



## REGULAR BOARD MEETING

Wednesday, February 1, 2017, 2:00 pm

---

### AGENDA

1. Call to Order
2. Pledge of Allegiance
3. Roll Call
4. Approval of Meeting Summary
  - *December 7, 2016 Board Meeting*
5. Comments from the Public
6. Comments from Advisory Committee Members (TAC/CAC/BPAC)
7. Approval of Agenda
8. Action Items
  - 8a. Complete Streets Study: Consideration of the criteria for Complete Streets in the St. Lucie TPO area and review and approval of the Complete Streets Inventory Map.  
  
*Action: Approve the Complete Streets Criteria and Inventory Map, approve with conditions, or do not approve.*
9. Discussion Items
  - 9a. Transportation Connectivity Study: Review of the identified Major Activity Centers and gaps in transportation connectivity to essential services in the St. Lucie TPO area.  
  
*Action: Discuss and provide comments to TPO Staff.*
  - 9b. Transportation Systems Management & Operations (TSM&O) Technologies and Benefits: A presentation by the Florida Department of Transportation District 4 (FDOT) on the latest TSM&O technologies and the associated benefits that may be provided as part of the St. Lucie Advanced Transportation Management System.  
  
*Action: Discuss and provide comments to FDOT and TPO Staff.*

10. FDOT Comments
11. Recommendations/Comments by Members
12. TPO Staff Comments
13. Next Meeting: The next St. Lucie TPO Board Meeting is a regular meeting scheduled for 2:00 pm on Wednesday, April 5, 2017.
14. Adjourn

#### NOTICES

The St. Lucie TPO satisfies the requirements of various nondiscrimination laws and regulations including Title VI of the Civil Rights Act of 1964. Public participation is welcome without regard to race, color, national origin, age, sex, religion, disability, income, or family status. Persons wishing to express their concerns about nondiscrimination should contact Marceia Lathou, the Title VI/ADA Coordinator of the St. Lucie TPO, at 772-462-1593 or via email at [lathoum@stlucieco.org](mailto:lathoum@stlucieco.org).

Persons who require special accommodations under the Americans with Disabilities Act (ADA) or persons who require translation services (free of charge) should contact Marceia Lathou at 772-462-1593 at least five days prior to the meeting. Persons who are hearing or speech impaired may use the Florida Relay System by dialing 711.

Items not included on the agenda may also be heard in consideration of the best interests of **the public's health, safety, welfare, and as necessary to protect every person's right of access**. If any person decides to appeal any decision made by the St. Lucie TPO with respect to any matter considered at this meeting, that person shall need a record of the proceedings, and for such a purpose, that person may need to ensure that a verbatim record of the proceedings is made which includes the testimony and evidence upon which the appeal is to be based.

Kreyòl Ayisyen: Si ou ta renmen resevwa enfòmasyon sa a nan lang Kreyòl Ayisyen, tanpri rele nimewo 772-462-1593.

Español: Si usted desea recibir esta información en español, por favor llame al 772-462-1593.

## REGULAR BOARD MEETING

DATE: Wednesday December 7, 2016  
TIME: 2:00 pm  
LOCATION: St. Lucie TPO  
Coco Vista Centre  
466 SW Port St. Lucie Boulevard, Suite 111  
Port St. Lucie, Florida

---

### MEETING SUMMARY

1. Call to Order

Chairwoman Hensley called the meeting to order at 2:13 pm.

2. Pledge of Allegiance

Chairwoman Hensley led the Pledge of Allegiance.

3. Roll Call

The roll was called and a quorum was noted with 9 members present.

Members present:

Kathryn Hensley, Chairwoman  
Mayor Linda Hudson, Vice-Chairwoman  
Commissioner Linda Bartz  
Commissioner Chris Dzadovsky  
Commissioner Frannie Hutchinson  
Councilman John Carvelli  
Councilwoman Stephanie Morgan  
Mayor Gregory Oravec  
Darrell Drummond

Representing:

St. Lucie County School Board  
City of Fort Pierce  
St. Lucie County  
St. Lucie County  
St. Lucie County  
City of Port St. Lucie  
City of Port St. Lucie  
City of Port St. Lucie  
Community Transit

Others present:

Peter Buchwald  
 Ed DeFini  
 Yi Ding  
 Marceia Lathou  
 Mary Holleran  
 Heather Young  
 Craig Hauschild  
 Roxanne Chesser  
 Tracy Telle  
 Beth Ryder  
 Stacy Miller  
 Leslie Wetherell  
 Sabrina Auberg  
 Steve Braun  
 Dan Hiden  
 Mira Skoroden  
 Antonette Adams  
 Alison Stettner  
 Ricardo Vazquez  
 Michael Minton  
 John DiMola

Representing:

St. Lucie TPO  
 St. Lucie TPO  
 St. Lucie TPO  
 St. Lucie TPO  
 Recording Specialist  
 St. Lucie County Attorney  
 St. Lucie County  
 City of Port St. Lucie  
 City of Fort Pierce  
 St. Lucie County  
 FDOT  
 FDOT  
 FDOT  
 FDOT  
 FDOT  
 FDOT  
 FDOT  
 FDOT  
 Turnpike Authority  
 Martin MPO  
 Public  
 Public

## 4. Approval of Meeting Summary

- October 19, 2016 Rescheduled Board Meeting

\* MOTION by Vice-Chairwoman Hudson to approve the Meeting Summary.

\*\* SECONDED by Councilwoman Morgan Carried UNANIMOUSLY

## 5. Comments from the Public – None

6. Comments from Advisory Committee Members (TAC/CAC/BPAC)  
None

## 7. Approval of Agenda

\* MOTION by Mayor Hudson to approve the agenda.

\*\* SECONDED by Commissioner Hutchinson Carried UNANIMOUSLY

DRAFT

8. Consent Agenda

8a. 2017 Meeting Dates: Approval of the proposed 2017 meeting dates for the St. Lucie TPO Board.

\* MOTION by Councilwoman Morgan to approve the Consent Agenda.

\*\* SECONDED by Vice-Chairwoman Hudson Carried UNANIMOUSLY

9. Action Items

9a. Annual Officer Elections and Appointments: Elections of a Chairperson and Vice-Chairperson for the St. Lucie TPO and appointments of members to various committees.

Chairwoman Hensley called for nominations for Chairperson of the TPO Board for 2017.

\* MOTION by Commissioner Bartz to nominate Vice-Chairwoman Hudson to serve as Chairwoman of the TPO Board for 2017.

\*\* SECONDED by Mr. Drummond

There were no other nominations, and the nominations were closed.

\*\* MOTION to elect Vice-Chairwoman Hudson to serve as Chairwoman of the TPO Board for 2017 carried UNANIMOUSLY

Chairwoman Hudson thanked the Board for their support and said she was honored to serve.

Outgoing Chairwoman Hensley was presented with a plaque in recognition of her service as Chairwoman of the TPO Board for 2016.

Chairwoman Hudson continued with the Annual Officer Elections and Appointments.

Mr. Buchwald explained that the historical process for officers of the TPO has been to rotate the officer positions among the local jurisdictions and indicated that the TPO Vice-Chairperson for 2017 would be from the City of Port St. Lucie if the Board were to continue to follow the historical process.

\* MOTION by Councilman Carvelli to nominate Councilwoman Morgan to serve as Vice-Chairwoman of the TPO Board for 2017.

\*\* SECONDED by Mayor Oravec

\* MOTION by Ms. Hensley to nominate Councilwoman Martin to serve as Vice-Chairwoman of the TPO Board for 2017.

\*\* SECONDED by Chairwoman Hudson

There were no other nominations, and the nominations were closed.

Because there were two nominations, a Roll Call vote was called. However, prior to the final roll call vote, Councilwoman Morgan requested to withdraw herself from consideration and thanked the Board for their support and indicated that Councilwoman Martin had more TPO Board experience.

\* MOTION by Councilman Carvelli to withdraw his nomination of Councilwoman Morgan to serve as Vice-Chairwoman of the TPO Board for 2017.

\*\* SECONDED by Mayor Oravec

\*\* MOTION to elect Councilwoman Martin to serve as Vice-Chairwoman of the TPO Board for 2017 carried UNANIMOUSLY.

Mr. Buchwald noted that the Executive Committee consists of the TPO officers, Chairwoman Hudson representing the City of Port Pierce and Vice-Chairwoman Martin representing the City of Port St. Lucie, Former Chairwoman Hensley representing the St. Lucie County School Board, and Darrell Drummond representing Transit. To complete the Executive Committee, an appointment representing St. Lucie County is needed.

\* MOTION by Ms. Hensley to appoint Commissioner Bartz to serve on the Executive Committee for 2017 representing St. Lucie County.

\*\* SECONDED by Mr. Drummond Carried UNANIMOUSLY

Mr. Buchwald identified the appointments to the Florida Metropolitan Planning Organization Advisory Council (MPOAC) to be Chairwoman Hudson as the Member and Vice-Chairwoman Martin as the First Alternate. Mr. Drummond served as the Second Alternate in 2016.

Mr. Drummond volunteered to continue to serve as the Second Alternate for the MPOAC in 2017.

Mr. Buchwald identified the 2016 appointments to the Treasure Coast Transportation Council (TCTC) as Commissioner Dzadoovsky, Mr. Drummond, and Ms. Hensley and indicated that Ms. Hensley was elected as Vice-Chairwoman of the TCTC last year.

The Board supported Ms. Hensley and Mr. Drummond serving as TCTC Members to maintain continuity. Commissioner Dzadoovsky volunteered to serve as the alternate.

Mr. Buchwald indicated that former St. Lucie County Commissioner Paula Lewis could no longer serve as the Chairwoman of the St. Lucie County Local Coordinating Board for the Transportation Disadvantaged (LCB). He further indicated that the LCB Bylaws require an elected official to be appointed by the TPO Board to serve as Chairperson of the LCB.

\* MOTION by Ms. Hensley to appoint St. Lucie County Commissioner Cathy Townsend as Chairperson of the LCB.

\*\* SECONDED by Commissioner Dzadoovsky      Carried UNANIMOUSLY

Commissioner Dzadoovsky suggested that Mr. Buchwald should provide Commissioner Townsend with information on the background, history, and role of the Chairperson of the LCB.

9b. Florida Department of Transportation (FDOT) FY 2017/18–  
FY 2021/22 Draft Tentative Work Program (DTWP):  
Presentation of the DTWP for the St. Lucie TPO area for  
FY 2017/18 – FY 2021/22.

Mr. Buchwald summarized the year-long process for the development of the TPO's Transportation Improvement Program that includes review and endorsement of the DTWP and provided highlights of several projects in the DTWP.

Mr. Buchwald introduced Stacy Miller, FDOT District 4 Director of Transportation Development, and Leslie Wetherell, FDOT District 4 Work Program Management Administrator, to provide additional information regarding the DTWP.

Ms. Miller provided a 2016 year-end review of FDOT's successes, details regarding new bonding authority provided by statute to FDOT, the

criteria to advance projects in the Work Program, and the upcoming release of **FDOT's** Complete Streets Handbook.

Ms. Wetherell provided an update on the projects in the next five years of the DTWP which included identifying the priorities and the project phases to be funded.

The Board inquired as to the height of the SR A1A North Causeway Bridge replacement. Ms. Miller indicated that it is still being evaluated.

Commissioner Dzadovsky commented on the Midway Road Project Development and Environment Study (PD&E) and asked if there was consideration for a Turnpike interchange at that location. He recommended that information be provided to the Turnpike Authority on the New York Mets' proposed expansion of Tradition Field and said that Midway Road would be a perfect alternate route to take pressure off of St. Lucie West Boulevard.

Commissioner Hutchinson commented on the Turnpike Authority doing a study that will be **coming back within a year's time**, about the same timeline as the Midway Road PD&E. A site for an interchange is being considered, but the location has not yet been determined.

Ms. Stettner indicated coordination currently is being conducted between the Turnpike Authority and FDOT District 4 as part of the Midway Road PD&E so that the interchange is not precluded.

The TPO was congratulated by Ms. Wetherell for its success in applying for Florida Shared-Use Network (SUN) Trail funding representing a great deal of hard work by St. Lucie County and TPO staffs.

Ms. Wetherell reminded the Board that next year FDOT will be before the Board two months earlier to present next year's DTWP.

\* MOTION by Commissioner Dzadovsky to endorse the FY 2017/18 – FY 2021/22 DTWP.

\*\* SECONDED by Ms. Hensley Carried UNANIMOUSLY

9c. Legislative Priorities: Review and adoption of the proposed Legislative Priorities for the St. Lucie TPO for 2017.

Mr. Buchwald reviewed the four proposed 2017 Legislative Priorities including the changes from the adopted 2016 Legislative Priorities.



\* MOTION by Commissioner Bartz to adopt the proposed Legislative Priorities for the St. Lucie TPO for 2017.

\*\* SECONDED by Councilwoman Morgan Carried UNANIMOUSLY

10. FDOT Comments – None

11. Recommendations/Comments by Members – Commissioner Dzadovsky commented on possible Turnpike connections to the Airport.

Councilwoman Morgan thanked staff for providing explanations for the acronyms found throughout the agenda materials.

Ms. Hensley referred the Board to an MPOAC handout that was provided regarding training for Board members

12. TPO Staff Comments

Mr. Buchwald provided a **summary of the TPO’s year in review** which included highlighting the accomplishments of the TPO and the priority projects that were funded in 2016. Mr. Buchwald also welcomed the new Board members, thanked everyone for their support, and wished all a happy and safe holiday season.

13. Next Meeting: The next meeting is a regular TPO Board Meeting scheduled for 2:00 pm on Wednesday, February 1, 2017.

14. Adjourn – The meeting was adjourned at 3:15 pm.

Respectfully submitted:

Approved by:

\_\_\_\_\_  
Mary F. Holleran  
Recording Specialist

\_\_\_\_\_  
Mayor Linda Hudson  
Chairwoman



Coco Vista Centre  
466 SW Port St. Lucie Blvd, Suite 111  
Port St. Lucie, Florida 34953  
772-462-1593 www.stlucietpo.org

## AGENDA ITEM SUMMARY

Board/Committee: St. Lucie TPO Board

Meeting Date: February 1, 2017

Item Number: 8a

Item Title: Complete Streets Study

Item Origination: Unified Planning Work Program (UPWP)

UPWP Reference: Task 4.1 – Complete Streets Study

Requested Action: Approve the Complete Streets Criteria and Inventory Map, approve with conditions, or do not approve.

Staff Recommendation: Based on the recommendations of the TPO Advisory Committees, it is recommended that the Complete Streets Criteria and Inventory Map be approved.

### Attachments

- Staff Report
- Complete Streets Inventory Map



Coco Vista Centre  
466 SW Port St. Lucie Blvd, Suite 111  
Port St. Lucie, Florida 34953  
772-462-1593 www.stlucietpo.org

## MEMORANDUM

TO: St. Lucie TPO Board

THROUGH: Peter Buchwald  
Executive Director

FROM: Yi Ding  
Livability Planner

DATE: January 24, 2017

SUBJECT: Complete Streets Study

---

### BACKGROUND

A "Complete Street" generally is defined as a street that accommodates all users, regardless of their ages or abilities, in a safe and balanced environment. The users include motorists, transit riders, bicyclists, and pedestrians.

Task 4.1 of the FY 2016/17 - FY 2017/18 Unified Planning Work Program (UPWP) of the St. Lucie TPO includes the preparation of a Complete Streets Study. The purpose of the study is to improve multimodal access, safety, and connections and to encourage the development of complete streets corridors within the TPO area.

The Complete Streets Study will include the following:

- Development of an inventory of complete streets within the TPO area
- Identification of candidate corridors for complete street treatment
- Preparation of Complete Street Action Plans for selected corridors

In addition, Task 4.1 includes the implementation of the Complete Street Action Plans subsequent to their preparation and adoption.

## ANALYSIS

The development of an inventory of the existing complete streets in the TPO area is the first step in the preparation of the Complete Streets Study. For the initial development of the inventory, a complete street was defined as a street with separate facilities for bicycles and pedestrians such as bicycle lanes and sidewalks, respectively. A draft map which depicts the Complete Streets Inventory based on this criteria was prepared and reviewed by the TPO Advisory Committees during their joint meeting on November 15, 2016.

After review and discussion by the TPO Advisory Committees, consensus was obtained to expand the criteria and include and depict on the map those streets with multi-use paths but no bicycle lanes. The widths of the multi-use paths typically range from 8 to 12 feet which can accommodate both bicyclists and pedestrians. The draft map was revised to include those streets with multi-use paths but no bicycle lanes.

At their meetings during the week of January 16th, the TPO Advisory Committees reviewed the revised map and recommended approval of the Complete Streets Criteria and Inventory Map subject to the incorporation of revisions to several street segments for accuracy and the addition of the local jurisdictions in the map legend. These revisions have been incorporated into the map.

## RECOMMENDATION

Based on the recommendations of the TPO Advisory Committees, it is recommended that the Complete Streets Criteria and Inventory Map be approved.





Coco Vista Centre  
466 SW Port St. Lucie Blvd, Suite 111  
Port St. Lucie, Florida 34953  
772-462-1593 www.stlucietpo.org

## AGENDA ITEM SUMMARY

Board/Committee: St. Lucie TPO Board

Meeting Date: February 1, 2017

Item Number: 9a

Item Title: Transportation Connectivity Study

Item Origination: Unified Planning Work Program (UPWP)

UPWP Reference: Task 3.9 – Ladders of Opportunity

Requested Action: Discuss and provide comments to TPO Staff.

Staff Recommendation: It is recommended that the Major Activity Center List and Maps be reviewed and comments be provided to Staff.

### Attachments

- Staff Report
- Major Activity Center List
- Major Activity Center/Transit Map
- Major Activity Center/Transit/Complete Streets Map



Coco Vista Centre  
466 SW Port St. Lucie Blvd, Suite 111  
Port St. Lucie, Florida 34953  
772-462-1593 www.stlucietpo.org

## MEMORANDUM

TO: St. Lucie TPO Board

THROUGH: Peter Buchwald  
Executive Director

FROM: Marceia Lathou  
Transit Program Manager

DATE: January 24, 2017

SUBJECT: Transportation Connectivity Study

---

### BACKGROUND

Communities that support access, ensuring that people can easily reach jobs, education, and other daily needs, are referred to as "livable" or "sustainable" communities. The St. Lucie TPO addresses access by incorporating livability, sustainability, and mobility goals into the planning process.

The Transportation Connectivity Study, which gives residents more options for access, evolved from Task 3.9, Ladders of Opportunity, of the Unified Planning Work Program (UPWP). The TPO has initiated the Transportation Connectivity Study, and the preliminary findings are being presented for initial review and comment.

### ANALYSIS

The Transportation Connectivity Study will analyze how well residents of the TPO area are connected to Major Activity Centers (MACs) via bicycle lanes, sidewalks, or transit routes and complete streets. A Major Activity Center is defined as:

. . . a geographical area characterized by a large transient population and heavy traffic volumes and densities; for example, central business district, major air terminal, large university, large shopping center, industrial park, sports arena." - *Transit Capacity and Quality of Service Manual, Third Edition, Transportation Research Board, 2013*

In other words, a MAC is a walkable geographic area that contains multiple attractions. The multiple attractions may include supermarkets, banks, gas stations, restaurants, and medical offices.

The following criteria were used in the selection of MACs:

- Intensity of development
- Size
- Diversity of land use



The attached list and draft map showing the locations of MACs have been prepared for review and comment. A transit overlay has been added to the attached MAC map. The transit overlay shows existing and future bus routes which further enhance access to MACs.

The Transportation Connectivity Study will inform numerous ongoing TPO planning studies and vice versa. These studies include the Congestion Management Process, the Transportation Disadvantaged Service Plan (TDSP), and the Transit Development Plan (TDP). The Transportation Connectivity Study will incorporate the Indian River Estates Connectivity Analysis. Because a key element of livable, sustainable communities is complete streets, the Complete Streets Study is being developed concurrently with the Transportation Connectivity Study.

The Complete Streets Inventory was overlaid upon the MAC/Transit Map to create another map which is attached for review and comment. This map indicates which MACs are not served by Complete Streets. The gaps in the Complete Streets Network then may be prioritized for Complete Streets Treatment.

Because access to healthy food is a basic need, consideration for Complete Streets Treatment also will be given to MACs with major supermarkets. For example, the Rivergate Plaza MAC, which includes a Publix, would be prioritized over the Sportsman's Park MAC. MACs that serve transportation



disadvantaged neighborhoods and other low-access communities also will be given special consideration.



At their meetings during the week of January 16th, the TPO Advisory Committees reviewed the MAC List and Maps. Comments from the Advisory Committees included the recommendation to add the Treasure Coast International Airport and Business Park as a MAC. In addition, it was recommended that a category be created for “Emerging” MACs and to add the Port of Fort Pierce as an emerging MAC. It also was recommended to divide the St. Lucie West Boulevard corridor into sub-districts because of its long length and to add numerical weights to the MAC selection criteria. The Advisory Committee comments have been incorporated or are being considered for incorporation based on additional analysis.

### RECOMMENDATION

It is recommended that the MAC List and Maps be reviewed and comments be provided to Staff.

# MAJOR ACTIVITY CENTERS (MACs)

MAC	LOCATION	PURPOSE	SUPERMARKET
January 20, 2017			
City Hall/ Community Center/Bus Transfer	Port St Lucie Blvd/ Airoso Blvd	Government/ Recreation/ Transportation	No
Rivergate Plaza/ Rivergate Park/ Botanical Gardens	Port St. Lucie Blvd/Veterans Memorial Parkway/ Westmoreland Blvd	Retail/ Recreation/ Institutional	Yes
Darwin Square/WalMart/ Whispering Pines/TC High	Port St. Lucie Blvd/ Darwin Blvd	Retail/ Recreation/ Institutional	Yes
Sabal Palm Plaza/ Botanical Gardens/ Virginia College/ SaveALot	U.S. 1/ Virginia Ave – Edwards Rd	Retail/ Institutional/ Recreation	Yes
County Admin/ Fenn Center/ Lawnwood Sports Complex/ Lawnwood Medical Center	Virginia Ave 13 <sup>th</sup> Street – 25 <sup>th</sup> Street	Government/ Recreation/ Medical	No
Fort Pierce Downtown/ Marina	U.S. 1/ Orange Avenue/ Melody Lane	Government/ Retail/ Recreation	Yes <b>(farmer's market)</b>
Walmart Supercenter/ <b>Sam's Club</b> / Town Center	U.S. 1/ Lennard Road – Jennings Road	Retail	Yes
St. Lucie West	St. Lucie West Blvd I-95 – Country Club Drive	Retail/ Lodging/ Recreation	Yes
St. Lucie West	St. Lucie West Blvd Country Club Drive – Turnpike	Retail	Yes
Sportsman's Park	Prima Vista Blvd/Irving St	Recreation	No
Walmart Supercenter/ Orange Blossom Mall	Okeechobee Rd/ McNeil Rd – Hartman Rd	Retail/ Institutional/ Office	Yes






# MAJOR ACTIVITY CENTERS (MACs)

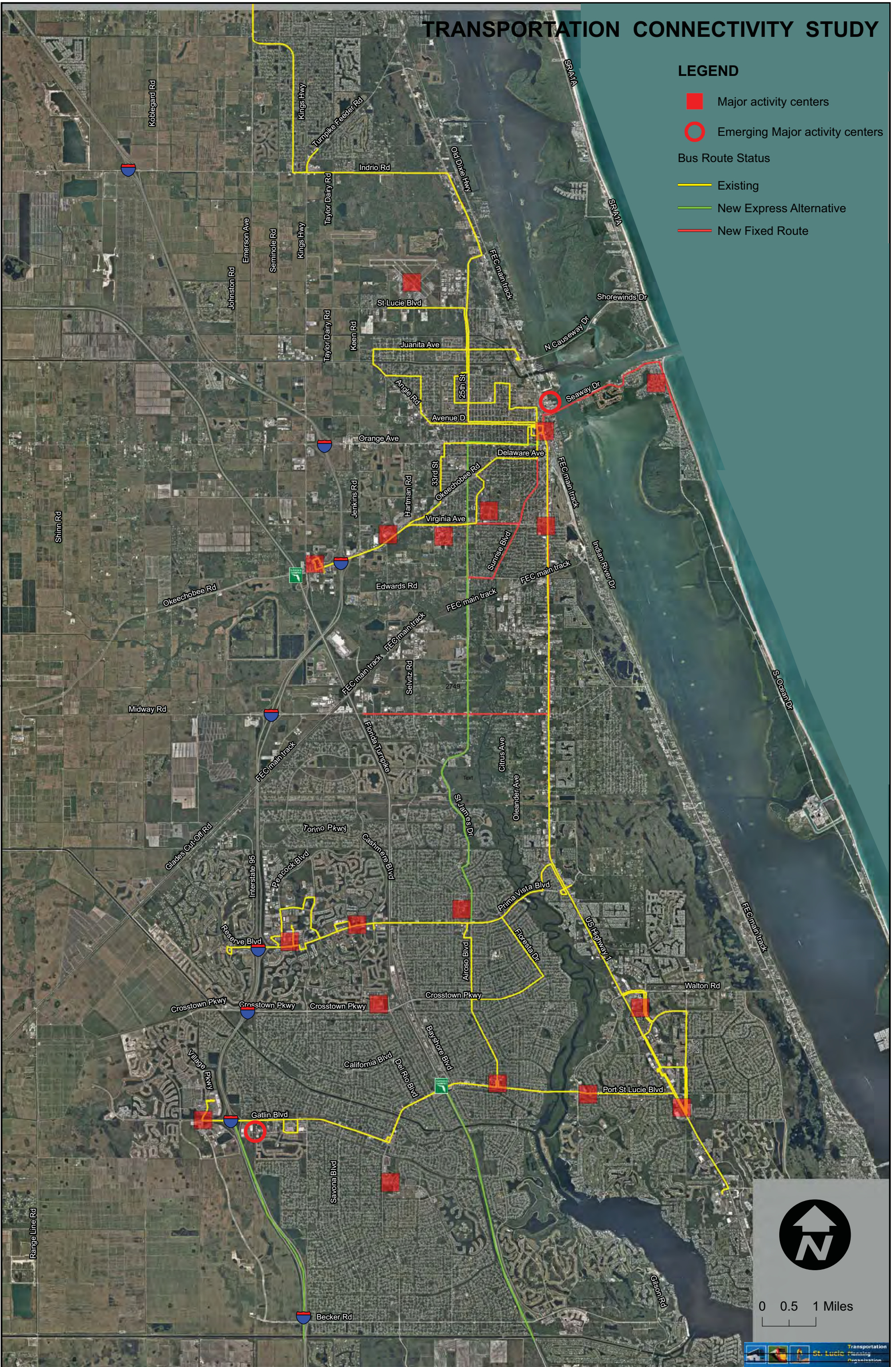
MAC	LOCATION	PURPOSE	SUPERMARKET
January 20, 2017			
Port St. Lucie Civic Center/ Eastport Plaza/ St Lucie Medical Center	U.S. 1/ Walton Rd – Tiffany Avenue	Government/ Retail/Medical	Yes
South Jetty Park	Seaway Dr/ Ocean Dr	Recreation/ Retail/ Lodging	No
Tradition	Tradition Parkway/ Village Parkway Dr	Retail/ Medical/ Lodging/ Recreation	Yes
McChesney Park/Centennial High/St Lucie West K-8	Crosstown Parkway/ Cashmere Blvd	Recreation/ Institutional	No
I-95/ Turnpike/SR-70 Interchanges	Okeechobee Rd/ Turnpike	Retail/Lodging/ Transportation	No
IRSC – Fort Pierce	Virginia Ave/35 <sup>th</sup> St	Institutional	No
Treasure Coast International Airport & Business Park	3000 Curtis King Blvd	Transportation	No
Port of Fort Pierce*	North 2 <sup>nd</sup> Street/ <b>Fisherman's Wharf</b>	Transportation	No
Jobs Express Terminal*	I-95/Gatlin Boulevard	Transportation	No

\*Emerging MAC

# TRANSPORTATION CONNECTIVITY STUDY

## LEGEND

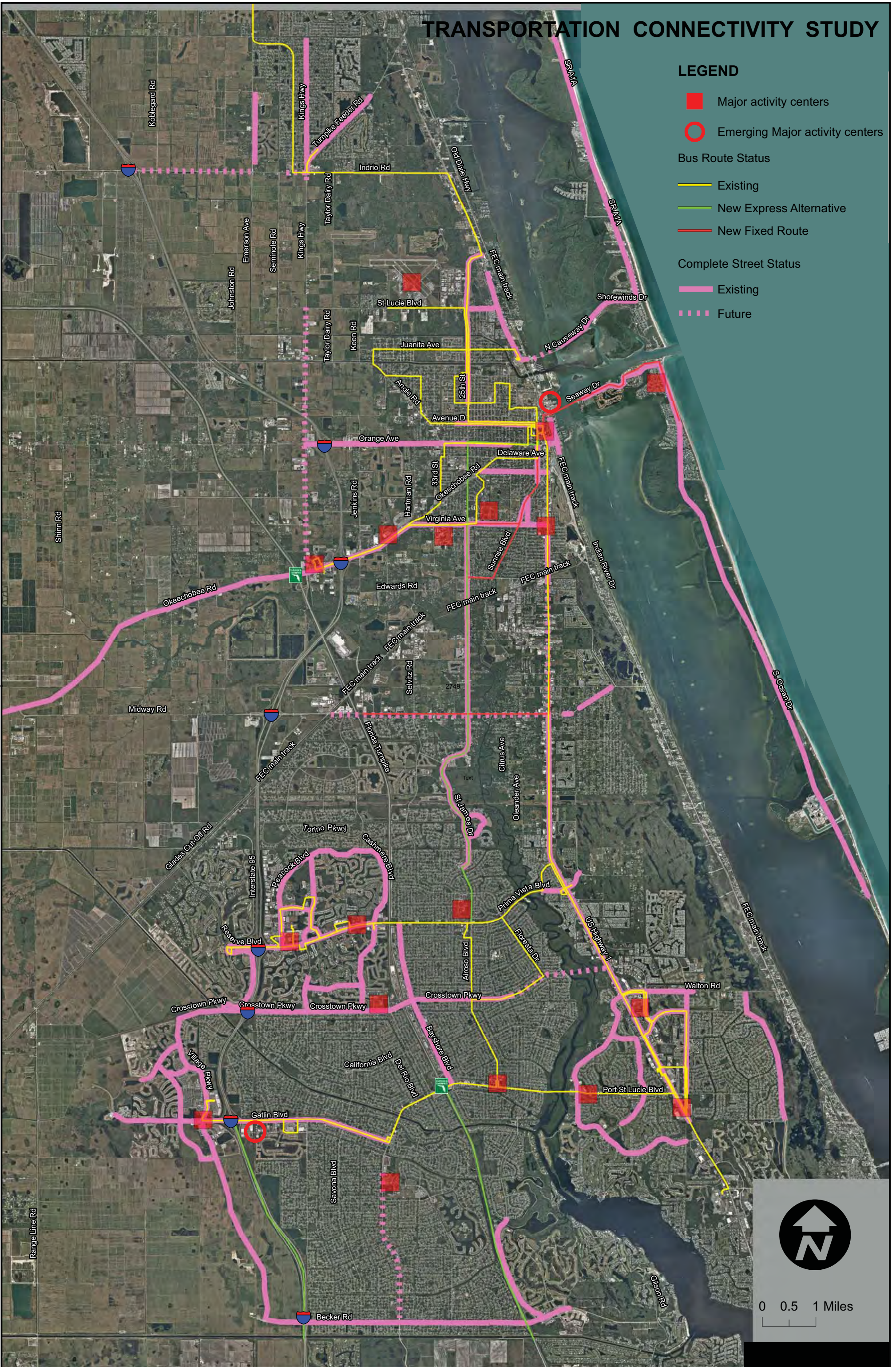
-  Major activity centers
-  Emerging Major activity centers
- Bus Route Status**
  -  Existing
  -  New Express Alternative
  -  New Fixed Route



# TRANSPORTATION CONNECTIVITY STUDY

## LEGEND

- Major activity centers
- Emerging Major activity centers
- Bus Route Status**
- Existing
- New Express Alternative
- New Fixed Route
- Complete Street Status**
- Existing
- Future



0 0.5 1 Miles



Coco Vista Centre  
466 SW Port St. Lucie Blvd, Suite 111  
Port St. Lucie, Florida 34953  
772-462-1593 www.stlucietpo.org

## AGENDA ITEM SUMMARY

Board/Committee: St. Lucie TPO Board

Meeting Date: February 1, 2017

Item Number: 9b

Item Title: Transportation Systems Management & Operations (TSM&O) Technologies and Benefits

Item Origination: Florida Department of Transportation District 4 (FDOT)

UPWP Reference: Task 2.2 – Data Collection and Monitoring  
Task 3.4 – Congestion Management Process

Requested Action: Discuss and provide comments to FDOT and TPO Staff.

Staff Recommendation: It is recommended that comments be provided to FDOT and TPO Staff regarding the technologies and benefits associated with the TSM&O Program and the St. Lucie Advanced Transportation Management System.

### Attachments

- Staff Report
- FDOT District 4 Presentation

## MEMORANDUM

TO: St. Lucie TPO Board

FROM: Peter Buchwald  
Executive Director

DATE: January 24, 2017

SUBJECT: Transportation Systems Management & Operations  
(TSM&O) Technologies and Benefits

---

### BACKGROUND

In cooperation with the local agency and TPO staffs, the Florida Department of Transportation District 4 (FDOT) prepared the St. Lucie Advanced Transportation Management System (ATMS) Master Plan, and the TPO Board approved the ATMS concept and Phase I of the ATMS Master Plan in April 2013. The purpose of the plan is to increase transportation system efficiency, enhance mobility, and improve safety through the installation of the latest technology and infrastructure. The plan also proposes collaboration among the local partner agencies to provide highly effective transportation services which maximize safety and mobility to the public and ultimately provide significant benefits to the local agencies. In addition, the ATMS will support future connected and automated vehicle technologies.

The adoption of the Go2040 Long Range Transportation Plan (LRTP) by the TPO Board in February 2016 further supported the ATMS concept. The Go2040 LRTP includes goals and objectives pertaining to the development of an efficient transportation system and improving the efficiency of the existing transportation services. In addition, the Cost Feasible Plan of the Go2040 LRTP includes US-1 Corridor Retrofit and Congestion Management Process (CMP) funding that envisions alternatives to roadway widening, such as the ATMS, to achieve enhanced efficiency.

As a result of the TPO's support, Phase I of the project was programmed for inclusion in the FDOT Work Program and in the FY 2016/17 – FY 2020/21 Transportation Improvement Program (TIP) adopted by the TPO in June 2016. A total of \$10.34 million is programmed for Phase I in

FY 2020/21 which consists of the design, procurement, and installation of the ATMS along U.S. Highway 1 from the North Kings Highway intersection to the Savanna Club Boulevard intersection and along State Route 70 from the South Kings Highway intersection to the U.S. Highway 1 intersection.

The construction includes the installation of fiber optic communications infrastructure to interconnect 56 intersections, traffic monitoring cameras, poles, and data collection devices. In addition, the ATMS Traffic Management Center (TMC) will be installed at the FDOT Treasure Coast Operations Center on Oleander Avenue as part of the project.

Subsequent to the project being programmed, FDOT requested resolutions of support from the local agencies. In October 2016, the City of Fort Pierce and St. Lucie County adopted resolutions of support for the project. Most recently, the FY 2017/18 – FY 2021/22 Draft Tentative Work Program endorsed by the TPO in December 2016 advances the project to FY 2019/20.

## ANALYSIS

An Arterial Management Program (AMP), such as the St. Lucie ATMS, is a product of an overall Transportation System Management & Operations (TSM&O) Program. With the demonstrated support by the TPO and the advancement of the construction of Phase 1 of the St. Lucie ATMS, FDOT now requests to present the latest TSM&O technologies and the associated benefits that may be provided as part of the TSM&O Program and the St. Lucie ATMS.

## RECOMMENDATION

It is recommended that comments be provided to FDOT and TPO Staff regarding the technologies and benefits associated with the TSM&O Program and the St. Lucie ATMS.





# Arterial Management Program

# AMP

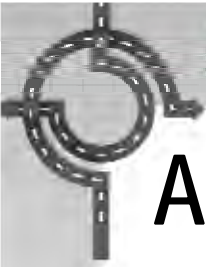
St. Lucie TPO



St. Lucie

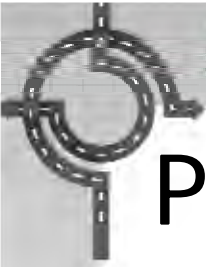
Transportation  
Planning  
Organization





# Agenda

- Program Overview
- Coverage Area
- ITS Tools and Devices
- Operations Phase – Focus Areas
- Contact Information



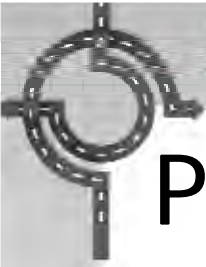
# Program Overview

The Arterial Management Program (AMP) is a product of the Florida Department of Transportation's (FDOT) Transportation System Management & Operations (TSM&O) Program

A real-time approach involving "taking back" capacity lost due to

- Recurring congestion
- Congestion created by traffic incidents



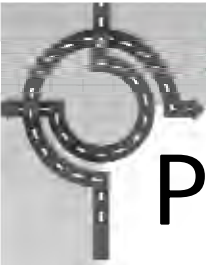


# Program Overview

## Goal of AMP

Improve travel time, and move vehicles and pedestrians quickly, efficiently, and safely along arterial roadways by using Intelligent Transportation Systems (ITS) tools

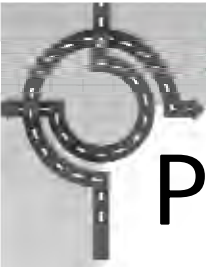




# Program Overview

- AMP supports nearby limited access facilities (Interstate 95 and Florida's Turnpike) during incidents
- AMP coordinates closely with Palm Beach County to mitigate traffic problems

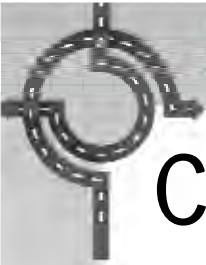




# Program Overview

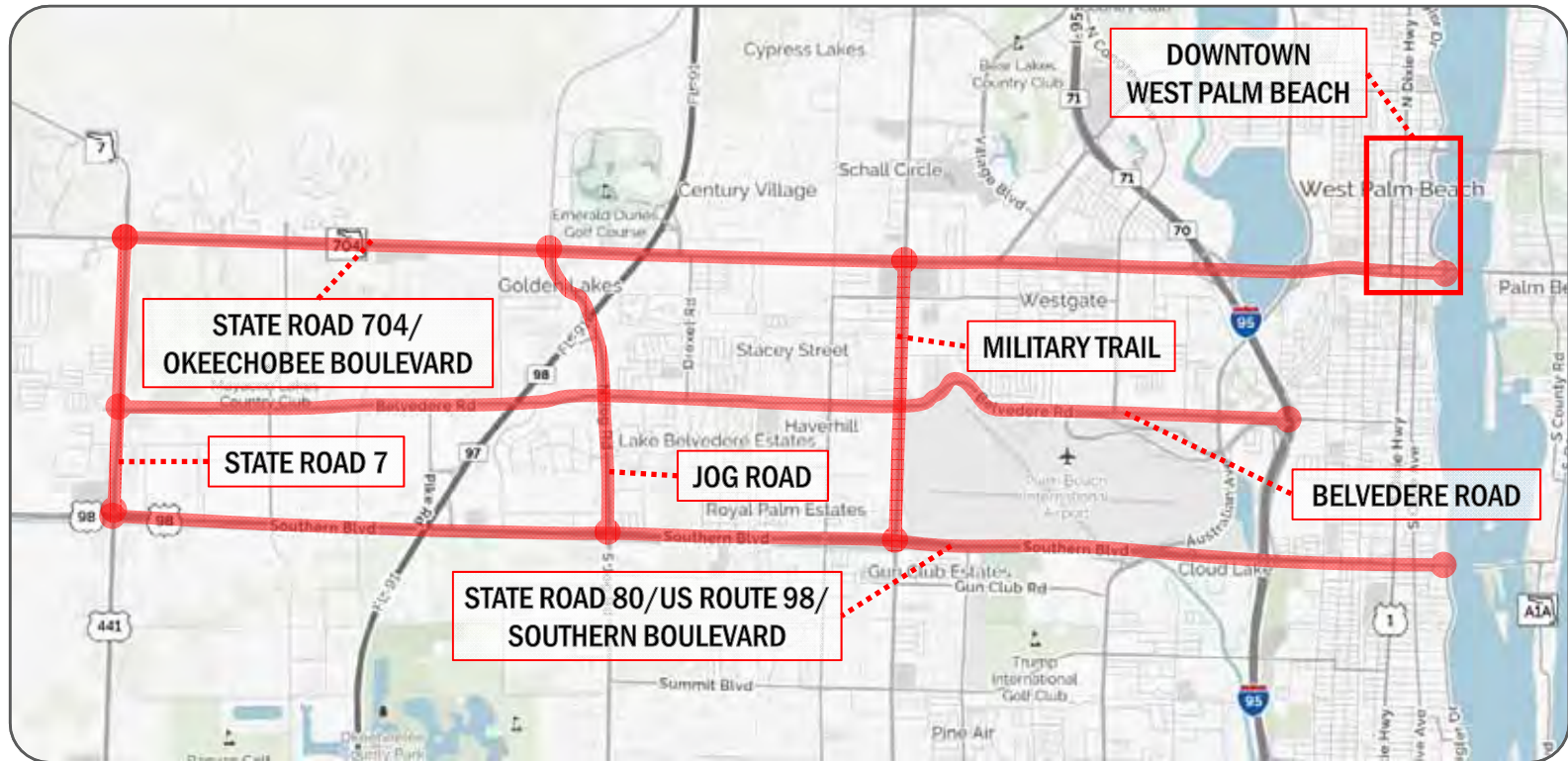
- AMP supports planned special events





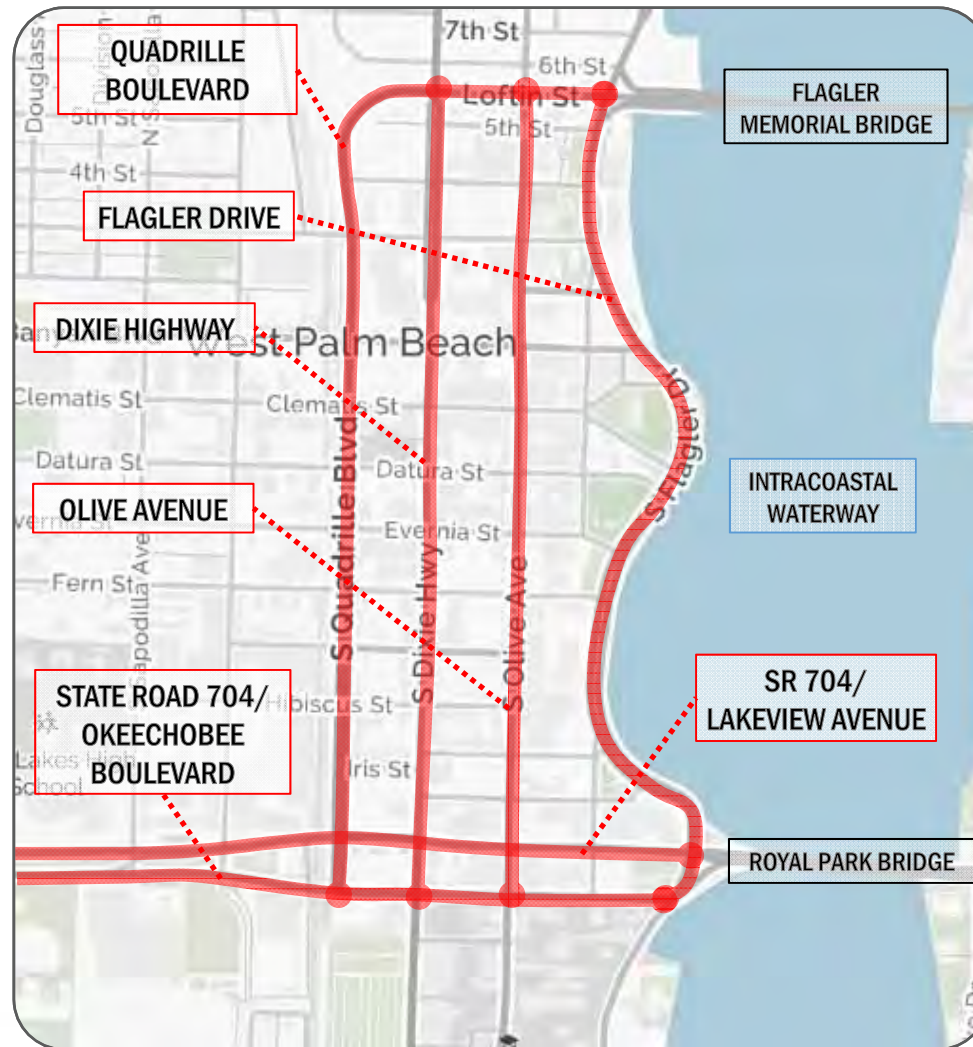
# Coverage Area

## *Palm Beach County*



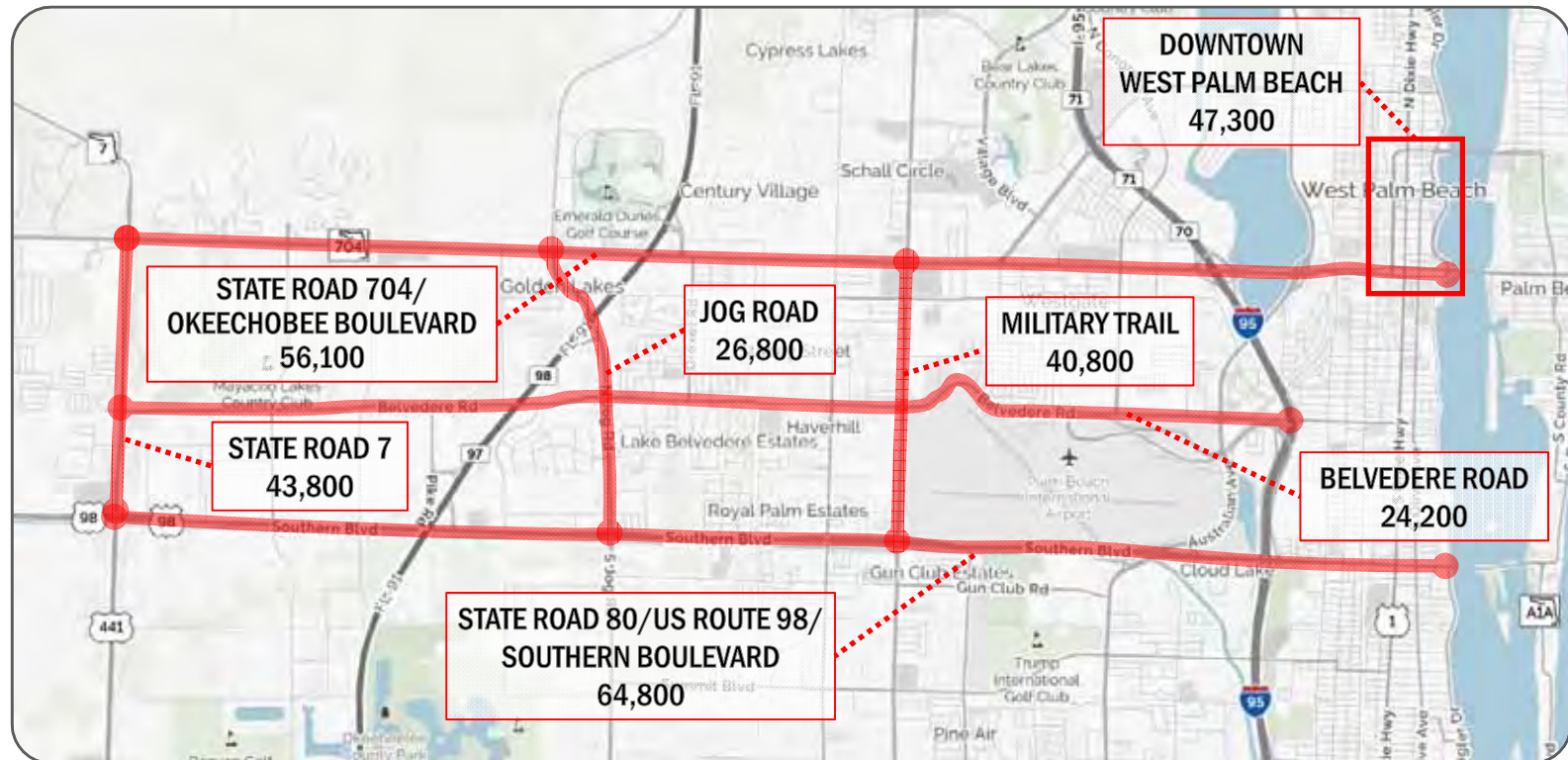
# Coverage Area

## *Downtown West Palm Beach*





# Annual Average Daily Traffic





# ITS Tools And Devices

- Traffic signal management
  - Advance Traffic Management System software platform (ATMS.now)
  - Real-time signal timing monitoring
  - Allows on-the-fly signal timing modifications

130 Online AMP traffic signals

1,200+ Online Palm Beach County traffic signals

Alarm	Status	ID	Name	# Address	Pattern	Code (Event)	Last Date/Time	Controller Type	Time Off (Sec)
●	●	1200	Palm Beach Lakes St and Village St Entrance	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	0
●	●	1205	Palm Beach Lakes Blvd and Hobbes Dr	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	2
●	●	1200	Palm Beach Lakes Blvd and Village St	254			5/11/2016 6:57 AM	5/11/2016 6:57 AM	1
●	●	1205	Palm Beach Lakes Blvd and E Mall	254			5/11/2016 6:57 AM	5/11/2016 6:57 AM	1
●	●	1303	Palm Beach Lakes Blvd and Congress Ave	254			5/11/2016 6:57 AM	5/11/2016 6:57 AM	0
●	●	1303	Palm Beach Lakes Blvd and Forest Way	21			5/11/2016 6:59 AM	5/11/2016 6:59 AM	3
●	●	1200	Palm Beach Lakes Blvd and 7th St	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	0
●	●	1303	Palm Beach Lakes Blvd and Olive Hwy	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	2
●	●	1345	Palm Beach Lakes Blvd and Olive Ave	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	4
●	●	1350	Palm Beach Lakes Blvd and Flagler Dr	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	2
●	●	1260	7th St and Australian Ave	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	3
●	●	1305	7th St and Tamarind Ave	254			5/11/2016 6:57 AM	5/11/2016 6:57 AM	0
●	●	1301	Quail Blvd and Olive Hwy	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1260	Am Dr and Olive Hwy	1	100	10	5/11/2016 6:59 AM	5/11/2016 6:59 AM	0
●	●	1305	Am Dr and Olive Ave	1	50	23	5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1301	3rd St and Quail Blvd	1	100	20	5/11/2016 6:59 AM	5/11/2016 6:59 AM	2
●	●	1410	3rd St and Olive Ave	1	50	13	5/11/2016 6:57 AM	5/11/2016 6:57 AM	2
●	●	1411	3rd St and Flagler Dr	1	100	2	5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1413	Executive Center Dr and Congress Ave	1	100	2	5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1421	3rd St and Olive Hwy (Palm Central)	1	100	2	5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1422	Banyan St and Tamarind Ave	1	100	11	5/11/2016 6:57 AM	5/11/2016 6:57 AM	2
●	●	1428	Banyan St and Samaha Ave	1	100	11	5/11/2016 6:57 AM	5/11/2016 6:57 AM	2
●	●	1442	Banyan St and Rosemary Ave	1	100	36	5/11/2016 6:59 AM	5/11/2016 6:59 AM	0
●	●	1445	Banyan St and Quail Blvd	1	100	36	5/11/2016 6:59 AM	5/11/2016 6:59 AM	0
●	●	1450	Banyan St and Olive Hwy	1	100	23	5/11/2016 6:59 AM	5/11/2016 6:59 AM	2
●	●	1455	Banyan St and Olive Ave	1	100	30	5/11/2016 6:59 AM	5/11/2016 6:59 AM	0
●	●	1451	Banyan St and Flagler Dr	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1485	Olive St and Rosemary Ave	1	100	18	5/11/2016 6:57 AM	5/11/2016 6:57 AM	2
●	●	1470	Olive St and Quail Blvd	1	100	18	5/11/2016 6:59 AM	5/11/2016 6:59 AM	2
●	●	1475	Olive St and Olive Hwy	1	100	18	5/11/2016 6:59 AM	5/11/2016 6:59 AM	2
●	●	1481	Olive St and Olive Ave	1	100	18	5/11/2016 6:57 AM	5/11/2016 6:57 AM	2
●	●	1485	Olive St and Olive Hwy	1	50	19	5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1490	Olive St and Olive Ave	1	50	19	5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1495	Olive St and Flagler Dr	254			5/11/2016 6:59 AM	5/11/2016 6:59 AM	1
●	●	1501	Olive St and Olive Hwy	1	50	29	5/11/2016 6:57 AM	5/11/2016 6:57 AM	1
●	●	1505	Olive St and Olive Ave	1	50	42	5/11/2016 6:59 AM	5/11/2016 6:59 AM	2



# ITS Tools And Devices

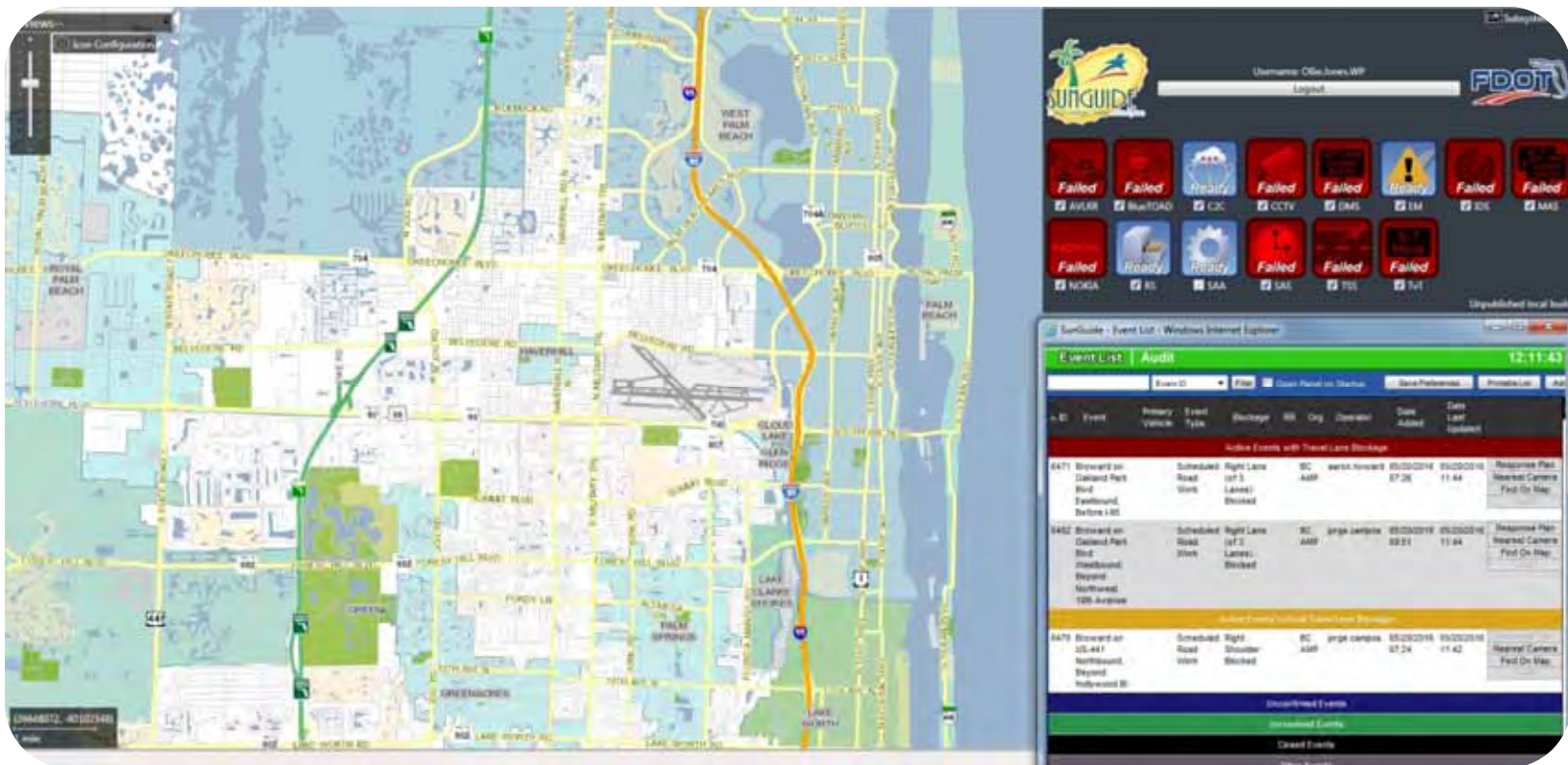
- CCTV Pan-Tilt-Zoom Cameras
  - Vicon
    - Watchdog Lite camera management software
    - 28 AMP/120 total Vicon pan-tilt-zoom (PTZ) cameras
  - Bosch
    - Bosch Video Viewer camera management software
    - 18 AMP/total Bosch PTZ cameras





# ITS Tools And Devices

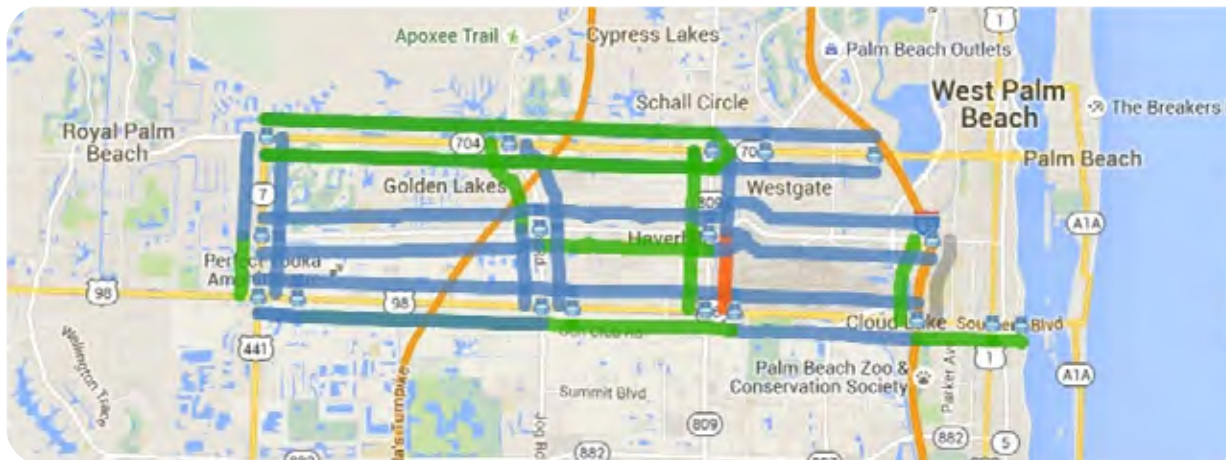
- Traffic Incident Management – FDOT SunGuide 6.1





# ITS Tools And Devices

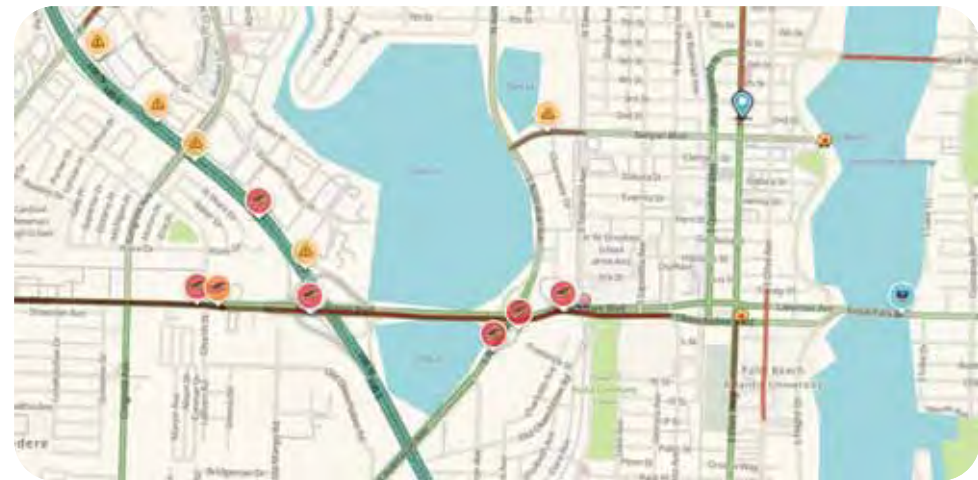
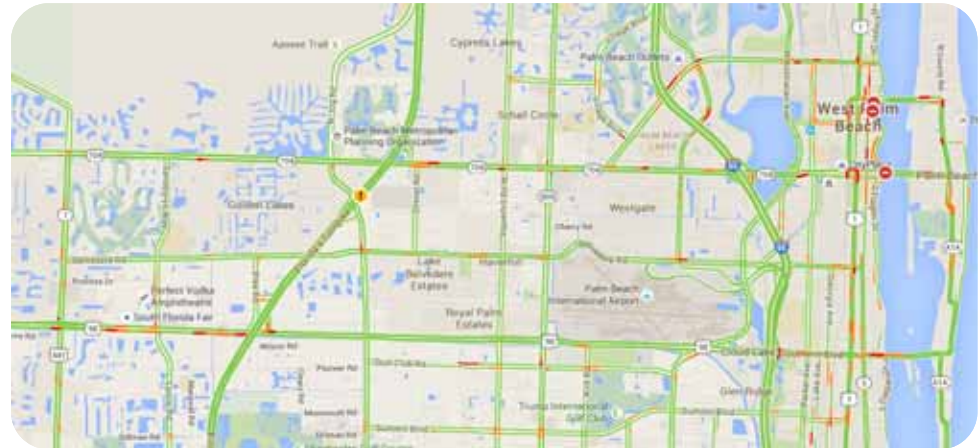
- Bluetooth Travel Time Detection
  - BlueARGUS web-based monitoring interface
  - 31 BlueTOAD detection units





# ITS Tools And Devices

- Other Web-based Detection
  - Google Maps
  - Regional Integrated Transportation Information System (RITIS)
  - Waze





# ITS Tools And Devices

## *Video Wall*

- Used for monitoring traffic and incidents
- All 120 Vicon and 18 Bosch PTZ cameras can be displayed in multiple grid configurations



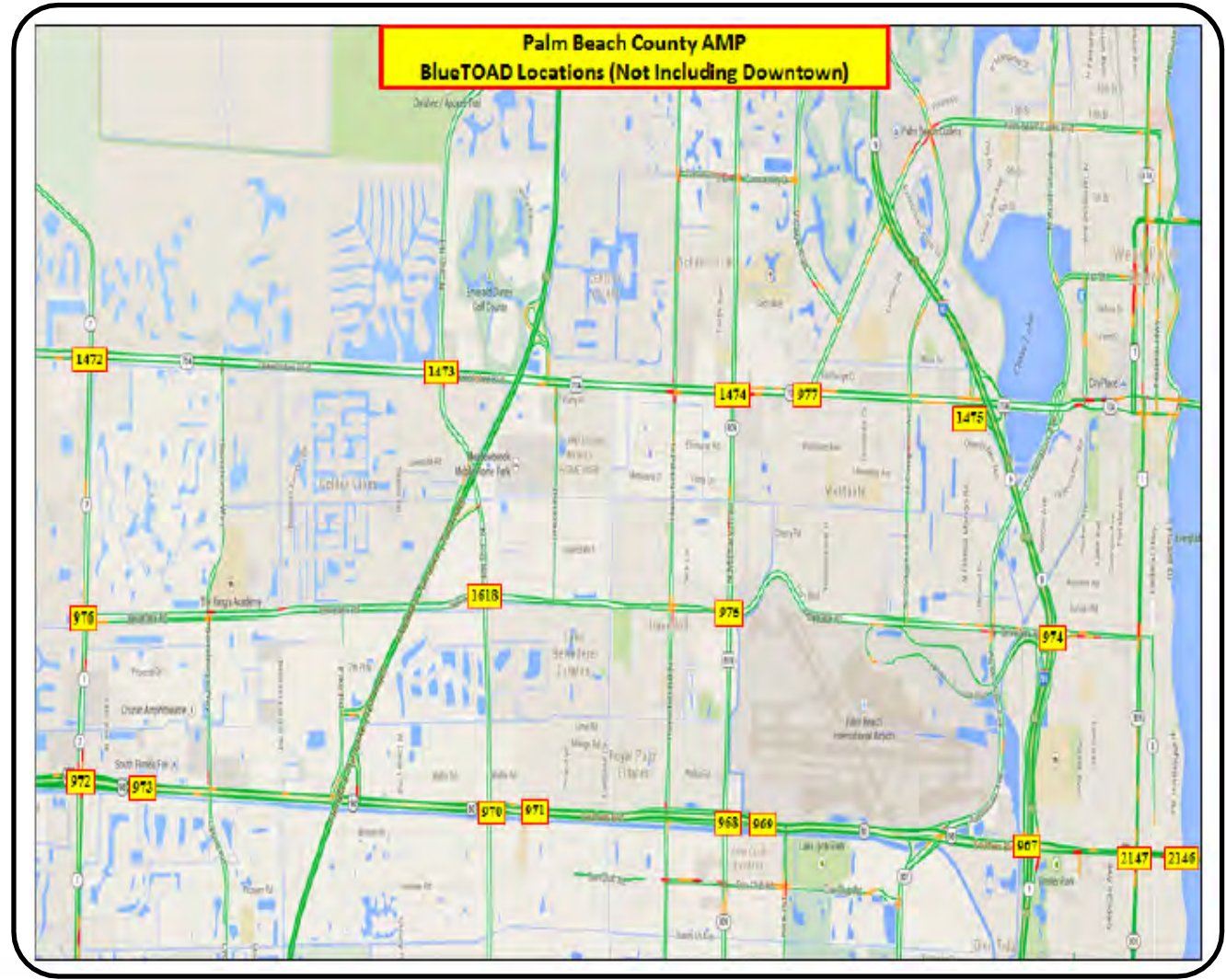






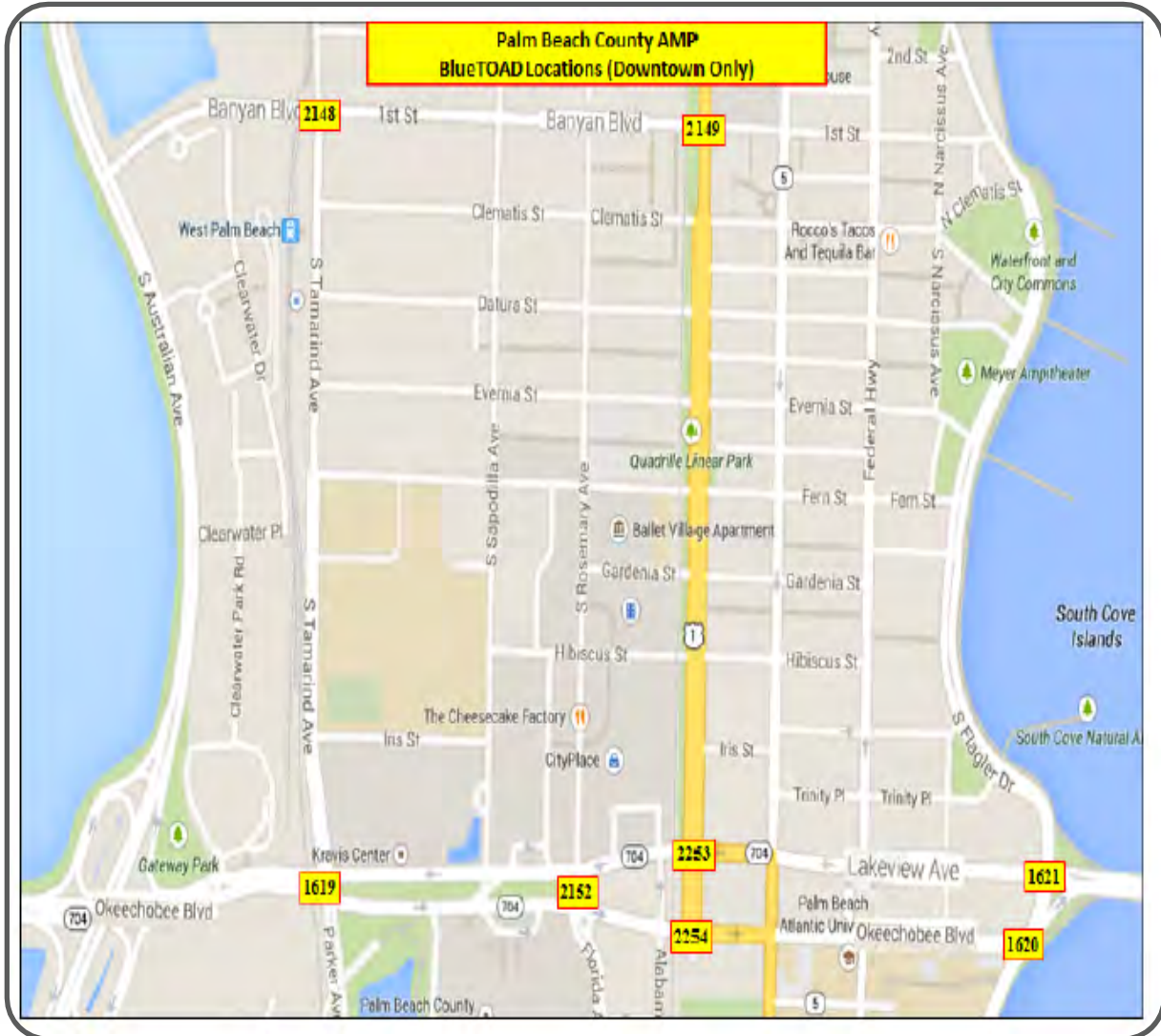
# ITS Tools And Devices

## BlueToad Locations



# ITS Tools And Devices

## BlueToad Locations



# Operations Phase – Focus Areas

- Performance Measures
- Work Zone Management
- Signal Retiming Activities
- Interagency Coordination

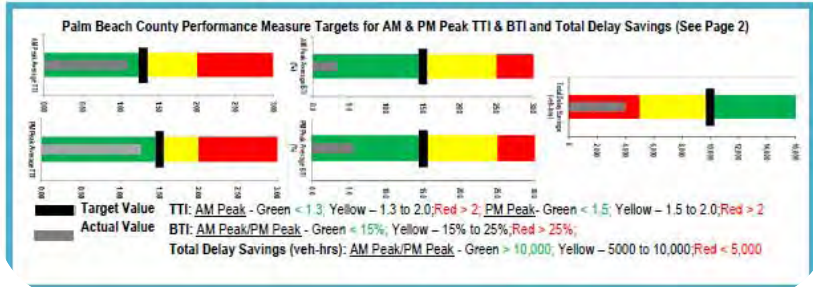
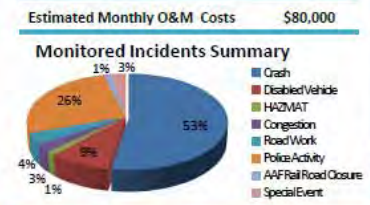


Number of Monitored Incidents	Number of Managed Incidents	Number of Signal Timing Changes	Average Incident Duration (Min.)	Benefit-to-Cost (B/C)	Net Benefit Value
76	19	540	40.8	2.29	\$102,984

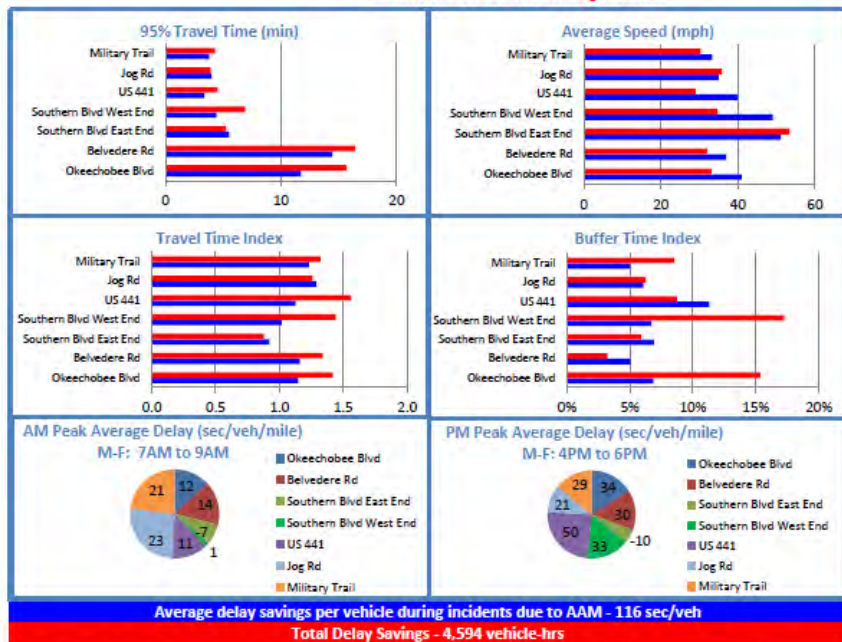
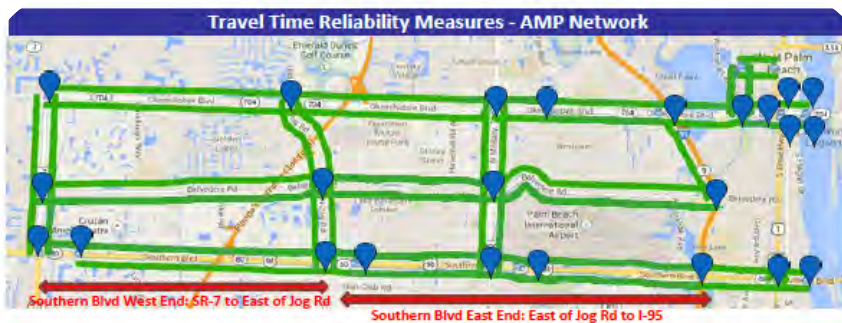
Performance Measure		Benefit
Travel Time/Delay Savings		\$96,431
Reduction in Emissions		\$6,659
Reduction in Fuel Consumption		\$15,093
Safety Benefits		\$64,801
<b>Total Benefits</b>		<b>\$182,984</b>

Device Type		Number of Devices
Online Traffic Signals (expressed as the percentage of total signals)		78%
Signal System Health		> 95%
Incident Management CCTV Cameras		142
Online Intersections with Video Detection System		66
Sensys Detection (no. of Intersections)		3
BlueTOAD Devices		31
MVDS-Microwave Vehicle Detection Sys		7
Fiber Optic System (approx. no. of miles)		530
Opticom Devices		1



# Operations Phase – Focus Areas



**Travel Time Index:** Travel Time Index (TTI) is a measure of congestion and conveys how much to multiply the ideal free flow travel time by to estimate the expected travel time for a certain route. Average TTI (July-2016) **1.09** **1.27**

**Buffer Index:** Buffer Time Index (BTI) is a measure of reliability and conveys how much additional time, relative to the typical travel time, is necessary to ensure an on-time arrival arrival with 95% confidence. Average BTI (July-2016) **3.2%** **5.6%**

FDOT Signal Timing Control for Incident Management in Palm Beach County July 2016

Date and Time	Location	Incident Type	Direction	Lane Blockage	CCTV #	Signal Timing Changes	Pictures	Estimated Benefits
7/13/2016 Wednesday 5am to 9:40am	Gateway Boulevard at Congress Avenue	Crash	WB	1 out of 3 WB lanes blocked	-	Gateway Boulevard at Congress Avenue: Pattern-2: Adjusted split and allocated 1 sec of additional green time to the WB movement.	No images available	Average Throughput Improvement = 30% Total Vehicular Delay Savings = 54 vehicles
7/14/2016 thru 7/19/2016	Hypoluxo Road at Dixie Highway	AAF closure	EW	East/West lanes blocked	CCTV 575	Implemented temporary timing plans at the following signals: + Larocca Road at Federal Highway + Hypoluxo Road at Federal Highway	[Image]	Average Throughput Improvement = 23% Total Vehicular Delay Savings = 1,326 vehicles
7/15/2016 Friday 5pm to 8:30pm	45th Street at Congress Avenue	Crash	EB	2 out of 3 EB lanes blocked	CCTV 160	45th Street at Congress Avenue: Modified the signal operation to their mode and adjusted maximum green limits to balance queues.	[Image]	Average Throughput Improvement = 52% Total Vehicular Delay Savings = 14 vehicles

FDOT Signal Timing Control for Incident Management in Palm Beach County July 2016

Date and Time	Location	Incident Type	Direction	Lane Blockage	CCTV #	Signal Timing Changes	Pictures	Estimated Benefits
7/26/2016 Thursday 4:30pm to 9:30pm	I-95 NB at Forest Hills Boulevard	Congestion	NB	None	460	10th Avenue at I-95 signal: Modified the signal operation to their operation and adjusted maximum green limits to flush out the NB off-ramp traffic.	[Image]	Average Throughput Improvement = 10% Total Vehicular Delay Savings = 3 vehicles
7/29/2016 Friday 8:45pm to 4:20pm	Palm Beach Lakes Boulevard at I-95	Crash	EB	2 out of 3 EB lanes blocked	CCTV 154	Palm Beach Lakes Boulevard at I-95 signal: Modified the signal operation to their operation and adjusted maximum green limits to balance queues.	[Image]	Average Throughput Improvement = 65% Total Vehicular Delay Savings = 6 vehicles
7/29/2016 Friday 1:15pm to 1:30pm	I-95 NB south of Blue Moon Boulevard	Crash	NB	1 out of 2 NB lanes blocked	CCTV 160	Pattern-1: increased the NB off-ramp split from 16 sec to 25 sec.	[Image]	Average Throughput Improvement = 43% Total Vehicular Delay Savings = 3 vehicles



*For inquires, verifying and/or reporting traffic signal problems, incidents,  
and special events, please contact us*

**Palm Beach County Vista Center**

2300 North Jog Road  
West Palm Beach | Florida | 33411  
561 681 4300

*Monday through Friday  
7:00 a.m. to 11:00 a.m.  
3:00 p.m. to 7:00 p.m.*



**Broward SMART SunGuide  
Regional Traffic Management Center**

2300 West Commercial Boulevard  
Fort Lauderdale | Florida | 33309  
954 847 1976

*Monday through Friday  
7:00 a.m. to 7:00 p.m.*