammocks



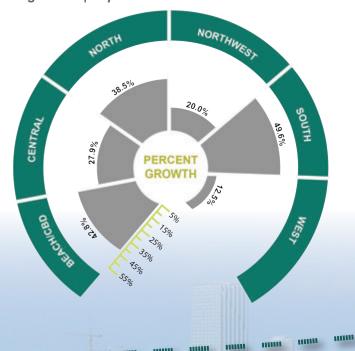




While the robust countywide growth of between 33% and 45% in population and employment respectively, will require signiÿcant infrastructure improvements, the nature and pattern of the growth should dictate the nature and extent of the speciÿc type of improvements. The County will face challenges as it grows and continues to prosper as both a major player in the global economy and the chosen home of more than 2 million people. Those challenges, however, can also be viewed as opportunities to both preserve the character and improve the function of Miami-Dade County and to propel Miami-Dade forward to a promising future. The County's growth and infrastructure trends call for cutting edge transportation solutions beÿtting of a global hub of commerce and lifestyle.

As a global hub, Miami attracts many visitors every year. The Greater Miami Convention and Visitor Bureau estimated the area had 13.9 million overnight visitors in 2013. These overnight visits translate into increased demand on the County's transportation system.

Figure 1-3 | Population Growth 2010-2040



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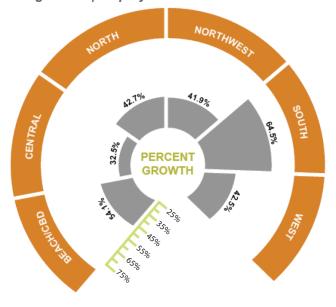
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Figure 1-4 | Employment Growth 2010-2040



Miami-Dade Population 3.3 m **Miami-Dade Employment** 2.0 m

Figure 1-2 | Historic and Projected Population and Employment of Miami-Dade 1980-2040

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2040

FIU PEDESTRIAN BRIDGE TRAFFIC STUDY WEEKDAY AM PEAK PERIOD - TRAFFIC FORECAST ANALYSIS

#	Intersection	Approach	Movement	Existing Raw Counts	Existing Counts (Adjusted)	Existing Counts (Balanced)	Background Traffic with 0.89% growth rate	Diverted Traffic SW 7th Terrace	Opening Year Traffic Volumes	Design Year Traffic with 0.89% growth rate	
				2014	2014	2014	2015	2015	2015	2035	
			L	34	34	34	34	0	34	41	
		NB	T	24	24	25	25	0	25	30	
			R	28	28	28	28	0	28	33	
			L	263	263	263	266	0	266	317	
	SW 109th	SB	T	87	87	87	88	0	88	105	
1	Avenue and		R	382	382	382	386	0	386	461	
'	SW 8th Street		L	277	277	286	288	0	288	344	
		EB	T	1487	1487	1487	1501	0	1501	1792	
			R	319	319	319	322	0	322	385	
			L	283	283	283	286	0	286	341	
		WB	T	1265	1265	1265	1276	0	1276	1523	
			R	71	71	73	74	0	74	88	
			L	52	51	51	52	0	52	62	
		NB	T	316	313	314	317	0	318	379	
			R	20	20	20	20	0	20	24	
			L	27	27	27	27	0	27	32	
	OW 4004-		T	495	490	507	512	0	512	611	
2	SW 109th Avenue and		R	5	5	5	5	4	9	11	
-	SW 7th Street		L	21	21	21	21	0	21	25	
			T	13	13	13	13	0	13	16	
			R	91	90	93	94	117	211	252	
			L	16	16	16	17	0	17	20	
			T	19	19	19	19	0	19	23	
			R	43	43	43	43	0	43	51	
	SW 109th Avenue and SW 7th Terrace			L	0	0	0	0	0	0	0
		NB	T	388	384	384	388	0	0	0	
			R	0	0	0	0	0	0	0	
			L	0	0	0	0	0	0	0	
		SB	T	602	596	617	622	0	0	0	
3			R	4	4	4	4	0	0	0	
ľ			L	0	0	0	0	0	0	0	
			T	0	0	0	0	0	0	0	
			R	112	111	116	117	0	0	0	
			L	0	0	0	0	0	0	0	
		WB	T	0	0	0	0	0	0	0	
			R	0	0	0	0	0	0	0	

FIU PEDESTRIAN BRIDGE TRAFFIC STUDY WEEKDAY PM PEAK PERIOD - TRAFFIC FORECAST ANALYSIS

#	Intersection	Approach	Movement	Existing Raw Counts	Existing Counts (Adjusted)	Existing Counts (Balanced)	Background Traffic with 0.89% growth rate	Diverted Traffic SW 7th Terrace	Opening Year Traffic Volumes	Design Year Traffic with 0.89% growth rate
				2014	2014	2014	2015	2015	2015	2035
			L	369	369	369	372	0	372	444
		NB	T	93	93	93	94	0	94	112
			R	282	282	282	284	0	284	339
			L	218	218	218	220	0	220	263
	OW 4004-	SB	T	72	72	72	73	0	73	87
1	SW 109th Avenue and		R	379	379	379	382	0	382	457
	SW 8th Street		L	277	277	277	280	0	280	334
		EB	T	1423	1423	1423	1436	0	1436	1714
			R	112	112	112	113	0	113	135
			L	178	178	178	179	0	179	214
		WB	T	1612	1612	1612	1626	0	1626	1942
			R	46	46	46	47	0	47	56
			L	77	76	76	77	0	77	92
		NB	T	327	324	324	327	0	327	390
			R	17	17	17	17	0	17	20
		SB EB	L	33	33	33	33	0	33	39
	SW 109th		T	479	474	477	481	0	481	575
1	Avenue and		R	23	23	23	23	4	27	32
	SW 7th Street		L	9	9	9	9	0	9	11
			T	13	13	13	13	0	13	16
			R	52	51	51	52	113	165	197
		WB	L	29	29	29	29	0	29	35
			T	58	57	57	58	0	58	69
			R	35	35	35	35	0	35	42
			L	0	0	0	0	0	0	0
		NB	T	421	417	417	420	0	0	0
				R	0	0	0	0	0	0
			L	0	0	0	0	0	0	0
	SW 109th	SB	T	552	546	558	563	0	0	0
1	Avenue and	EB	R	4	4	4	4	0	0	0
	SW 7th Terrace		L	0	0	0	0	0	0	0
			T	0	0	0	0	0	0	0
			R	111	110	112	113	0	0	0
			L	0	0	0	0	0	0	0
		WB	T	0	0	0	0	0	0	0
			R	0	0	0	0	0	0	0

	Traffic Study for FIU Pedestrian Bridge & Complete Street Improvements
	APPENDIX H
(Future Condit	ion Intersection LOS Analysis Results)
(101010 0011011)	ion in ito social in Eco / trialysis itosons,

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	4111		1/4	**		*	ર્ન	7	*	र्स	7
Volume (vph)	288	1501	322	286	1276	74	34	25	28	266	88	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	300		0	0		150	250		0
Storage Lanes	1		0	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor		1.00			1.00				0.92			0.96
Frt		0.974			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.991		0.950	0.975	
Satd. Flow (prot)	1752	6165	0	3400	4990	0	1665	1737	1568	1665	1709	1568
FIt Permitted	0.102			0.950			0.950	0.991		0.950	0.975	
Satd. Flow (perm)	188	6165	0	3400	4990	0	1665	1737	1441	1665	1709	1498
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			5				110			317
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1975			1327			562			486	
Travel Time (s)		29.9			20.1			12.8			11.0	
Confl. Peds. (#/hr)			1			1			43			21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	303	1580	339	301	1343	78	36	26	29	280	93	406
Shared Lane Traffic (%)							16%			34%		
Lane Group Flow (vph)	303	1919	0	301	1421	0	30	32	29	185	188	406
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Prot	NA		Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8	1	4	4	5
Permitted Phases	2								8			4
Detector Phase	5	2		1	6		8	8	1	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0	5.0	7.0	7.0	5.0
Minimum Split (s)	11.8	31.8		11.8	31.8		40.6	40.6	11.8	41.6	41.6	11.8
Total Split (s)	35.0	75.8		22.0	62.8		40.6	40.6	22.0	41.6	41.6	35.0
Total Split (%)	19.4%	42.1%		12.2%	34.9%		22.6%	22.6%	12.2%	23.1%	23.1%	19.4%
Maximum Green (s)	28.2	69.0		15.2	56.0		33.0	33.0	15.2	34.0	34.0	28.2
Yellow Time (s)	4.8	4.8		4.8	4.8		4.0	4.0	4.8	4.0	4.0	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.6	3.6	2.0	3.6	3.6	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.6	7.6	6.8	7.6	7.6	6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None

EBT	EBR								200	
	LDIX	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
5.0					5.0	5.0		5.0	5.0	
20.0					28.0	28.0		29.0	29.0	
0					0	0		0	0	
94.8		23.6	86.5		8.7	8.7	31.5	27.1	27.1	59.8
0.53		0.13	0.48		0.05	0.05	0.18	0.15	0.15	0.33
0.59		0.68	0.59		0.38	0.39	0.08	0.74	0.73	0.56
31.2		82.8	38.0		95.8	95.7	0.4	90.0	89.0	9.3
0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
31.2		82.8	38.0		95.8	95.7	0.4	90.0	89.0	9.3
) C		F	D		F	F	Α	F	F	Α
33.2			45.8			65.4			47.7	
С			D			Е			D	
	20.0 0 6 94.8 9 0.53 5 0.59 9 31.2 0 0.0 9 31.2 C C 33.2	20.0 0 6 94.8 9 0.53 5 0.59 9 31.2 0 0.0 9 31.2 C 33.2	20.0 0 6 94.8 23.6 9 0.53 0.13 5 0.59 0.68 9 31.2 82.8 0 0.0 0.0 9 31.2 82.8 C F	20.0 0 6 94.8 23.6 86.5 9 0.53 0.13 0.48 5 0.59 0.68 0.59 9 31.2 82.8 38.0 0 0.0 0.0 0.0 9 31.2 82.8 38.0 C F D 33.2 45.8	20.0 0 6 94.8 23.6 86.5 9 0.53 0.13 0.48 5 0.59 0.68 0.59 9 31.2 82.8 38.0 0 0.0 0.0 0.0 9 31.2 82.8 38.0 C F D 33.2 45.8	20.0 28.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20.0 28.0 28.0 0 0 0 6 94.8 23.6 86.5 8.7 8.7 9 0.53 0.13 0.48 0.05 0.05 5 0.59 0.68 0.59 0.38 0.39 9 31.2 82.8 38.0 95.8 95.7 0 0.0 0.0 0.0 0.0 0.0 9 31.2 82.8 38.0 95.8 95.7 0 C F D F F 33.2 45.8 65.4	20.0 28.0 28.0 28.0 0 0 0 0 6 94.8 23.6 86.5 8.7 8.7 31.5 9 0.53 0.13 0.48 0.05 0.05 0.18 5 0.59 0.68 0.59 0.38 0.39 0.08 9 31.2 82.8 38.0 95.8 95.7 0.4 0 0.0 0.0 0.0 0.0 0.0 9 31.2 82.8 38.0 95.8 95.7 0.4 0 C F D F F A 33.2 45.8 65.4	20.0 28.0 28.0 29.0 0 0 0 0 0 6 94.8 23.6 86.5 8.7 8.7 31.5 27.1 9 0.53 0.13 0.48 0.05 0.05 0.18 0.15 5 0.59 0.68 0.59 0.38 0.39 0.08 0.74 9 31.2 82.8 38.0 95.8 95.7 0.4 90.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9 31.2 82.8 38.0 95.8 95.7 0.4 90.0 0 C F D F F A F 33.2 45.8 65.4	20.0 28.0 28.0 29.0 29.0 0 0 0 0 0 0 6 94.8 23.6 86.5 8.7 8.7 31.5 27.1 27.1 9 0.53 0.13 0.48 0.05 0.05 0.18 0.15 0.15 5 0.59 0.68 0.59 0.38 0.39 0.08 0.74 0.73 9 31.2 82.8 38.0 95.8 95.7 0.4 90.0 89.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9 31.2 82.8 38.0 95.8 95.7 0.4 90.0 89.0 0 C F D F F A F F 33.2 45.8 65.4 47.7

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 68 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

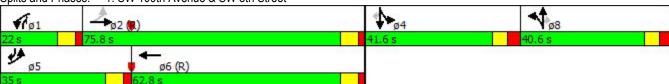
Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 40.7 Intersection LOS: D
Intersection Capacity Utilization 92.2% ICU Level of Service F

Analysis Period (min) 15



1: SW 109th Avenue & SW 8th Street

	•	-	1	•	1	†	~	-	ļ	1	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	303	1919	301	1421	30	32	29	185	188	406	
v/c Ratio	0.75	0.59	0.68	0.59	0.38	0.39	0.08	0.74	0.73	0.56	
Control Delay	45.9	31.2	82.8	38.0	95.8	95.7	0.4	90.0	89.0	9.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.9	31.2	82.8	38.0	95.8	95.7	0.4	90.0	89.0	9.3	
Queue Length 50th (ft)	219	452	178	461	36	40	0	222	225	59	
Queue Length 95th (ft)	343	555	231	601	77	83	0	310	313	117	
Internal Link Dist (ft)		1895		1247		482			406		
Turn Bay Length (ft)	600		300				150	250			
Base Capacity (vph)	417	3262	445	2400	305	318	359	314	322	729	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.73	0.59	0.68	0.59	0.10	0.10	0.08	0.59	0.58	0.56	
Intersection Summary											

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	###		44	ተተጉ		*	ર્લ	7	*	स्	7
Volume (veh/h)	288	1501	322	286	1276	74	34	25	28	266	88	386
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.90	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	303	1580	339	301	1343	78	31	33	29	186	224	406
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	321	2276	488	288	1896	110	237	249	324	332	348	485
Arrive On Green	0.13	0.43	0.43	0.08	0.39	0.39	0.13	0.13	0.13	0.19	0.19	0.19
Sat Flow, veh/h	1757	5272	1131	3408	4869	283	1757	1845	1418	1757	1845	1516
Grp Volume(v), veh/h	303	1426	493	301	926	495	31	33	29	186	224	406
Grp Sat Flow(s),veh/h/ln	1757	1586	1644	1704	1679	1794	1757	1845	1418	1757	1845	1516
Q Serve(g_s), s	20.6	43.8	43.8	15.2	41.9	41.9	2.8	2.8	2.9	17.3	20.2	34.0
Cycle Q Clear(g_c), s	20.6	43.8	43.8	15.2	41.9	41.9	2.8	2.8	2.9	17.3	20.2	34.0
Prop In Lane	1.00		0.69	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	2055	710	288	1307	699	237	249	324	332	348	485
V/C Ratio(X)	0.94	0.69	0.69	1.05	0.71	0.71	0.13	0.13	0.09	0.56	0.64	0.84
Avail Cap(c_a), veh/h	374	2055	710	288	1307	699	322	338	392	332	348	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	41.5	41.5	82.4	46.3	46.3	68.6	68.6	56.0	66.2	67.4	57.5
Incr Delay (d2), s/veh	28.8	2.0	5.5	65.5	3.3	6.0	0.2	0.2	0.1	3.6	5.5	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.3	26.8	28.4	17.6	27.4	29.6	2.5	2.6	2.1	13.6	16.3	28.1
LnGrp Delay(d),s/veh	72.7	43.5	47.0	147.9	49.6	52.3	68.7	68.8	56.1	69.8	72.9	70.9
LnGrp LOS	Е	D	D	F	D	D	Е	Е	Е	Е	Е	Е
Approach Vol, veh/h		2222			1722			93			816	
Approach Delay, s/veh		48.2			67.6			64.8			71.2	
Approach LOS		D			Е			Е			Е	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	84.5		41.6	29.6	76.9		31.9				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	15.2	69.0		34.0	28.2	56.0		33.0				
Max Q Clear Time (g_c+l1), s	17.2	45.8		36.0	22.6	43.9		4.9				
Green Ext Time (p_c), s	0.0	19.1		0.0	0.2	10.8		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			59.3									
HCM 2010 LOS			Е									
Notes												

Notes

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	21	13	211	17	19	43	52	318	20	27	512	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.884			0.927			0.993			0.998	
Flt Protected		0.996			0.989			0.993			0.998	
Satd. Flow (prot)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
FIt Permitted		0.996			0.989			0.993			0.998	
Satd. Flow (perm)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	14	222	18	20	45	55	335	21	28	539	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	258	0	0	83	0	0	411	0	0	576	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
7 I	Other											
Control Type: Unsignalized												
	00 101						_					

ICU Level of Service B

Intersection Capacity Utilization 60.4% Analysis Period (min) 15

Intersection													
Int Delay, s/veh	7.8												
Movement	EBL	EBT	EBR		WBL	WBT	WBR	NE	BL NE	T NBF	R SBL	SBT	SBR
Vol, veh/h	21	13	211		17	19	43		52 31	8 20) 27	512	9
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0 (0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Fre	e Fre	e Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	- None	-	-	None
Storage Length	-	-	-		-	-	-		-	-	. <u>-</u>	-	-
Veh in Median Storage, #	-	0	-		-	0	-		-	U	-	0	-
Grade, %	-	0	-		-	0	-		-	v	-	0	-
Peak Hour Factor	95	95	95		95	95	95	(5 95		95	95
Heavy Vehicles, %	3	3	3		3	3	3		3	3 3		3	3
Mvmt Flow	22	14	222		18	20	45	ļ	55 33	5 2	28	539	9
Major/Minor	Minor2			М	linor1			Majo	r1		Major2		
Conflicting Flow All	1088	1066	544		1173	1060	345		18	0 (0	0
Stage 1	601	601	-		455	455	-		-	-		-	-
Stage 2	487	465	-		718	605	_		-	-	_	_	-
Critical Hdwy	7.13	6.53	6.23		7.13	6.53	6.23	4.	13	-	4.13	-	_
Critical Hdwy Stg 1	6.13	5.53	-		6.13	5.53	-		-	-		-	-
Critical Hdwy Stg 2	6.13	5.53	-		6.13	5.53	-		-	-		-	-
Follow-up Hdwy	3.527	4.027	3.327	3	3.527	4.027	3.327	2.22	27	-	2.227	-	-
Pot Cap-1 Maneuver	192	221	537		168	223	696	10 ⁻	16	-	- 1197	-	-
Stage 1	485	488	-		583	567	-		-	-	. <u>-</u>	-	-
Stage 2	560	561	-		419	486	-		-	-	-	-	-
Platoon blocked, %										-	-	-	-
Mov Cap-1 Maneuver	153	199	537		86	201	696	10 ⁻	16	-	- 1197	-	-
Mov Cap-2 Maneuver	153	199	-		86	201	-		-	-	-	-	-
Stage 1	452	471	-		543	528	-		-	-	-	-	-
Stage 2	469	523	-		230	469	-		-	-	-	-	-
Approach	EB				WB			N	IB		SB		
HCM Control Delay, s	27.4				30.4				.2		0.4		
HCM LOS	D				D								
Minor Lane/Major Mvmt	NBL	NBT	NDD	EBLn1W	RI n1	SBL	SBT	SBR					
Capacity (veh/h)	1016	IND I	NDR	411	223		<u> </u>	ODIN					
HCM Lane V/C Ratio	0.054	-	-	0.627			-	-					
HCM Control Delay (s)	8.7	0	-	27.4	30.4	8.1	0	-					
HCM Lane LOS	Α.	A	<u>-</u>	27.4 D	D	Α	A	<u>-</u>					
HCM 95th %tile Q(veh)	0.2	-	-	4.2	1.6	0.1	-	-					
HOW SOLL WILL CONTROL	0.2	-	-	٦.۷	1.0	0.1	-	-					

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT Lane Configurations 1111 1115	382 1900 0 1 1.00 0.95 0.850 1568
Volume (vph) 280 1436 113 179 1626 47 372 94 284 220 73 Ideal Flow (vphpl) 1900	382 1900 0 1 1.00 0.95 0.850
Volume (vph) 280 1436 113 179 1626 47 372 94 284 220 73 Ideal Flow (vphpl) 1900	1900 0 1 1.00 0.95 0.850
Ideal Flow (vphpl) 1900 <td>1.00 0.95 0.850</td>	1.00 0.95 0.850
Storage Length (ft) 600 0 300 0 0 150 250 Storage Lanes 1 0 2 0 1 1 1 Taper Length (ft) 25 25 25 25 25 Lane Util. Factor 1.00 0.86 0.97 0.91 0.91 0.95 0.95 1.00 0.95 Ped Bike Factor 1.00 1.00 0.996 0.850 0.850	1 1.00 0.95 0.850 1568
Storage Lanes 1 0 2 0 1 1 1 Taper Length (ft) 25 25 25 25 25 Lane Util. Factor 1.00 0.86 0.97 0.91 0.91 0.95 0.95 1.00 0.95 0.95 Ped Bike Factor 1.00 1.00 0.96 0.850 0.850	1 1.00 0.95 0.850 1568
Taper Length (ft) 25 25 25 25 Lane Util. Factor 1.00 0.86 0.86 0.97 0.91 0.91 0.95 0.95 1.00 0.95 0.95 Ped Bike Factor 1.00 1.00 0.86 Frt 0.989 0.996 0.850	0.95 0.850 1568
Lane Util. Factor 1.00 0.86 0.86 0.97 0.91 0.91 0.95 0.95 1.00 0.95 0.95 Ped Bike Factor 1.00 1.00 0.86 Frt 0.989 0.996 0.850	0.95 0.850 1568
Ped Bike Factor 1.00 1.00 0.86 Frt 0.989 0.996 0.850	0.850 1568
Frt 0.989 0.996 0.850	0.850 1568
TUB 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Fit Protected 0.950 0.950 0.971 0.950 0.975	
Satd. Flow (prot) 1752 6269 0 3400 5013 0 1665 1702 1568 1665 1709	
Flt Permitted 0.049 0.950 0.950 0.971 0.950 0.975	1/102
Satd. Flow (perm) 90 6269 0 3400 5013 0 1665 1702 1348 1665 1709	1400
Right Turn on Red Yes Yes Yes	Yes
Satd. Flow (RTOR) 11 3 76	110
Link Speed (mph) 45 45 30 30	
Link Distance (ft) 1975 1327 562 486	
Travel Time (s) 29.9 20.1 12.8 11.0	
Confl. Peds. (#/hr) 1 1 80	27
Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95	0.95
Adj. Flow (vph) 295 1512 119 188 1712 49 392 99 299 232 77	402
Shared Lane Traffic (%) 38% 34%	
Lane Group Flow (vph) 295 1631 0 188 1761 0 243 248 299 153 156	402
Enter Blocked Intersection No	No
Lane Alignment Left Left Right Left Right Left Left Right Left Left	Right
Median Width(ft) 24 24 12 12	J
Link Offset(ft) 0 0 0	
Crosswalk Width(ft) 10 10 10 10	
Two way Left Turn Lane	
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00
Turning Speed (mph) 15 9 15 9 15	9
	pm+ov
Protected Phases 5 2 1 6 8 8 1 4 4	5
Permitted Phases 2 8	4
Detector Phase 5 2 1 6 8 8 1 4 4	5
Switch Phase	
Minimum Initial (s) 5.0 7.0 5.0 7.0 7.0 5.0 7.0 7.0	5.0
Minimum Split (s) 11.8 31.8 11.8 31.8 40.6 40.6 11.8 41.6 41.6	11.8
Total Split (s) 16.0 73.8 24.0 81.8 40.6 40.6 24.0 41.6 41.6	16.0
Total Split (%) 8.9% 41.0% 13.3% 45.4% 22.6% 22.6% 13.3% 23.1% 23.1%	8.9%
Maximum Green (s) 9.2 67.0 17.2 75.0 33.0 33.0 17.2 34.0 34.0	9.2
Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.0 4.0 4.0	4.8
All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6	2.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0
Total Lost Time (s) 6.8 6.8 6.8 7.6 7.6 6.8 7.6 7.6	6.8
Lead/Lag Lead Lag Lead Lag Lead	Lead
Lead-Lag Optimize?	
Vehicle Extension (s) 2.0 2.5 2.0 2.5 2.5 2.0 5.0 5.0	2.0
Recall Mode None C-Max None C-Max None None None None None	None

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	98.4	82.6		14.1	75.0		30.6	30.6	45.4	24.0	24.0	46.4
Actuated g/C Ratio	0.55	0.46		0.08	0.42		0.17	0.17	0.25	0.13	0.13	0.26
v/c Ratio	1.18	0.57		0.71	0.84		0.86	0.86	0.72	0.69	0.69	0.85
Control Delay	162.5	38.1		95.5	51.8		99.4	98.9	51.1	89.9	89.2	46.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	162.5	38.1		95.5	51.8		99.4	98.9	51.1	89.9	89.2	46.1
LOS	F	D		F	D		F	F	D	F	F	D
Approach Delay		57.2			56.0			81.0			65.0	
Approach LOS		E			Е			F			E	

Area Type: Other

Cycle Length: 180 Actuated Cycle Length: 180

Offset: 127 (71%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.18 Intersection Signal Delay: 61.3 Intersection Capacity Utilization 102.7%

Intersection LOS: E
ICU Level of Service G

Analysis Period (min) 15



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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	295	1631	188	1761	243	248	299	153	156	402	
v/c Ratio	1.18	0.57	0.71	0.84	0.86	0.86	0.72	0.69	0.69	0.85	
Control Delay	162.5	38.1	95.5	51.8	99.4	98.9	51.1	89.9	89.2	46.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	162.5	38.1	95.5	51.8	99.4	98.9	51.1	89.9	89.2	46.1	
Queue Length 50th (ft)	~372	407	113	682	295	302	227	185	188	219	
Queue Length 95th (ft)	#741	514	158	745	405	412	318	263	266	#476	
Internal Link Dist (ft)		1895		1247		482			406		
Turn Bay Length (ft)	600		300				150	250			
Base Capacity (vph)	249	2882	324	2090	315	322	440	314	322	474	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.18	0.57	0.58	0.84	0.77	0.77	0.68	0.49	0.48	0.85	

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	†††ĵ∌		44	^		7	ર્ન	7	7	ર્ન	7
Volume (veh/h)	280	1436	113	179	1626	47	372	94	284	220	73	382
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	295	1512	119	188	1712	49	246	304	299	154	185	402
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	2426	191	226	2097	60	322	338	354	332	348	364
Arrive On Green	0.05	0.40	0.40	0.07	0.42	0.42	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1757	6044	475	3408	5032	144	1757	1845	1363	1757	1845	1501
Grp Volume(v), veh/h	295	1190	441	188	1142	619	246	304	299	154	185	402
Grp Sat Flow(s),veh/h/ln	1757	1586	1760	1704	1679	1819	1757	1845	1363	1757	1845	1501
Q Serve(g_s), s	9.2	35.9	36.0	9.8	54.1	54.2	23.9	29.0	33.0	14.0	16.3	34.0
Cycle Q Clear(g_c), s	9.2	35.9	36.0	9.8	54.1	54.2	23.9	29.0	33.0	14.0	16.3	34.0
Prop In Lane	1.00		0.27	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	1910	707	226	1399	758	322	338	354	332	348	364
V/C Ratio(X)	1.83	0.62	0.62	0.83	0.82	0.82	0.76	0.90	0.84	0.46	0.53	1.11
Avail Cap(c_a), veh/h	161	1910	707	326	1399	758	322	338	354	332	348	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	43.0	43.0	83.0	46.4	46.4	69.8	71.9	64.9	64.9	65.8	68.6
Incr Delay (d2), s/veh	398.6	1.5	4.1	7.9	5.4	9.5	10.0	25.3	16.5	2.2	2.9	78.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	38.4	22.6	25.3	8.5	34.5	38.0	18.3	23.9	22.4	11.3	13.4	46.8
LnGrp Delay(d),s/veh	443.7	44.6	47.2	90.9	51.8	55.9	79.8	97.1	81.4	67.1	68.7	147.3
LnGrp LOS	F	D	D	F	D	Е	Е	F	F	Е	Е	F
Approach Vol, veh/h		1926			1949			849			741	
Approach Delay, s/veh		106.3			56.9			86.6			111.0	
Approach LOS		F			E			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.8	79.0		41.6	16.0	81.8		40.6				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	17.2	67.0		34.0	9.2	75.0		33.0				
Max Q Clear Time (g_c+l1), s	11.8	38.0		36.0	11.2	56.2		35.0				
Green Ext Time (p_c), s	0.1	23.1		0.0	0.0	16.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			86.2									
HCM 2010 LOS			60.2 F									
Notes			ı									

Notes

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	9	13	165	29	58	35	77	327	17	33	481	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.881			0.961			0.995			0.993	
Flt Protected		0.998			0.988			0.991			0.997	
Satd. Flow (prot)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
FIt Permitted		0.998			0.988			0.991			0.997	
Satd. Flow (perm)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	14	174	31	61	37	81	344	18	35	506	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	0	0	129	0	0	443	0	0	569	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
•	Other											
Control Type: Unsignalized												

Control Type: Unsignalized

Intersection Capacity Utilization 68.5%

ICU Level of Service C

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	10.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	13	165	29	58	35	77	327	17	33	481	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	·-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage,	# -	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	14	174	31	61	37	81	344	18	35	506	28
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1154	1114	521	1199	1119	353	535	0	0	362	0	0
Stage 1	590	590	_	515	515	-	-	-	_	-	-	-
Stage 2	564	524	-	684	604	-	-	-	-	-	-	_
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	_
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	173	207	553	161	206	688	1028	-	-	1191	-	-
Stage 1	492	493	-	541	533	-	-	-	-	-	-	-
Stage 2	509	528	-	437	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	108	179	553	93	178	688	1028	-	-	1191	-	-
Mov Cap-2 Maneuver	108	179	-	93	178	-	-	-	-	-	-	-
Stage 1	443	472	-	487	480	-	-	-	-	-	-	-
Stage 2	379	476	-	279	466	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	21.5			65.8			1.6			0.5		
HCM LOS	C			F						0.0		
0 0												
Minor Lane/Major Mvmt	NBL	NBT	NBR I	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1028	-	-	412 177		-	-					
HCM Lane V/C Ratio	0.079	_	-	0.478 0.726		_						
HCM Control Delay (s)	8.8	0	-	21.5 65.8	8.1	0	-					
HCM Lane LOS	A	A	-	C F		A	-					
HCM 95th %tile Q(veh)	0.3	-	-	2.5 4.5		-	-					
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4111		44	ተተሱ		*	ર્ન	7	*	ર્ન	7
Volume (vph)	344	1792	385	341	1523	88	41	30	33	317	105	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	300		0	0		150	250		0
Storage Lanes	1		0	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor		1.00			1.00				0.90			0.95
Frt		0.973			0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.992		0.950	0.975	
Satd. Flow (prot)	1752	6159	0	3400	4990	0	1665	1738	1568	1665	1709	1568
FIt Permitted	0.055			0.950			0.950	0.992		0.950	0.975	
Satd. Flow (perm)	101	6159	0	3400	4990	0	1665	1738	1418	1665	1709	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			5				110			300
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1975			1327			562			486	
Travel Time (s)		29.9			20.1			12.8			11.0	
Confl. Peds. (#/hr)			1			1			52			25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	362	1886	405	359	1603	93	43	32	35	334	111	485
Shared Lane Traffic (%)	002	1000	100	000	1000		15%			34%		.00
Lane Group Flow (vph)	362	2291	0	359	1696	0	37	38	35	220	225	485
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		. •						. •			. •	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Prot	NA		Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8	1	4	4	5
Permitted Phases	2	_							8	•	•	4
Detector Phase	5	2		1	6		8	8	1	4	4	5
Switch Phase									•		•	
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0	5.0	7.0	7.0	5.0
Minimum Split (s)	11.8	31.8		11.8	31.8		40.6	40.6	11.8	41.6	41.6	11.8
Total Split (s)	35.0	75.8		22.0	62.8		40.6	40.6	22.0	41.6	41.6	35.0
Total Split (%)	19.4%	42.1%		12.2%	34.9%		22.6%	22.6%	12.2%	23.1%	23.1%	19.4%
Maximum Green (s)	28.2	69.0		15.2	56.0		33.0	33.0	15.2	34.0	34.0	28.2
Yellow Time (s)	4.8	4.8		4.8	4.8		4.0	4.0	4.8	4.0	4.0	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.6	3.6	2.0	3.6	3.6	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.6	7.6	6.8	7.6	7.6	6.8
Lead/Lag	Lead	Lag		Lead	Lag		7.0	7.0	Lead	1.0	7.0	Lead
Lead-Lag Optimize?	Leau	Lay		Leau	Lay				Leau			Leau
	2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Vehicle Extension (s)												2.0
Recall Mode	ivoné	C-Max		None	C-Max		None	None	None	None	None	None

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	121.8	84.3		30.7	67.8		9.3	9.3	39.2	29.8	29.8	77.8
Actuated g/C Ratio	0.68	0.47		0.17	0.38		0.05	0.05	0.22	0.17	0.17	0.43
v/c Ratio	0.72	0.79		0.62	0.90		0.44	0.43	0.08	0.80	0.80	0.58
Control Delay	57.3	43.2		75.2	60.0		97.5	96.5	0.4	92.8	92.2	11.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	43.2		75.2	60.0		97.5	96.5	0.4	92.8	92.2	11.5
LOS	Е	D		Ε	Ε		F	F	Α	F	F	В
Approach Delay		45.2			62.7			66.3			50.3	
Approach LOS		D			Ε			Е			D	

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 68 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

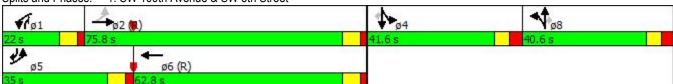
Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 52.7 Intersection LOS: D
Intersection Capacity Utilization 103.6% ICU Level of Service G

Analysis Period (min) 15



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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	362	2291	359	1696	37	38	35	220	225	485	
v/c Ratio	0.72	0.79	0.62	0.90	0.44	0.43	0.08	0.80	0.80	0.58	
Control Delay	57.3	43.2	75.2	60.0	97.5	96.5	0.4	92.8	92.2	11.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.3	43.2	75.2	60.0	97.5	96.5	0.4	92.8	92.2	11.5	
Queue Length 50th (ft)	348	663	209	697	45	47	0	264	269	121	
Queue Length 95th (ft)	472	756	268	#914	91	92	0	368	375	179	
Internal Link Dist (ft)		1895		1247		482			406		
Turn Bay Length (ft)	600		300				150	250			
Base Capacity (vph)	500	2902	580	1883	305	318	420	314	322	834	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.72	0.79	0.62	0.90	0.12	0.12	0.08	0.70	0.70	0.58	
Intersection Summary											

^{# 95}th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	###		77	^		1	ર્ન	7	*	ર્લ	7
Volume (veh/h)	344	1792	385	341	1523	88	41	30	33	317	105	461
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.89	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	362	1886	405	359	1603	93	38	40	35	222	267	485
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	324	2224	476	288	1702	99	255	267	335	332	348	530
Arrive On Green	0.16	0.42	0.42	0.08	0.35	0.35	0.14	0.14	0.14	0.19	0.19	0.19
Sat Flow, veh/h	1757	5275	1129	3408	4869	282	1757	1845	1399	1757	1845	1506
Grp Volume(v), veh/h	362	1701	590	359	1105	591	38	40	35	222	267	485
Grp Sat Flow(s),veh/h/ln	1757	1586	1644	1704	1679	1794	1757	1845	1399	1757	1845	1506
Q Serve(g_s), s	28.2	57.9	58.2	15.2	57.4	57.5	3.4	3.4	3.6	21.1	24.7	34.0
Cycle Q Clear(g_c), s	28.2	57.9	58.2	15.2	57.4	57.5	3.4	3.4	3.6	21.1	24.7	34.0
Prop In Lane	1.00		0.69	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	2007	694	288	1173	627	255	267	335	332	348	530
V/C Ratio(X)	1.12	0.85	0.85	1.25	0.94	0.94	0.15	0.15	0.10	0.67	0.77	0.91
Avail Cap(c_a), veh/h	324	2007	694	288	1173	627	322	338	389	332	348	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.7	46.8	46.9	82.4	56.8	56.8	67.3	67.3	54.8	67.8	69.2	56.7
Incr Delay (d2), s/veh	85.7	4.7	12.5	136.9	15.6	24.3	0.2	0.2	0.1	6.8	11.4	21.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	42.9	34.6	37.6	22.7	38.1	42.2	3.0	3.2	2.5	16.3	19.8	34.7
LnGrp Delay(d),s/veh	146.4	51.5	59.4	219.3	72.3	81.0	67.5	67.4	54.9	74.5	80.7	78.0
LnGrp LOS	F	D	E	F	E	F	E	E	D	E	F	E
Approach Vol, veh/h		2653			2055			113			974	
Approach Delay, s/veh		66.2			100.5			63.6			78.0	
Approach LOS		Е			F			Е			Е	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	82.7		41.6	35.0	69.7		33.7				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	15.2	69.0		34.0	28.2	56.0		33.0				
Max Q Clear Time (g_c+l1), s	17.2	60.2		36.0	30.2	59.5		5.6				
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	0.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			80.3									
HCM 2010 LOS			F									
Notes												

Notes

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	25	16	252	20	23	51	62	379	24	32	611	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.884			0.926			0.993			0.998	
Flt Protected		0.996			0.990			0.993			0.998	
Satd. Flow (prot)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
Flt Permitted		0.996			0.990			0.993			0.998	
Satd. Flow (perm)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	17	265	21	24	54	65	399	25	34	643	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	308	0	0	99	0	0	489	0	0	689	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											

Control Type: Unsignalized

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

Intersection													
Int Delay, s/veh	20.6												
Movement	EBL	EBT	EBR	1	WBL	WBT	WBR	NE	BL NB	NBR	SBL	SBT	SBR
Vol, veh/h	25	16	252		20	23	51		379		32	611	11
Conflicting Peds, #/hr	0	0	0		0	0	0		0 (0	0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Fre	e Free	Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	- None	-	-	None
Storage Length	-	-	-		-	-	-		-		-	-	-
Veh in Median Storage,	# -	0	-		-	0	-		- () -	-	0	-
Grade, %	-	0	-		-	0	-) -	-	0	-
Peak Hour Factor	95	95	95		95	95	95	Ç	95		95	95	95
Heavy Vehicles, %	3	3	3		3	3	3			3	3	3	3
Mvmt Flow	26	17	265		21	24	54	(55 399	25	34	643	12
Major/Minor	Minor2			Mi	inor1			Majo	r1		Major2		
Conflicting Flow All	1297	1271	649		1399	1264	412	65) 0	424	0	0
Stage 1	716	716	-		542	542	-	-			-	-	-
Stage 2	581	555	-		857	722	-		-		-	-	_
Critical Hdwy	7.13	6.53	6.23		7.13	6.53	6.23	4.1	3		4.13	-	_
Critical Hdwy Stg 1	6.13	5.53	-		6.13	5.53	-		-		-	-	-
Critical Hdwy Stg 2	6.13	5.53	-		6.13	5.53	-		-		-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3	3.527	4.027	3.327	2.22	27		2.227	-	_
Pot Cap-1 Maneuver	138	167	468		117	169	638	92	27		1130	-	_
Stage 1	420	433	-		523	519	-		-		-	-	-
Stage 2	498	512	-		351	430	-		-		-	-	-
Platoon blocked, %												-	-
Mov Cap-1 Maneuver	99	145	468		41	146	638	92	27		1130	-	-
Mov Cap-2 Maneuver	99	145	-		41	146	-		-		-	-	-
Stage 1	381	413	-		475	471	-		-		-	-	-
Stage 2	393	465	-		139	410	-		-		-	-	-
Approach	EB				WB			N	В		SB		
HCM Control Delay, s	74.3				90.2				.2		0.4		
HCM LOS	F				F						.		
Minor Lane/Major Mvmt	NBL	NBT	NRR	EBLn1W	RI n1	SBL	SBT	SBR					
Capacity (veh/h)	927	-	- 11011	325	130	1130	-	-					
HCM Lane V/C Ratio	0.07	_	_	0.949 0		0.03	_						
HCM Control Delay (s)	9.2	0	_		90.2	8.3	0	<u>-</u>					
HCM Lane LOS	Α.Δ	A	_	7 - .5	F	Α	A	_					
HCM 95th %tile Q(veh)	0.2	-	<u>-</u>	9.8	4.5	0.1	-	<u>-</u>					
	0.2			0.0	1.0	0.1							

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	4111		1/4	ተተሱ		*	ર્ન	7	*	ર્ન	7
Volume (vph)	334	1714	135	214	1942	56	444	112	339	263	87	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	300		0	0		150	250		0
Storage Lanes	1		0	2		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	0.95	0.95	1.00
Ped Bike Factor		1.00			1.00				0.83			0.94
Frt		0.989			0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.971		0.950	0.975	
Satd. Flow (prot)	1752	6269	0	3400	5013	0	1665	1702	1568	1665	1709	1568
Flt Permitted	0.054			0.950			0.950	0.971		0.950	0.975	
Satd. Flow (perm)	100	6269	0	3400	5013	0	1665	1702	1308	1665	1709	1471
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			3				69			110
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1975			1327			562			486	
Travel Time (s)		29.9			20.1			12.8			11.0	
Confl. Peds. (#/hr)			1			1			96			32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	352	1804	142	225	2044	59	467	118	357	277	92	481
Shared Lane Traffic (%)							38%			34%		
Lane Group Flow (vph)	352	1946	0	225	2103	0	290	295	357	183	186	481
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		Prot	NA		Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8	1	4	4	5
Permitted Phases	2								8			4
Detector Phase	5	2		1	6		8	8	1	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0	5.0	7.0	7.0	5.0
Minimum Split (s)	11.8	31.8		11.8	31.8		40.6	40.6	11.8	41.6	41.6	11.8
Total Split (s)	16.0	73.8		24.0	81.8		40.6	40.6	24.0	41.6	41.6	16.0
Total Split (%)	8.9%	41.0%		13.3%	45.4%		22.6%	22.6%	13.3%	23.1%	23.1%	8.9%
Maximum Green (s)	9.2	67.0		17.2	75.0		33.0	33.0	17.2	34.0	34.0	9.2
Yellow Time (s)	4.8	4.8		4.8	4.8		4.0	4.0	4.8	4.0	4.0	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.6	3.6	2.0	3.6	3.6	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.6	7.6	6.8	7.6	7.6	6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None

1: SW 109th Avenue & SW 8th Street

	•	-	-	6	•	•	4	†	-	-	1	4
		100357	10.00	3354.56			8000	300	2000		2000	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	86.3	73.9		15.3	75.0		35.1	35.1	51.2	26.9	26.9	41.9
Actuated g/C Ratio	0.48	0.41		0.08	0.42		0.20	0.20	0.28	0.15	0.15	0.23
v/c Ratio	1.98	0.75		0.78	1.01		0.90	0.89	0.81	0.73	0.73	1.11
Control Delay	488.5	48.5		98.9	72.5		98.7	97.6	58.9	89.9	88.9	108.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	488.5	48.5		98.9	72.5		98.7	97.6	58.9	89.9	88.9	108.4
LOS	F	D		F	Е		F	F	Е	F	F	F
Approach Delay		115.9			75.1			83.3			100.2	
Approach LOS		F			E			F			F	

Intersection Summary

Area Type: Other

Cycle Length: 180 Actuated Cycle Length: 180

Offset: 127 (71%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.98 Intersection Signal Delay: 94.2 Intersection Capacity Utilization 114.6%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15



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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	352	1946	225	2103	290	295	357	183	186	481	
v/c Ratio	1.98	0.75	0.78	1.01	0.90	0.89	0.81	0.73	0.73	1.11	
Control Delay	488.5	48.5	98.9	72.5	98.7	97.6	58.9	89.9	88.9	108.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	488.5	48.5	98.9	72.5	98.7	97.6	58.9	89.9	88.9	108.4	
Queue Length 50th (ft)	~664	600	136	~921	345	351	284	220	223	~480	
Queue Length 95th (ft)	#885	651	186	#1030	#569	#573	#423	308	309	#666	
Internal Link Dist (ft)		1895		1247		482			406		
Turn Bay Length (ft)	600		300				150	250			
Base Capacity (vph)	178	2578	324	2090	329	336	458	314	322	434	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.98	0.75	0.69	1.01	0.88	0.88	0.78	0.58	0.58	1.11	

Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.

^{# 95}th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	###		1	^		7	્રની	7	7	ની	7
Volume (veh/h)	334	1714	135	214	1942	56	444	112	339	263	87	457
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	352	1804	142	225	2044	59	292	362	357	184	221	481
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	2361	186	263	2096	60	322	338	363	332	348	361
Arrive On Green	0.05	0.39	0.39	0.08	0.42	0.42	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1757	6044	476	3408	5031	145	1757	1845	1322	1757	1845	1488
Grp Volume(v), veh/h	352	1421	525	225	1363	740	292	362	357	184	221	481
Grp Sat Flow(s),veh/h/ln	1757	1586	1760	1704	1679	1819	1757	1845	1322	1757	1845	1488
Q Serve(g_s), s	9.2	46.7	46.7	11.7	71.7	72.1	29.3	33.0	33.0	17.1	19.9	34.0
Cycle Q Clear(g_c), s	9.2	46.7	46.7	11.7	71.7	72.1	29.3	33.0	33.0	17.1	19.9	34.0
Prop In Lane	1.00		0.27	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1859	688	263	1399	758	322	338	363	332	348	361
V/C Ratio(X)	2.65	0.76	0.76	0.86	0.97	0.98	0.91	1.07	0.98	0.55	0.63	1.33
Avail Cap(c_a), veh/h	133	1859	688	326	1399	758	322	338	363	332	348	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	47.6	47.6	82.1	51.5	51.6	72.0	73.5	67.0	66.1	67.3	68.6
Incr Delay (d2), s/veh	762.8	3.0	7.9	14.4	18.6	27.5	27.6	68.9	42.5	3.5	5.3	167.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	62.6	28.4	32.2	10.1	46.9	52.6	23.5	41.9	29.6	13.4	16.0	62.5
LnGrp Delay(d),s/veh	814.1	50.7	55.5	96.5	70.2	79.2	99.6	142.4	109.5	69.6	72.5	235.6
LnGrp LOS	F	D	Е	F	Е	Е	F	F	F	Е	Е	F
Approach Vol, veh/h		2298			2328			1011			886	
Approach Delay, s/veh		168.7			75.6			118.4			160.5	
Approach LOS		F			Е			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.7	77.1		41.6	16.0	81.8		40.6				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	17.2	67.0		34.0	9.2	75.0		33.0				
Max Q Clear Time (g_c+l1), s	13.7	48.7		36.0	11.2	74.1		35.0				
Green Ext Time (p_c), s	0.1	17.0		0.0	0.0	0.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			126.6									
HCM 2010 LOS			F									
Notes												

Notes

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	11	16	197	35	69	42	92	390	20	39	575	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.882			0.961			0.995			0.993	
Flt Protected		0.997			0.988			0.991			0.997	
Satd. Flow (prot)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
Flt Permitted		0.997			0.988			0.991			0.997	
Satd. Flow (perm)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	17	207	37	73	44	97	411	21	41	605	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	236	0	0	154	0	0	529	0	0	680	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											

Control Type: Unsignalized

Intersection Capacity Utilization 80.6%

ICU Level of Service D

Analysis Period (min) 15

Intersection														
Int Delay, s/veh	36.5													
Movement	EBL	EBT	EBR	١	WBL	WBT	WBR	1	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	16	197		35	69	42		92	390	20	39	575	32
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	;	Stop	Stop	Stop	F	ree	Free	Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None	-	-	None
Storage Length	-	-	-		-	-	-		-	-	-	-	-	-
Veh in Median Storage,	# -	0	-		-	0	-		-	0	-	-	0	-
Grade, %	-	0	-		-	0	-		-	0	-	-	0	-
Peak Hour Factor	95	95	95		95	95	95		95	95	95	95	95	95
Heavy Vehicles, %	3	3	3		3	3	3		3	3	3	3	3	3
Mvmt Flow	12	17	207		37	73	44		97	411	21	41	605	34
Major/Minor	Minor2			Mi	inor1			Ma	ior1			Major2		
Conflicting Flow All	1377	1329	622		1431	1336	421		639	0	0	432	0	0
Stage 1	704	704	-		615	615	741		-	-	-	-102	-	_
Stage 2	673	625	_		816	721	_		_	_	_	_	_	_
Critical Hdwy	7.13	6.53	6.23		7.13	6.53	6.23		1.13	_	_	4.13	_	_
Critical Hdwy Stg 1	6.13	5.53	-		6.13	5.53	-	'	-	_	_	-		_
Critical Hdwy Stg 2	6.13	5.53	_		6.13	5.53	_		_	_	_	_	_	_
Follow-up Hdwy	3.527	4.027	3.327		3.527		3.327	2.	227	_	_	2.227	_	_
Pot Cap-1 Maneuver	122	154	485	·	112	153	630		940	-	_	1122	_	_
Stage 1	426	438	-		477	481	-		_	_	-	-	-	_
Stage 2	443	476	-		369	430	-		-	_	_	_	_	_
Platoon blocked, %										-	-		-	-
Mov Cap-1 Maneuver	53	125	485		49	125	630		940	-	-	1122	-	_
Mov Cap-2 Maneuver	53	125	-		49	125	-		-	-	_	-	-	-
Stage 1	368	413	-		412	416	-		-	-	-	-	-	-
Stage 2	294	411	-		191	405	-		-	-	-	-	-	-
Approach	EB				WB				NB			SB		
	49			2	296.1				1.7			0.5		
HCM LOS	49 E				.90.1 F				1.7			0.5		
HCM LOS	E				Г									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WE		SBL	SBT	SBR						
Capacity (veh/h)	940	-	-			1122	-	-						
HCM Lane V/C Ratio	0.103	-	-	0.781 1			-	-						
HCM Control Delay (s)	9.3	0	-	49 2		8.3	0	-						
HCM Lane LOS	Α	Α	-	Е	F	Α	Α	-						
HCM 95th %tile Q(veh)	0.3	-	-	6.1	10.8	0.1	-	-						

Lane Configurations		۶	-	•	1	+	•	4	1	~	/	ļ	1
Volume (vph) 288 1501 322 286 1276 74 34 25 28 266 88 386 Ideal Flow (vphpl) 1900	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph) 288 1501 322 286 1276 74 34 25 28 266 88 386 Ideal Flow (vphpl) 1900	Lane Configurations	7	tttt ₂		1/2	^		*	ર્લ	7		ર્લ	7
Storage Length (fft) 600 0 300 0 0 150 250 0 0 1 1 1 0 0 1 1	Volume (vph)	288		322			74			28	266		386
Storage Lanes	Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Taper Length (ft)	Storage Length (ft)	600		0	300		0	0		150	250		0
Taper Length (ft)	Storage Lanes	1		0	2		0	1		1	0		1
Ped Bike Factor		25			25			25			25		
Fith	Lane Util. Factor	1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fit Protected 0.950 0.950 0.950 0.991 0.964	Ped Bike Factor		1.00			1.00				0.92			0.96
Satd. Flow (prot) 1752 6165 0 3400 4990 0 1665 1737 1568 0 1778 1568 Fit Permitted 0.089 0.950 0.950 0.991 0.964 0.964 Satd. Flow (perm) 164 6165 0 3400 4990 0 1665 1737 1441 0 1778 1498 Right Turn on Red Yes Yes Yes Yes Yes Yes Yes Satd. Flow (RTOR) 35 5 5 110 317 1441 0 1778 1498 Link Speed (mph) 45 45 30 30 30 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317 110 317	Frt		0.974			0.992				0.850			0.850
Fit Permitted 0.089	Flt Protected	0.950			0.950			0.950	0.991			0.964	
Satd. Flow (perm) 164 6165 0 3400 4990 0 1665 1737 1441 0 1778 1498 Right Turn on Red Yes Yes Yes Yes Yes Yes Yes Satd. Flow (RTOR) 35 5 5 110 317 Link Speed (mph) 45 45 30 30 Link Distance (ft) 1975 1327 562 486 Travel Time (s) 29.9 20.1 12.8 11.0 Confl. Peds. (#/hr) 1 1 43 21 Peak Hour Factor 0.95 <td>Satd. Flow (prot)</td> <td>1752</td> <td>6165</td> <td>0</td> <td>3400</td> <td>4990</td> <td>0</td> <td>1665</td> <td>1737</td> <td>1568</td> <td>0</td> <td>1778</td> <td>1568</td>	Satd. Flow (prot)	1752	6165	0	3400	4990	0	1665	1737	1568	0	1778	1568
Right Turn on Red Yes Add Tex Add Period Add Texe	Flt Permitted	0.089			0.950			0.950	0.991			0.964	
Satd. Flow (RTOR) 35 5 110 317 Link Speed (mph) 45 45 30 30 Link Distance (ft) 1975 1327 562 486 Travel Time (s) 29.9 20.1 12.8 11.0 Confl. Peds. (#/hr) 1 1 43 21 Peak Hour Factor 0.95 <td>Satd. Flow (perm)</td> <td>164</td> <td>6165</td> <td>0</td> <td>3400</td> <td>4990</td> <td>0</td> <td>1665</td> <td>1737</td> <td>1441</td> <td>0</td> <td>1778</td> <td>1498</td>	Satd. Flow (perm)	164	6165	0	3400	4990	0	1665	1737	1441	0	1778	1498
Link Speed (mph) 45 45 30 30 Link Distance (ft) 1975 1327 562 486 Travel Time (s) 29.9 20.1 12.8 11.0 Confl. Peds. (#/hr) 1 1 43 21 Peak Hour Factor 0.95	Right Turn on Red			Yes			Yes			Yes			Yes
Link Distance (ft) 1975 1327 562 486 Travel Time (s) 29.9 20.1 12.8 11.0 Confl. Peds. (#/hr) 1 1 43 21 Peak Hour Factor 0.95	Satd. Flow (RTOR)		35			5				110			317
Link Distance (ft) 1975 1327 562 486 Travel Time (s) 29.9 20.1 12.8 11.0 Confl. Peds. (#/hr) 1 1 1 43 21 Peak Hour Factor 0.95	Link Speed (mph)		45			45			30			30	
Confl. Peds. (#/hr) 1 1 43 21 Peak Hour Factor 0.95 <td></td> <td></td> <td>1975</td> <td></td> <td></td> <td>1327</td> <td></td> <td></td> <td>562</td> <td></td> <td></td> <td>486</td> <td></td>			1975			1327			562			486	
Peak Hour Factor 0.95	Travel Time (s)		29.9			20.1			12.8			11.0	
Peak Hour Factor 0.95	Confl. Peds. (#/hr)			1			1			43			21
Shared Lane Traffic (%) Lane Group Flow (vph) 303 1919 0 301 1421 0 30 32 29 0 373 406 Enter Blocked Intersection No No<		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%) Lane Group Flow (vph) 303 1919 0 301 1421 0 30 32 29 0 373 406 Enter Blocked Intersection No No </td <td></td>													
Lane Group Flow (vph) 303 1919 0 301 1421 0 30 32 29 0 373 406 Enter Blocked Intersection No													
Enter Blocked Intersection No		303	1919	0	301	1421	0		32	29	0	373	406
Lane AlignmentLeftLeftRightLeftRightLeftLeftRightLeftLeftRightMedian Width(ft)24241212Link Offset(ft)0000Crosswalk Width(ft)10101010Two way Left Turn Lane		No	No	No	No	No	No	No	No	No	No	No	No
Median Width(ft) 24 24 12 12 Link Offset(ft) 0 0 0 0 Crosswalk Width(ft) 10 10 10 10 Two way Left Turn Lane 10 10 10 10													
Link Offset(ft) 0 0 0 0 Crosswalk Width(ft) 10 10 10 10 Two way Left Turn Lane 10 10 10 10			24			24			12			12	
Crosswalk Width(ft) 10 10 10 10 Two way Left Turn Lane			0			0			0			0	
Two way Left Turn Lane	. ,		10			10			10			10	
	` '												
	Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph) 15 9 15 9 15 9	•	15		9	15		9	15		9	15		
Turn Type pm+pt NA Prot NA Split NA pm+ov Split NA pm+ov			NA			NA		Split	NA	pm+ov		NA	pm+ov
Protected Phases 5 2 1 6 8 8 1 4 4 5					1	6				•	•		•
Permitted Phases 2 8 4	Permitted Phases	2								8			4
Detector Phase 5 2 1 6 8 8 1 4 4 5		5	2		1	6		8	8	1	4	4	5
Switch Phase													
Minimum Initial (s) 5.0 7.0 5.0 7.0 7.0 5.0 7.0 5.0 5.0		5.0	7.0		5.0	7.0		7.0	7.0	5.0	7.0	7.0	5.0
Minimum Split (s) 11.8 31.8 11.8 31.8 40.6 40.6 11.8 41.6 41.6 11.8	. ,												
Total Split (s) 35.0 75.8 22.0 62.8 40.6 40.6 22.0 41.6 41.6 35.0	,												
Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4%					12.2%	34.9%		22.6%	22.6%	12.2%	23.1%		
Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2													
Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.0 4.0 4.8	. ,												
All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0	()												
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	, ,												
Total Lost Time (s) 6.8 6.8 6.8 7.6 7.6 6.8 7.6 6.8													
Lead/Lag Lead Lag Lead Lead Lead													
Lead-Lag Optimize?			3			3							
Vehicle Extension (s) 2.0 2.5 2.0 2.5 2.5 2.0 5.0 5.0 2.0	<u> </u>	2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Recall Mode None C-Max None C-Max None None None None None None													

	•	_	~		•	*	4	†	-	-	1	1
			1.00				5000	504.00	10000		200	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	116.9	87.9		23.6	79.0		8.7	8.7	31.5		34.0	67.2
Actuated g/C Ratio	0.65	0.49		0.13	0.44		0.05	0.05	0.18		0.19	0.37
v/c Ratio	0.77	0.63		0.68	0.65		0.38	0.39	0.08		1.11	0.53
Control Delay	53.6	35.4		82.8	42.9		95.8	95.7	0.4		146.7	8.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	53.6	35.4		82.8	42.9		95.8	95.7	0.4		146.7	8.3
LOS	D	D		F	D		F	F	Α		F	Α
Approach Delay		37.9			49.9			65.4			74.5	
Approach LOS		D			D			E			Е	

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 68 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

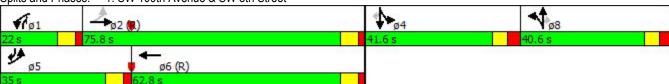
Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 48.6 Intersection LOS: D
Intersection Capacity Utilization 92.2% ICU Level of Service F

Analysis Period (min) 15



Lane Group EBL EBT WBL WBT NBL NBT NBR SBT SBR Lane Group Flow (vph) 303 1919 301 1421 30 32 29 373 406 v/c Ratio 0.77 0.63 0.68 0.65 0.38 0.39 0.08 1.11 0.53 Control Delay 53.6 35.4 82.8 42.9 95.8 95.7 0.4 146.7 8.3 Queue Delay 0.0
v/c Ratio 0.77 0.63 0.68 0.65 0.38 0.39 0.08 1.11 0.53 Control Delay 53.6 35.4 82.8 42.9 95.8 95.7 0.4 146.7 8.3 Queue Delay 0.0
Control Delay 53.6 35.4 82.8 42.9 95.8 95.7 0.4 146.7 8.3 Queue Delay 0.0
Queue Delay 0.0
Total Delay 53.6 35.4 82.8 42.9 95.8 95.7 0.4 146.7 8.3 Queue Length 50th (ft) 245 486 178 494 36 40 0 ~501 55 Queue Length 95th (ft) 359 555 231 601 77 83 0 #724 117 Internal Link Dist (ft) 1895 1247 482 406
Queue Length 50th (ft) 245 486 178 494 36 40 0 ~501 55 Queue Length 95th (ft) 359 555 231 601 77 83 0 #724 117 Internal Link Dist (ft) 1895 1247 482 406
Queue Length 95th (ft) 359 555 231 601 77 83 0 #724 117 Internal Link Dist (ft) 1895 1247 482 406
Internal Link Dist (ft) 1895 1247 482 406
Turn Bay Length (ft) 600 300 150
· ···· = ··· / = ···· · · · · · · · · ·
Base Capacity (vph) 402 3027 445 2193 305 318 359 335 777
Starvation Cap Reductn 0 0 0 0 0 0 0 0
Spillback Cap Reductn 0 0 0 0 0 0 0
Storage Cap Reductn 0 0 0 0 0 0 0 0
Reduced v/c Ratio 0.75 0.63 0.68 0.65 0.10 0.10 0.08 1.11 0.52

Intersection Summary

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	-	###		44	^		1	ર્ન	7		ર્સ	7
Volume (veh/h)	288	1501	322	286	1276	74	34	25	28	266	88	386
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.90	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	303	1580	339	301	1343	78	31	33	29	280	93	406
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	321	2276	488	288	1896	110	237	249	324	252	84	485
Arrive On Green	0.13	0.43	0.43	0.08	0.39	0.39	0.13	0.13	0.13	0.19	0.19	0.19
Sat Flow, veh/h	1757	5272	1131	3408	4869	283	1757	1845	1418	1335	443	1516
Grp Volume(v), veh/h	303	1426	493	301	926	495	31	33	29	373	0	406
Grp Sat Flow(s),veh/h/ln	1757	1586	1644	1704	1679	1794	1757	1845	1418	1778	0	1516
Q Serve(g_s), s	20.6	43.8	43.8	15.2	41.9	41.9	2.8	2.8	2.9	34.0	0.0	34.0
Cycle Q Clear(g_c), s	20.6	43.8	43.8	15.2	41.9	41.9	2.8	2.8	2.9	34.0	0.0	34.0
Prop In Lane	1.00		0.69	1.00		0.16	1.00		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	321	2055	710	288	1307	699	237	249	324	336	0	485
V/C Ratio(X)	0.94	0.69	0.69	1.05	0.71	0.71	0.13	0.13	0.09	1.11	0.00	0.84
Avail Cap(c_a), veh/h	374	2055	710	288	1307	699	322	338	392	336	0	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.9	41.5	41.5	82.4	46.3	46.3	68.6	68.6	56.0	73.0	0.0	57.5
Incr Delay (d2), s/veh	28.8	2.0	5.5	65.5	3.3	6.0	0.2	0.2	0.1	82.3	0.0	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.3	26.8	28.4	17.6	27.4	29.6	2.5	2.6	2.1	43.9	0.0	28.1
LnGrp Delay(d),s/veh	72.7	43.5	47.0	147.9	49.6	52.3	68.7	68.8	56.1	155.3	0.0	70.9
LnGrp LOS	Е	D	D	F	D	D	Е	Е	Е	F		Е
Approach Vol, veh/h		2222			1722			93			779	
Approach Delay, s/veh		48.2			67.6			64.8			111.3	
Approach LOS		D			Е			Е			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	84.5		41.6	29.6	76.9		31.9				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	15.2	69.0		34.0	28.2	56.0		33.0				
Max Q Clear Time (g_c+l1), s	17.2	45.8		36.0	22.6	43.9		4.9				
Green Ext Time (p_c), s	0.0	19.1		0.0	0.2	10.8		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			65.7									
HCM 2010 LOS			Е									
Notes												

Notes

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	21	13	211	17	19	43	52	318	20	27	512	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.884			0.927			0.993			0.998	
Flt Protected		0.996			0.989			0.993			0.998	
Satd. Flow (prot)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
Flt Permitted		0.996			0.989			0.993			0.998	
Satd. Flow (perm)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	14	222	18	20	45	55	335	21	28	539	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	258	0	0	83	0	0	411	0	0	576	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											

Area Type: Othe

Control Type: Unsignalized

Intersection Capacity Utilization 60.4%

ICU Level of Service B

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	7.8											
·												
Movement	EBL	EBT	EBR	WBI	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	13	211	17		43	52	318	20	27	512	9
Conflicting Peds, #/hr	0	0	0	(0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None			None	-	-	None	-	-	None
Storage Length	-	-	-			-	-	-	-	-	-	-
Veh in Median Storage, #	! -	0	-		- 0	-	-	0	-	-	0	-
Grade, %	-	0	-		- 0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	9	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	(3	3	3	3	3	3	3	3
Mvmt Flow	22	14	222	18	3 20	45	55	335	21	28	539	9
Major/Minor	Minor2			Minor ⁻			Major1			Major2		
Conflicting Flow All	1088	1066	544	1173		345	548	0	0	356	0	0
Stage 1	601	601	-	45		-	-	-	-	-	-	-
Stage 2	487	465	-	718		_	_	_	_	-	_	_
Critical Hdwy	7.13	6.53	6.23	7.13		6.23	4.13	_	_	4.13	-	_
Critical Hdwy Stg 1	6.13	5.53	-	6.13		-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13		-	-	-	-	-	-	_
Follow-up Hdwy	3.527	4.027	3.327	3.52	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	192	221	537	168	3 223	696	1016	-	-	1197	-	-
Stage 1	485	488	-	583	3 567	-	-	-	-	-	-	-
Stage 2	560	561	-	419	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	153	199	537	86	201	696	1016	-	-	1197	-	-
Mov Cap-2 Maneuver	153	199	-	86	201	-	-	-	-	-	-	-
Stage 1	452	471	-	543	528	-	-	-	-	-	-	-
Stage 2	469	523	-	230	469	-	-	-	-	=	-	-
Approach	EB			WE	}		NB			SB		
HCM Control Delay, s	27.4			30.4			1.2			0.4		
HCM LOS	D			[0.1		
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn	l SBL	SBT	SBR					
Capacity (veh/h)	1016	-		411 223		-	-					
HCM Lane V/C Ratio	0.054	_	_	0.627 0.373		_	-					
HCM Control Delay (s)	8.7	0	_	27.4 30.4		0	<u>-</u>					
HCM Lane LOS	Α	A	_	D [_					
HCM 95th %tile Q(veh)	0.2	-	_	4.2 1.6		-	<u>-</u>					
/ / / / / / / / / / / / / / / /	0.2				. 0.1							

	٠	-	*	•	•	•	1	1	~	7	ļ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	###		44	ተ ተጉ		*	ર્ન	7		र्स	7
Volume (vph)	280	1436	113	179	1626	47	372	94	284	220	73	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	300		0	0		150	250		0
Storage Lanes	1		0	2		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00				0.86			0.95
Frt		0.989			0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.971			0.964	
Satd. Flow (prot)	1752	6269	0	3400	5013	0	1665	1702	1568	0	1778	1568
Flt Permitted	0.054			0.950		-	0.950	0.971			0.964	
Satd. Flow (perm)	100	6269	0	3400	5013	0	1665	1702	1348	0	1778	1483
Right Turn on Red		0200	Yes	0.00	00.0	Yes	.000	1102	Yes		11.10	Yes
Satd. Flow (RTOR)		11			3				76			110
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1975			1327			562			486	
Travel Time (s)		29.9			20.1			12.8			11.0	
Confl. Peds. (#/hr)		20.0	1		20.1	1		12.0	80		11.0	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	295	1512	119	188	1712	49	392	99	299	232	77	402
Shared Lane Traffic (%)	200	1012	110	100	17.12	70	38%	33	200	202		702
Lane Group Flow (vph)	295	1631	0	188	1761	0	243	248	299	0	309	402
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	2010	24	, agair	2010	24	. ug.ic	20.0	12	rugiic	LOIL	12	. agaic
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		. •			. •			. •			. •	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	,,,,,	9	15	,,,,,	9
Turn Type	pm+pt	NA		Prot	NA		Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	5	2		1	6		8	8	1	4	4	5
Permitted Phases	2								8			4
Detector Phase	5	2		1	6		8	8	1	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0	5.0	7.0	7.0	5.0
Minimum Split (s)	11.8	31.8		11.8	31.8		40.6	40.6	11.8	41.6	41.6	11.8
Total Split (s)	16.0	73.8		24.0	81.8		40.6	40.6	24.0	41.6	41.6	16.0
Total Split (%)	8.9%	41.0%		13.3%	45.4%		22.6%	22.6%	13.3%	23.1%	23.1%	8.9%
Maximum Green (s)	9.2	67.0		17.2	75.0		33.0	33.0	17.2	34.0	34.0	9.2
Yellow Time (s)	4.8	4.8		4.8	4.8		4.0	4.0	4.8	4.0	4.0	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.6	3.6	2.0	3.6	3.6	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.6	7.6	6.8		7.6	6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?		_∽9			_~9							
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Recall Mode		C-Max		None	C-Max		None	None	None	None	None	None
1 1 3 3 dil 1 1 1 0 d 0	110110	O MICA		110110	O MIUA		110110	1 10110	110110	110110	110110	110110

	•	_	~		•	*	4	†	-	1	1	1
				•			1.5	50.00	1000		****	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	86.3	74.2		14.1	75.0		29.5	29.5	44.4		33.4	47.5
Actuated g/C Ratio	0.48	0.41		0.08	0.42		0.16	0.16	0.25		0.19	0.26
v/c Ratio	1.75	0.63		0.71	0.84		0.89	0.89	0.74		0.94	0.84
Control Delay	390.7	44.0		95.5	51.8		105.2	104.7	52.9		106.9	46.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	390.7	44.0		95.5	51.8		105.2	104.7	52.9		106.9	46.5
LOS	F	D		F	D		F	F	D		F	D
Approach Delay		97.1			56.0			85.3			72.8	
Approach LOS		F			Е			F			Е	

Area Type: Other

Cycle Length: 180 Actuated Cycle Length: 180

Offset: 127 (71%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.75 Intersection Signal Delay: 77.2

Intersection LOS: E Intersection Capacity Utilization 102.7% ICU Level of Service G

Analysis Period (min) 15



	•	→	1	•	1	†	1	Į.	1	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT	SBR	
Lane Group Flow (vph)	295	1631	188	1761	243	248	299	309	402	
v/c Ratio	1.75	0.63	0.71	0.84	0.89	0.89	0.74	0.94	0.84	
Control Delay	390.7	44.0	95.5	51.8	105.2	104.7	52.9	106.9	46.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	390.7	44.0	95.5	51.8	105.2	104.7	52.9	106.9	46.5	
Queue Length 50th (ft)	~501	453	113	682	295	302	227	364	229	
Queue Length 95th (ft)	#732	514	158	745	#435	#443	324	#553	#457	
Internal Link Dist (ft)		1895		1247		482		406		
Turn Bay Length (ft)	600		300				150			
Base Capacity (vph)	169	2590	324	2090	305	312	432	335	478	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.75	0.63	0.58	0.84	0.80	0.79	0.69	0.92	0.84	

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

	۶	-	7	1	+	1	1	†	/	1	↓	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	ttt⊅		44	ተተጉ		*	र्स	7		ર્લ	7
Volume (veh/h)	280	1436	113	179	1626	47	372	94	284	220	73	382
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	295	1512	119	188	1712	49	246	304	299	232	77	402
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	2426	191	226	2097	60	322	338	354	252	84	364
Arrive On Green	0.05	0.40	0.40	0.07	0.42	0.42	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1757	6044	475	3408	5032	144	1757	1845	1363	1335	443	1501
Grp Volume(v), veh/h	295	1190	441	188	1142	619	246	304	299	309	0	402
Grp Sat Flow(s), veh/h/ln	1757	1586	1760	1704	1679	1819	1757	1845	1363	1778	0	1501
Q Serve(g_s), s	9.2	35.9	36.0	9.8	54.1	54.2	23.9	29.0	33.0	30.7	0.0	34.0
Cycle Q Clear(g_c), s	9.2	35.9	36.0	9.8	54.1	54.2	23.9	29.0	33.0	30.7	0.0	34.0
Prop In Lane	1.00	55.5	0.27	1.00	J 4 . I	0.08	1.00	23.0	1.00	0.75	0.0	1.00
Lane Grp Cap(c), veh/h	161	1910	707	226	1399	758	322	338	354	336	0	364
V/C Ratio(X)	1.83	0.62	0.62	0.83	0.82	0.82	0.76	0.90	0.84	0.92	0.00	1.11
Avail Cap(c_a), veh/h	161	1910	707	326	1399	758	322	338	354	336	0.00	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
	45.1	43.0	43.0	83.0	46.4	46.4	69.8	71.9	64.9	71.7	0.00	68.6
Uniform Delay (d), s/veh	398.6	1.5	43.0	7.9	5.4	9.5	10.0	25.3	16.5	30.5	0.0	78.8
Incr Delay (d2), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0											
%ile BackOfQ(95%),veh/ln	38.4	22.6	25.3	8.5	34.5	38.0	18.3	23.9	22.4	24.9	0.0	46.8
LnGrp Delay(d),s/veh	443.7	44.6	47.2	90.9	51.8	55.9	79.8	97.1	81.4	102.2	0.0	147.3
LnGrp LOS	F	<u>D</u>	D	F	D	E	E	F	F	F		F
Approach Vol, veh/h		1926			1949			849			711	
Approach Delay, s/veh		106.3			56.9			86.6			127.7	
Approach LOS		F			Е			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.8	79.0		41.6	16.0	81.8		40.6				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	17.2	67.0		34.0	9.2	75.0		33.0				
Max Q Clear Time (g_c+l1), s	11.8	38.0		36.0	11.2	56.2		35.0				
Green Ext Time (p_c), s	0.1	23.1		0.0	0.0	16.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			88.3									
HCM 2010 LOS			F									
Notes												

	٠	→	*	•	+	•	1	1	~	1	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	9	13	165	29	58	35	77	327	17	33	481	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.881			0.961			0.995			0.993	
Flt Protected		0.998			0.988			0.991			0.997	
Satd. Flow (prot)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
Flt Permitted		0.998			0.988			0.991			0.997	
Satd. Flow (perm)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	14	174	31	61	37	81	344	18	35	506	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	0	0	129	0	0	443	0	0	569	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0	_		0	_		0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type: O	ther											

Control Type: Unsignalized

Intersection Capacity Utilization 68.5%

ICU Level of Service C

Analysis Period (min) 15

Intersection														
Int Delay, s/veh	10.2													
Movement	EBL	EBT	EBR		WBL	WBT	WBR	N	IBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	13	165		29	58	35		77	327	17	33	481	27
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0	0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	F	ree	Free	Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None	-	-	None
Storage Length	-	-	-		-	-	-		-	-	-	-	-	-
Veh in Median Storage,	+ -	0	-		-	0	-		-	0	-	-	0	-
Grade, %	-	0	-		-	0	-		-	0	-	-	0	-
Peak Hour Factor	95	95	95		95	95	95		95	95	95	95	95	95
Heavy Vehicles, %	3	3	3		3	3	3		3	3	3	3	3	3
Mvmt Flow	9	14	174		31	61	37		81	344	18	35	506	28
Major/Minor	Minor2			М	inor1			Maj	or1			Major2		
Conflicting Flow All	1154	1114	521		1199	1119	353		535	0	0	362	0	0
Stage 1	590	590	-		515	515	-		-	-	-	-	-	-
Stage 2	564	524	-		684	604	-		-	-	_	-	-	-
Critical Hdwy	7.13	6.53	6.23		7.13	6.53	6.23	4	.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-		6.13	5.53	-		-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-		6.13	5.53	-		-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3	3.527	4.027	3.327	2.2	227	-	-	2.227	-	-
Pot Cap-1 Maneuver	173	207	553		161	206	688	10)28	-	-	1191	-	-
Stage 1	492	493	-		541	533	-		-	-	-	-	-	-
Stage 2	509	528	-		437	486	-		-	-	-	-	-	-
Platoon blocked, %										-	-		-	-
Mov Cap-1 Maneuver	108	179	553		93	178	688	10	028	-	-	1191	-	-
Mov Cap-2 Maneuver	108	179	-		93	178	-		-	-	-	-	-	-
Stage 1	443	472	-		487	480	-		-	-	-	-	-	-
Stage 2	379	476	-		279	466	-		-	-	-	-	-	-
Approach	EB				WB				NB			SB		
HCM Control Delay, s	21.5				65.8				1.6			0.5		
HCM LOS	С				F									
Minor Lane/Major Mvmt	NBL	NBT	NRP	EBLn1W	RI n1	SBL	SBT	SBR						
Capacity (veh/h)	1028	-	TADIA	412	177		- 301	ODIN						
HCM Lane V/C Ratio	0.079	_	<u>-</u>	0.478			_							
HCM Control Delay (s)	8.8	0	_		65.8	8.1	0	-						
HCM Lane LOS	0.0 A	A	-	21.5 C	65.6 F	Α	A	-						
HCM 95th %tile Q(veh)	0.3	-	_	2.5	4.5	0.1	-	_						
	0.0			2.0	۲.٥	0.1								

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Lane Configurations 1 1115 1
Volume (vph) 344 1792 385 341 1523 88 41 30 33 317 105 461 Ideal Flow (vphpl) 1900
Volume (vph) 344 1792 385 341 1523 88 41 30 33 317 105 461 Ideal Flow (vphpl) 1900
Storage Length (ft) 600 0 300 0 0 150 250 0 Storage Lanes 1 0 2 0 1 1 0 1 Taper Length (ft) 25 25 25 25 25 25 Lane Util. Factor 1.00 0.86 0.86 0.97 0.91 0.91 0.95 0.95 1.00 1.00 1.00 Ped Bike Factor 1.00 1.00 1.00 0.95 0.850 0.850 Frt 0.973 0.992 0.850 0.850
Storage Lanes 1 0 2 0 1 1 0 1 Taper Length (ft) 25 25 25 25 25 25 25 25 25 25 25 25 25 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 0.95 0.850 0.850 0.850
Taper Length (ft) 25 25 25 25 Lane Util. Factor 1.00 0.86 0.86 0.97 0.91 0.91 0.95 0.95 1.00 1.00 1.00 1.00 1.00 0.90 0.95 Frt 0.973 0.992 0.850 0.850 0.850
Taper Length (ft) 25 25 25 25 Lane Util. Factor 1.00 0.86 0.86 0.97 0.91 0.91 0.95 0.95 1.00 1.00 1.00 1.00 1.00 0.90 0.95 Frt 0.973 0.992 0.850 0.850 0.850
Ped Bike Factor 1.00 1.00 0.90 0.95 Frt 0.973 0.992 0.850 0.850
Frt 0.973 0.992 0.850 0.850
Flt Protected 0.950 0.950 0.950 0.992 0.964
Satd. Flow (prot) 1752 6159 0 3400 4990 0 1665 1738 1568 0 1778 1568
Flt Permitted 0.058 0.950 0.950 0.992 0.964
Satd. Flow (perm) 107 6159 0 3400 4990 0 1665 1738 1418 0 1778 1488
Right Turn on Red Yes Yes Yes Yes
Satd. Flow (RTOR) 35 5 110 300
Link Speed (mph) 45 45 30 30
Link Distance (ft) 1975 1327 562 486
Travel Time (s) 29.9 20.1 12.8 11.0
Confl. Peds. (#/hr) 1 1 52 25
Peak Hour Factor 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
Adj. Flow (vph) 362 1886 405 359 1603 93 43 32 35 334 111 485
Shared Lane Traffic (%)
Lane Group Flow (vph) 362 2291 0 359 1696 0 37 38 35 0 445 485
Enter Blocked Intersection No
Lane Alignment Left Left Right Left Right Left Right Left Right
Median Width(ft) 24 24 12 12
Link Offset(ft) 0 0 0
Crosswalk Width(ft) 10 10 10
Two way Left Turn Lane
Headway Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0
Turning Speed (mph) 15 9 15 9 15 9
Turn Type pm+pt NA Prot NA Split NA pm+ov Split NA pm+ov
Protected Phases 5 2 1 6 8 8 1 4 4 5
Permitted Phases 2 8 4
Detector Phase 5 2 1 6 8 8 1 4 4 5
Switch Phase
Minimum Initial (s) 5.0 7.0 5.0 7.0 7.0 5.0 7.0 5.0 5.0
Minimum Split (s) 11.8 31.8 11.8 31.8 40.6 40.6 11.8 41.6 41.6 11.8
Total Split (s) 35.0 75.8 22.0 62.8 40.6 40.6 22.0 41.6 41.6 35.0
Total Split (%) 19.4% 42.1% 12.2% 34.9% 22.6% 22.6% 12.2% 23.1% 23.1% 19.4%
Maximum Green (s) 28.2 69.0 15.2 56.0 33.0 33.0 15.2 34.0 34.0 28.2
Yellow Time (s) 4.8 4.8 4.8 4.0 4.0 4.0 4.0 4.8
All-Red Time (s) 2.0 2.0 2.0 3.6 3.6 2.0 3.6 3.6 2.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Total Lost Time (s) 6.8 6.8 6.8 7.6 7.6 6.8 7.6 6.8
Lead/Lag Lead Lag Lead Lead Lead
Lead-Lag Optimize?
Vehicle Extension (s) 2.0 2.5 2.0 2.5 2.5 2.0 5.0 5.0 2.0
Recall Mode None C-Max None C-Max None None None None None None

Godfrey Lamptey, P.E., PTOE GOAL Associates Inc.

1: SW 109th Avenue & SW 8th Street

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	117.6	80.1		30.7	63.3		9.3	9.3	39.2		34.0	82.3
Actuated g/C Ratio	0.65	0.44		0.17	0.35		0.05	0.05	0.22		0.19	0.46
v/c Ratio	0.72	0.83		0.62	0.96		0.44	0.43	80.0		1.33	0.56
Control Delay	56.6	46.9		75.2	70.7		97.5	96.5	0.4		219.4	10.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	56.6	46.9		75.2	70.7		97.5	96.5	0.4		219.4	10.8
LOS	Е	D		Е	Е		F	F	Α		F	В
Approach Delay		48.2			71.5			66.3			110.6	
Approach LOS		D			Ε			Ε			F	

Intersection Summary

Area Type: Other

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 68 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

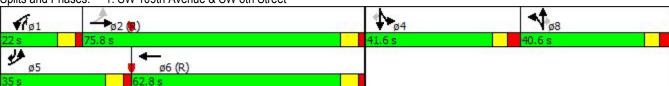
Maximum v/c Ratio: 1.33 Intersection Signal Delay: 67.0

Intersection Signal Delay: 67.0
Intersection Capacity Utilization 103.6%

Intersection LOS: E
ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: SW 109th Avenue & SW 8th Street



	•	-	1	•	1	†	1	Į.	1
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	362	2291	359	1696	37	38	35	445	485
v/c Ratio	0.72	0.83	0.62	0.96	0.44	0.43	0.08	1.33	0.56
Control Delay	56.6	46.9	75.2	70.7	97.5	96.5	0.4	219.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.6	46.9	75.2	70.7	97.5	96.5	0.4	219.4	10.8
Queue Length 50th (ft)	346	681	209	715	45	47	0	~678	116
Queue Length 95th (ft)	468	756	268	#914	91	92	0	#910	179
Internal Link Dist (ft)		1895		1247		482		406	
Turn Bay Length (ft)	600		300				150		
Base Capacity (vph)	503	2760	580	1758	305	318	420	335	864
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.83	0.62	0.96	0.12	0.12	0.08	1.33	0.56

Intersection Summary

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	###		77	^		1	ર્ન	7		ર્લ	7
Volume (veh/h)	344	1792	385	341	1523	88	41	30	33	317	105	461
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.89	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	362	1886	405	359	1603	93	38	40	35	334	111	485
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	324	2224	476	288	1702	99	255	267	335	252	84	530
Arrive On Green	0.16	0.42	0.42	0.08	0.35	0.35	0.14	0.14	0.14	0.19	0.19	0.19
Sat Flow, veh/h	1757	5275	1129	3408	4869	282	1757	1845	1399	1334	443	1506
Grp Volume(v), veh/h	362	1701	590	359	1105	591	38	40	35	445	0	485
Grp Sat Flow(s),veh/h/ln	1757	1586	1644	1704	1679	1794	1757	1845	1399	1778	0	1506
Q Serve(g_s), s	28.2	57.9	58.2	15.2	57.4	57.5	3.4	3.4	3.6	34.0	0.0	34.0
Cycle Q Clear(g_c), s	28.2	57.9	58.2	15.2	57.4	57.5	3.4	3.4	3.6	34.0	0.0	34.0
Prop In Lane	1.00		0.69	1.00		0.16	1.00		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	324	2007	694	288	1173	627	255	267	335	336	0	530
V/C Ratio(X)	1.12	0.85	0.85	1.25	0.94	0.94	0.15	0.15	0.10	1.33	0.00	0.91
Avail Cap(c_a), veh/h	324	2007	694	288	1173	627	322	338	389	336	0	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.7	46.8	46.9	82.4	56.8	56.8	67.3	67.3	54.8	73.0	0.0	56.7
Incr Delay (d2), s/veh	85.7	4.7	12.5	136.9	15.6	24.3	0.2	0.2	0.1	165.6	0.0	21.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	42.9	34.6	37.6	22.7	38.1	42.2	3.0	3.2	2.5	57.9	0.0	34.7
LnGrp Delay(d),s/veh	146.4	51.5	59.4	219.3	72.3	81.0	67.5	67.4	54.9	238.6	0.0	78.0
LnGrp LOS	F	D	E	F	Е	F	Е	Е	D	F		Е
Approach Vol, veh/h		2653			2055			113			930	
Approach Delay, s/veh		66.2			100.5			63.6			154.8	
Approach LOS		E			F			Е			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	82.7		41.6	35.0	69.7		33.7				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	15.2	69.0		34.0	28.2	56.0		33.0				
Max Q Clear Time (g_c+l1), s	17.2	60.2		36.0	30.2	59.5		5.6				
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	0.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			92.7									
HCM 2010 LOS			F									
Notes												

Notes

User approved volume balancing among the lanes for turning movement.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	25	16	252	20	23	51	62	379	24	32	611	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.884			0.926			0.993			0.998	
Flt Protected		0.996			0.990			0.993			0.998	
Satd. Flow (prot)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
Flt Permitted		0.996			0.990			0.993			0.998	
Satd. Flow (perm)	0	1624	0	0	1691	0	0	1819	0	0	1837	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	17	265	21	24	54	65	399	25	34	643	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	308	0	0	99	0	0	489	0	0	689	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type, Uneignolized												

Control Type: Unsignalized

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

Intersection													
Int Delay, s/veh	20.6												
Movement	EBL	EBT	EBR	1	WBL	WBT	WBR	NE	BL NB	NBR	SBL	SBT	SBR
Vol, veh/h	25	16	252		20	23	51		379		32	611	11
Conflicting Peds, #/hr	0	0	0		0	0	0		0 (0	0	0	0
Sign Control	Stop	Stop	Stop		Stop	Stop	Stop	Fre	e Free	Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	- None	-	-	None
Storage Length	-	-	-		-	-	-		-		-	-	-
Veh in Median Storage,	# -	0	-		-	0	-		- () -	-	0	-
Grade, %	-	0	-		-	0	-) -	-	0	-
Peak Hour Factor	95	95	95		95	95	95	Ç	95		95	95	95
Heavy Vehicles, %	3	3	3		3	3	3			3	3	3	3
Mvmt Flow	26	17	265		21	24	54	(55 399	25	34	643	12
Major/Minor	Minor2			Mi	inor1			Majo	r1		Major2		
Conflicting Flow All	1297	1271	649		1399	1264	412	65) 0	424	0	0
Stage 1	716	716	-		542	542	-	-			-	-	-
Stage 2	581	555	-		857	722	-		-		-	-	_
Critical Hdwy	7.13	6.53	6.23		7.13	6.53	6.23	4.1	3		4.13	-	_
Critical Hdwy Stg 1	6.13	5.53	-		6.13	5.53	-		-		-	-	-
Critical Hdwy Stg 2	6.13	5.53	-		6.13	5.53	-		-		-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3	3.527	4.027	3.327	2.22	27		2.227	-	_
Pot Cap-1 Maneuver	138	167	468		117	169	638	92	27		1130	-	_
Stage 1	420	433	-		523	519	-		-		-	-	-
Stage 2	498	512	-		351	430	-		-		-	-	-
Platoon blocked, %												-	-
Mov Cap-1 Maneuver	99	145	468		41	146	638	92	27		1130	-	-
Mov Cap-2 Maneuver	99	145	-		41	146	-		-		-	-	-
Stage 1	381	413	-		475	471	-		-		-	-	-
Stage 2	393	465	-		139	410	-		-		-	-	-
Approach	EB				WB			N	В		SB		
HCM Control Delay, s	74.3				90.2				.2		0.4		
HCM LOS	F				F						.		
Minor Lane/Major Mvmt	NBL	NBT	NRR	EBLn1W	RI n1	SBL	SBT	SBR					
Capacity (veh/h)	927	-	- 1011	325	130	1130	-	-					
HCM Lane V/C Ratio	0.07	_	_	0.949 0		0.03	_						
HCM Control Delay (s)	9.2	0	_		90.2	8.3	0	<u>-</u>					
HCM Lane LOS	Α.Δ	A	_	7 - .5	F	Α	A	_					
HCM 95th %tile Q(veh)	0.2	-	<u>-</u>	9.8	4.5	0.1	-	<u>-</u>					
	0.2			0.0	1.0	0.1							

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	4111		1/4	ተተሱ		*	ર્ન	7		ર્ન	7
Volume (vph)	334	1714	135	214	1942	56	444	112	339	263	87	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		0	300		0	0		150	250		0
Storage Lanes	1		0	2		0	1		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.86	0.86	0.97	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00				0.83			0.94
Frt		0.989			0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.971			0.964	
Satd. Flow (prot)	1752	6269	0	3400	5013	0	1665	1702	1568	0	1778	1568
Flt Permitted	0.058	0200		0.950			0.950	0.971			0.964	
Satd. Flow (perm)	107	6269	0	3400	5013	0	1665	1702	1308	0	1778	1471
Right Turn on Red		0200	Yes	0.00	0010	Yes	.000		Yes		1110	Yes
Satd. Flow (RTOR)		11			3	100			69			110
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1975			1327			562			486	
Travel Time (s)		29.9			20.1			12.8			11.0	
Confl. Peds. (#/hr)		20.0	1		20.1	1		12.0	96		11.0	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	352	1804	142	225	2044	59	467	118	357	277	92	481
Shared Lane Traffic (%)	332	1004	172	223	2044	55	38%	110	331	211	32	701
Lane Group Flow (vph)	352	1946	0	225	2103	0	290	295	357	0	369	481
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	LGIL	24	ragnt	Leit	24	rtigiit	Leit	12	rtigrit	Leit	12	rtigrit
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	9
Turn Type	pm+pt	NA	9	Prot	NA	9	Split	NA	pm+ov	Split	NA	vo+mq
Protected Phases	ріпі - рі 5	2		1	6		Split 8	8	pili+0v 1	Split 4	4	-
Permitted Phases	2			I	U		0	0	8	4	4	5 4
Detector Phase	5	2		1	6		8	8	1	1	4	5
	3			I	U		0	0	ı	4	4	ວ
Switch Phase	5.0	7.0		5.0	7.0		7.0	7.0	E 0	7.0	7.0	F 0
Minimum Initial (s)								40.6	5.0	7.0		5.0
Minimum Split (s)	11.8	31.8		11.8	31.8		40.6		11.8	41.6	41.6	11.8
Total Split (s)	16.0	73.8		24.0	81.8		40.6	40.6	24.0	41.6	41.6	16.0
Total Split (%)	8.9%	41.0%		13.3%	45.4%		22.6%	22.6%	13.3%	23.1%	23.1%	8.9%
Maximum Green (s)	9.2	67.0		17.2	75.0		33.0	33.0	17.2	34.0	34.0	9.2
Yellow Time (s)	4.8	4.8		4.8	4.8		4.0	4.0	4.8	4.0	4.0	4.8
All-Red Time (s)	2.0	2.0		2.0	2.0		3.6	3.6	2.0	3.6	3.6	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.8	6.8		6.8	6.8		7.6	7.6	6.8		7.6	6.8
Lead/Lag	Lead	Lag		Lead	Lag				Lead			Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.5	2.5	2.0	5.0	5.0	2.0
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	None

Godfrey Lamptey, P.E., PTOE GOAL Associates Inc.

	•	-	-	-	•	•	4	†	-	-	1	4
	35	100759	35.400	3324050		*57	10.00	38.88	2000	7400	83638	38054
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)		5.0					5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		20.0					28.0	28.0		29.0	29.0	
Pedestrian Calls (#/hr)		0					0	0		0	0	
Act Effct Green (s)	79.1	69.4		15.3	75.0		32.5	32.5	48.6		34.0	44.5
Actuated g/C Ratio	0.44	0.39		0.08	0.42		0.18	0.18	0.27		0.19	0.25
v/c Ratio	2.61	0.80		0.78	1.01		0.97	0.96	0.84		1.10	1.07
Control Delay	763.6	52.5		98.9	72.5		115.2	113.6	64.1		143.3	95.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	763.6	52.5		98.9	72.5		115.2	113.6	64.1		143.3	95.6
LOS	F	D		F	Е		F	F	Ε		F	F
Approach Delay		161.4			75.1			95.3			116.3	
Approach LOS		F			E			F			F	

Intersection Summary

Area Type: Other

Cycle Length: 180
Actuated Cycle Length: 180

Offset: 127 (71%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.61

Intersection Signal Delay: 114.4 Intersection LOS: F
Intersection Capacity Utilization 114.6% ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: SW 109th Avenue & SW 8th Street



Lane Group EBL EBT WBL WBT NBL NBT NBR SBT SB Lane Group Flow (vph) 352 1946 225 2103 290 295 357 369 48
Lane Group Flow (yph) 352 1946 225 2103 290 295 357 369 48
24110 010 dp 11011 (1p11) 002 1010 220 2100 200 001 000 10
v/c Ratio 2.61 0.80 0.78 1.01 0.97 0.96 0.84 1.10 1.0
Control Delay 763.6 52.5 98.9 72.5 115.2 113.6 64.1 143.3 95
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
Total Delay 763.6 52.5 98.9 72.5 115.2 113.6 64.1 143.3 95
Queue Length 50th (ft) ~657 600 136 ~921 362 368 300 ~492 ~42
Queue Length 95th (ft) #879 651 186 #1030 #569 #573 #423 #712 #66
Internal Link Dist (ft) 1895 1247 482 406
Turn Bay Length (ft) 600 300 150
Base Capacity (vph) 135 2422 324 2090 305 312 441 335 45
Starvation Cap Reductn 0 0 0 0 0 0 0
Spillback Cap Reductn 0 0 0 0 0 0 0
Storage Cap Reductn 0 0 0 0 0 0 0
Reduced v/c Ratio 2.61 0.80 0.69 1.01 0.95 0.95 0.81 1.10 1.0

Intersection Summary

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1111		1	^		7	ની	7		ની	7
Volume (veh/h)	334	1714	135	214	1942	56	444	112	339	263	87	457
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	352	1804	142	225	2044	59	292	362	357	277	92	481
Adj No. of Lanes	1	4	0	2	3	0	1	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	2361	186	263	2096	60	322	338	363	252	84	361
Arrive On Green	0.05	0.39	0.39	0.08	0.42	0.42	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1757	6044	476	3408	5031	145	1757	1845	1322	1335	443	1488
Grp Volume(v), veh/h	352	1421	525	225	1363	740	292	362	357	369	0	481
Grp Sat Flow(s),veh/h/ln	1757	1586	1760	1704	1679	1819	1757	1845	1322	1778	0	1488
Q Serve(g_s), s	9.2	46.7	46.7	11.7	71.7	72.1	29.3	33.0	33.0	34.0	0.0	34.0
Cycle Q Clear(g_c), s	9.2	46.7	46.7	11.7	71.7	72.1	29.3	33.0	33.0	34.0	0.0	34.0
Prop In Lane	1.00		0.27	1.00		0.08	1.00		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	133	1859	688	263	1399	758	322	338	363	336	0	361
V/C Ratio(X)	2.65	0.76	0.76	0.86	0.97	0.98	0.91	1.07	0.98	1.10	0.00	1.33
Avail Cap(c_a), veh/h	133	1859	688	326	1399	758	322	338	363	336	0	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.3	47.6	47.6	82.1	51.5	51.6	72.0	73.5	67.0	73.0	0.0	68.6
Incr Delay (d2), s/veh	762.8	3.0	7.9	14.4	18.6	27.5	27.6	68.9	42.5	78.3	0.0	167.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	62.6	28.4	32.2	10.1	46.9	52.6	23.5	41.9	29.6	43.2	0.0	62.5
LnGrp Delay(d),s/veh	814.1	50.7	55.5	96.5	70.2	79.2	99.6	142.4	109.5	151.3	0.0	235.6
LnGrp LOS	F	D	Е	F	Е	Е	F	F	F	F		F
Approach Vol, veh/h		2298			2328			1011			850	
Approach Delay, s/veh		168.7			75.6			118.4			199.0	
Approach LOS		F			E			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6	•	8				
Phs Duration (G+Y+Rc), s	20.7	77.1		41.6	16.0	81.8		40.6				
Change Period (Y+Rc), s	6.8	6.8		7.6	6.8	6.8		7.6				
Max Green Setting (Gmax), s	17.2	67.0		34.0	9.2	75.0		33.0				
Max Q Clear Time (g_c+l1), s	13.7	48.7		36.0	11.2	74.1		35.0				
Green Ext Time (p_c), s	0.1	17.0		0.0	0.0	0.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			131.4									
HCM 2010 LOS			F									
Notes			•									

Notes

User approved volume balancing among the lanes for turning movement.

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Volume (vph)	11	16	197	35	69	42	92	390	20	39	575	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	120		0	120		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.882			0.961			0.995			0.993	
Flt Protected		0.997			0.988			0.991			0.997	
Satd. Flow (prot)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
Flt Permitted		0.997			0.988			0.991			0.997	
Satd. Flow (perm)	0	1622	0	0	1751	0	0	1819	0	0	1826	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		361			422			486			252	
Travel Time (s)		8.2			9.6			11.0			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	17	207	37	73	44	97	411	21	41	605	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	236	0	0	154	0	0	529	0	0	680	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			10	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											

Control Type: Unsignalized

Intersection Capacity Utilization 80.6%

ICU Level of Service D

Analysis Period (min) 15

Intersection														
Int Delay, s/veh	36.5													
Movement	EBL	EBT	EBR	1	WBL	WBT	WBR		NBL	NBT	NBR	SBI	SBT	SBR
Vol, veh/h	11	16	197		35	69	42		92	390	20	39	575	32
Conflicting Peds, #/hr	0	0	0		0	0	0		0	0	0	(0	0
Sign Control	Stop	Stop	Stop	;	Stop	Stop	Stop	ı	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None		-	-	None		-	-	None			None
Storage Length	-	-	-		-	-	-		-	-	-			-
Veh in Median Storage,	# -	0	-		-	0	-		-	0	-		- 0	-
Grade, %	-	0	-		-	0	-		-	0	-		- 0	-
Peak Hour Factor	95	95	95		95	95	95		95	95	95	9	95	95
Heavy Vehicles, %	3	3	3		3	3	3		3	3	3	3	3	3
Mvmt Flow	12	17	207		37	73	44		97	411	21	4	605	34
Major/Minor	Minor2			Mir	nor1			Ma	ajor1			Major2)	
Conflicting Flow All	1377	1329	622		1431	1336	421		639	0	0	432		0
Stage 1	704	704	-		615	615	741		-	-	-	702		-
Stage 2	673	625	_		816	721	_		_	_	_			_
Critical Hdwy	7.13	6.53	6.23		7.13	6.53	6.23		4.13	_	_	4.13		_
Critical Hdwy Stg 1	6.13	5.53	-		6.13	5.53	-		-	_	_			_
Critical Hdwy Stg 2	6.13	5.53	_		6.13	5.53	_		-	_	_			_
Follow-up Hdwy	3.527	4.027	3.327		.527		3.327	2	.227	_	-	2.227	7 -	_
Pot Cap-1 Maneuver	122	154	485		112	153	630		940	_	_	1122		_
Stage 1	426	438	-		477	481	-		-	-	-			_
Stage 2	443	476	-		369	430	-		-	_	-			-
Platoon blocked, %										-	-		-	-
Mov Cap-1 Maneuver	53	125	485		49	125	630		940	-	-	1122	<u> </u>	-
Mov Cap-2 Maneuver	53	125	-		49	125	-		-	-	-			-
Stage 1	368	413	-		412	416	-		-	-	-			-
Stage 2	294	411	-		191	405	-		-	-	-			-
Approach	EB				WB				NB			SE	ì	
HCM Control Delay, s	49			2	96.1				1.7			0.5		
HCM LOS	49 E				.90.1				1.7			0.0	,	
I TOWN LOO														
				-			05-	000						
Minor Lane/Major Mvmt		NBT	NBR	EBLn1WE		SBL	SBT	SBR						
Capacity (veh/h)	940	-	-			1122	-	-						
HCM Lane V/C Ratio	0.103	-	-	0.781 1			-	-						
HCM Control Delay (s)	9.3	0	-	49 2		8.3	0	-						
HCM Lane LOS	A	Α	-	E	F	Α	Α	-						
HCM 95th %tile Q(veh)	0.3	-	-	6.1	10.8	0.1	-	-						

APPENDIX 3 FHWA 4(F) Coordination

From: <u>James, Steven C.</u>
To: <u>Vilches, Mary T.</u>

Cc:Kenneth Jessell; Colin HendersonSubject:FW: TIGER V FIU 4(f) de minimisDate:Thursday, March 12, 2015 2:41:38 PM

Please see below. Thank you.

Steven Craig James, RLA 1451

District Environmental Administrator
Intermodal Systems Development Office
Florida Department of Transportation, District Six
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6109
Miami, Florida 33172
Office (305) 470-5221
steven.james@dot.state.fl.us



From: Cathy.Kendall@dot.gov [mailto:Cathy.Kendall@dot.gov]

Sent: Thursday, March 12, 2015 2:29 PM

To: Rivera, Jorge

Cc: Benito.Cunill@dot.gov; James, Steven C. **Subject:** RE: TIGER V FIU 4(f) de minimis

FHWA has reviewed the documentation provided and determined that the proposed impact would be considered "de minimis" under Section 4(f). Please include this finding as part of the project records.

Cathy Kendall, AICP Senior Environmental Specialist FHWA - FL, PR and VI 545 John Knox Road, Suite 200 Tallahassee, FL 32303 (850) 553-2225 cathy.kendall@dot.gov From: Rivera, Jorge (FHWA)

Sent: Wednesday, March 04, 2015 10:12 AM

To: Kendall, Cathy (FHWA) **Cc:** Cunill, Benito (FHWA)

Subject: TIGER V FIU 4(f) de minimis

Katy:

Could you assist me in reviewing the 4(f) de minimis for the FIU TIGER V project? The document is in the following location:

T:\District 6\Tiger V - District 6 FIU University City\NEPA\4(f) DOA\4(f) deminimis 3-3-15

Thank you,

Jorge J. Rivera

District 6 Transportation Engineer Direct Line: (407) 867-6406

e-mail: jorge.rivera@dot.gov

Federal Highway Administration

Florida Division

Orlando Satellite Office

George C. Young Federal Building & Courthouse 400 W. Washington Street * Room 4200 Orlando, FL 32801 Office: (407) 867-6400

Toll-Free: (877) 478-8325

Tallahassee Office

545 John Knox Rd., Suite 200 Tallahassee, FL 32303 Office: (850) 553-2200 Toll-Free: (877) 478-8325

Fax: (850) 942-8308 or (850) 942-9691



OFFICE OF FINANCE & ADMINISTRATION

February 25, 2015

The Honorable Jose M. Diaz Mayor, City of Sweetwater 500 SW 109th Avenue Sweetwater, FL 33174

Subject: Section 4(f) De Minimis Concurrence for James L. Beasley Linear Park

UniversityCity Prosperity Project

SW 109th Avenue from SW 10th Street (ECS Building) to SW 6th Street

Sweetwater, Miami-Dade County, Florida

Dear Mayor Diaz,

This letter is requesting concurrence on the pursuit of a Section 4(f) *de minimis* determination from the Federal Highway Administration (FHWA) for the James M. Beasley Linear Park associated with the proposed UniversityCity pedestrian bridge. The proposed pedestrian bridge associated with the UniversityCity Prosperity Project will span SW 8th Street (US 41/Tamiami Trail) and the Tamiami Canal (C-4) and land within the current footprint of the James M. Beasley Linear Park, owned and maintained by the City of Sweetwater.

The one mile linear park is located on the south side of SW 7th Terrace adjacent to the Tamiami Canal between SW 107th Avenue and SW 117th Avenue. The park includes a 6 foot paved multi-use trail with exercise stations, benches, lighting, water fountains, and two sheltered rest stations. Figure 1 depicts the existing conditions at the project site.

As part of the National Environmental Policy Act (NEPA) process, the proposed pedestrian bridge on the west side of SW 109th Avenue crossing the Tamiami Canal has been identified as the Preferred Build Alternative. Based on current design, a portion of the pedestrian plaza/bridge landing associated with the new pedestrian bridge extends into the limits of the existing linear park. As part of the UniversityCity Prosperity Project, approximately 2,250 square feet from the James M. Beasley Linear Park will be used to construct the proposed bridge landing, bulkhead, and a portion of the proposed plaza. There are no benches, exercise equipment, or other park amenities in this proposed project area. In addition, any existing trees that may be removed as a result of the project improvements will be replaced in-kind with plans to plant several more trees within and surrounding the proposed plaza.

February 25, 2015 Mayor Jose M. Diaz *De Minimis* Impact Concurrence for James M. Beasley Linear Park UniversityCity Prosperity Project Page 2

The area that will be used for the bridge landing currently includes a paved multi-use trail with limited tree cover and landscaping. Photos of the project area are included in Attachment A. As shown in Figure 2, this path will be relocated into an extension of the larger proposed pedestrian plaza encompassing approximately 6,750 square feet and includes the installation of hardscape over the existing sod, artificial turf, and asphalt path. The pedestrian plaza will enlarge the existing park footprint and will allow the continued flow of through pedestrian/bicycle traffic around the bridge landing as well as serve as a trailhead with bicycle racks, benches, and water fountains. The proposed changes are considered an enhancement to the park facility and would provide an enhanced level of access to the park by providing a connection to the pedestrian bridge, FIU, and the City's complete streets improvements. This land, including the closed portion of SW 7th Terrace, is to be transferred to FIU as part of the grant match commitment, either as a perpetual easement or fee interest, for use as a public park.

The Tamiami Canal (8DA6453) has been determined eligible for inclusion in the National Register by the State Historic Preservation Office (SHPO). Due to the presence of resources eligible for inclusion in the National Register, coordination with the SHPO was conducted in order to be compliant with the National Historic Preservation Act of 1966 and Section 106 (16 U.S.C. 470). The proposed project was determined to have no adverse effect on the National Register-eligible Tamiami Canal. Correspondence with SHPO concurrence is provided in Attachment B. The canal will be crossed by the new pedestrian bridge and the landing of the new bridge will be placed on the northern embankment along with a retaining wall. These improvements will not affect the canal to such a degree that it can no longer convey its significance in the areas of engineering, and its integrity will not be notably compromised.

Community Outreach

On September 3, 2014, Florida International University and the City of Sweetwater held a meeting with Grove Estates Condominium unit owners at the 109 Tower 1st floor conference room to review street closure options being considered by the City of Sweetwater to facilitate the vision of the UniversityCity project. The Grove Estates Condominium is located on the west side of SW 109th Avenue between SW 7th Terrace and SW 7th Street in Sweetwater, Florida and it is immediately north and west of the planned UniversityCity improvements and the James M. Beasley Linear Park (see Figure 1).

The meeting was organized through the efforts of and approval by Oneida Mareno of P&M Management Services, Inc., the condominium management company that provides various services to Grove Estate Condominium Association, Inc., and the Grove Estates Condominium Association, Inc. President, Jenny Guerra. All thirty-three (33) unit owners were put on notice of the meeting by email. Included in Attachment C is the sign-in sheet collected at the meeting.

February 25, 2015 Mayor Jose M. Diaz De Minimis Impact Concurrence for James M. Beasley Linear Park UniversityCity Prosperity Project Page 3

At this meeting, conceptualized improvements were shown that would create a pedestrian plaza west of SW 109th Avenue on SW 7th Terrace, encompassing the James M. Beasley Linear Park. During this time the proposed pedestrian bridge landed on the south side of the canal and did not impact the linear park. Three options (1, 2, and 2B) along with visual presentations of the intended plaza area with features were shown (see Attachment C). A vote was taken on the proposed options and by unanimous vote, Option 2, depicting a street closure, was selected as the preferred option.

- On December 30, 2014 and January 4, 2015 surveys were distributed and collected at James M. Beasley Linear Park. Surveys were conducted in the afternoon midweek and on the weekend to gather opinions of both recreational users and commuters. A surveyor fluent in Spanish was also available to address questions for park users not fluent in English. Sixty (60) surveys were completed during these periods. The purpose of this survey was to gather information from park users about the proposed improvements within the linear park. Of those surveyed 42% indicated they were aware of the UniversityCity project while 58% were not aware. Of those aware of the project most were aware of the pedestrian bridge but not of the other proposed enhancements and improvements, such as where the bridge was landing or the expanded pedestrian plaza. Seventy-eight percent of those surveyed indicated they used the park more than once a week with 60% indicting daily use. People that used the linear park during the week were more likely to use it daily than the people on the weekends. The most common use of the park was noted to be exercise (walking, biking) with 87% of the respondents. As expected, recreational use increased during the weekend. Only 2% indicated using the linear park for commuting. The proposed improvements would enhance and not limit these activities. The survey results are included in Attachment D.
- Sweetwater Police Departments. A general discussion of the project was provided, including the proposed street closure along SW 7th Terrace. It was indicated that there would be no anticipated impacts to response time or ability to respond to calls due to the street closure. Concerns about the existing bottleneck on SW 109th Avenue were expressed as there are not many exits out of the City of Sweetwater. It was also suggested to include flashing crosswalk indicators across SW 109th Avenue and US 41. All parties agree that these improvements will increase general safety and improve traffic flow in the area. All parties agree that there is no issue with the proposed street closure and prefer the closure since it will inhibit cut through traffic and help with traffic flow on SW 109th Avenue. Therefore, the proposed improvements and closure of SW 7th Terrace is not seen as an issue from these stakeholders. Meeting minutes are included in Attachment E.

On January 30, 2015, and February 5, 2015 surveys were distributed and collected from twenty-two (22) units at the Grove Estates Condominium. The purpose of this survey was to garner information from residents who would likely be impacted by the proposed improvements and

street closure along SW 7th Terrace. As a result, nineteen (19) of the surveys preferred Option 2, two (2) surveys preferred Option 1, and one (1) survey preferred the no build alternative.

In total, twenty-two (22) residential units completed surveys out of a sample size of thirty-three

(33) residential units. A substantial majority (86%) of survey responses indicated Option 2, complete street closure, as the preferred alternative. Attachment F includes the surveys and

options presented.

> Plans were submitted to Miami-Dade Fire rescue for site plan approval on January 16, 2015.

Concerns regarding emergency vehicle access through the plaza were addressed and on February 5, 2015 the site plan was approved by the Miami-Dade County Fire Department.

Attachment G includes the approved site plan.

In summary, the project's use of approximately 2,250 square feet of linear park will not adversely affect

the activities, features, and connectivity of the James M. Beasley Linear Park, and the proposed changes are considered an enhancement to the park facility. Furthermore, Option 2 which has the support of

the residents and City Commission (see attachment F), proposes to increase the footprint of the existing

park by approximately 6,750 square feet with the closure of SW 7th Terrace and transfer the land to FIU

as part of the grant match commitment for use as a public park.

The expected positive effects of any measures included in a project to mitigate the adverse effects on a

park or recreational resource are taken into account when determining whether the impact on the park or recreational resource is *de minimis*. Therefore, based upon considerations contained in the attached

documents, there are no adverse effects to the activities, features, and attributes of the resource due to

the proposed project and we request concurrence that the information provided supports the finding of

de minimis impact as per 23 CFR 774.

Kend a June l

If you have any questions or need additional information, please contact me at 305-348-2101 or

kjessell@fiu.edu.

Sincerely,

Kenneth A. Jessell, Ph.D.

Senior Vice President for Finance and Administration and Chief Financial Officer

Attachments

February 25, 2015 Mayor Jose M. Diaz De Minimis Impact Concurrence for James M. Beasley Linear Park UniversityCity Prosperity Project Page 5

The attached information is being submitted to request a Section 4(f) *de minimis* approval from FHWA for the proposed use of the James M. Beasley Linear Park by the above referenced project. This information is being provided pursuant to 49 U.S.C. 303 and in accordance with the provisions of 23 CFR 774.

THEREFORE: Based upon considerations contained in the attached documents, it is determined that the use of the above referenced property results in only *de minimis* impacts to the protected resource.

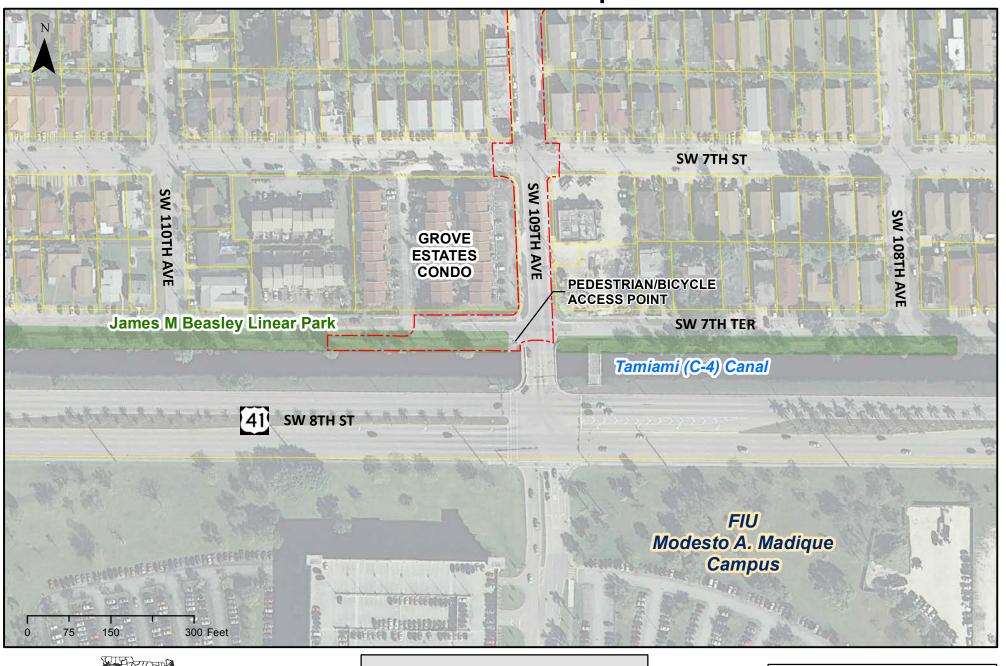
APPROVAL:

The City of Sweetwater concurs that the Section 4(f) *de minimis* impact applies for James M. Beasley Linear Park for the UniversityCity Prosperity Project as described in this document and understands that FHWA may proceed with a *de minimis* impact finding based upon the City's concurrence that the proposed use will result in no adverse effects to the activities, features and attributes of the property.

On: 02 126 1 15

City of Sweetwater

UniversityCity Prosperity Project Site Location Map





Legend --- Construction Limits within SFWMD/Sweetwater R/W Parcel Boundary Park Boundary

FIGURE 1

UniversityCity Prosperity Project Preferred Alternative - Option 2

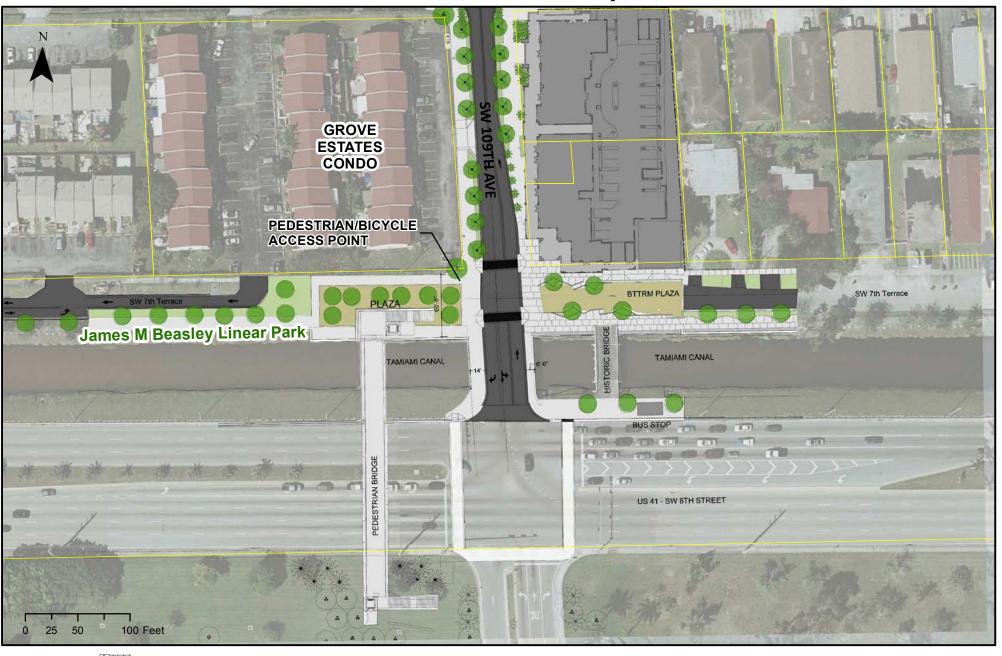






FIGURE 2

ATTACHMENT A Site Photos



James M. Beasley Linear Park looking west from SW 109th Avenue



James M. Beasley Linear Park looking east toward SW 109th Avenue

ATTACHMENT B SHPO Concurrence

From: <u>James, Steven C.</u>

To: <u>Kenneth Jessell</u>; <u>Colin Henderson</u>

Cc: Culhane, Barbara J; Varela-Margolles, Aileen; Carter, Nicole; Vilches, Mary T.

Subject: FW: FIU UniversityCity Section 106 Addendum Number 2

Date: Thursday, December 11, 2014 11:39:46 AM

Attachments: Pages from Rev 1UniversityCityProject.ConceptualPlans.10142014.pdf

Ken & Colin, we have received SHPO Concurrence below. Please include in the Reevaluation. Thank you.

Steven Craig James, RLA 1451

District Environmental Administrator
Intermodal Systems Development Office
Florida Department of Transportation, District Six
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6109
Miami, Florida 33172
Office (305) 470-5221
steven.james@dot.state.fl.us





From: Jones, Ginny L. [mailto:Ginny.Jones@DOS.MyFlorida.com]

Sent: Thursday, December 11, 2014 8:32 AM

To: Cathy.Kendall@dot.gov

Cc: James, Steven C.; Culhane, Barbara J; Rivera, Jorge; Jackson, Roy **Subject:** RE: FIU UniversityCity Section 106 Addendum Number 2

Cathy,

SHPO concurs with FHWA's finding of no adverse effect to historic properties.

Regards,

Ginny Jones

Architectural Historian | Bureau of Historic Preservation | Division of Historical Resources | Florida Department of State | 500 South Bronough Street | Tallahassee, Florida 32399-0250 |

850.245.6333 | 1.800.847.PAST | Fax: 850.245.6439 | Ginny.Jones@dos.myflorida.com | dos.myflorida.com/historical



From: Cathy.Kendall@dot.gov [mailto:Cathy.Kendall@dot.gov]

Sent: Wednesday, December 10, 2014 2:51 PM

To: Jones, Ginny L.

Cc: Steven.James@dot.state.fl.us; Barbara.Culhane@dot.state.fl.us; Jorge.Rivera@dot.gov;

Roy.Jackson@dot.state.fl.us

Subject: FW: FIU UniversityCity Section 106 Addendum Number 2

Jenny,

On April 4, 2014, you provided concurrence for the SHPOP of *no adverse effect* for the proposed pedestrian bridge over SW 8th Street near the SWFWMD C-4 canal. I am forwarding to you the new request from FIU via FDOT to alter the proposed FIU Sweetwater TIGER project to extend the proposed pedestrian bridge over the historic canal as illustrated in the attached new concept plans.

As described by FDOT and indicated in the attachment, the revision would move the touchdown of the pedestrian bridge and new bulkhead from the south side of the canal bank to the north side, and no additional impacts to the canal from the previous design are anticipated.

FHWA finds that the proposed change would not adversely affect historic properties on or eligible for listing in the *National Register of Historic Places* and request your concurrence for this finding.

Cathy Kendall, AICP
Senior Environmental Specialist
FHWA - FL, PR and VI
545 John Knox Road, Suite 200
Tallahassee, FL 32303
(850) 553-2225
cathy.kendall@dot.gov

From: James, Steven C. [mailto:Steven.James@dot.state.fl.us]

Sent: Monday, December 08, 2014 2:44 PM

To: Kendall, Cathy (FHWA)

Cc: Rivera, Jorge (FHWA); Jackson, Roy; Culhane, Barbara J **Subject:** FW: FIU UniversityCity Section 106 Addendum Number 2

Cathy,

FIU has now extended the new UniversityCity pedestrian bridge so that it completely spans the National Register of Historic Places (NHRP) eligible Tamiami Canal; it is still located on the west side

of SW 109th Avenue. In addition, improvements to the pedestrian plaza in this area would involve new bulkhead along the northern bank of the canal. The attached drawings depict the new configuration. As the new bridge will span the canal, this resource will remain in the same configuration with no modifications to the alignment and the canal will not be filled in or widened. The addition of the bridge over the canal should allow the canal to continue to convey its significance in the areas of engineering and community planning and development.

FHWA previously found that the proposed relocation of the new pedestrian bridge to the west side of SW 109th Avenue would have no adverse effect on resources on or eligible for listing in the NRHP, with SHPO concurrence on April 4, 2014. We respectfully request your concurrence with the findings that the proposed project continues to have no adverse effect on both the old pedestrian bridge and the Tamiami Canal. This request is in accordance with the Section 106 of the National Historic Preservation Act of 1966, as amended.

Please let me know if you need any additional information. Thank you.

Steven Craig James, RLA 1451

District Environmental Administrator
Intermodal Systems Development Office
Florida Department of Transportation, District Six
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6109
Miami, Florida 33172
Office (305) 470-5221
steven.james@dot.state.fl.us





@ltsWorkingFL



The Department of State is committed to excellence. Please take our <u>Customer Satisfaction Survey</u>.

ATTACHMENT C

Grove Estates Meeting

September 3, 2014

From: <u>Thomas Gustafson</u>

To: Jenny Guerra (jen guerra@bellsouth.net); Oneida Marena (pandmmanagement@gmail.com)
Cc: Elizabeth Cardona; Francisco Alonso; Robert Herrada; Alan Abolila; Colin Henderson

Subject: Re: September 3rd meeting

Date: Sunday, January 18, 2015 5:32:05 PM

Attachments: GroveEstates.09032014meeting.SigninSheet.PNG

ConceptualOptionsCommissionAug25.pdf

This will confirm that on last September 3, 2014, Florida International University and the City of Sweetwater held a meeting with Grove Estates Condominium unit owners at the 109 Tower 1st floor conference room across SW 109th from the Grove Estate Condominium to review options being considered by the Sweetwater City Commission and Mayor to make further improvements as part of the UniversityCity Prosperity Project See http://cake.fiu.edu/TIGER2013/.

Grove Estates Condominium is located on the west side of SW 109th Avenue between SW 7th Terrace and SW 7th Street in Sweetwater, Florida and it is immediately north and west of the UniversityCity improvements planned along SW 109th Avenue and immediately to the west of SW 109th Avenue on SW 7th Terrace and the James M. Beasley Linear Park (inclusive of the bridge landing for the signature pedestrian-oriented shared use bridge that is proposed to span US41 west of the US 41 and SW 109th Avenue intersection.

The meeting was organized through the efforts of and approval by Oneida Mareno of P&M Management Services, Inc., the condominium management company that provides various services to Grove Estate Condominium Association, Inc. and the Grove Estates Condominium Association, Inc. President, Jenny Guerra. All 33 unit owners were put on notice of the meeting by email from Oneida Mareno and the attached is the sign-in sheet collected at the meeting.

Elizabeth Cardona is a principal in the architectural firm of NC - office that was hired by the City of Sweetwater to conceptualize improvements that would create a plaza west of SW 109th Avenue on SW 7th Terrace and extending into the James M. Beasley Linear Park. As part of her work with the City of Sweetwater, Ms. Cardona prepared three alternatives (1, 2, and 2B) along with some visual presentations of the intended plaza area with features as shown by the attached. When looking at the proposal plans, the 33 Grove Estate Condominium units can be seen as the three rows of residential units with red roofs running south to north from SW 7th Terrace to SW 7th Street west of SW 109th Avenue that are arranged 11 to a row.

At the Grove Estate Condominium meeting, many questions were asked of and answered by Ms. Cardona as well as questions asked of and answered by two City of Sweetwater employees, Robert Herrada and Alan Abolia. Francisco Alonso of TYLI was also there to explain the UniversityCity conceptual drawings and improvements. I was there to broadly

explain the UniversityCity project history and the expected review of these option by the Sweetwater City Commission in the following weeks and months.

Towards the end of this meeting discussion that extended in time for over an hour, a vote was taken as to the options proposed and by unanimous vote of those Grove Estate Condominium unit owners attending, Option 2 was selected as the preferred option (see page 5 of the NC office conceptual drawings).

I ask Ms. Guerra and Ms. Mareno to confirm that they attended the meeting, arranged for all 33 of the Grove Estate Condominium unit owners to be invited to the meeting, and that the the attached was the sign-in sheet that includes Ms. Guerra's name last on the sign-in sheet.

I ask Elizabeth Cardona, Francisco Alonso, Robert Herrada and Alan Abolila to confirm this meeting description to be accurate and to correct or add to it any additional information they think was relevant.

Thank you.

Tom Gustafson, J.D. Director, Research Programs Office of Finance & Administration Florida International University 11200 SW 8th Street, PC539C Miami, Florida 33199

Email: tgustafs@fiu.edu Office: 305 348-4748

Cell: 954 661-7848

From: Thomas Gustafson

Sent: Wednesday, August 27, 2014 12:12 PM

To: Oneida Mareno; Oneida Mareno

Cc: Travis Bodeep; Elizabeth Cardona; Francisco Alonso; Robert Herrada; Eric Gomez; Sergio

Purrinos; Isabel Cusio Carballo Subject: September 3rd meeting

This will confirm our 6:00 PM meeting with the Grove Estates Condo owners this next Wednesday, September 3rd to review UniversityCity plans and alternatives being considered by the Sweetwater City Commission. I have reserved with of 109 Tower management (Travis Bodeep - Community Manager at 109 Tower) the first floor conference room of 109 Tower for our use.

I have requested Elizabeth Cardona of NC - office attend to explain the alternate improvements and plans for Linear Park and Memorial Plaza improvements. In addition I have requested Francisco Alonzo of TYLI to explain UniversityCity conceptual plans and design criteria for the pedestrian-oriented shared-use bridge and complete street improvements. Eric Gomez or I can explain the improvements to the Sweetwater Historic Bridge (for use as a pedestrian bridge) and to SW 7th Avenue east of SW 7th Terrace that will be closed to through traffic as part of the Brothers to the Rescue Memorial Plaza development.

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Tom Gustafson, J.D.
Director, Research Programs
Office of Finance & Administration
Florida International University
11200 SW 8th Street, PC539C

Miami, Florida 33199 Email: tgustafs@fiu.edu Office: 305 348-4748

Cell: 954 661-7848

Sent from my iPhone

From: <u>Francisco Alonso</u>

To: Thomas Gustafson; Jenny Guerra (jen_guerra@bellsouth.net); Oneida Marena (pandmmanagement@gmail.com)

Cc: <u>Elizabeth Cardona; Robert Herrada; Alan Abolila; Colin Henderson</u>

Subject: RE: September 3rd meeting

Date: Tuesday, January 20, 2015 9:44:29 AM

Tom.

I was at the meeting and your email factually represents the events of the meeting.

Frank Alonso

From: Thomas Gustafson [mailto:tgustafs@fiu.edu]

Sent: Sunday, January 18, 2015 5:30 PM

To: Jenny Guerra (jen_guerra@bellsouth.net); Oneida Marena (pandmmanagement@gmail.com)

Cc: Elizabeth Cardona; Francisco Alonso; Robert Herrada; Alan Abolila; Colin Henderson

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Condominium units can be seen as the three rows of residential units with red roofs running south to north from SW 7th Terrace to SW 7th Street west of SW 109th Avenue that are arranged 11 to a row.

At the Grove Estate Condominium meeting, many questions were asked of and answered by Ms. Cardona as well as questions asked of and answered by two City of Sweetwater employees, Robert Herrada and Alan Abolia. Francisco Alonso of TYLI was also there to explain the UniversityCity conceptual drawings and improvements. I was there to broadly explain the UniversityCity project history and the expected review of these option by the Sweetwater City Commission in the following weeks and months.

Towards the end of this meeting discussion that extended in time for over an hour, a vote was taken as to the options proposed and by unanimous vote of those Grove Estate Condominium unit owners attending, Option 2 was selected as the preferred option (see page 5 of the NC - office conceptual drawings).

I ask Ms. Guerra and Ms. Mareno to confirm that they attended the meeting, arranged for all 33 of the Grove Estate Condominium unit owners to be invited to the meeting, and that the the attached was the sign-in sheet that includes Ms. Guerra's name last on the sign-in sheet.

I ask Elizabeth Cardona, Francisco Alonso, Robert Herrada and Alan Abolila to confirm this meeting description to be accurate and to correct or add to it any additional information they think was relevant.

Thank you.

Tom Gustafson, J.D.
Director, Research Programs
Office of Finance & Administration
Florida International University
11200 SW 8th Street, PC539C

Email: tgustafs@fiu.edu
Office: 305 348-4748
Cell: 954 661-7848

Miami. Florida 33199

From: Thomas Gustafson

Sent: Wednesday, August 27, 2014 12:12 PM

To: Oneida Mareno; Oneida Mareno

Cc: Travis Bodeep; Elizabeth Cardona; Francisco Alonso; Robert Herrada; Eric Gomez; Sergio

Purrinos; Isabel Cusio Carballo Subject: September 3rd meeting

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Miami, Florida 33199

Email: tgustafs@fiu.edu
Office: 305 348-4748
Cell: 954 661-7848

Sent from my iPhone

From: Elizabeth Cardona
To: Francisco Alonso

Cc: Thomas Gustafson; Jenny Guerra (jen_guerra@bellsouth.net); Oneida Marena

(pandmmanagement@gmail.com); Elizabeth Cardona; Robert Herrada; Alan Abolila; Colin Henderson

Subject: Re: September 3rd meeting

Date: Tuesday, January 20, 2015 10:03:44 AM

I also agree with Toms description. I would like to add that on September 18, I emailed the residents on the list the resolution that was voted on by the commission.

Sent from my iPhone

On Jan 20, 2015, at 9:44 AM, Francisco Alonso < francisco.alonso@tylin.com > wrote:

Tom,

I was at the meeting and your email factually represents the events of the meeting.

Frank Alonso

From: Thomas Gustafson [mailto:tgustafs@fiu.edu]

Sent: Sunday, January 18, 2015 5:30 PM

To: Jenny Guerra (<u>jen_guerra@bellsouth.net</u>); Oneida Marena

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From: Thomas Gustafson

Sent: Wednesday, August 27, 2014 12:12 PM

To: Oneida Mareno; Oneida Mareno

Cc: Travis Bodeep; Elizabeth Cardona; Francisco Alonso; Robert Herrada; Eric

Gomez; Sergio Purrinos; Isabel Cusio Carballo

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Tom Gustafson, J.D.
Director, Research Programs
Office of Finance & Administration
Florida International University
11200 SW 8th Street, PC539C

From: <u>JENNY GUERRA</u>

To: <u>Elizabeth Cardona</u>; <u>Francisco Alonso</u>

Cc: Thomas Gustafson; Oneida Marena (pandmmanagement@gmail.com); Elizabeth Cardona; Robert Herrada; Alan

Abolila; Colin Henderson

Subject: Re: September 3rd meeting

Date: Tuesday, January 20, 2015 7:45:59 PM

Tom,

I confirm that I was at the meeting and Oneida Moreno sent a notice inviting all 33 owners to attend the meeting. I do not believe the attached was the actual sign in sheet though. There were more owners in attendance. Oneida should have the sign in sheet from the Grove Estates owners. If I'm not mistaken, Elizabeth started this sign in sheet for owners that were interested in receiving more information with respect to the resolution of the upcoming commissioners meeting.

Jenny Guerra (305) 962-4323

On Tuesday, January 20, 2015 10:03 AM, Elizabeth Cardona <elizabethcar@gmail.com> wrote:

I also agree with Toms description. I would like to add that on September 18, I emailed the residents on the list the resolution that was voted on by the commission.

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On Jan 20, 2015, at 9:44 AM, Francisco Alonso <francisco.alonso@tylin.com> wrote:

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Frank Alonso

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Sent: Sunday, January 18, 2015 5:30 PM

To: Jenny Guerra (jen_querra@bellsouth.net); Oneida Marena (pandmmanagement@gmail.com)

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109th Avenue and immediately to the west of SW 109th Avenue on SW 7th Terrace and the James M. Beasley Linear Park (inclusive of the bridge landing for the signature pedestrian-oriented shared use bridge that is proposed to span US41 west of the US 41 and SW 109th Avenue intersection.

The meeting was organized through the efforts of and approval by Oneida Mareno of P&M Management Services, Inc., the condominium management company that provides various services to Grove Estate Condominium Association, Inc. and the Grove Estates Condominium Association, Inc. President, Jenny Guerra. All 33 unit owners were put on notice of the meeting by email from Oneida Mareno and the attached is the sign-in sheet collected at the meeting.

Elizabeth Cardona is a principal in the architectural firm of NC - office that was hired by the City of Sweetwater to conceptualize improvements that would create a plaza west of SW 109th Avenue on SW 7th Terrace and extending into the James M. Beasley Linear Park. As part of her work with the City of Sweetwater, Ms. Cardona prepared three alternatives (1, 2, and 2B) along with some visual presentations of the intended plaza area with features as shown by the attached. When looking at the proposal plans, the 33 Grove Estate Condominium units can be seen as the three rows of residential units with red roofs running south to north from SW 7th Terrace to SW 7th Street west of SW 109th Avenue that are arranged 11 to a row.

At the Grove Estate Condominium meeting, many questions were asked of and answered by Ms. Cardona as well as questions asked of and answered by two City of Sweetwater employees, Robert Herrada and Alan Abolia. Francisco Alonso of TYLI was also there to explain the UniversityCity conceptual drawings and improvements. I was there to broadly explain the UniversityCity project history and the expected review of these option by the Sweetwater City Commission in the following weeks and months.

Towards the end of this meeting discussion that extended in time for over an hour, a vote was taken as to the options proposed and by unanimous vote of those Grove Estate Condominium unit owners attending, Option 2 was selected as the preferred option (see page 5 of the NC -office conceptual drawings).

I ask Ms. Guerra and Ms. Mareno to confirm that they attended the meeting, arranged for all 33 of the Grove Estate Condominium unit owners to be invited to the meeting, and that the the attached was the sign-in sheet that includes Ms. Guerra's name last on the sign-in sheet.

I ask Elizabeth Cardona, Francisco Alonso, Robert Herrada and Alan Abolila to confirm this meeting description to be accurate and to correct or add to it any additional information they think was relevant.

Thank you.

Tom Gustafson, J.D. Director, Research Programs

Office of Finance & Administration Florida International University 11200 SW 8th Street, PC539C Miami, Florida 33199

Email: tgustafs@fiu.edu
Office: 305 348-4748
Cell: 954 661-7848

From: Thomas Gustafson

Sent: Wednesday, August 27, 2014 12:12 PM

To: Oneida Mareno; Oneida Mareno

Cc: Travis Bodeep; Elizabeth Cardona; Francisco Alonso; Robert Herrada; Eric

Gomez; Sergio Purrinos; Isabel Cusio Carballo

Subject: September 3rd meeting

This will confirm our 6:00 PM meeting with the Grove Estates Condo owners this next Wednesday, September 3rd to review UniversityCity plans and alternatives being considered by the Sweetwater City Commission. I have reserved with of 109 Tower management (Travis Bodeep - Community Manager at 109 Tower) the first floor conference room of 109 Tower for our use.

I have requested Elizabeth Cardona of NC - office attend to explain the alternate improvements and plans for Linear Park and Memorial Plaza improvements. In addition I have requested Francisco Alonzo of TYLI to explain UniversityCity conceptual plans and design criteria for the pedestrian-oriented shared-use bridge and complete street improvements. Eric Gomez or I can explain the improvements to the Sweetwater Historic Bridge (for use as a pedestrian bridge) and to SW 7th Avenue east of SW 7th Terrace that will be closed to through traffic as part of the Brothers to the Rescue Memorial Plaza development.

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Miami, Florida 33199

Email: tgustafs@fiu.edu
Office: 305 348-4748
Cell: 954 661-7848

Sent from my iPhone

From: Oneida Moreno
To: Thomas Gustafson

Cc: JENNY GUERRA; Elizabeth Cardona; Francisco Alonso; Elizabeth Cardona; Robert Herrada; Alan Abolila; Colin

Henderson

Subject: Re: September 3rd meeting

Date: Monday, January 26, 2015 4:09:28 PM

Dear Mr. Gustafson:

All unit owners were properly notified. As far as I remember there were at least twenty owners present at the meeting.

Regards,

Oneida Moreno

On Sun, Jan 25, 2015 at 2:37 PM, Thomas Gustafson < tgustafs@fiu.edu > wrote:

Ondeida - I suspect that you are right in your memory regarding the sign-in sheets, but would you please confirm that the 33 Grove Estate Condominium unit owners were invited to the meeting organized last September 3, 2014 and what is your memory of the number of unit owners in attendance?

I assumed as least 20 unit members were in attendance.

Note that the City Commission in fact did approve the Option 2 version of the alternatives proposed pursuant to Resolution #3944 as attached above.

Thank you.

Tom Gustafson, J.D.
Director, Research Programs
Office of Finance & Administration
Florida International University
11200 SW 8th Street, GL470

Miami, Florida 33199 Email: tgustafs@fiu.edu Office: 305 348-4748 Cell: 954 661-7848 From: Oneida Moreno pandmmanagement@gmail.com>

Sent: Thursday, January 22, 2015 9:51 AM

To: Thomas Gustafson

Cc: JENNY GUERRA; Elizabeth Cardona; Francisco Alonso; Elizabeth Cardona; Robert Herrada; Alan

Abolila; Colin Henderson

Subject: Re: September 3rd meeting

Good Morning:

I did not take any sign-in sheet.

Thanks,

Oneida Moreno

On Tue, Jan 20, 2015 at 7:57 PM, Thomas Gustafson < tgustafs@fiu.edu > wrote:

Thanks. Maybe Oneida can send me the complete sign-in sheet from the September 3rd meeting.

I will be sending you and Oneida a new survey tomorrow to be transmitted to Grove Estates Condominium unit owners and residents. Oneida would hopefully, at your direction, send it by email or mail to the unit owners and I will try to personally deliver the survey to each resident.

When you have some free time, I would like you to the walk with me to those units where you know the residents in order to try and get their input.

Thank you.

Tom Gustafson, J.D.
Director, Research Programs
Office of Finance & Administration
Florida International University
11200 SW 8th Street, GL470

Miami, Florida 33199 Email: tgustafs@fiu.edu Office: 305 348-4748 Cell: 954 661-7848 Sent from my iPhone

On Jan 20, 2015, at 7:46 PM, JENNY GUERRA < <u>ien_guerra@bellsouth.net</u>> wrote:

Tom,

I confirm that I was at the meeting and Oneida Moreno sent a notice inviting all 33 owners to attend the meeting. I do not believe the attached was the actual sign in sheet though. There were more owners in attendance. Oneida should have the sign in sheet from the Grove Estates owners. If I'm not mistaken, Elizabeth started this sign in sheet for owners that were interested in receiving more information with respect to the resolution of the upcoming commissioners meeting.

Jenny Guerra (305) 962-4323

On Tuesday, January 20, 2015 10:03 AM, Elizabeth Cardona < elizabethcar@gmail.com > wrote:

I also agree with Toms description. I would like to add that on September 18, I emailed the residents on the list the resolution that was voted on by the commission.

Sent from my iPhone

On Jan 20, 2015, at 9:44 AM, Francisco Alonso <francisco.alonso@tylin.com</pre>> wrote:

Tom,

I was at the meeting and your email factually represents the events of the meeting.

Frank Alonso

From: Thomas Gustafson [mailto:tgustafs@fiu.edu]

Sent: Sunday, January 18, 2015 5:30 PM

To: Jenny Guerra (jen_guerra@bellsouth.net); Oneida Marena

(pandmmanagement@gmail.com)

Cc: Elizabeth Cardona; Francisco Alonso; Robert Herrada; Alan Abolila; Colin

Henderson

Subject: Re: September 3rd meeting

This will confirm that on last September 3, 2014, Florida International University and the City of Sweetwater held a meeting with Grove Estates Condominium unit owners at the 109 Tower 1st floor conference room across SW 109th from the Grove Estate Condominium to review options being considered by the Sweetwater City Commission and Mayor to make further improvements as part of the UniversityCity Prosperity Project See http://cake.fiu.edu/TIGER2013/.

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Towards the end of this meeting discussion that extended in time for over an hour, a vote was taken as to the options proposed and by unanimous vote of those Grove Estate Condominium unit owners attending, Option 2 was selected as the preferred option (see page 5 of the NC -office conceptual drawings).

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Sent from my iPhone

City Commission Review 25 AUG 2014

BROTHERS TO THE RESCUE MEMORIAL PLAZA

Conceptual Design Options _ SW 109th AVE & West Side of SW 7th Terrace

City of Sweetwater / Florida International University

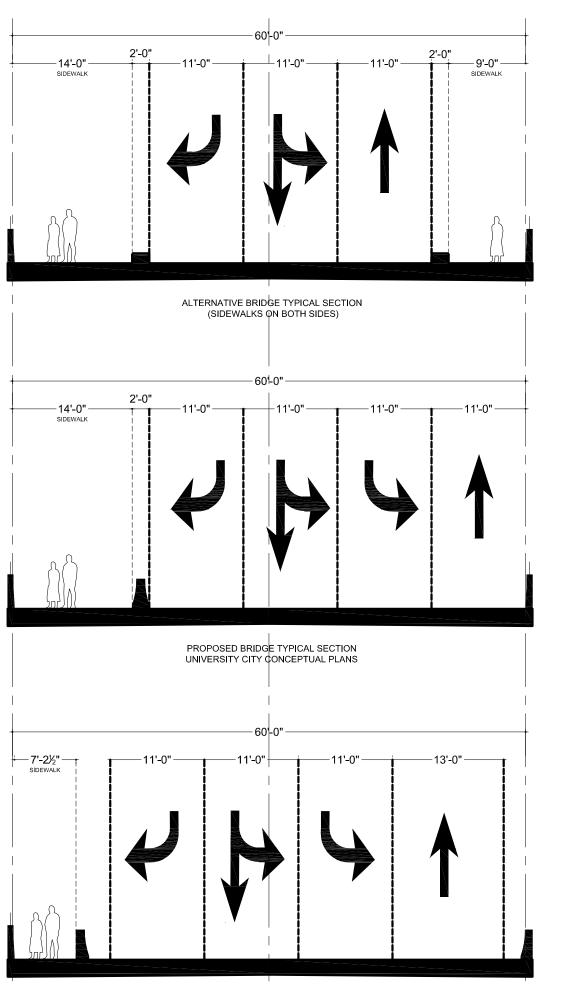


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14131

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08-12-14

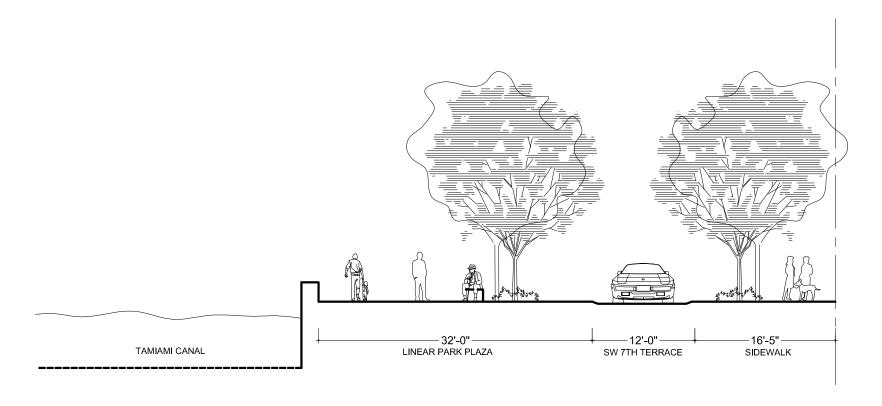
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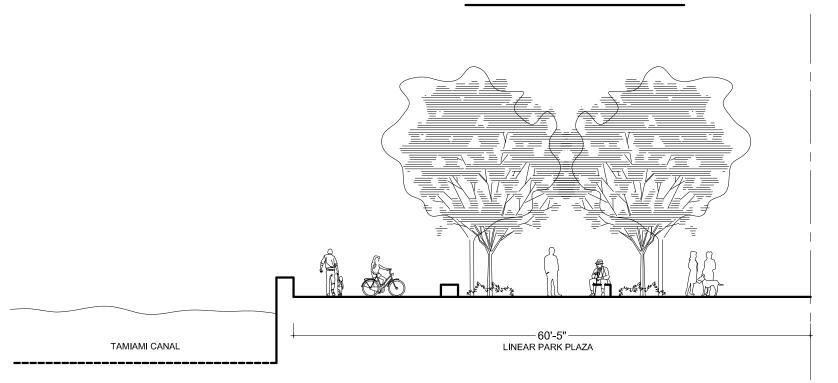


14131

OPTION 2 LINEAR PARK PLAZA & NO ROAD



OPTION 1 LINEAR PARK PLAZA & ONE WAY EAST 12' LANE



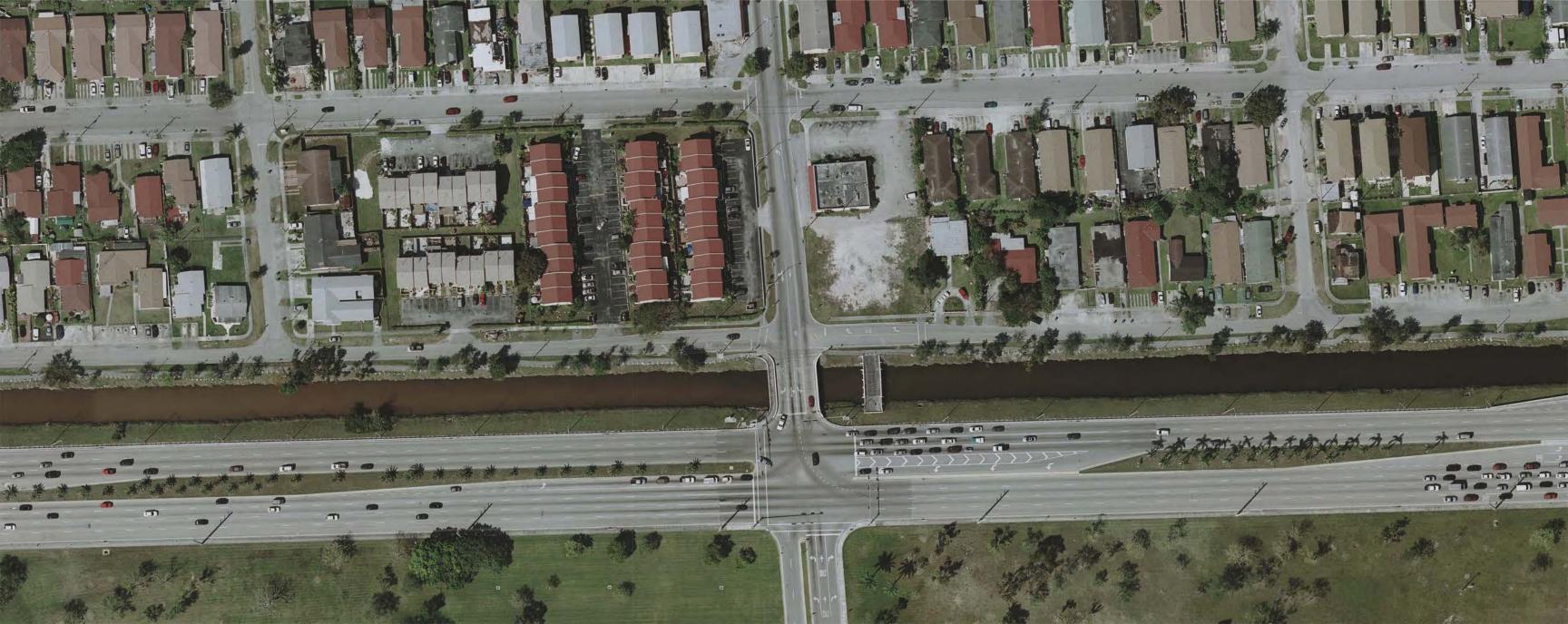




Image capture: Apr 2014 SW 7th Terrace © 2014 Google

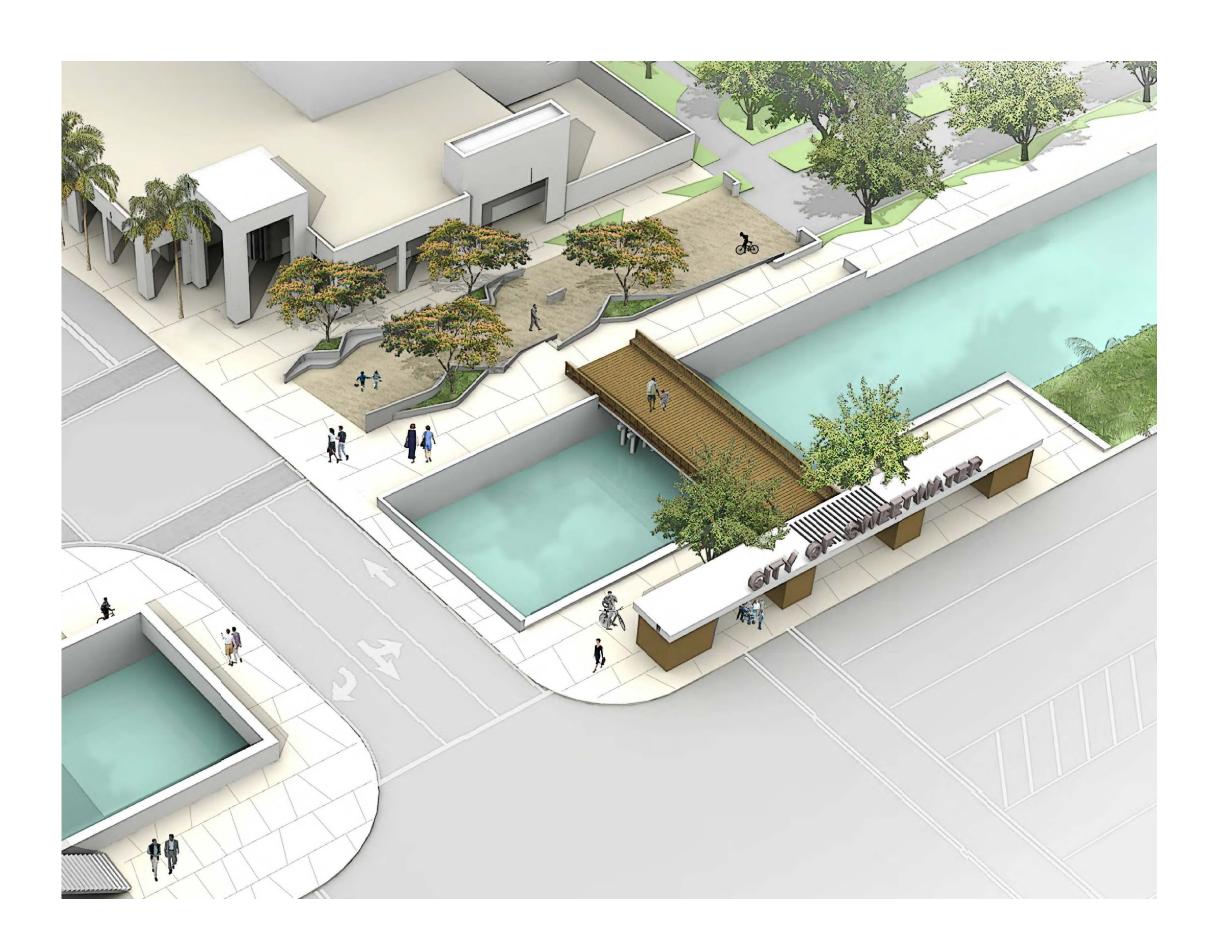
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NANCY STEERS 7880 SW 745T-Luis A. MERCHAN CATIRESS & Hot MAIL. COM Guillermo-r1 @ Verifone.com Gillermo Rumine 10940 5W 7 te St #101. Alberto de Galisteo JULIO 5896@ att. NET JULIO ALVARADO 740 5-20 109 AVE # 309 GREGORIA GONTALEZ DELIA RAMOS DIREALTY @ AIM, COM Roberto Quintana -740 SW 109 AVE aptr311 ruben diaz @ bellsouth net RAFAEL PEREZ RPEREZNIAS@HOTMAIL.COM. WINGTON LIPPERT WINY DESIGN @ AOL. COH Jenny Guerra jen-guerrad bellsouth. net

ATTACHMENT D James M. Beasley Linear Park Surveys

UNIVERSITYCITY PROSPERITY PROJECT

PROJECT DESCRIPTION

Using federal, state, and local funding, the UniversityCity Prosperity Project is an approximately \$16 million effort that implements a transformative complex of pedestrian-oriented, multi-modal and intermodal improvements. By linking the City of Sweetwater and Florida International University to major hubs and providing a safe, healthy and educational enriched urban built environment, UniversityCity will support long term prosperity in a balanced, resilient and sustainable community.

Pedestrian-oriented improvements, including a signature shared-use bridge, mixed-use development, community transit, intermodal stations, feeder bus services and transit stops, will integrate Sweetwater and FIU segments of the UniversityCity community. More frequent transit use, efficient intermodal transfers and safer pedestrian-oriented transit access will enhance this multimodal urban environment in combination with an advanced and comprehensive electronic system of wayfinding: the Informed Traveler Program and Applications (ITPA).

The infrastructure improvements include enhanced pedestrian-oriented transit access and public space:

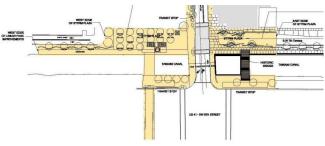
- Along SW 109th Avenue between SW 10th Street in FIU's Maidique Campus and SW 6th Street in Sweetwater
- On SW 7th Terrace and in the James M. Beasley Linear Park adjacent to SW 109th Avenue in Sweetwater
- East of Market Station which is a mixed-use parking garage designated as PG5 in FIU's Maidique Campus east of SW 109th Avenue and north of SW 10th Street.

These improvements will hopefully set the stage for other plazas, mixed-use development, intermodal, transit, and parking improvements adjacent to this project so that Sweetwater and FIU grow together as a prosperous, sustainable and multimodal UniversityCity community now and into the 22nd century.

PROJECT SCHEDULE

Project Phase	Begin (est.)	End (est.)
Design	Q4-2015	Q4-2016
Construction	Q4-2016	Q4-2018





CONTACT

Florida International University Dr. Kenneth Jessell 885 SW 109th Avenue, Sweetwater, Florida 33199 (305) 348-1776 mmunozre@fiu.edu







Date:

UniversityCity Survey

Instructions to persons who are asking and recoding the answers to the following UniversityCity Survey questions: i) introduce yourself to individuals at the James M. Beasley Linear Park (Park); ii) provide those Park users with a copy the Project Description for the UniversityCity Prosperity Project as shown on the back side of this listing of survey questions; iii) summarize the information provided in the Project Description and encourage review of same; iv) ask each question and note each answer as provided below; v) read the statement to the person surveyed as shown in quotes below after the 2nd question is answered and before the 3rd question is asked; and, vi) provide your legible initials on each completed survey form and return to Ken Jessell.

1. Are you aware of the upcoming pedestrian bridge project?

- Yes
- o No

2. Are you aware the project includes the following enhancements/improvements:

- Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street
- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator
- The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)
- Linear park trail and plaza lighting
- Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- Once in a while
- Once/month
- Once/week
- Several times/week
- Daily

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking
- Relaxation
- Other

Date:	Initials:
-------	-----------

UniversityCity Survey

(60 Respondents – Dec. 30, 2014 and Jan. 4, 2015)

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1. Are you aware of the upcoming pedestrian bridge project?

- Yes: 42% (Weekday 41%; Weekend 43%)
- No: 58% (Weekday 59%; Weekend 57%)

2. Are you aware the project includes the following enhancements/improvements:

- Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street: 42% (Weekday – 41%; Weekend – 43%)
- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator: 18% (Weekday 19%; Weekend –17%)
- The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza): 7% (Weekday 8%; Weekend 4%)
- Linear park trail and plaza lighting: 5% (Weekday 8%; Weekend 0%)
- Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area: 3% (Weekday 3%; Weekend 4%)

No: 57% (Weekday – 57%; Weekend – 57%)

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- o Once in a while: 15% (Weekday 11%; Weekend 22%)
- o Once/month: 0% (Weekday 0%; Weekend 0%)
- Once/week: 7% (Weekday 11%; Weekend –0%)
- Several times/week: 18% (Weekday 16%; Weekend 22%)
- o Daily: 60% (Weekday 62%; Weekend 57%)

4. What activities are you involved in this portion of the park

- o Recreation: 25% (Weekday 16%; Weekend 39%)
- Dog walking: 10% (Weekday 5%; Weekend 17%)
- Relaxation: 20% (Weekday 22%; Weekend 17%)
- o Other

Exercise: 87% (Weekday – 81%; Weekend – 96%) Commute: 2% (Weekday – 3%; Weekend – 0%) Socialize: 2% (Weekday – 3%; Weekend – 0%)

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1. Are you aware of the upcoming pedestrian bridge project?

Yes

No

2. Are you aware the project includes the following enhancements/improvements:

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"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- Once in a while
- Once/month 0
- Once/week 0
- Several times/week

Daily

4. What activities are you involved in this portion of the park

- 0 Recreation
- Dog walking 0
- Relaxation

Other

Walker out

Date: 12/30/2014

Initials:

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o Yes No

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3. How frequently do you use this portion of the park:

- o Once in a while
- Once/month
- o Once/week
- Several times/week

Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- > Relaxation

Other

1/1/Kon

Date: 12/30/2014

Initials:

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1. Are you aware of the upcoming pedestrian bridge project?

o Yes

≫ No

2. Are you aware the project includes the following enhancements/improvements:

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Linear park trail and plaza lighting

Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- Once/week
- Several times/week

" Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- Relaxation

Other

12/30/2014

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No

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3. How frequently do you use this portion of the park: 3 times a year

Once in a while

Once/month

- Once/week 0
- Several times/week
- Daily o

4. What activities are you involved in this portion of the park

- O Recreation
- Dog walking 0
- Relaxation

Initials:

UniversityCity Survey

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- Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street
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- The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)
- Linear park trail and plaza lighting
- Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- o Once/week
 - Several times/week



Daily

4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- o Relaxation

X

Other

WALKU)

Initials:

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

Yes

o No.

2. Are you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- o Once/week

🟏 Several times/week

o Daily

4. What activities are you involved in this portion of the park

Recreation
Dog walking

Relaxation
Other

11/11

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1. Are you aware of the upcoming pedestrian bridge project?

No

2. Are you aware the project includes the following enhancements/improvements:

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3. How frequently do you use this portion of the park:

- Once in a while 0
- 0 Once/month
- Once/week О
- Several times/week 0

Daily

What activities are you involved in this portion of the park

- Recreation
- Dog walking
- Relaxation

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3. How frequently do you use this portion of the park:

- Once in a while o
- Once/month O
- Once/week O
 - Several times/week

Daily

4. What activities are you involved in this portion of the park

- Recreation 0
- Dog walking
- Wilker Relaxation

Initials:

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- o Once in a while
- Once/month
- o Once/week
- Several times/week

Daily

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking
- o Relaxation

× 0

Other

| W | W |

Date: 17/20/2014

Initials: 176

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

o Yes

No No

2. Are you aware the project includes the following enhancements/improvements:

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o Once/week

Several times/week

O Daily

4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- Relaxation

✓ Other

1

UniversityCity Survey

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Yes No

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3. How frequently do you use this portion of the park:

4. What activities are you involved in this portion of the park

- Once in a while
- Once/month 0
- Once/week

Several times/week

Daily

- Recreation
- Dog walking
- Relaxation

Other Walking

Initials: The first

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- Once/week

Several times/week

o Daily

4. What activities are you involved in this portion of the park

Recreation

Dog walking

Relaxation

(Other

RUNNIN

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Yes

No

2. Are you aware the project includes the following enhancements/improvements:

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3. How frequently do you use this portion of the park:

- Once in a while
- Once/month 0
- 0 Once/week
 - Several times/week

Daily

4. What activities are you involved in this portion of the park

- Recreation 0
- Dog walking
- Relaxation

Walking-

Initials:

UniversityCity Survey

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o Yes

≫ No

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o Once/week
- Several times/week

76 Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- Relaxation

Other

Other Blus

No

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3. How frequently do you use this portion of the park:

- Once in a while 0
- Once/month 0
- Once/week 0
- Several times/week

Daily

4. What activities are you involved in this portion of the park

- Recreation 0
- Dog walking

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- Once in a while
- Once/month 0
- Once/week 0
 - Several times/week

Daily

4. What activities are you involved in this portion of the park

- 0 Recreation
- Dog walking 0
- Relaxation ,

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- Once in a while 0
- Once/month 0
- Once/week
- Several times/week

Daily

What activities are you involved in this portion of the park

Recreation

Dog walking

Initials:

UniversityCity Survey

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- Once in a while
- o Once/month
- o Once/week
 - Several times/week

Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
 - Relaxation

Other Com

No

UniversityCity Survey

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Yes No

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3. How frequently do you use this portion of the park:

Once in a while

Once/month

- Once/week O
- Several times/week 0
- Daily O

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking 0
- Relaxation

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	10	/	30	Illi
Date:	16	<u>/_</u>		

Initials: WS

UniversityCity Survey

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Yes

o No

2. Arg you aware the project includes the following enhancements/improvements:

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- Once/week
- Several times/week
- ✓ Daily

4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- o Relaxation
- **⊘** Other

bike walk

Initials: MS /TG

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o Once/week
- Several times/week
- Q Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking

o✓ Other

ther

Initials: WS

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o Once/week
- Several times/week
- q / Daily

4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- o Relaxation

Other

walk/set to cears

Initials: WS/TG

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

Yes

o No

2. Are you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator

The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)

 $\mathcal{V}^{\mathcal{C}}$ Linear park trail and plaza lighting

Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o Once/week
- Several times/week
- Daily

4. What activities are you involved in this portion of the park

- Recreation
- o Dog walking
- **/** Relaxation
- Other

Initials: WS

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

√ Yes

o No

2. Are you aware the project includes the following enhancements/improvements:

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✓ and SW 8th Street

An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator

The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)

Linear park trail and plaza lighting

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3. How frequently do you use this portion of the park:

- Once in a while
- Once/month
- o Once/week
- Several times/week
- D Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- o Relaxation

a Other

walk

Initials:

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

✓ Yes

o No

2. Are you aware the project includes the following enhancements/improvements:

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3. How frequently do you use this portion of the park:

- o Once in a while
- Once/month
- o Once/week
- Several times/week
- Daily

4. What activities are you involved in this portion of the park

⊗ Recreation

o / Dog walking

d√ ✓ Relaxation

/ Othe

Walking

Initials:

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- Once in a while
- Once/month
- o Once/week
- Several times/week
- o Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- Relaxation

Other

I valking

Initials: WS/7-

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

o Yes

2. Are you aware the project includes the following enhancements/improvements:

- Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street
- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator
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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- o Once/week
- Several times/week
- ✓ Daily

4. What activities are you involved in this portion of the park

∀ Recreation

o / Dog walking

Relaxation

Other .

italk . run

Initials: WS

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

o Yes

2. Arg/you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator
- The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)
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- Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o / Once/week
 - Several times/week
- Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- o Relaxation

Other wide bike

Initials: WS / G

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

o Yes

₩ No

2. Are you aware the project includes the following enhancements/improvements:

- o Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street
- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator
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3. How frequently do you use this portion of the park:

- o Once in a while
- Once/month
- o Once/week
- Several times/week
- Daily

4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- o , Relaxation

b/ Other

Walk

Date:	12	130

Initials: 5!

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

O Yes

No

2. Are you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator

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3. How frequently do you use this portion of the park:

- Once in a while
 - o Once/month
 - o Once/week
 - o Several times/week
 - o Daily

4. What activities are you involved in this portion of the park

- Recreation
- _⊖——Dog walking)
 - Relaxation
- o Other

Date:	12/	30

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1. Are you aware of the upcoming pedestrian bridge project? Yes

No 0

2. Are you aware the project includes the following enhancements/improvements:

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- Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

If you have any questions about the UniversityCity Prosperity Project or would like to provide additional" comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- Once in a while 0
- Once/month o
- Once/week

Several times/wee

Daily. O

4. What activities are you involved in this portion of the park

Recreation

- Dog walking Relaxation
- Other O

0

Date: 12/30

Initials:

UniversityCity Survey

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1Are	you aware	of the u	pcoming	pedestrian	bridge	project
	Yes					
0	No					

2. Are you aware the project includes the following enhancements/improvements:

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month

Once/week__

Several times/week

o **Daily**

4. What activities are you involved in this portion of the park

O Recreation

Dog Walking

- Relaxation
- o Other

Date: 12/30/14/

UniversityCity Survey

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Linear park trail and plaza lighting Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead

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3. How frequently do you use this portion of the park:

kiosk will be included in the expanded park area

Once in a while 0

Once/month 0

Once/week

Several times/week

Daily

4. What activities are you involved in this portion of the park

Recreation 0

Dog walking...

Relaxation

YLAY WITH GRAND CHILDREN

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3. How frequently do you use this portion of the park:

- Once in a while 0
- Once/month 0
- Once/week 0

Several times/week

Daily

4. What activities are you involved in this portion of the park

Recreation

Dog-walking

Relaxation

SIT & TALK W/PEOPLE

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Linear park trail and plaza lighting



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3. How frequently do you use this portion of the park:

- Once in a while
- Once/month
- Once/week 0
- Several times/week 0
- Daily O

4. What activities are you involved in this portion of the park

Recreation

Dog walking

Relaxation Other

Initials:

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- Once/week
- o Several times/week
- o Daily

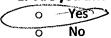
4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- O Relaxation
 - o Other

Date:	 2	13	Ü	

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1.	Are	ou aware of the upcoming pedestrian bridge project
		V



2. Are you aware the project includes the following enhancements/improvements:

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"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- Once in a while 0
- Once/month 0
- Once/week 0
- Several times/week

Daily

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking

Relaxation

SELLS WATER ON 107 AVE COMES
TO PARK TO REST

Date: 1/4/2015

Initials:

UniversityCity Survey

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"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

Once in a while

- Once/month
- o Once/week
- Several times/week
- o Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking

Relaxation

Other

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1. Are you aware of the upcoming pedestrian bridge project?

No

2. Are you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator

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"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

Once in a while

Once/month

- Once/week
- Several times/week 0
- 0 Daily

4. What activities are you involved in this portion of the park

Recreation

Dog walking

Relaxation

Date: UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

Yes O No

2. Are you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator

The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)

o Linear park trail and plaza lighting

o Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

- Once in a while
- Once/month
- o Once/week
- Several times/week

Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- Relaxation

Other

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

No

2. Are you aware the project includes the following enhancements/improvements:

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- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator
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- Once in a while
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- Several times/week

Daily

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking
- Relaxation

Other

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- Once in a while
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Daily

4. What activities are you involved in this portion of the park

Recreation

Dog walking Relaxation

Initials:

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- o Once/month
- Once/week
- o Several times/week

Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- Relaxation

√ Other

Walter,

Date: 1/4/20/5

Initials:

UniversityCity Survey

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o Yes

% No

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- o Once/month
- o Once/week
 - Several times/week

6 Daily

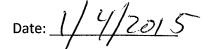
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Recreation

Dog walking

o **Relaxation**

Other



Initials:

UniversityCity Survey

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3. How frequently do you use this portion of the park:



Once in a while

- Once/month
- Once/week
- Several times/week
- o Daily

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking
- o Relaxation •



BIKI

Date: 1/5/2015

Initials:

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o Once/week
- Several times/week



4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- o Relaxation

Other

Mo

Date: 1/4/20/5

Initials:

UniversityCity Survey

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1. Are you aware of the upcoming pedestrian bridge project?

o Yes No

2. Are you aware the project includes the following enhancements/improvements:

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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- o Once/week
- o Several times/week

y Daily

4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- Relaxation

Other ()

 N_{j}

Date: 4/2015

Initials:

UniversityCity Survey

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o Yes

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3. How frequently do you use this portion of the park:

- o Once in a while
- o Once/month
- o Once/week
- Several times/week



4. What activities are you involved in this portion of the park

- o Recreation
- o Dog walking
- Relaxation

R

Other

Date:	01/	H li	5	

Initials: W.J

UniversityCity Survey

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o Yes

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- ✓ Once in a while
- o Once/month
- o Once/week
- Several times/week
- o Daily

4. What activities are you involved in this portion of the park

Recreation

o Dog walking

Relaxation

Other

unlk

Initials: WS

UniversityCity Survey

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o No

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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- Once/week
- Several times/week
- Daily

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking
- o Relaxation
- Ø Other

walk, exercise

Initials: WS MG

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- ✓ Once/week
- Several times/week
- Daily

4. What activities are you involved in this portion of the park

Recreation
Dog walking
Relaxation

Other

wakeing

Initials: WS/TF

UniversityCity Survey

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3. How frequently do you use this portion of the park:

- Once in a while
- o Once/month
- / Once/week
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4. What activities are you involved in this portion of the park

Recreation
Dog walking
Relaxation
Other

UniversityCity Survey

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Yes

No 0

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- Once/week
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- Daily

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✓ Recreation

Dog walking

Relaxation

Other welling exercise

Initials: WS / The

UniversityCity Survey

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- Several times/week

Daily

4. What activities are you involved in this portion of the park

Recreation
Dog walking
Relaxation
Other

walking , biking

Initials: WS

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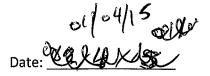
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6	Yes
0	No

2.	. Are⁄y	ou aware the project includes the following enhancements/improvements:
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زيوي		and SW 8th Street
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- 3. How frequently do you use this portion of the park:
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 - Recreation
 - Dog walking
 - o Relaxation
 - Other

walking.



Initials: WS / TG

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- Once in a while
- o Once/month
- Once/week
- ✓ Several times/week

b Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- o Relaxation

♦ Other

walk.

* maniculter was

Date: 0//01/15

Initials: WS/10

UniversityCity Survey

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o No

2. Are you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator

The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)

Linear park trail and plaza lighting

Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

- 3. How frequently do you use this portion of the park:
 - o Once in a while
 - o Once/month
 - Once/week
 - Several times/week
 - **⊘** Daily
- 4. What activities are you involved in this portion of the park
 - o Recreation
 - Dog walking
 - o Relaxation

Other

welle

01/04/15 Date: 02/04/15

Initials: WS

UniversityCity Survey

Instructions to persons who are asking and recoding the answers to the following UniversityCity Survey **questions**: i) introduce yourself to individuals at the James M. Beasley Linear Park (Park); ii) provide those Park users with a copy the Project Description for the UniversityCity Prosperity Project as shown on the back side of this listing of survey questions; iii) summarize the information provided in the Project Description and encourage review of same; iv) ask each question and note each answer as provided below; v) read the statement to the person surveyed as shown in quotes below after the 2nd question is answered and before the 3rd question is asked; and, vi) provide your legible initials on each completed survey form and return to Ken Jessell.

1.	Arg∕y	ou aware of the upcoming pedestrian bridge project?
	V	Yes
	0	No
2.	Are 🗸	ou aware the project includes the following enhancements/improvements:
yes.		ou aware the project includes the following enhancements/improvements: Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal
•••		
no X		∕and SW 8th Street An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including
	/	stairs and elevator
yes	6	stairs and elevator The existing linear park and trail will be expanded into a plaza within NW 7th Terrace
		(referenced as BTTRM Plaza)
NOX	0 /	Linear park trail and plaza lighting Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead biosk will be included in the expanded park area.
, 9 3	16/	Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead
$^{\circ}$	•	kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

- 3. How frequently do you use this portion of the park:
 - Once in a while
 - o Once/month
 - o /Once/week
 - Several times/week
 - o Daily
- 4. What activities are you involved in this portion of the park
 - o Recreation
 - Dog walking
 - Relaxation

Other

bike, exercise

Initials: <u>WS</u>

UniversityCity Survey

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1. Are ou aware of the upcoming pedestrian bridge project?
Yes
No

2. Are you aware the project includes the following enhancements/improvements:

Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street

- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator
- The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)
- o Linear park trail and plaza lighting
- Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

- 3. How frequently do you use this portion of the park:
 - Once in a while
 - Once/month
 - o Once/week
 - Several times/week
 - Daily

4. What activities are you involved in this portion of the park

- Recreation
- Dog walking
- Relaxation

o Other Walking exercise.

Initials: W3

UniversityCity Survey

Instructions to persons who are asking and recoding the answers to the following UniversityCity Survey questions: i) introduce yourself to individuals at the James M. Beasley Linear Park (Park); ii) provide those Park users with a copy the Project Description for the UniversityCity Prosperity Project as shown on the back side of this listing of survey questions; iii) summarize the information provided in the Project Description and encourage review of same; iv) ask each question and note each answer as provided below; v) read the statement to the person surveyed as shown in quotes below after the 2nd question is answered and before the 3rd question is asked; and, vi) provide your legible initials on each completed survey form and return to Ken Jessell.

1. Are you aware of the upcoming pedestrian bridge project?

Q. Yes

o No

2. Are you aware the project includes the following enhancements/improvements:

- Pedestrian Bridge from NW 7th Terrace to the FIU campus, traveling over the Tamiami canal and SW 8th Street
- An appropriate scaled bridge landing on the northern bank of the Tamiami canal, including stairs and elevator
- The existing linear park and trail will be expanded into a plaza within NW 7th Terrace (referenced as BTTRM Plaza)
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- Amenities such as benches, trash receptacles, bicycle racks, shade trees, and trailhead kiosk will be included in the expanded park area

"If you have any questions about the UniversityCity Prosperity Project or would like to provide additional comments, please contact by phone or mail to the Project Team leader listed on the Project Description flyer I have provided to you."

3. How frequently do you use this portion of the park:

Once in a while

- o Once/month
- o Once/week
- Several times/week
- o Daily

4. What activities are you involved in this portion of the park

- o Recreation
- Dog walking
- o Relaxation
- no/ Other

ATTACHMENT E City of Sweetwater and FIU Chief of Police Meetings

From: Colin Henderson

To: "jmenocal@cityofsweetwater.fl.gov"

Cc: "ifdelara@cityofssweetwater.fl.gov"; Robert Herrada; Francisco Alonso; "Thomas Gustafson"

Subject: FIU University City Meeting

Date: Thursday, January 15, 2015 1:57:00 AM

Chief Menocal – Thank you taking the time to meet with us on Monday morning. We appreciate your insight and suggestions on the proposed project. The following summarizes the discussion along with your concerns and suggestions that were provided during the meeting.

- A general discussion of the project was provided, including the proposed street closure along SW 7th Terrace.
- Concerns about the existing bottleneck on SW 109th Avenue were expressed. There are currently not enough exits out of the City. The proposed plans show going from 4 to 3 lanes on the SW 109th Avenue bridge; however, would prefer to keep the four lanes with a dedicated free flow right turn lane to westbound SW 8th Street with a barrier. Also suggested to include flashing crosswalk indicators across SW 109th Avenue and SW 8th Street.
- It was noted, based on observations, that pedestrians crossing SW 8th Street in the western crosswalk causes a back up in traffic trying to make the right turn on to westbound SW 8th Street. Would like to remove this at grade crossing once the pedestrian bridge is in place.
- Trucks are not allowed on SW 109th Avenue but still come through, damaging the traffic circle near City hall. Would like to request "No left turn for trucks" signage on SW 8th Street.
- Fishing has been observed from the historic bridge. Suggest "No Fishing" signs placed on bridge.
- FWC has delegated water traffic enforcement to the Sweetwater police. Would like to include "No wake zone" signage along the canal.
- There is no issue with the proposed street closure and prefer the closure in that it will inhibit cut through traffic and more than likely help with traffic on SW 109th Avenue. The residents have alternative routes for exits to the north. Proposed bollard type to be further coordinated with the Chief.
- It was noted that an off-duty officer would be required during construction for any street closure.
- Would like to consider a police substation within the new tower.

Please let me know if there any corrections to these points or if you have any additional comments you would like to include.

Regards,

Colin Henderson Vice President Environmental From: Colin Henderson

To: <u>"Alexander.Casas@fiu.edu"</u>

Cc: Francisco Alonso; "Thomas Gustafson"; Kenneth Jessell

Subject: FIU University City Meeting

Date: Thursday, January 15, 2015 2:18:00 AM

Chief Casas – Thank you taking the time to meet with us on Monday morning. We appreciate your insight and suggestions on the proposed project. The following summarizes the discussion along with your concerns and suggestions that were provided during the meeting.

- A general discussion of the project was provided, including the proposed street closure along SW 7th Terrace.
- The jurisdiction of the FIU Police Department extends 1,000 ft off campus and would extend across SW 8th Street into the project area.
- It was indicated that there are no anticipated impacts to response time or ability to respond to calls due to the street closure. It was also indicated that coordination had occurred between FIU Police Department and the Miami-Dade Police Department and they also expressed there would be no anticipated impacts due to the street closure. Therefore, closure of SW 7th Terrace is not see as an issue.
- These improvements were believe to increase general safety and improve traffic flow in the area.
- Ingress into the campus is not an issue; however, egress out of campus is a problem.
- Would like to encourage parking and walking (or trolleys) to get around campus. Get the people out of their cars and off the campus roads as soon as possible. Adequate parking is the key.

Please let me know if there any corrections to these points or if you have any additional comments you would like to include.

Regards,

Colin Henderson

Vice President

Environmental

TY-LININTERNATIONAL

201 Alhambra Circle, Suite 900

Coral Gables, FL 33134

305.567.1888 main

305.714.4037 direct

786.512.8817 mobile

305.567.1771 fax

colin.henderson@tylin.com

Visit us online at www.tylin.com

Please consider the environment before printing.

From: Alexander Casas
To: Colin Henderson

Subject: RE: FIU University City Meeting
Date: Thursday, January 15, 2015 8:28:11 PM

Attachments: <u>image005.png</u>

Colin,

It was a pleasure meeting with you. I've reviewed your points and all are accurate. I appreciate your time.

Thanks, Alex

Alexander D. Casas, M.S.

Florida International University Police Department



885 SW 109 Avenue

Miami, FL 33199

Chief of Police

Phone: (305)348-1657 Fax: (305)348-1332 Email: adcasas@fiu.edu



From: Colin Henderson [mailto:colin.henderson@tylin.com]

Sent: Thursday, January 15, 2015 2:18 AM

To: Alexander.Casas@fiu.edu

Cc: Francisco Alonso; Thomas Gustafson; Kenneth Jessell

Subject: FIU University City Meeting

Chief Casas – Thank you taking the time to meet with us on Monday morning. We appreciate your insight and suggestions on the proposed project. The following summarizes the discussion along with your concerns and suggestions that were provided during the meeting.

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- It was indicated that there are no anticipated impacts to response time or ability to respond to calls due to the street closure. It was also indicated that coordination had occurred

between FIU Police Department and the Miami-Dade Police Department and they also expressed there would be no anticipated impacts due to the street closure. Therefore, closure of SW 7th Terrace is not see as an issue.

- These improvements were believe to increase general safety and improve traffic flow in the area.
- Ingress into the campus is not an issue; however, egress out of campus is a problem.
- Would like to encourage parking and walking (or trolleys) to get around campus. Get the people out of their cars and off the campus roads as soon as possible. Adequate parking is the key.

Please let me know if there any corrections to these points or if you have any additional comments you would like to include.

Regards,

Colin Henderson
Vice President
Environmental
TY:LININTERNATIONAL

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305.567.1888 main

305.714.4037 direct

786.512.8817 mobile

305.567.1771 fax

colin.henderson@tylin.com

Visit us online at www.tylin.com

Please consider the environment before printing.

ATTACHMENT F

Grove Estates Surveys

January-February 2015



l,	, owner of property at
[Your name, Please print]	
	, Sweetwater, FL 33174
[Property address]	
I would prefer option (choose from op community plaza on SW 7 th Terrace.	tions attached) for the proposed installment of a
I am a unit owner (Yes/No) I am a Resident (Yes/No)	
Comments:	
Signature:	Date:



Option 1



Option 2



No change from current plans



	1111	0 01	
1. 1	Hlborto 1	le (ralps/t	ner of property at
 	[Your name, Please print]		nei or property at
0940	SW7±C	het #10	, Sweetwater, FL 33174
	[Property ac	ddress] / / /	
I would prefer	option(choose for	rom options attached) for th	a proposed installment of a
	a on SW 7 th Terrace.	ioni options attached for th	e proposed installment of a
I am a unit own	er (Yes/No) (Yes/No)		
l am a Resident	(Yes/No)		
l am a Resident	(Yes/No)		
l am a Resident	(Yes/No)		
I am a Resident Comments:	(Yes/No)		
Comments:	(Yes/No)		1/21/201
	(Yes/No)		Date: 1/31/20/



1, Ruben Diaz owner of property at
[Your name, Please print]
10940 SW 7S+ 33174, 103, Sweetwater, FL 33174
[Property address]
would prefer option (choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace. am a unit owner (Yes/No)
am a Resident (Yes/No)
Comments: MORO PARKING MODE OF
Signature: X Ruhow Diag Date: 1-30-15



[Your name, Please print] [Property address] OTOSWITCHERA owner of property at [Property address] ONE OF CONTROL OF C	74
I would prefer option(choose from options attached) for the proposed installment of community plaza on SW 7 th Terrace.	of a
I am a unit owner (Yes/No) I am a Resident (Yes/No)	
Comments:	
Signature:	15



1, Calixio O Miliaw, owner of p	roperty at
[Your name, Please print]	Sweetwater, FL 33174
would prefer option(choose from options attached) for the propcommunity plaza on SW 7 th Terrace.	osed installment of a
am a unit owner (Yes/No) I am a Resident (Yes/No)	
Comments:	
Signature: D.	ate: 1/30/15



1. Raman	Martinez	owner of proper	ty at
[Your name, P	lease print]	1 m C	
	[Property address]	Swee	twater, FL 33174
would prefer option 2 community plaza on SW 7 th Te	(choose from options rrace.	attached) for the proposed	installment of a
am a unit owner (Yes/N	/No) o)		
Comments:	<u>and the second </u>	· · · · · · · · · · · · · · · · · · ·	mand de la colonia de la colo
7 .			
Signature:		Date:_	30/1/15
/ 1			/ /



1, Dolores García	, owner of property at
[Your name, Please print] [Property address]	, Sweetwater, FL 33174
I would prefer option (choose from options attached) community plaza on SW 7 th Terrace.	for the proposed installment of
I am a unit owner (Yes/No) I am a Resident (Yes/No)	
Comments:	
Signature:	Date: 1/30/15



Please fill in the form below and bring/mail/fax it to Robert Herrada the City Hall at the above

address/fax. A signed form may also be scanned and emailed to rherrada@cityofsweetwater.fl.gov .
[Your name, Please print] [Property address] One of property at [Property address]
[Property address]
would prefer option (choose from options attached) for the proposed installment of community plaza on SW 7 th Terrace.
I am a unit owner (Yes/No) I am a Resident (Yes/No)
Comments:
//www.
Signature:Date:



1, Taine De La Cruz , owner of pro	operty at
I, Jaime De La Cruz , owner of pro [Your name, Please print] 10930 SW 7 H (10, sw [Property address]	veetwater, FL 33174
I would prefer option (choose from options attached) for the propo- community plaza on SW 7 th Terrace.	sed installment of a
I am a unit owner (Yes/No) I am a Resident (Yes/No)	
Comments:	
Signature:Dat	e: /30/2/15

Would Not open close



The City of Sweetwater and FIU organized a meeting with the unit owners of the Grove Estate Condominium Association, Inc. last September 3, 2014 to review the community plaza on SW 7th Terrace. At that time, unit owners at Grove Estates indicated their preference for what is referred to as Option 2 (plaza extends across SW 7th Terrace). As a result of these discussions with Grove Estates Condominium unit owners and deliberations by the Sweetwater City Commission, it was recommended by the City Commission in Resolution #3944 that a version closing SW 7th Avenue and constructing a memorial plaza in honor to the Brothers to the Rescue there would be pursued. Attached are illustrations of the three options that you might want to review and indicate your preference.

Please fill in the form below and bring/mail/fax it to Robert Herrada the City Hall at the above address/fax. A signed form may also be scanned and emailed to rherrada@cityofsweetwater.fl.gov.

\wedge			
1. 2	20 CA/2Ada.	wner of property at	
[Y	/our name, Please print]		
109	340 SW 7 Thut #11	, Sweetwater, FL 33174	
	[Property address]		
	en de la companya de La companya de la co		
l would prefer o	option(shoose from options attached) for	the proposed installment of a	
community plaza	on SW 7 th Terrace.		
	(Yes/No)		
	The state of the s		
l am a Resident _/	Yes/No)		
l am a Resident _/	(Yes/No)		
	(Yes/No)		
Tam a Resident _/ Comments:	(Yes/No)		
	(Yes/No)	1/2/	
	wb Mahale	Date: 1/30/2015	
Comments:	x (Yes/No)	Date: 1/20/2015	



[Your name, Please print] [OS30 SW 7 Flowed, 20], Sweetwater, FL 33174 [Property address]
I would prefer option(choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace.
I am a unit owner (Yes/No) I am a Resident (Yes/No)
Comments:
Signature:



Please fill in the form below and bring/mail/fax it to Robert Herrada the City Hall at the above address/fax. A signed form may also be scanned and emailed to rherrada@cityofsweetwater.fl.gov.

[Your name, Please print] (0930 SW 7 FLORED Sweetwater, FL 33174
[Property address]
I would prefer option (choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace.
I am a unit owner (Yes/No) I am a Resident (Yes/No)
Comments: NE LUKE OFITON 2 - & APPRECIATE THE OPPORTUNITY TO IMPROVE THE AREA. WE HOPE
TO SOIN IN WITH THE IMPROVENTS
Signature: May Mayor Date: Jan 30, 20

15



[Your name, Please print] [Property address] owner of property at [Property address] owner of property at [Property address]
I would prefer option (choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace.
I am a unit owner (Yes/No) I am a Resident (Yes/No)
Comments:
Signature: Date: 138/2015



Please fill in the form below and bring/mail/fax it to Robert Herrada the City Hall at the above address/fax. A signed form may also be scanned and emailed to rherrada@cityofsweetwater.fl.gov.

[Your name, Please print] [Property address] One of property at property at property at property at property address]
I would prefer option(choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace. I am a unit owner (Yes/No) I am a Resident (Yes/No)
Comments:
16/

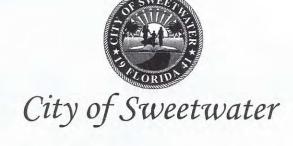
Date: (/50/20/)



I,	MR) A A Lur name, Please print	Iomondo-joune	r of property at
137	Property addr		Sweetwater, FL 33174
I would prefer opt community plaza or I am a unit owner I am a Resident	n SW 7 th Terrace. (Yes/No)	m options attached) for the	proposed installment of a
Comments:			
	The second state of the se		
Signature: \(\lambda\left(\frac{1}{\psi}\)	Piaff.		Date: $\frac{1/30/20}{}$



\	
1, DECIA JAMAYI	owner of property at
[Your name, Please print]	1
[Property address]	306, Sweetwater, FL 33174
•	
I would prefer option No (choose from option option) Terrace.	$P_{I,V}$ sons attached) for the proposed installment of a
I am a unit owner (Yes/No) I am a Resident (Yes/No)	
Comments:	
	·
	11 /
Signature	Date: 130/2015



1, Karla Santos owner of property at
[Your name, Please print] 10940 Su 74407, Sweetwater, FL 33174 [Property address]
I would prefer option 2 (choose from options attached) for the proposed installment of a community plaza on SW 7^{th} Terrace.
I am a unit owner (Yes/No) I am a Resident (Yes/No)
Comments:



1, Luis Alberto Merchantowner of property at
[Your name, Please print] 10930 SW 74 SJ 203, Sweetwater, FL 33174
[Property address] , Sweetwater, FL 331/4
I would prefer option (choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace.
I am a unit owner (Yes/No) I am a Resident (Yes/No)
comments: Parking. 2, A.m
2 - 3 . 20 Signature: Date:



993	I, Maring Lenis huoises Dia Fowner of property at [Your name, Please print] [Property address] [Property address]
co La	would prefer option (choose from options attached) for the proposed installment of community plaza on SW 7 th Terrace. am a unit owner (Yes/No) am a Resident (Yes/No)
	Comments: ×
-	



1, Helev FLones, owner of property at Your name, Please print] 740 SW 109 Hw 307, Sweetwater, FL 33174 [Property address]
would prefer option(choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace. am a unit owner (Yes/No) am a Resident (Yes/No)
Comments:
Signature: Date: 2/3/2



1, Jolan da [Your name, Plea	Delgadillo ase print] Delgadillo Property address]	, owner of property at, Sweetwater, FL 33174
community plaza on SW 7 th Terra	ace.	ed) for the proposed installment of a
I am a unit owner (Yes/No) I am a Resident (Yes/No) Comments:	0)	
		r .
Signature tallar	7	9/3/15 Date: 7

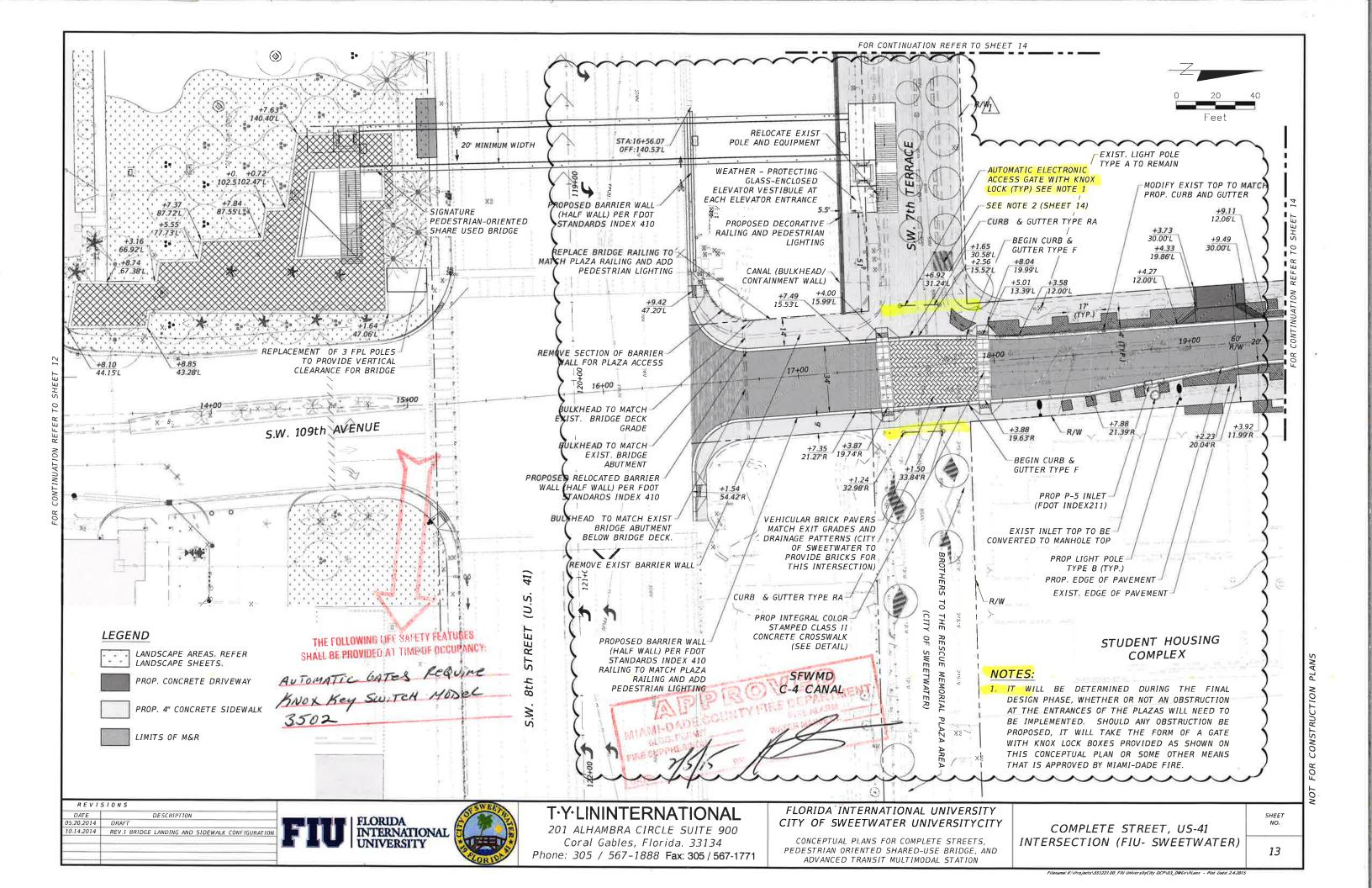


1, Gre	goria Ganz	talet	, owner of propert	y at
740 1	rname, Please print] Sw 109 5 [Property addr	- Jreney ress]	#309_, Sweets	water, FL 33174
	on (choose from SW 7 th Terrace.			
Comments:			t .	
Signature: Two	rona Jaiza	le,	Date:	2/3/15



1, Roberto QUINTAM, owner of property at
[Your name, Please print]
[Your name, Please print] 740 Sc. 109 HAve 13/1 , Sweetwater, FL 33174 [Property address]
I would prefer option(choose from options attached) for the proposed installment of a community plaza on SW 7 th Terrace.
I am a unit owner (Yes/No) I am a Resident (Yes/No)
Comments: Safefy) (2/120 D1 Solar 2010)
Parkay no
Dow Jagfie
Signature: Plantin Date: 2/3/15

ATTACHMENT G Miami-Dade Fire Rescue Site Plan Approval



ATTACHMENT H City of Sweetwater Resolution #3944

RESOLUTION NO.

A RESOLUTION OF THE MAYOR AND COMMISSION OF THE CITY OF SWEETWATER, FLORIDA, AUTHORIZING THE CITY OF SWEETWATER TO REQUEST THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES TO AMEND THE UNIVERSITYCITY PROJECT REQUEST FOR PROPOSAL PACKAGE TO ADJUST THE DESCRIPTION AND LOCATION OF THE CITY OF SWEETWATER RIGHT-OF-WAY TO BE TRANSFERED BY DONATION THROUGH QUIT CLAIM DEED, EASEMENT, OR OTHER CONVEYANCE TO THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES FOR THE DEVELOPMENT OF THE MEMORIAL PLAZA IN HONOR OF THE BROTHERS TO THE RESCUE, AS AUTHORIZED AND DESCRIBED UNDER CITY OF SWEETWATER RESOLUTIONS NO. 3904, NO. 3923 AND NO. 3930 AND AS FURTHER PROVIDED FOR HEREIN.

WHEREAS, on July 14, 2014, the City of Sweetwater (hereinafter referred to as "City" or "Sweetwater") City Commission, unanimously approved Resolution No. 3904, which, among other things, authorized several of Sweetwater's obligations and responsibilities with respect to the UniversityCity project and other issues pertaining to the development of the UniversityCity project;

WHEREAS, on September 8, 2014, the Sweetwater City Commission unanimously approved Resolution No. 3923, which, among other things, authorized modifications related to the UniversityCity project, specifically including the following:

- i) Right-of-way donation description to fit with Option 1 as depicted by NC office pursuant to a Conceptual Options Presentation from August 25, 2014 & the Phasing Diagram shared with the City Commission on September 8, 2014;
- ii) Accelerating the Sweetwater obligations as to UniversityCity related community transit payments, small rubber tire trolley hybrid-electric trolley vehicle ownership, operation and maintenance costs, and operation of a CATS vehicle until the small rubber tire trolley hybrid-electric trolley vehicle is available for service;
- iii) Seeking an agreement with The Florida International University Board of Trustees (hereinafter referred to as "FIU") to operate an FIU CATS shuttle vehicle and one of the Sweetwater trolleys on a UniversityCity Transit Southern Route as between FIU's Modesto A. Maidique Campus, adjoining community destinations, and FIU's Engineering Center; and

iv) Discussing with Miami-Dade Transit, FIU, and other stakeholders an expansion of the Sweetwater Circulator route (MDT's Route #212) and stops, which may include the formation of a UniversityCity transportation management association to fully implement a described UniversityCity Transit proposal;

WHEREAS, on September 22, 2014, the Sweetwater City Commission unanimously approved Resolution 3930, which, among other things, authorized modifications and other actions associated with the UniversityCity project, specifically including the following:

- i) Right-of-way donation description to fit with Option 1 as generally depicted by NC office pursuant to a Conceptual Options Presentation from August 25, 2014 & the Phasing Diagram shared with the City Commission on September 8, 2014, revised Phasing Diagram notes, limited use of one-way motorized vehicular traffic lane at SW 7th Terrace as exit onto SW 109th Avenue Bridge, use of Sweetwater impact fees and park concurrency fees, and understanding that Sweetwater and FDOT will revisit how best to manage traffic on SW 109th Avenue Bridge from time to time to assure that pedestrian safety is emphasized; and
- ii) The Mayor negotiating with T.Y. Lin International for engineering services;

WHEREAS, Sweetwater officials and staff, in discussions with FIU personnel, have concluded that the UniversityCity project will be further improved by a modification to the signature pedestrian-oriented shared-use bridge spanning over US 41 also extended over the Tamiami Canal into an expanded Memorial Plaza in honor of the Brothers to the Rescue (Memorial Plaza) and expanded James M. Beasley Linear Park (Linear Park) area (the area that has generally been identified as associated with Option 2 and that is now more specifically identified in the revised Phasing Diagram that is attached hereto and made a part hereof as Schedule 1 of this Resolution, the Public Space Diagram that is attached hereto and made a part hereof as Schedule 2 of this Resolution, and revised Conceptual Plans that are attached hereto and made a part hereof as Schedule 3 of this Resolution);

WHEREAS, the benefit to the City arising from such further modifications are well depicted in Schedules 1 through 3 attached as part of this Resolution and such public space improvements will greatly benefit Sweetwater as FIU undertakes to administer the UniversityCity TIGER Discretionary Grant Award and carry out the requirements of the UniversityCity TIGER Award Agreement; and

RESOLUTION NO. 3944

WHEREAS, unless otherwise modified herein, the terms and provisions of the Sweetwater Resolutions No. 3904, No. 3923, and No. 3930 remain unchanged and are hereby ratified.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COMMISSION OF THE CITY OF SWEETWATER, FLORIDA AS FOLLOWS:

SECTION 1. That the City authorizes the following actions and, with the approval as to form by the City Attorney, the execution of agreements and any necessary legal documents providing for the following:

The City's use of the revised Phasing Diagram, attached hereto as Schedule 1 of this Resolution, the Public Space Diagram attached hereto as Schedule 2 of this Resolution, and the revised Conceptual Plans attached hereto as Schedule 3 of this Resolution, as a basis to request and arrange with FIU for a revision, at Sweetwater's cost, to the UniversityCity RFP Package presented http://facilities.fiu.edu/projects/BT-904.htm to reflect an adjustment to the rightof-way description to be transferred from Sweetwater to FIU by quit claim deed, easement or other conveyance by donation for the development of the Memorial Plaza, as authorized and collectively described under Sweetwater Resolutions No. 3904, No. 3923, and No. 3930, and as further amended by this resolution; that the revised Phasing Diagram notes, as provided at Schedule 2, will be the policy and intent of the City of Sweetwater as it proceeds with improvements discussed therein, using approximately \$600,000 in funds supplied by Sweetwater impact fees and park concurrency fees associated with 109 Tower and Plaza II, as needed, to make improvements to the Memorial Plaza, Linear Park and Historic Sweetwater Bridge east of SW 109th Avenue that are to be completed in 2015 based on the construction plans developed by NC - office and T.Y. Lin International and approved by the Mayor and City Commission, with the understanding that Sweetwater will revisit how best to manage traffic on the SW 109th Avenue Bridge from time to time to assure that pedestrian safety is emphasized.

SECTION 2. That the Mayor and City Clerk are hereby directed to take all steps necessary to effect these authorized actions and payments.

RESOLUTION NO. 3944

SECTION 3. That this resolution shall become effective upon its adoption by the City Commission and approval by the Mayor or, if vetoed, upon its re-enactment by the City Commission as provided by the Charter of the City of Sweetwater.

PASSED AND ADOPTED this 28 day of Cotolor, 2014.

JOSÉ M. DIAZ, MAYOR

ORLANDO LOPEZ, COMMISSION PRESIDENT

ATTEST:

MARIE O. SCHMIDT, CITY CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

RALPH VENTURA, CITY ATTORNEY

VOTE UPON ADOPTION:

ORLANDO LOPEZ, COMMISSION PRESIDENT

JOSE M. GUERRA, COMMISSION VICE-PRESIDENT

PRISCA BARRETO, COMMISSIONER

JOSE BERGOUIGNAN, JR., COMMISSIONER

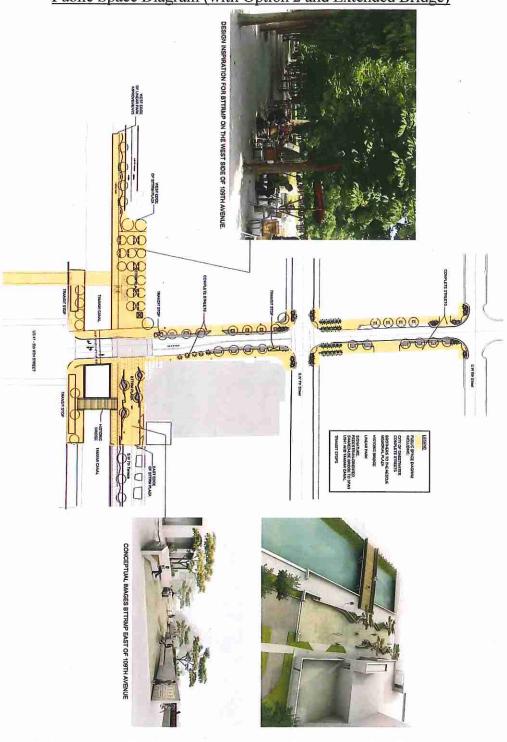
MANUEL DUASSO, COMMISSIONER

ISOLINA MAROÑO, COMMISSIONER

CATALINO RODRIGUEZ, COMMISSIONER

SCHEDULE 1
Revised Phasing Diagram (Option 2 and Extended Bridge) × NC - Office HALL TO STOCK 1 ST PHASING DIAGRAM

SCHEDULE 2
Public Space Diagram (with Option 2 and Extended Bridge)



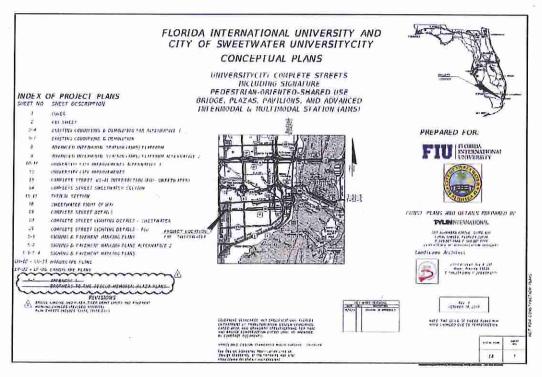
NC-office

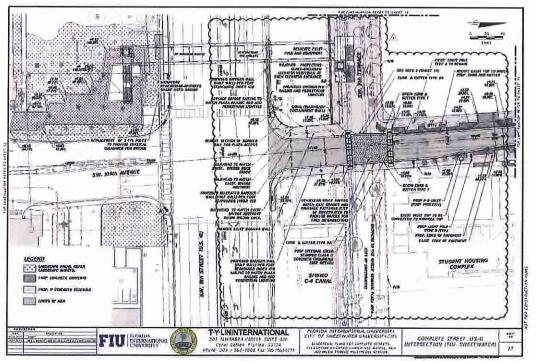
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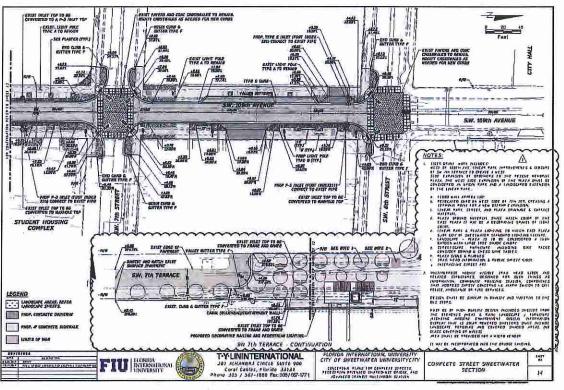
PUBLIC SPACE DIAGRAM

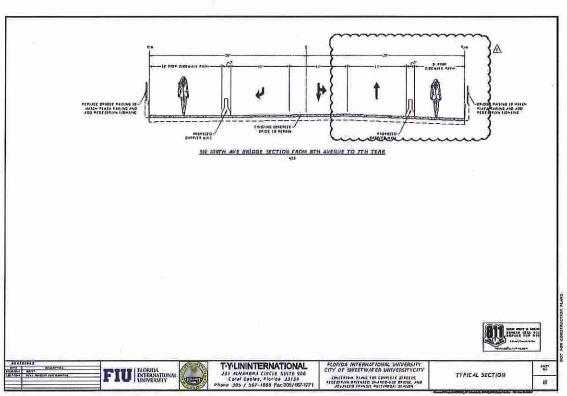
BROTHERS TO THE RESCUE MEMORIAL PLACE. Addenoum to University City Conceptual Plans City of Sweetwater / Florida International Liniversity

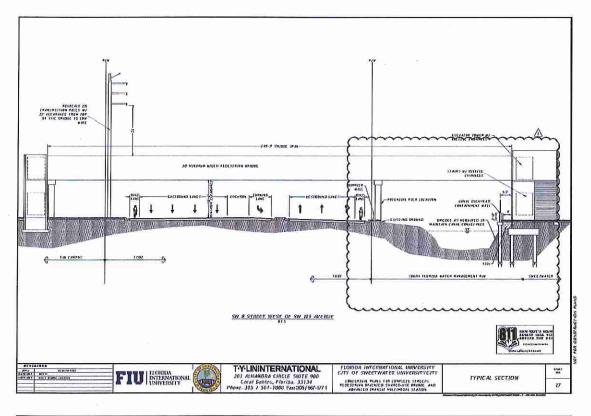
SCHEDULE 3 Revised Conceptual Plan (with Option 2 and Extended Bridge)

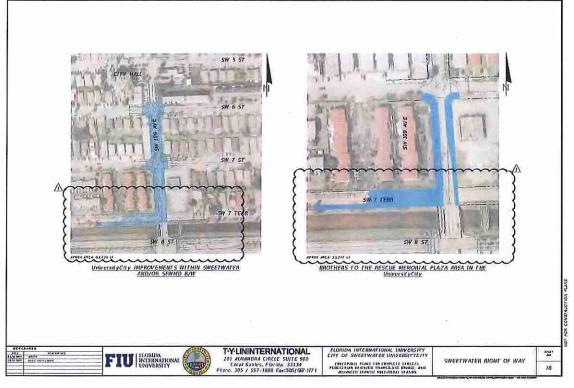


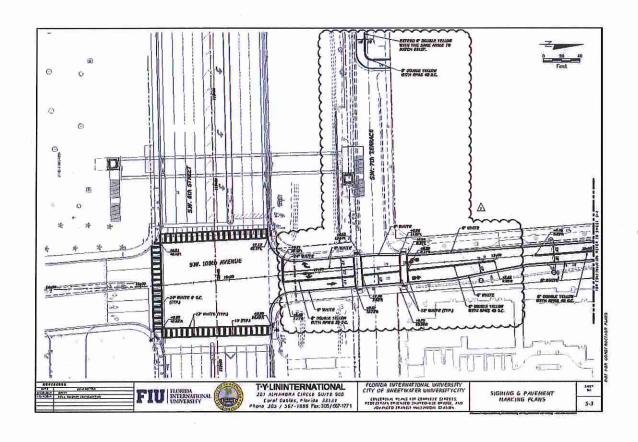












APPENDIX 4 SHPO Concurrence

From: <u>James, Steven C.</u>

To: Kenneth Jessell; Colin Henderson

Cc: Culhane, Barbara J; Varela-Margolles, Aileen; Carter, Nicole; Vilches, Mary T.

Subject: FW: FIU UniversityCity Section 106 Addendum Number 2

Date: Thursday, December 11, 2014 11:39:46 AM

Attachments: Pages from Rev 1UniversityCityProject.ConceptualPlans.10142014.pdf

Ken & Colin, we have received SHPO Concurrence below. Please include in the Reevaluation. Thank you.

Steven Craig James, RLA 1451

District Environmental Administrator
Intermodal Systems Development Office
Florida Department of Transportation, District Six
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6109
Miami, Florida 33172
Office (305) 470-5221
steven.james@dot.state.fl.us





From: Jones, Ginny L. [mailto:Ginny.Jones@DOS.MyFlorida.com]

Sent: Thursday, December 11, 2014 8:32 AM

To: Cathy.Kendall@dot.gov

Cc: James, Steven C.; Culhane, Barbara J; Rivera, Jorge; Jackson, Roy **Subject:** RE: FIU UniversityCity Section 106 Addendum Number 2

Cathy,

SHPO concurs with FHWA's finding of no adverse effect to historic properties.

Regards,

Ginny Jones

Architectural Historian | Bureau of Historic Preservation | Division of Historical Resources | Florida Department of State | 500 South Bronough Street | Tallahassee, Florida 32399-0250 |

850.245.6333 | 1.800.847.PAST | Fax: 850.245.6439 | Ginny.Jones@dos.myflorida.com | dos.myflorida.com/historical



From: Cathy.Kendall@dot.gov [mailto:Cathy.Kendall@dot.gov]

Sent: Wednesday, December 10, 2014 2:51 PM

To: Jones, Ginny L.

Cc: Steven.James@dot.state.fl.us; Barbara.Culhane@dot.state.fl.us; Jorge.Rivera@dot.gov;

Roy.Jackson@dot.state.fl.us

Subject: FW: FIU UniversityCity Section 106 Addendum Number 2

Jenny,

On April 4, 2014, you provided concurrence for the SHPOP of *no adverse effect* for the proposed pedestrian bridge over SW 8th Street near the SWFWMD C-4 canal. I am forwarding to you the new request from FIU via FDOT to alter the proposed FIU Sweetwater TIGER project to extend the proposed pedestrian bridge over the historic canal as illustrated in the attached new concept plans.

As described by FDOT and indicated in the attachment, the revision would move the touchdown of the pedestrian bridge and new bulkhead from the south side of the canal bank to the north side, and no additional impacts to the canal from the previous design are anticipated.

FHWA finds that the proposed change would not adversely affect historic properties on or eligible for listing in the *National Register of Historic Places* and request your concurrence for this finding.

Cathy Kendall, AICP
Senior Environmental Specialist
FHWA - FL, PR and VI
545 John Knox Road, Suite 200
Tallahassee, FL 32303
(850) 553-2225
cathy.kendall@dot.gov

From: James, Steven C. [mailto:Steven.James@dot.state.fl.us]

Sent: Monday, December 08, 2014 2:44 PM

To: Kendall, Cathy (FHWA)

Cc: Rivera, Jorge (FHWA); Jackson, Roy; Culhane, Barbara J **Subject:** FW: FIU UniversityCity Section 106 Addendum Number 2

Cathy,

FIU has now extended the new UniversityCity pedestrian bridge so that it completely spans the National Register of Historic Places (NHRP) eligible Tamiami Canal; it is still located on the west side

of SW 109th Avenue. In addition, improvements to the pedestrian plaza in this area would involve new bulkhead along the northern bank of the canal. The attached drawings depict the new configuration. As the new bridge will span the canal, this resource will remain in the same configuration with no modifications to the alignment and the canal will not be filled in or widened. The addition of the bridge over the canal should allow the canal to continue to convey its significance in the areas of engineering and community planning and development.

FHWA previously found that the proposed relocation of the new pedestrian bridge to the west side of SW 109th Avenue would have no adverse effect on resources on or eligible for listing in the NRHP, with SHPO concurrence on April 4, 2014. We respectfully request your concurrence with the findings that the proposed project continues to have no adverse effect on both the old pedestrian bridge and the Tamiami Canal. This request is in accordance with the Section 106 of the National Historic Preservation Act of 1966, as amended.

Please let me know if you need any additional information. Thank you.

Steven Craig James, RLA 1451

District Environmental Administrator
Intermodal Systems Development Office
Florida Department of Transportation, District Six
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6109
Miami, Florida 33172
Office (305) 470-5221
steven.james@dot.state.fl.us





@ltsWorkingFL



The Department of State is committed to excellence. Please take our <u>Customer Satisfaction Survey</u>.

APPENDIX 5 SFWMD Coordination



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

LAN 08-02 1010/C-4

November 6, 2014

Mr. Stuart M. Grant Florida International University 11555 SW 17th Street MMC Campus, CSC 142C Miami, Florida 33199

Dear Mr. Grant:

SUBJECT:

BT904-UCPP/TIGER-Florida International University (FIU) –Conceptual Skywalk Bridge

Plans crossing C-4 and SW 8th Streetⁱ Miami-Dade County, Section 6/7, Township 54S,

Range 40E

This letter is a follow-up our meeting held yesterday, November 5, 2014 at the South Florida Water Management District's Miami Field Office. Discussions revolved around the conceptual plans for the FIU Bridge crossing and associated appurtenances. Matters of discussion included canal design information, access openings, plaza and proposed landscaping. I hope to address all issues below.

Canal Design Information:

Canal Section:

Bottom Elevation:

(-) 13' NGVD/MSL

Bottom Width:

30 Feet

Side Slopes:

1V to 1H

Hydraulic Information:

Design Water Surface Elevation:

8.0' NGVD/MSL

Optimum Water Control Elevation:

3.5' NGVD/MSL

Required Vertical Clearance:

The low member of the proposed bridge must be set at 2' above design water surface elevation of 6' above optimum water control elevation whichever produces the higher low member.

Required Horizontal Clearances:

Due to close proximity of the proposed FIU bridge in relation to the SW 109th Avenue Bridge located immediately upstream and the City of Sweetwater's Historical Bridge, the proposed FIU bridge must be constructed as a free-span structure crossing C-4.

Professional Engineer's Certification Required:

Any pedestrian or vehicular bridge crossing must be designed by a Professional Engineer Registered in the State of Florida. The Professional Engineer shall affix his/her seal to at least one set of record permit application drawings.

Bridge Hydraulic Report:

Must be submitted with application. BT904-UCPP/TIGER-Florida International University

408 Reviews:

The USACE has issued guidance from Washington, D.C. that any work done in, over, under or through a system or structure built by the USACE as part of the Central and South Florida Flood Control System (C&SF) that could potentially affect the ability of the system to perform as intended is required to have an engineering review by the USACE office. This is found in 33 USC 408 of the Federal Code and is often referred to as a Section 408 Review. The Code requires the submittal of the request to be made by the non-Federal (local) sponsor of the original project, in our case, the SFWMD. The local USACE office in Jacksonville has interpreted this to mean that anything constructed in the R/W of a C&SF canal, levee or structure should be subject to the Section 408 review.

Comments provided by Teri Swartz, SFWMD Lead Engineer for the 408 review include "provide cross-sections through the bridge section to show that the flow area is not reduced by constructing the bulkhead support walls and a canal hydraulic analysis for pre- and post-project conditions."

Cross Sections:

In order for the District to determine if clean-out or excavation of the channel is necessary at the point of a proposed crossing the applicant must provide cross sections of the canal. For the proposed bridge crossings, the applicant must provide an existing section at the west face of the SW 109th Bridge, thence westerly every 25' to a point 25' upstream of the proposed FIU bridge crossing. The cross sections shall be taken perpendicular to the centerline of the channel. Soundings for cross sections are to be taken at a maximum of 10 foot intervals, from top of bank to top of bank and tied into the canal right of way lines. The cross sections must be plotted on standard 10 X 10 cross section paper or a similar CAD drawing and have the design canal section superimposed on each section. Mean Sea Level (MSL) or National Geodetic Vertical Datum (NGVD) will be used as datum and English or a combination of English and equivalent metric units of measure employed.

Excavation:

If excavation of the canal is required to achieve the canal design section, the limits of excavation to the design section shall begin immediately west of SW 109th Avenue, westerly to a point approximately 25' west of the proposed crossing with adequate transitions. The limits of the excavated area and transitions into the existing section must be shown on both the plan and profile view of the application drawings.

<u>Bulkhead:</u>

Specific bulkhead cap elevation will be required and shall be furnished by the District in the near future.

Restrictions to Flow during Construction:

The South Florida Water Management District is under no obligation to allow canal flows to be impeded or restricted to facilitate the construction of a crossing. If there is any potential possibility that the permittees contractor will request the use of coffer dams or earthen fills that will encroach in the channel such proposals must be included in the application. You are also cautioned to advise potential bidders of the prohibition on blocking or interfering with canal flows in order that they may bid the job accordingly.

In those instances where the District determines that the temporary restriction or blocking of a channel is feasible the District will dictate the manner and length of time the canal may be impacted. The applicant will prepare a sequence of work, equipment and personnel list and schedule accordingly for review and acceptance or rejection by the District.

BT904-UCPP/TIGER-Florida International University November 6, 2014 Page Three.

District Access:

In designing bridge approaches keep in mind that the District's access along the canal must not be severed or impeded. Guardrailing, curbs, sidewalks and medians must be designed so that they do not interfere with the movement of District equipment along the canal.

In regard to the conceptual plans, this access can be accomplished by providing a minimum 50 feet opening from the end of the barrier wall of SW 109th to the proposed bridge landing located within the north right of way of C-4 and depicted on the plans. Mountable curbing a minimum of 40' in width must be provide for District access off 109th Avenue to access the District's northerly right of way and access area. Clearly depict on the plans that both access areas are for use by the SFWMD.

Relocations:

It is the applicant's sole responsibility to determine if any existing installations located within the District's right of way will be impacted by his proposed work and for any notification and/or coordination with the owners of existing facilities. Under no circumstances will the District be responsible for any relocation costs or liabilities, either direct or indirect, which are necessitated by the applicant's proposed work.

According to District records the following facilities may be relocated that are in the vicinity of the proposed crossing: all above encroachments, such as, but not limited to the aerial parallel powerline, above ground pull boxes and trees located from the west face of SW 109th Avenue westerly to the proposed FIU bridge landing.

The District does not warrant the accuracy of this information. It is provided for informational purposes only and the applicant is cautioned to exercise due diligence in identifying all potential conflicts within the canal right of way.

Financial Assurances:

The construction of a privately-owned bridge requires that the applicant (prior to the application being placed on the Regulatory Governing Board Agenda for formal consideration); demonstrate financial assurances, such as the posting of a bond, to ensure compliance with any and all permit conditions that may be imposed. The amount of the financial assurances must be at least equal to the cost of removal and disposal of the bridge and restoration of the right of way. Said financial assurance must remain in effect until the facility is removed in its entirety from the right of way and all restoration work completed to the satisfaction of the District. The amount bond or surety must be equal to the cost of removal and disposal of the structure or crossing based on an itemized estimate from a Professional Engineer registered in the State of Florida or from a demolition contractor.

As part of your application package you should submit an itemized estimate of the cost of removal of the proposed structure and restoration of the right of way along with a statement from the owner that he is willing to provide and maintain a bond or other surety acceptable to the District for the life of the installation.

A Certificate of Insurance will be required to the limits specified by the District. The Certificate must name the South Florida Water Management District as an additional insured and received prior to the application being placed on the Regulatory Governing Board Meeting Agenda. As part of your application package you should provide a statement to the effect that the applicant is agreeable to providing such insurance to remain current throughout the life of the permit. If the applicant is a "self-insurer" under the applicable statutes documentation evidencing this status may be substituted for the insurance coverage.

BT904-UCPP/TIGER-Florida International University November 6, 2014 Page Four.

Plaza/Landscaping:

New planting of trees along the north right of way specifically the top of the canal bank or within the area designed for SFWMD access is not authorized. The placement of any above ground planter, benches or associated above-ground facilities within the area designed as the SFWMD access, area will not be authorized. Any trees and/or planting located outside of the designated areas must meet the criteria in the SFWMD Right of Way Planting Choices.

Requirements are Subject to Change:

In managing its canal and levee system the District must, from time to time, change its criteria and permit requirements based on regional and site specific conditions. Applicants are cautioned that the information provided in this letter is based on the best available information at the time the letter is written but is subject to change. This is particularly true when applicants delay months or years in submitting an application for permit. Therefore the rules, criteria and requirements in effect at the time a formal application is received for review will be applied to the permit application.

Drawings to Accompany Applications for Permits:

While three (3) sets of large-size (24" X 36" or larger) plans are helpful in the application review process they are not a requirement. Three (3) sets of drawings no larger than $8\frac{1}{2} \times 11$ inches are required to be submitted with the permit application package and will ultimately be included in the District's permit files. Large-size drawings that have been reduced to $8\frac{1}{2} \times 11$ inches are frequently illegible and will be rejected if they are not readable. All application drawings must be legible and drawn to scale or fully dimensioned. All dimensions must be in English units of measure or a combination of English and equivalent metric units.

Petition for Waiver:

The District has determined that an unencumbered 40 foot strip of right of way, measured from the top of bank landward, is required in order for the District to perform the required routine and emergency operations and maintenance activities necessary to insure flood protection to the entire community. In this 40 foot right of way, subject only to limited exceptions provided in this rule, the District shall not authorize any above-ground facilities or other encroachments.

Your request for issuance of a Right of Way Occupancy Permit to utilize the Works and Lands of the District does not meet, or is contrary to, the District's criteria. Therefore, it will be necessary for Florida International University to file a Petition for Waiver of the District's criteria. See enclosed Waiver packet.

Application Processing Fee:

Applications received without an application processing fee (or an insufficient fee) are deemed incomplete and will not be processed. Likewise, checks that are returned for insufficient funds render an application invalid and the review will be delayed.

At the time this letter is written and from the information that you have provided, it appears that a **\$[1,750.00]** Application processing fee including the Waiver is applicable to your project.

Sincerely,

Beverly Miller Right of Way Specialist-Senior Operations and Maintenance Division BT904-UCPP/TIGER-Florida International University November 6, 2014 Page Five.

Cc: Jesus Carrasco- Superintendent, Miami Field Station
Andrew Wolf-Assistant Superintendent
Armando Vilaboy-Intergovernmental & Community Outreach Rep.-Lead
Teri Swartz-Lead Engineer
Keith Price-Right of Way Technician 2-Miami Field Station
Bob Griffith-Florida International University
John Cal-Florida International University
Francisco Alonso-T.Y Lin International

FLORIDA INTERNATIONAL UNIVERSITY AND CITY OF SWEETWATER UNIVERSITYCITY

CONCEPTUAL PLANS

BRIDGE, PLAZAS, PAVILIONS, AND ADVANCED INTERMODAL & MULTIMODAL STATION (AIMS) PEDESTRIAN-ORIENTED-SHARED USE UNIVERSITYCITY COMPLETE STREETS INCLUDING SIGNATURE

INDEX OF PROJECT PLANS SHEET DESCRIPTION SHEET NO.

COVER

KEY SHEET

EXISTING CONDITIONS & DEMOLITION FOR ALTERNATIVE 1

EXISTING CONDITIONS & DEMOLITION

ADVANCED INTERMODAL STATION (AIMS) PLATFORM

ADVANCED INTERMODAL STATION (AIMS) PLATFORM ALTERNATIVE 2

UNIVERSITY CITY IMPROVEMENTS ALTERNATIVE I 10-11

UNIVERSITY CITY IMPROVEMENTS 13

COMPLETE STREET, US-41 INTERSECTION (FIU- SWEETWATER)

COMPLETE STREET SWEETWATER SECTION

TYPICAL SECTION

SWEETWATER RIGHT OF WAY 15-17 18

COMPLETE STREET DETAILS

COMPLETE STREET LIGHTING DETAILS - SWEETWATER

20 21

PROJECT LOCATION FIU - SWEETWATER COMPLETE STREET LIGHTING DETAILS - FIU SIGNING & PAVEMENT MARKING PLANS

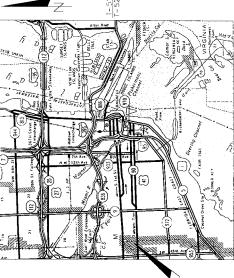
SIGNING & PAVEMENT MARKING PLANS ALTERNATIVE 2

SIGNING & PAVEMENT MARKING PLANS 5-3-5-4

LH-02 - LH-11 HARDSCAPE PLANS

BROTHERS TO THE RESCUE MEMORIAL PLAZA PLANS LANDSCAPE PLANS

BRIDGE LANDING AND PLAZA, TIGER GRANT LIMITS AND PAVEMENT MARKING CHANGES (REVISED) 10/1/41/14 NAN SHEFTS INCLUDE 13-14, 16-18 &S-3





| FLORIDA | INTERNATIONAL | UNIVERSITY

PREPARED FOR:





201 ALHAMBRA CIRCLE, SUITE 900 COAL GABLES, FLORIDA 33134 COAL SADES, 1888 F 305.567.1771 CERTIFICATE OF AUTHORIZATION 00002017

Landscape Architect



Miami, Florida 33129 T 286.314.5906 F 305.854.8777 2333 Brickell Ave # 216

RFV 1 OCTOBER 14, 2014

KEY SHEET REVISIONS, DATE 18Y SHEET OF SCHIPTION 10/14/14 REMOVAL OF APPENDIX

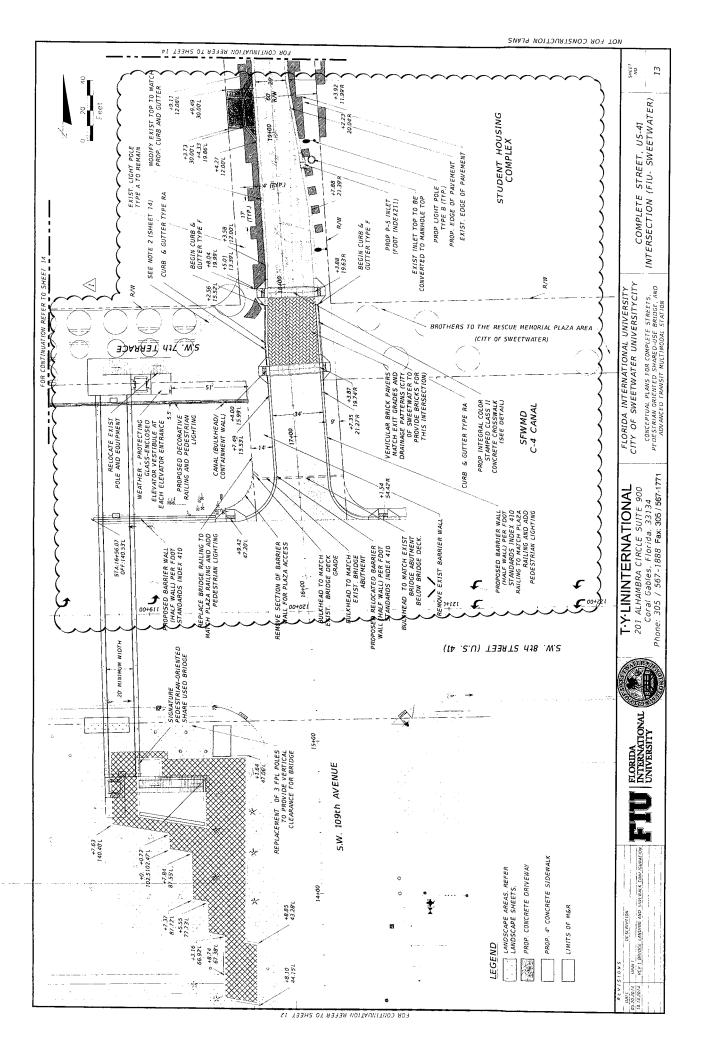
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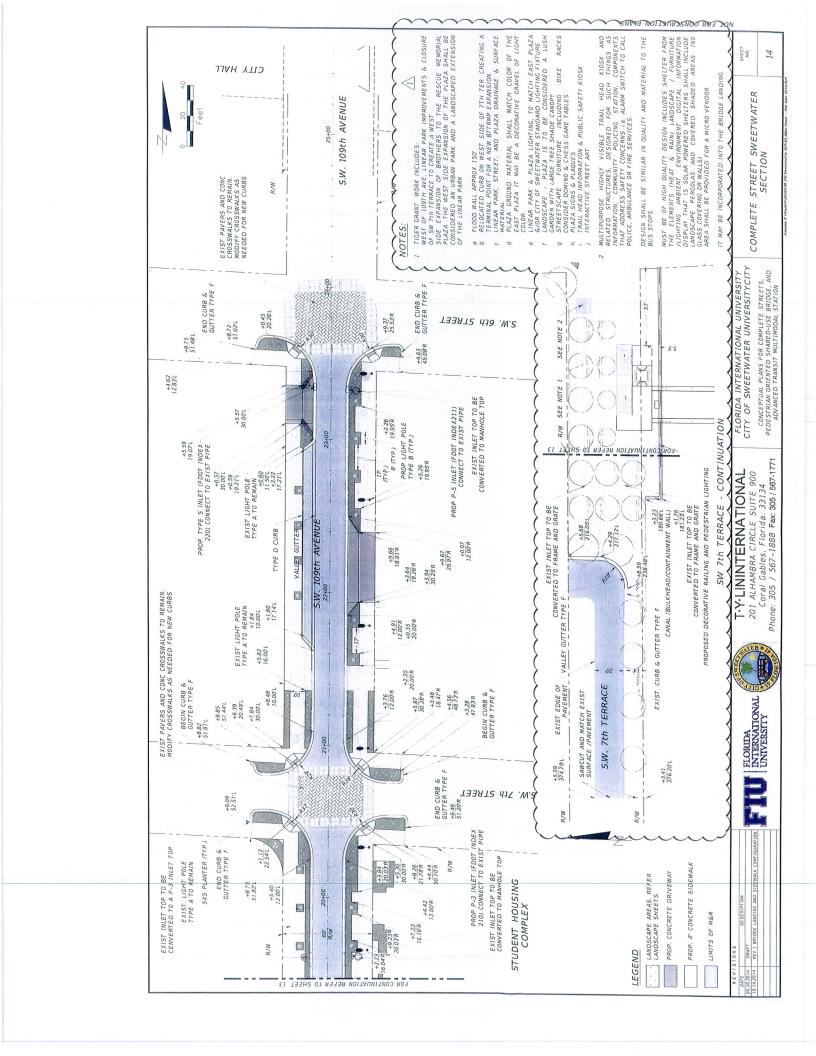
FISCAL YEAR

OERVENINGS TRANDADED AND SPECFFICIATIONS: FLORIDA DEPARTMENT OF TRANSFORTATION DESIGN STANDARDS DATED 2014 AND STANDARD SPECFFICATIONS FOR ROAD MAD BRIDGE CONSTRUCTION DATED 2010. AS AMENDED ST CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 01-01-14 Foe Design Standards Modification Click on "Design Standards" at the following web site: https://www.dot.state.fl.us/rddesign/

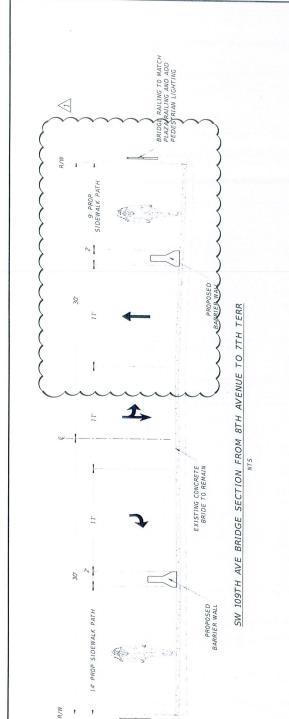
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ROOM WHAT'S BELOW
ALKAN'S CALL 811
SECOND COLOR STATEMENT STA



REPLACE BRIDGE RAILING TO MATCH PLAZA RAILING AND ADD PEDESTRIAN LIGHTING

FLORIDA INTERNATIONAL UNIVERSITY CITY OF SWEETWATER UNIVERSITYCITY

T-Y-LININTERNATIONAL
201 ALHAMBRA CIRCLE SUITE 900
Coral Gables, Florida. 33134
Phone: 305 / 567-1888 Fax: 305 / 567-1771

| FLORUDA | INTERNATIONAL | UNIVERSITY

DESCRIPTION

DATE

05.20.2014

10.14.2014

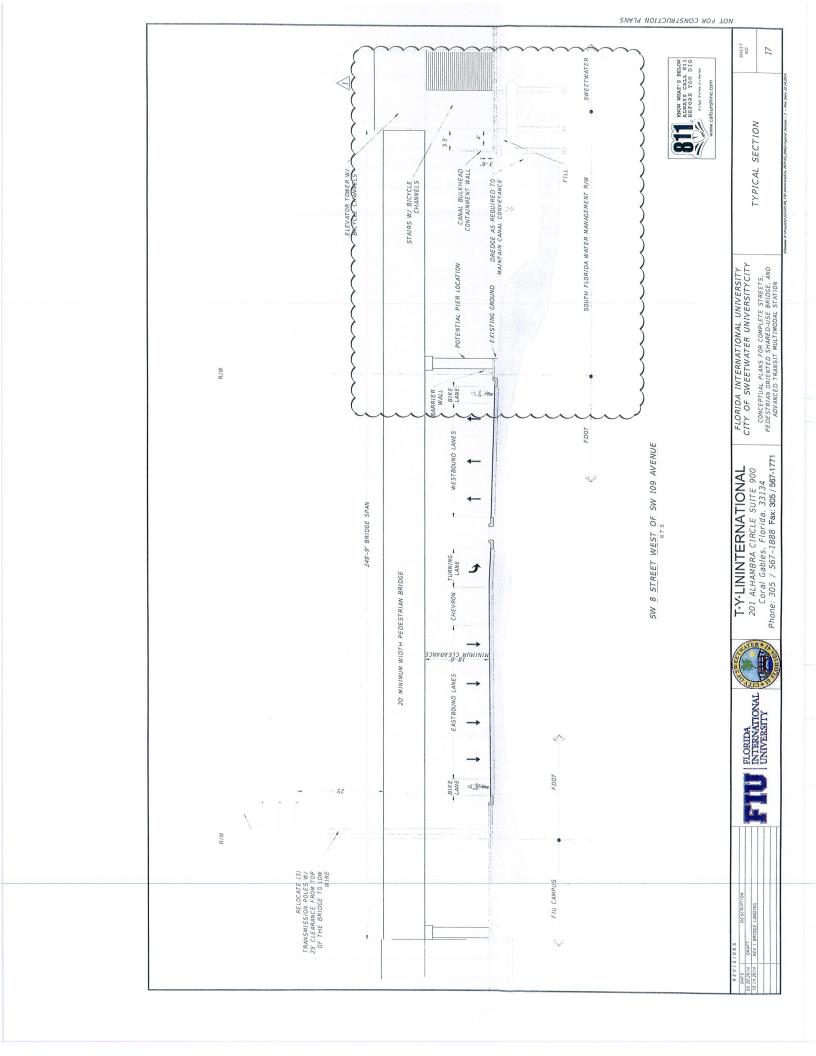
REVINS

CONCEPTUAL PLANS FOR COMPLETE STREETS,
PEDESTRIAN ORIENTED SHARED-USE BRIDGE, AND
ADVANCED TRANSIT MULTIMODAL STATION

91

SHEET

TYPICAL SECTION



SHEET NO.

18

SWEETWATER RIGHT OF WAY

FLORIDA INTERNATIONAL UNIVERSITY CITY OF SWEETWATER UNIVERSITYCITY

CONCEPTUAL PLANS FOR COMPLETE STREETS,
PEDESTRIAN ORIENTED SHARED-USE BRIDGE, AND
ADVANCED TRANSIT MULTIMODAL STATION

T·Y-LININTERNATIONAL
201 ALHAMBRA CIRCLE SUITE 900
Coral Gables, Florida. 33134
Phone: 305 / 567-1888 Fax: 305/567-1771

INTERNATIONAL ONIVERSITY E

DESCRIPTION

BROTHERS TO THE RESCUE MEMORIAL PLAZA AREA IN THE UniversityCity. SW 8 ST SW 109 AVE KARLA. MS APROX AREA: 23,277 sf 1 6 ST. ST UniversityCity IMPROVEMENTS WITHIN SWEETWATER AND/OR SFWMD R/W SW 7 8 ST BVA 801 WZ MS ROX AREA: 64,724 sf

SW 5 ST

14+00

UNIVERSITY CITY PROSPERITY PROJECT

10:00AM Meeting
SFWMD Miami Field Office
November 5, 2014
SIGN-IN SHEET

Name	Dept. /Agency	Email
Francisco Alonso	T. V. Lin International	falonso e tylin-com avilaboy @ SFWMD.zov Awolf @ SFWMD.gov
Acmando Vilaboy	SF WM D	avilaboy@stump.gov
Andrew Wolf	SFWMO	Awolf @ SFWm Digo
JUSUS CARRASCO BOB Griffith	SEWMD Fill	JCARRASCOSFNMD-901
pob Anti Hu	TIU	grilling parcey

UNIVERSITY CITY PROSPERITY PROJECT

10:00AM Meeting
SFWMD Miami Field Office
November 5, 2014
SIGN-IN SHEET

Name	Dept. /Agency	<u>Email</u>
STUART GRANT	FIU	STUART, GRANT, FIU. EDU
John M. Cal	FIN-FMD	John. Cal @ Piu. edu
BEVERLY MILLER	OFWMD MIA F/S	KPRICE @SFWMD. GOV
Bevery Miller	SFWMD/WP.Boh	BMILLER @SFLOMD. GOV
	/	
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APPENDIX 6 FPL Coordination



May 9, 2014

Stewart Grant
Facilities Planning Coordinator
FIU
11555 S.W. 17TH Street CSC 142C
Miami, FL 33199

RE: Proposed Relocation of Transmission Facilities for new pedestrian bridge at Florida International University

Transmission Line: Flagami-Village Green 138 kV; Tropical-International Section; Strs 50A3, 50A3A, 50A4, and 50A5

Dear Mr. Grant,

We have evaluated your request to relocate the referenced FPL transmission structure(s). The non-binding 'ballpark' estimate to accommodate this potential overhead relocation is \$400,000. The scope of the work to accomplish this relocation is relocation/reconstruction of structures with two new spun concrete tangent structures and two new spun concrete inline dead-end structures to allow for new pedestrian bridge construction over SW 8th Street at SW 109th Avenue intersection, as well as to accommodate future signalization improvements at the intersection. The estimate also includes allowance for approximately four (4) single day line de-energizations to accommodate crane work during the pedestrian bridge construction. This estimate is not an offer from FPL to perform the requested work and should not be construed or used as such for detailed planning purposes. It is provided only to assist your preliminary decision-making, and will remain valid for 180 days.

This non-binding estimate is an "order of magnitude" estimate, and is based on previous FPL experience. However, due to the complex nature and variables associated with this type of work, the estimate may not accurately represent the actual costs the applicant would be obligated to pay FPL to relocate these facilities. This estimate does not include the cost to relocate any Distribution facilities or facilities belonging to another utility. Costs associated with the relocation, such as survey work; acquisition and recording of easements; clearing easements of trees and obstructions, etc. have been excluded. This estimate is based upon favorable field conditions, which include cooperation to eliminate conflicts.

Detailed estimate will be provided, should you decide based on this 'ballpark' estimate, and detailed engineering will commence should you elect to pay the non-refundable engineering deposit. The deposit is required due to the complexity and time required to estimate such a project, and would be applied towards the estimated amount owed to FPL for the project, should you decide to proceed with the work, provide the balance payment, and contract for that work, within 90 days of the date the binding estimate is provided.

If you decide to request the detailed estimate on the above 'ballpark' estimate, please send a check payable to the order of 'Florida Power & Light Company' for an amount of \$80,000 enabling us to commence the detailed design and estimating process. The request for the estimate must be in writing, and must describe in detail the scope of work requested. Please send the request addressed to my attention along with the check toward the engineering deposit at: Florida Power & Light Company, Transmission Projects Department, 700 Universe Blvd., TS4/JW Juno Beach, Florida 33408.

Binding estimates are valid for 90 days, and would be subject to change in the event of a work scope change. Payment in full and execution of an agreement will be required prior to commencement of construction. Time of construction can vary depending upon easement execution, permitting, resource availability, material delivery and line clearances. Such projects are scheduled after full payment is made and a Relocation Agreement is executed.

Please feel free to contact me on (561) 904-3604, should you have any questions or need additional information.

Sincerely,

George J. Beck, P.E.

Transmission Relocations Engineer