St. Lucie Transportation Planning Organization

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

CITIZENS ADVISORY COMMITTEE (CAC)

Regular Meeting

Tuesday, July 12, 2016
10:30 am

AGENDA

1. Call to Order

2. Roll Call

3. Approval of Minutes
   - *May 17, 2016 Regular Meeting*

4. Comments from the Public

5. Approval of Agenda

6. Action Items

   6a. 2016/17 List of Priority Projects (LOPP): Review of the draft LOPP for 2016/17 for the St. Lucie TPO.

   Action: Review and recommend adoption of the draft 2016/17 LOPP, recommend adoption with conditions, or do not recommend adoption.

   6b. Walton Road Multimodal Improvements Feasibility Study: Review of the revised draft Walton Road Multimodal Improvements Feasibility Study.

   Action: Review and recommend acceptance of the revised draft study, recommend acceptance with conditions, or do not recommend acceptance.

   6c. Public Involvement Program (PIP) Annual Evaluation of Effectiveness and Update: Review of the effectiveness of the St. Lucie TPO's PIP during FY 2015/16.

   Action: Review and recommend acceptance of the PIP Evaluation of Effectiveness and Update, recommend acceptance with conditions, or do not recommend acceptance.

7. Discussion Items

7a. Water Taxi Feasibility Study: A presentation on the draft Water Taxi Feasibility Study.

Action: Discuss and provide comments to staff.

8. Recommendations/Comments by Members

9. Staff Comments

10. Next Meeting: The next CAC meeting is a regular meeting scheduled for 10:30 am on Tuesday, September 20, 2016.

11. 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.

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 Advisory Committees with respect to any matter considered at a 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.

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

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

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CITIZENS ADVISORY COMMITTEE (CAC)

Regular Meeting

DATE: Tuesday, May 17, 2016

TIME: 10:30 AM

LOCATION: St. Lucie TPO Boardroom
Coco Vista Centre
466 SW Port St. Lucie Boulevard, Suite 111
Port St. Lucie, Florida

MINUTES

1. Call to Order

Carolyn Niemczyk, Chairperson, called the meeting to order at 1:40 pm.

2. Roll Call

The roll was taken via sign-in sheet. A quorum was noted with the following eight members in attendance:

Members Present:	Representing:
Carolyn Niemczyk, Chairperson	Unincorporated County Resident
Paul Weinstein, Vice Chair	Port St. Lucie Resident
Bill Brooks	Minority Resident
Ron Brown	At Large Resident
William Lindsay	Minority Resident
Alan Love	Disabled Community
Marvin Mendelson	At Large Resident
Bertha Sullivan	Fort Pierce Resident

Others Attending:	Representing:
Peter Buchwald	St. Lucie TPO
Edward DeFini	St. Lucie TPO
Yi Ding	St. Lucie TPO

DRAFT

Marceia Lathou	St. Lucie TPO
Mary Holleran	Recording Specialist
Linda Ferreira	Stanley Consultants
William Evans	Stanley Consultants
Alice Bojanowski	Martin MPO

3. Approval of Minutes
   - March 8, 2016 Regular Meeting

* MOTION – MOVED by Mr. Brown to approve the minutes of the CAC Regular Meeting on March 8, 2016.

** SECONDED by Mr. Weinstein Carried UNANIMOUSLY

4. Comments from the Public - None

5. Approval of Agenda

* MOTION – MOVED by Mr. Weinstein to approve the agenda.

** SECONDED by Mr. Mendelson Carried UNANIMOUSLY

6. <u>Action Items</u>

6a. Draft FY 2016/17 – FY 2020/21 Transportation Improvement Program (TIP): Review and Recommendation

Mr. Buchwald explained the purpose of the TIP is to identify the prioritized transportation improvement projects in the TPO area receiving Federal and State funding over a five-year period.

Mr. Yi Ding, TIP Program Manager, was introduced to present an update of the projects. He reviewed project location maps and summarized the 2015/16 List of Priority Projects (LOPP) that was adopted by the Board August 5, 2015. The year-long development process of the TIP will begin again in June, 2016.

The Final Tentative Work Program appears consistent with the Draft Tentative Work Program recommended for endorsement by the TPO advisory committees and the draft FY 2016/17- FY 2020/21 TIP was recommended for adoption by the TPO Board.

DRAFT

* MOTION – MOVED by Mr. Lindsey to recommend the Draft FY 2016/17 – FY 2020/21 TIP for adoption by the TPO Board.

** SECONDED by Mr. Brooks Carried UNANIMOUSLY

6b. Transportation Alternatives Program (TAP) 2016 Grant Application: Review and Recommend Endorsement

Mr. Buchwald explained the purpose of funding for TAP. The only 2016 grant application received was from the City of Port St. Lucie, for a project which is ranked 7th on the TA Priority Project List. The estimated cost of the project and the total amount of grant funding being requested was provided for the construction of a 5 foot wide, 1-mile long concrete sidewalk on the south side of North Macedo Boulevard between St. James Drive and Selvitz Road.

Mr. Mendelson questioned the responsibility for funding sidewalks at Charter Schools. Mr. Buchwald explained funding varies depending on the need, agreement by the local jurisdiction, developer contributions or from the General Fund.

* MOTION – MOVED by Mr. Brown to recommend endorsement of the TAP 2016 Grant Application for the allocation of TAP funding from the 2016 grant cycle for the City of Port St. Lucie North Macedo Boulevard Sidewalk Project.

** SECONDED by Mr. Weinstein Carried UNANIMOUSLY

6c. Walton Road Multimodal Improvements Feasibility Study: Review and recommend acceptance of the draft Study.

Mr. Buchwald introduced Mr. Edward DeFini, TPO Bicycle-Pedestrian Program Manager to review the purpose of the Feasibility Study.

Mr. DeFini indicated the FY 2014/15-FY 2015/16 UPWP for the St. Lucie TPO includes Task 4.1, Walton Road Multimodal Improvements. Task 4.1 Objective is to conduct a feasibility study of potential multimodal improvements to the segment of Walton Road from Lennard Road to Indian River Drive, which is substandard because it does not include shoulders or any pedestrian or bicycle facilities.

Stanley Consultants William Evans and Linda Ferreira were introduced to review the draft Feasibility Study.

DRAFT

Ms. Ferreira provided a Power Point presentation which concentrated on connectivity and safety on and off the road. The Study also included potential widening, corridor and multimodal improvements, evaluation of "fatal flaws" with existing Right-of-Way ownership, and bicycle and pedestrian infrastructure and potential corridor improvements. Recommended Study Alternatives were presented in three Segments, A, B, and C. Kayak crossing options either under or over Walton Road were evaluated. Cost estimations were provided in Appendix F of the Report.

CAC Comments / Questions

Mr. Brown asked if Segment C included the cost for replacement of widening the road since it is all marsh. Ms. Ferreira noted that was included in Segment C. Mr. Brown commented on the water levels and road flooding concerns, however he would love to see this project approved.

Mr. Love commented that in the past residents objected to changes, and asked if there were any problems with the area residents. Ms. Ferreira spoke with some bike riders who were positive about it, but she had not spoken with residents.

There were no further comments or questions.

* MOTION – MOVED by Mr. Brown to accept the Draft Walton Road Multimodal Improvements Feasibility Study.

** SECONDED by Mr. Love Carried UNANIMOUSLY

7. Discussion Items

7a. Strategic Intermodal System (SIS) Multimodal Needs Plan Update: Presentation of an update to the SIS Multimodal Needs Plan by FDOT (District 4).

Mr. Buchwald explained the SIS is Florida's network of high priority transportation facilities including airports, highways, railroads, seaports, spaceports and transit facilities.

The SIS Needs Plan identifies capacity projects to meet Florida's Transportation Plan Goals and SIS Policy Plan Objectives. The process to update the SIS from 2040 to 2045 began in January 2016 and is scheduled to conclude in March 2017.

DRAFT

Projects associated with SIS facilities are eligible for State funding and must meet criteria and thresholds identified in FDOT's Summary of Adopted SIS Facility Types, Criteria and Thresholds.

Mr. Buchwald explained how projects move from the first five years to the next five years as they relate to the TIP, LRTP, LOPP and through coordinated efforts with the St. Lucie TPO and other partners.

It is recommended that local projects potentially eligible for SIS funding be identified to FDOT for inclusion in the SIS Multimodal Needs Plan.

CAC Comments / Questions:

Chairperson Niemczyk commented on a plan to extend St. Lucie Blvd. on the south side of the airport, west to I-95. Mr. Buchwald indicated that was included in the TPO LRTP as a funded developer project. New Interchanges would be constructed between I-95 and the Turnpike in the 2035 plan. Projects can be added to the LOPP which is coming to the CAC in July.

Mr. Mendelson asked how the Vero Beach Airport was able to initiate flights in a short period of time. Mr. Buchwald explained they previously had commercial service and are in the process of making improvements. Until St. Lucie can identify a carrier for passenger service the airport may be used as a maintenance or retro-fit facility.

Ms. Lois Bush, FDOT District 4, shared additional information on three types of designated facilities, hubs, corridors, and connectors. Multiple connectivity for local and statewide roads must have entities working together to plan for Florida's transportation future.

Mr. Buchwald noted that Chairperson Niemczyk identified a potential need for connectivity to the airport and the Port for St. Lucie Boulevard to be connected to I-95 and the Turnpike.

Ms. Bush discussed that project might become eligible as a hub to hub connector, and explained some of the criteria required.

Mr. Mendelson asked if the long term vision for the Port of Fort Pierce was for shipping containers.

DRAFT

Mr. Buchwald explained the Port Master Plan drives the Port's vision which is under the City of Fort Pierce regulations. Large container ships are not anticipated as a major activity due to the shallow entry to the Port. It is perceived as an intermediate port for smaller vessels and activities, and establishing a training academy for the operation of port equipment.

An Engineer has been hired to oversee Port projects and to address the challenge of mixed-use dynamics to bolster the economy and employment.

Ms. Bush advised that a Master Plan for I-95 is being developed next year to look at Martin, St. Lucie and Indian River Counties, that will take 18 to 24 months.

Mr. Love asked if an increase in auto traffic in the next 20-30 years was being addressed, or will it decrease because of other modes of transportation.

Ms. Bush suggested that using other modes of transportation, and advancing technology to connect vehicles will offer more transportation choices.

Mr. Weinstein commented on the future of driverless cars within the 40-year plan. Ms. Bush discussed some of the issues and challenges that already occur, and the need for consideration of long range planning and updating technology in the system.

Mr. Buchwald explained the general funding process for the projects discussed.

8. Recommendations/Comments by Members – Mr. Mendelson and Mr. Weinstein will not be attending the July meeting.

9. Staff Comments – Mr. Buchwald thanked everyone for attending and providing their comments.

10. Next Meeting: The next CAC meeting is a regular meeting scheduled for 10:30 am on Tuesday, July 12, 2016.

11. Adjourn – The meeting was adjourned at 11:50 am.

DRAFT

Respectfully submitted:

_____
Mary F. Holleran
Recording Specialist

Approved by:

_____
Carolyn Niemczyk
Chairperson

DRAFT

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AGENDA ITEM SUMMARY

Board/Committee:	Citizens Advisory Committee (CAC)
Meeting Date:	July 12, 2016
Item Number:	6a
Item Title:	2016/17 List of Priority Projects (LOPP)
Item Origination:	For development of the St. Lucie TPO's Transportation Improvement Program (TIP) for FY 2017/18 – FY 2021/22 and the Florida Department of Transportation Work Program
UPWP Reference:	Task 3.3 – TIP
Requested Action:	Review and recommend adoption of the draft 2016/17 LOPP, recommend adoption with conditions, or do not recommend adoption
Staff Recommendation:	It is recommended that the draft 2016/17 LOPP be reviewed and recommended for adoption by the TPO Board based on the comments received during the review.

Attachments

- Staff Report
- Draft 2016/17 LOPP
- 2015/16 LOPP

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MEMORANDUM

TO: Citizens Advisory Committee (CAC)

FROM: Peter Buchwald
Executive Director

DATE: July 5, 2016

SUBJECT: 2016/17 List of Priority Projects (LOPP)

BACKGROUND

As part of the annual development of the St. Lucie TPO's Transportation Improvement Program (TIP), the LOPP is developed for submittal to the Florida Department of Transportation District 4 (FDOT) by October 1st of each year. The projects identified in the LOPP subsequently are funded and included in the FDOT Work Program to the maximum extent feasible.

The St. Lucie TPO's TIP for FY 2017/18 – FY 2021/22 then will be developed based on the LOPP and the FDOT Work Program. An Informal Priority Projects Meeting was conducted with FDOT and local agency staffs on June 12th to initiate the annual TIP development process.

ANALYSIS

The draft 2016/17 LOPP is attached which incorporates comments received during the Informal Priority Projects Meeting. Significant changes from the 2015/16 LOPP, also attached, include the removal of the U.S. Highway 1 and Virginia Avenue Intersection Project and the St. Lucie TPO Advanced Transportation Management System (ATMS) Phase I Project from the Master LOPP because they are funded for construction. The remaining projects in the Master LOPP were prioritized accordingly. In addition, the status and estimated costs of the projects in the Master LOPP were updated as necessary.

There were no changes to the Congestion Management Process (CMP) LOPP or the Transit LOPP. Revisions to the Transportation Alternatives (TA) LOPP

consist of revisions to reflect the results of the 2016 TA grant cycle and the adoption of the Go2040 Long Range Transportation Plan.

RECOMMENDATION

It is recommended that the draft 2016/17 LOPP be reviewed and recommended for adoption by the TPO Board based on the comments received during the review.

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DRAFT
2016/17 List of Priority Projects (LOPP)
(Adopted _____)

Master List

2016/17 Priority Ranking	Major Gateway Corridor?[1]	Facility	Project Limits		Project Description	Project Status/Notes	In LRTP[2] Cost Feasible Plan?	Estimated Cost	2015/16 Priority Ranking
			From	To					
1	Yes	Port St. Lucie Boulevard	Paar Drive	Darwin Boulevard	Add 2 lanes, sidewalks, bicycle lanes	PE[3] and ROW[4] in process	Yes	$11,700,000[5]	1
2	Yes	Midway Road	Glades Cut Off Road	Selvitz Road	Add 2 lanes, sidewalks, bicycle lanes	PD&E[6] in process, PE and ROW to start in FY 2016/17	Yes	$47,000,000[7]	2
3	Yes	Port St. Lucie Boulevard	Becker Road	Paar Drive	Add 2 lanes, sidewalks, bicycle lanes	PE to start in FY 2020/21	Yes	$9,600,000[5]	5
4	Yes	Kings Highway	I-95 Overpass	St. Lucie Boulevard	Add 2 lanes, sidewalks, bicycle lanes	PE to start in FY 2017/18	Yes	$29,520,000[8]	6

[1]Landscape funding eligibility for capacity projects based on 2012 FDOT Landscape Policy
[2]LRTP: *Go2040 Long Range Transportation Plan, February 2016*
[3]PE: Preliminary Engineering
[4]ROW: Right-of-Way Acquisition
[5]Source: *Port St. Lucie Boulevard, Becker Road to Darwin Boulevard Project Development & Environment Study, September 2014*
[6]PD&E: Project Development & Environment Study
[7]Source: Midway Road PD&E Alternatives Public Workshop, June 2016
[8]Source: *Kings Highway Project Development & Environment Study, July 2012*

Congestion Management Process (CMP) List

(The St. Lucie TPO's allocation of urban-attributable Federal funds to CMP projects is $300,000 - $400,000 annually)

2016/17 Priority Ranking	Facility/Intersection	Project Description	Project Status/Notes	Estimated Cost[1]	CMP Plan[2] Ranking	2015/16 Priority Ranking
1	California Boulevard at University Boulevard	Construct a roundabout		$350,000	1	1
2	California Boulevard at Del Rio Boulevard	Construct a roundabout		$350,000	2	2
3	St. Lucie West Boulevard at Peacock Boulevard	Extend the southbound innermost left-turn lane and incorporate signal timing adjustments		$100,000	3	3
4	Port St. Lucie Boulevard at Floresta Boulevard	Extend westbound right-turn lane		$350,000	4	4

[1]Source of Estimated Cost: CMP Plan, unless otherwise noted
[2]CMP Plan: *St. Lucie Transportation Planning Organization Congestion Management Process Revised Implementation Plan, 2015*

Transit

2016/17 Priority Ranking	Facility/Equipment/Service	Project Location/Description	Is funding for Capital or Operating?	In LRTP[1] or TDP[2]?	Estimated Cost[3]	2015/16 Priority Ranking
1	Vehicle Purchases	New/replacement buses for new and expanded services as specified in TDP	Capital	Yes	$2,000,000	1
2	Bus Stop and Park and Ride Infrastructure	Miscellaneous locations along the fixed routes with priority at transfer locations	Capital	Yes	$75,000 (for bus shelters)	2
3	Expanded Local Services	Routes 1, 2 & 3 – Improve frequency to 30 minutes	Operating	Yes	$1,000,000	3
4	New Bus Services	New bus service via intermodal facility along 25th Street	Operating	Yes	$500,000	4
5	I-95 Express Regional Bus Service	To Palm Beach County	Operating	Yes	$500,000	5
6	St. Lucie Transit Administration and Operations Facility	Centralized facility for transit operations and bus maintenance	Capital	Yes	$9,800,000	6

[1]LRTP: *Go2040 Long Range Transportation Plan, February 2016*
[2]TDP: *St. Lucie County FY 2015-FY 2024 Transit Development Plan Major Update, June 2014*
[3]Source of Estimated Cost: Tables 9-1, 9-3, 9-9, and 9-10 of TDP, unless otherwise noted

Transportation Alternatives (TA) Projects

2016/17 Priority Ranking	Score[1]	Facility	Project Limits		Project Description	Project Source	Estimated Cost[2]	2015/16 Priority Ranking
			From	To				
1	41.5	North Macedo Boulevard	Selvitz Road	St. James Drive	Sidewalk-1.0 miles	2016 TA Grant Application[3]	$872,243[4]	7
2	34.0	Oleander Avenue	Midway Road	Market Avenue	Sidewalk-1.3 miles	LRTP[5]	$1,202,125	2
3	46.5	Walton Road	Lennard Road	Green River Parkway	Sidewalk-1.1 miles	LRTP	$632,730	3
4	43.5	17th Street Sidewalk Gaps	Georgia Avenue	Avenue Q	Sidewalk-1.7 miles	LRTP	$222,700	4
5	43.0	East Torino Parkway	Volucia Drive	Conus Street	Sidewalk-0.4 miles	LRTP	$220,080	5
6	41.5	Selvitz Road	Milner Drive	Peachtree Boulevard	Sidewalk-0.8 miles	LRTP	$520,397	7
7	38.5	Thornhill Drive	Bayshore Boulevard	Airoso Boulevard	Sidewalk-1.0 miles	LRTP	$916,023	9
8	36.5	Parr Drive	Savona Boulevard	Port St. Lucie Boulevard	Sidewalk-0.8 miles	LRTP	$529,837	10
8	36.5	29th Street Sidewalk Gaps	Avenue I	Avenue Q	Sidewalk-0.5 miles	LRTP	$77,000	10
8	36.5	Boston Avenue	25th Street	13th Street	Sidewalk-0.8 miles	LRTP	$123,200	10
11	35.5	Curtis Street	Prima Vista Boulevard	Floresta Drive	Sidewalk-0.5 miles	LRTP	$710,895	14
12	34.5	Weatherbee Road	U.S. Highway 1	Oleander Avenue	Sidewalk-0.5 miles	LRTP	$445,220	15
13	34.0	Oleander Avenue	Midway Road	Saeger Avenue	Sidewalk-1.5 miles	LRTP	$1,323,840	16
13	34.0	Volucia Drive	Blanton Boulevard	Torino Parkway	Sidewalk-1.0 miles	LRTP	$870,425	16
15	32.5	29th Street	Avenue Q	Avenue T	Sidewalk-0.1 miles	LRTP	$19,7000	18
16	31.5	Alcantarra Boulevard	Port St. Lucie Boulevard	Savona Boulevard	Sidewalk-0.8 miles	LRTP	$703,290	19
17	29.5	Floresta Drive	Port St. Lucie Boulevard	Southbend Boulevard	Sidewalk-0.6 miles	LRTP	$964,947	20
18	28.5	Rosser Boulevard	Openview	Bamberg Street	Sidewalk-2.1 miles	LRTP	$1,999,182	21
19		Florida East Coast Greenway/SUN Trail	Martin County Line	Downtown Fort Pierce	Multi-Use Trail	LRTP	$6,757,225	N/R
20		Florida East Coast Greenway/SUN Trail	Downtown Fort Pierce	Indian River County Line	Multi-Use Trail	LRTP	$3,412,760	N/R

[1]Scoring is based on the St. Lucie TPO TA Project Prioritization Methodology
[2]Source of Estimated Cost: *Go2040 Long Range Transportation Plan, February 2016*, unless otherwise noted
[3]Construction funding is anticipated to be programmed in the upcoming FDOT Tentative Work Program as a result of the 2016 TA Grant Cycle
[4]Source of Estimated Cost: 2016 TA Grant Application
[5]LRTP: *Go2040 Long Range Transportation Plan, February 2016*

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2015/16 List of Priority Projects (LOPP)

(Adopted August 5, 2015)

Master List

2015/16 Priority Ranking	Major Gateway Corridor?[1]	Facility	Project Limits		Project Description	Project Status/Notes	In RLRTP[2] Cost Feasible Plan?	Estimated Cost	2014/15 Priority Ranking
			From	To					
1	Yes	Port St. Lucie Boulevard	Paar Drive	Darwin Boulevard	Add 2 lanes, sidewalks, bicycle lanes	PE[3] in process	Yes	$11,700,000[4]	2
2	Yes	Midway Road	Glades Cut Off Road	Selvitz Road	Add 2 lanes, sidewalks, bicycle lanes	PD&E[5] in process	Yes	$19,000,000[6]	3
3	N/A[7]	U.S. Highway 1 Intersection	At Virginia Avenue		Construct SB right-turn lane	PE to start in FY 2016/17	Yes	$1,537,000[8]	4
4	N/A	St. Lucie TPO Advanced Transportation Management System (ATMS) Phase I	U.S. Highway 1		Fiber optic infrastructure, cameras, poles, and data collection devices to connect 56 intersections	PE in process	Yes	$3,300,000[9]	5
			Turnpike Feeder Road	Savanna Club Boulevard					
			Okeechobee Road (SR-70)						
			Kings Highway	U.S. Highway 1					
5	Yes	Port St. Lucie Boulevard	Becker Road	Paar Drive	Add 2 lanes, sidewalks, bicycle lanes		Yes	$9,600,000[4]	6
6	Yes	Kings Highway	I-95 Overpass	St. Lucie Boulevard	Add 2 lanes, sidewalks, bicycle lanes		Yes	$29,520,000[10]	N/R[11]

[1]Landscape funding eligibility for capacity projects based on 2012 FDOT Landscape Policy
[2]RLRTP: *2035 St. Lucie/Martin Regional Long Range Transportation Plan, February 2011*
[3]PE: Preliminary Engineering
[4]Source: *Port St. Lucie Boulevard, Becker Road to Darwin Boulevard Project Development & Environment Study, September 2014*
[5]PD&E: Project Development & Environment Study
[6]Source: *2035 St. Lucie/Martin Regional Long Range Transportation Plan, February 2011*
[7]N/A: Not Applicable
[8]Source: *St. Lucie TPO Transportation Improvement Program FY 2015/16 – FY 2019/20*
[9]Source: *Advanced Transportation Management System (ATMS) Master Plan for St. Lucie County, February 2013*
[10]Source: *Kings Highway Project Development & Environment Study, July 2012*
[11]N/R: Not Ranked

Congestion Management Process (CMP) List

(The St. Lucie TPO's allocation of urban-attributable Federal funds to CMP projects is $300,000 - $400,000 annually)

2015/16 Priority Ranking	Facility/Intersection	Project Description	Project Status/Notes	Estimated Cost[1]	CMP Plan[2] Ranking	2014/15 Priority Ranking
1	California Boulevard at University Boulevard	Construct a roundabout		$350,000	1	1
2	California Boulevard at Del Rio Boulevard	Construct a roundabout		$350,000	2	2
3	St. Lucie West Boulevard at Peacock Boulevard	Extend the southbound innermost left-turn lane and incorporate signal timing adjustments		$100,000	3	3
4	Port St. Lucie Boulevard at Floresta Boulevard	Extend westbound right-turn lane		$350,000	4	4

[1]Source of Estimated Cost: CMP Plan, unless otherwise noted
[2]CMP Plan: *St. Lucie Transportation Planning Organization Congestion Management Process Revised Implementation Plan, 2015*

Transit

2015/16 Priority Ranking	Facility/Equipment/Service	Project Location/Description	Is funding for Capital or Operating?	In RLRTP[1] or TDP[2]?	Estimated Cost[3]	2014/15 Priority Ranking
1	Vehicle Purchases	New/replacement buses for new and expanded services as specified in TDP	Capital	Yes	$2,000,000	1
2	Bus Stop and Park and Ride Infrastructure	Miscellaneous locations along the fixed routes with priority at transfer locations	Capital	Yes	$75,000 (for bus shelters)	7
3	Expanded Local Services	Routes 1, 2 & 3 – Improve frequency to 30 minutes	Operating	Yes	$1,000,000	4
4	New Bus Services	New bus service via intermodal facility along 25th Street	Operating	Yes	$500,000	N/R[4]
5	I-95 Express Regional Bus Service	To Palm Beach County	Operating	Yes	$500,000	6
6	St. Lucie Transit Administration and Operations Facility	Centralized facility for transit operations and bus maintenance	Capital	Yes	$9,800,000	8

[1]RLRTP: *2035 St. Lucie/Martin Regional Long Range Transportation Plan, February 2011*
[2]TDP: *St. Lucie County FY 2015-FY 2024 Transit Development Plan Major Update, June 2014*
[3]Source of Estimated Cost: Tables 9-1, 9-3, 9-9, and 9-10 of TDP, unless otherwise noted
[4]N/R: Not Ranked

Transportation Alternatives (TA) Projects

2015/16 Priority Ranking	Score[1]	Facility	Project Limits		Project Description	Project Source	Estimated Cost[2]	2014/15 Priority Ranking
			From	To				
1	40.0	Parr Drive	Port St. Lucie Boulevard	Darwin Boulevard	Sidewalk-1.0 miles	2015 TA Grant Application[3]	$569,984	8
2	34.0	Oleander Avenue	Midway Road	Market Avenue	Sidewalk-1.3 miles	2015 TA Grant Application[4]	$917,653	16
3	46.5	Walton Road	Lennard Road	Green River Parkway	Sidewalk-1.1 miles	St. Lucie County School District	$483,000	2
4	43.5	17th Street Sidewalk Gaps	Georgia Avenue	Avenue Q	Sidewalk-1.7 miles	2010/11 LOPP	$170,000[5]	3
5	43.0	East Torino Parkway	Volucia Drive	Conus Street	Sidewalk-0.4 miles	St. Lucie County School District	$168,000	4
6	42.0	East Torino Parkway	Peacock Apartments	C-106 Canal	Sidewalk-0.3 miles	2013 TA Grant Application	$207,730	5
7	41.5	North Macedo Boulevard	Selvitz Road	St. James Drive	Sidewalk-1.0 miles	Port St. Lucie Sidewalk List	$525,220	6
7	41.5	Selvitz Road	Milner Drive	Peachtree Boulevard	Sidewalk-0.8 miles	2010/11 LOPP	$337,920[6]	6
9	38.5	Thornhill Drive	Bayshore Boulevard	Airoso Boulevard	Sidewalk-1.0 miles	Port St. Lucie Sidewalk List	$594,820	9
10	36.5	Parr Drive	Savona Boulevard	Port St. Lucie Boulevard	Sidewalk-0.8 miles	Port St. Lucie Sidewalk List	$344,050	10
10	36.5	29th Street Sidewalk Gaps	Avenue I	Avenue Q	Sidewalk-0.5 miles	2010/11 LOPP	$50,000[5]	10
10	36.5	Boston Avenue	25th Street	13th Street	Sidewalk-0.8 miles	2010/11 LOPP	$80,000[5]	10
13	36	Floresta Drive	Port St. Lucie Boulevard	Streamlet Avenue	Sidewalk-1.0 mile	Port St. Lucie Sidewalk List #7	$759,730	13
14	35.5	Curtis Street	Prima Vista Boulevard	Floresta Drive	Sidewalk-0.5 miles	Port St. Lucie Sidewalk List	$461,620	14
15	34.5	Weatherbee Road	U.S. Highway 1	Oleander Avenue	Sidewalk-0.5 miles	St. Lucie County School District	$226,000	15
16	34.0	Oleander Avenue	Midway Road	Saeger Avenue	Sidewalk-1.5 miles	St. Lucie County School District	$672,000	16
16	34.0	Volucia Drive	Blanton Boulevard	Torino Parkway	Sidewalk-1.0 miles	St. Lucie County School District	$441,840	16
18	32.5	29th Street	Avenue Q	Avenue T	Sidewalk-0.1 miles	2010/11 LOPP	$10,000[5]	19
19	31.5	Alcantarra Boulevard	Port St. Lucie Boulevard	Savona Boulevard	Sidewalk-0.8 miles	St. Lucie County School District	$357,000	20
20	29.5	Floresta Drive	Port St. Lucie Boulevard	Southbend Boulevard	Sidewalk-0.6 miles	Port St. Lucie Sidewalk List #8	$489,821	21
21	28.5	Rosser Boulevard	Newport Isle	Bamberg Street	Sidewalk-2.1 miles	Port St. Lucie Sidewalk List #1	$1,014,813	22
22	25.5	Import Drive	Gatlin Boulevard	Savage Boulevard	Sidewalk-2.0 miles	Port St. Lucie Sidewalk List #3	$1,255,161	23

2015/16 Priority Ranking	Score[1]	Facility	Project Limits		Project Description	Project Source	Estimated Cost[2]	2014/15 Priority Ranking
			From	To				
23	21.5	Paar Drive	Bamberg Street	Savona Boulevard	Sidewalk-0.8 miles	Port St. Lucie Sidewalk List #2	$1,014,728	24
23	21.5	Southbend Boulevard	Oakridge Drive	Eagle Drive	Bridge and Sidewalk-0.2 miles	Port St. Lucie Sidewalk List #13	$1,526,084	24
25	20.5	Savage Boulevard	Import Drive	Gatlin Boulevard	Sidewalk-1.7 miles	Port St. Lucie Sidewalk List #4	$1,293,199	26
25	20.5	Bayshore Boulevard	Mountwell Street	Port St. Lucie Boulevard	Sidewalk-0.8 miles	Port St. Lucie Sidewalk List #6	$695,496	26
25	20.5	Emil Avenue	Oleander Avenue	U.S. Highway 1	Sidewalk-0.4 miles	2014 TA Grant Application	$347,487	26
28	20.0	Traffic Signal Preemption Technology	Various	Various	50 Intersections 55 Fire/EMS vehicles	St. Lucie County Fire District	$750,000	29
29	19.5	Oakridge Drive	Southbend Drive	Mountwell Street	Sidewalk-0.8 miles	Port St. Lucie Sidewalk List #5	$736,575	30
29	19.5	Tiffany Avenue	Lennard Road	Grand Drive	Sidewalk-0.9 miles	Port St. Lucie Sidewalk List #9	$365,843	30
29	19.5	Selvitz Road	Floresta Drive	Bayshore Boulevard	Sidewalk-0.5 miles	Port St. Lucie Sidewalk List #10	$962,435	30
29	19.5	Cashmere Boulevard	Charter School	Westgate K-8 School	Sidewalk-1.0 miles	Port St. Lucie Sidewalk List #11	$590,464	30
29	19.5	Idol Drive	Charter School	Savona Boulevard	Sidewalk-0.7 miles	Port St. Lucie Sidewalk List #12	$483,037	30
34	17.0	Bicycle Facilities Improvement Program	Various	Various	Install various bicycle facilities	2011 TE Grant Application	$401,353	35
35	5.0	West Cedar Pedestrian Mall	2nd Street	FEC Railroad	Streetscape improvements	2011 TE Grant Application	$440,756	36

[1]Scoring is based on the St. Lucie TPO TA Project Prioritization Methodology
[2]Source of Estimated Cost: Project Source, unless otherwise noted
[3]Construction funding is anticipated to be fully programmed in the upcoming FDOT Tentative Work Program as a result of the 2015 TA Grant Cycle
[4]Construction funding was partially awarded as a result of the 2015 TA Grant Cycle
[5]Estimated cost is based on an assumed cost of $100,000 per mile
[6]Source: City of Port St. Lucie Engineering Department

St. Lucie Transportation Planning Organization

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

AGENDA ITEM SUMMARY

Board/Committee:	Citizens Advisory Committee (CAC)
Meeting Date:	July 12, 2016
Item Number:	6b
Item Title:	Walton Road Multimodal Improvements Feasibility Study
Item Origination:	Unified Planning Work Program (UPWP)
UPWP Reference:	Task 4.1 – Walton Road Multimodal Improvements
Requested Action:	Review and recommend acceptance of the draft study, recommend acceptance with conditions, or do not recommend acceptance.
Staff Recommendation:	Based on the study evaluating the feasibility of multimodal improvements to Walton Road, and the comments being incorporated into the revised draft version, it is recommended that the draft Walton Road Multimodal Improvements Feasibility Study be recommended for acceptance.

Attachments

- Staff Report
- Draft Walton Road Multimodal Improvements Feasibility Study

St. Lucie Transportation Planning Organization

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MEMORANDUM

TO: Citizens Advisory Committee (CAC)

THROUGH: Peter Buchwald
Executive Director

FROM: Ed DeFini

DATE: July 12, 2016

SUBJECT: Walton Road Multimodal Improvements Feasibility Study

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BACKGROUND

Walton Road from Lennard Road to Indian River Drive is a substandard roadway facility because it does not include shoulders or any pedestrian or bicycle facilities. The FY 2014/15 – FY 2015/16 Unified Planning Work Program (UPWP) for the St. Lucie TPO includes Task 4.1, *Walton Road Multimodal Improvements*. The objective of Task 4.1 is to conduct a feasibility study of potential multimodal improvements to this segment of Walton Road.

ANALYSIS

The draft Walton Road Multimodal Improvements Feasibility Study includes a detailed analysis and evaluates potential widening and multimodal improvements with respect to environmental, socio-cultural, and engineering factors. In order to consider improvements along Walton Road including bicycle and pedestrian infrastructure, the feasibility study evaluated "fatal flaws" associated with existing right-of-way ownership for potential corridor improvements. Stakeholder's input and planning agency consensus was obtained through continuous and cooperative efforts, and the planning activities were coordinated with St. Lucie County and the City of Port St. Lucie.

The feasibility study was prepared by Stanley Consultants Inc. (SCI). SCI is one of the General Planning Consultants for the St. Lucie TPO. The Study contains an analyses of the existing conditions, bicycle and pedestrian mobility, and potential impacts and other environmental concerns.

At the May advisory committee meetings, concerns were raised regarding storm water conveyance issues that could result in major section re-design and cost increases significant enough to make the project infeasible. The final report address these concerns and provides revised cost estimates including approximate permitting fees. Discussion by the BPAC resulted in three areas of concern: 1) connectivity among project segments of sidewalks or multi-use paths so that users would not be required to cross Walton Road to remain on the sidewalk/multi-use path, 2) a desire to review different options for the typical sections, and 3) the infeasibility of a portage option across Walton Road. The final report address these concerns and provides different options for the typical sections and revised cost estimates.

At its June Meeting, the TPO Board discussed bike lanes that are not buffered from traffic, the associated safety hazards, and lack of shoulders, arched culverts and their maintenance, life span, and costs. The draft report was revised to address these concern. The Study is anticipated to return to the Board for acceptance at the August meeting.

RECOMMENDATION

Based on the study evaluating the feasibility of multimodal improvements to Walton Road, and the comments being incorporated into the revised draft version, it is recommended that the draft Walton Road Multimodal Improvements Feasibility Study be recommended for acceptance.

Walton Road Multimodal Improvements Preliminary Report

St. Lucie Transportation Planning Organization

Prepared for:

Prepared by:

Stanley Consultants INC.

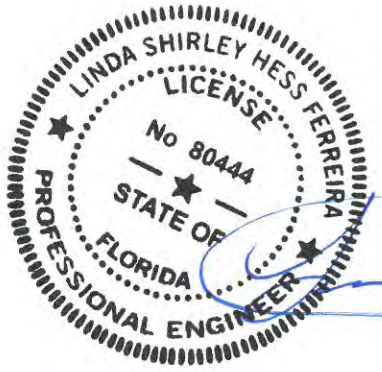
June 2016

Walton Road Multimodal Improvements Feasibility Study

From Lennard Road to Indian River Drive

Prepared for:
St. Lucie Transportation Planning Organization

June 2016



6/29/16

Stanley Consultants, Inc.

1641 Worthington Road, Suite 400
West Palm Beach, FL 33409

Linda Ferreira, P.E.
Professional Engineer License No. 80444

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APPENDICES

Executive Summary

The St. Lucie Transportation Planning Organization (TPO) retained Stanley Consultants, Inc. to complete this preliminary feasibility study to evaluate multimodal improvements to the Walton Road corridor from Lennard Road to Indian River Drive. Walton Road is located within the limits of the City of Port St. Lucie and is owned and maintained by St. Lucie County. A demand for multimodal facilities exist in the surrounding study area due to residential and commercial land use, St. Lucie Civic Center, St. Lucie Medical Center, Savannas Preserve State Park, Woodstork Trail, existing off road shared use paths, and the National East Coast Greenway trail.

The multimodal improvements are consistent with local transportation plans. The FY 2014/15 – FY 2015/16 Unified Planning Work Program (UPWP) for the St. Lucie TPO includes Task 4.1, Walton Road Multimodal Improvements. Sidewalk improvements to the Walton Road corridor from Lennard Road to SE Green River Parkway are included in the list of priority projects (LOPP), were identified as part of the Walk-Bike needs and network improvements, and included in the cost feasible plan for the recently adopted Go2040 St. Lucie TPO Long Range Transportation Plan (LRTP). Completing the off road shared use path missing link from Lennard Road to SE Green River Parkway was included in the recommended preferred alternative contained in the Bicycle/Pedestrian Corridor Study Area of Interest Analysis completed by the St. Lucie TPO in 2011.

The entire study corridor spans approximately 1.9 miles with the roadway right of way (ROW) width varying from 50 feet to 150 feet. The study begins at Lennard Road as a four-lane roadway with bike lanes, sidewalk and an off road shared use path for approximately 600 feet and then transitions into a two-lane roadway with no paved shoulders or bicycle facilities all the way to Indian River Drive at the end of the study. Sidewalks, bike lanes or shared use paths are not present between SE Scenic Park Street and Indian River Drive.

The study corridor was divided into three segments based on the existing multimodal facilities, ROW width and recommended alternatives. Segment A is a four-lane divided roadway starting at Lennard Road and terminating 800 feet east of the intersection. This segment currently contains multimodal facilities on both sides of Walton Road and is the only segment with a four-lane typical section with a divided median. Segment B starts at the end of Segment A and ends at SE Green River Parkway, with varying ROW width. The existing land use is residential, with vacant parcels, a private hospital to the south, and the Savannas Preserve State Park to the north. Segment C is a two-lane rural roadway from SE Green River Parkway to Indian River Drive. Segment C has a 50-foot ROW width, guardrail through the Savannas Preserve State Park, and crosses at the FEC Railroad.

An evaluation of existing traffic counts and future volumes for Walton Road was completed to determine if roadway widening would be required in the future. Based on the planning tables found in the 2013 Florida Department of Transportation Quality and Level of Service Handbook, Walton Road is expected to have a Level of Service C through the year 2040 as a two lane roadway and widening will not be necessary.

The following alternatives were evaluated in this preliminary study:

- **Segment A**
  - Existing multimodal features are acceptable therefore no improvements are proposed.
- **Segment B**
  - **Alternative B1** - Extend sidewalk on north side of Walton Road from SE Scenic Park Street to Green River Parkway, extend shared use path from east of SE Rainer Road to Green River Parkway, add on-street bike lanes in both directions. Minimum ROW width required for this typical section is 65 feet.
  - **Alternative B2** Roadway reconstruction – reconstruct roadway with curb and gutter, extend sidewalk on north side of Walton Road from SE Scenic Park Street to Green River Parkway, extend shared use path from east of SE Rainer Road to Green River Parkway, add on-street bike lanes in both directions. Minimum ROW width required for this typical section is 65 feet
  - Both Alternative B1 and B2 will require ROW from the vacant school board parcel.
- **Segment C**
  - **Alternative C1** - Add sidewalk on north side of Walton Road from Green River Parkway to Indian River Drive, add on-street bike lanes in both directions. Minimum ROW width required for this typical section would be dependent on stormwater swale design and permitting requirement to meet water quality standards.
  - **Alternative C2** Roadway reconstruction – reconstruct the 2 lane roadway with curb and gutter, piped drainage system, sidewalk on north side of Walton Road from Green River Parkway to Indian River Drive, add on-street bike lanes in both directions.
  - **Alternative C3** No roadway improvements – no roadway improvements but provide a separate 10-foot wide elevated shared use boardwalk structure. Required ROW would be dependent on guardrail replacement.
  - **Alternative C4** Bridge roadway – construct a new bridge on Walton Road from east of Green River Parkway over Savannas Preserve State Park to west of the FEC railroad crossing. Sidewalk and paved shoulders would be added.
  - All alternatives for Segment C will require ROW from Savannas Preserve State Park.

Additional options for Segment C:

Kayak crossing options were evaluated for this segment in order to improve connectivity from the kayak launch south of Walton Road to the Savannas Preserve State Park to the north.

- Kayak Crossing Under Walton Road – the option of adding an under road crossing for kayaks and other non-motorized watercrafts through an arch culvert. Reconstruction and raising of Walton Road would be needed to meet kayak vertical clearance requirements.
- Kayak Crossing Over Walton Road – the option of allowing multimodal water users to cross over Walton Road with a kayak portage. The alternative would require a mid-block pedestrian crossing signal and adequate ingress and egress from the waterway.

Currently in Segment B one portion of the ROW is restricted to 50 feet due to Savannas Preserve State Park to the north and a vacant parcel owned by the St. Lucie County School Board. Based on coordination with the St. Lucie County School Board, the Board may be open to donating ROW adjacent to Walton Road to add off-road paths or sidewalks.

In Segment C, if mitigation is required, it is recommended to use a mitigation bank. Moreover, it is recommended that pre-application meetings be conducted with South Florida Water Management District (SFWMD) and the US Army Corps (land owners) in order to ensure that the alternative will avoid and minimize impacts.

Estimated costs for the recommended alternatives is listed in the table below. The cost estimate for Segment C includes an estimated $145,000 cost for FEC railroad crossing improvements based on previous TIP projects within south Florida. The kayak options are not included in the total cost.

Segment	Alternative	Total Cost
Segment A	Maintain existing multimodal features	None
Segment B	**B1.** Bike lanes, sidewalk, multiuse path	**$ 1,980,000**
	B2. Curb and gutter – bike lanes, sidewalk, multiuse path	**$ 6,980,000**
Segment C	**C1**. Add bike lanes & sidewalk	$ 3,100,000
	Permitting	$ 3,000
	Kayak Crossing	$ 900,000
	Total Alternative C1 Cost	**$ 4,020,000**
	C2. Roadway reconstruction with curb and gutter – add bike lanes & sidewalk	$ 6,500,000
	Permitting	$ 3,000
	Kayak Crossing	$ 900,000
	Total Alternative C2 Cost	**$ 7,420,000**
	C3. No roadway improvements – add raised Boardwalk*	$ 1,310,000
	Permitting	$ 3,000
	Kayak Crossing	$ 1,750,000
	Total Alternative C3 Cost	**$ 3,040,000**
	C4. Bridge roadway – add sidewalk and paved shoulders	$ 43,950,000
	Permitting	$ 3,000
	Kayak Crossing	$ 1,750,000
	Total Alternative C4 Cost	**$ 44,900,000**
*Does not include $72,000 yearly maintenance cost		

These recommended improvements would enhance pedestrian mobility, provide safety benefits to both bicyclists and pedestrians as well as provide potential connections to future trails.

1.0 Introduction

The St. Lucie Transportation Planning Organization (TPO) retained Stanley Consultants, Inc. to complete this preliminary report to evaluate multimodal improvements to increase connectivity along the Walton Road corridor from Lennard Road to Indian River Drive. The study corridor is approximately 1.9 miles, of which 1.5 miles lack existing pedestrian or bicycle facilities.

This preliminary report is consistent with several TPO transportation plans. The study corridor is identified in the adopted Go2040 St. Lucie TPO Long Range Transportation Plan (LRTP) as part of the TPO's Walk-Bike Needs and Network Improvements and Cost Feasible Plan. The FY 2014/15 – FY 2015/16 St. Lucie TPO Unified Planning Work Program (UPWP) includes Walton Road Multimodal Improvements as a task. The corridor is also listed as second in the 2014/15 priority ranking and third on the 2015/16 list of priority projects (LOPP) as a Transportation Alternatives (TA) project for adding sidewalks. Furthermore, completing the missing link of an off-road shared use path from Lennard Road to SE Green River Parkway was included with the recommended alternative in the Bicycle/Pedestrian Corridor Study Area of Interest Analysis completed by the St. Lucie TPO in 2011.

1.1 Study Area

Walton Road from Lennard Road to Indian River Drive is located within the City of Port St. Lucie and is owned and maintained by St. Lucie County. Walton Road is classified as a Minor Arterial Urban roadway and provides the only roadway, pedestrian or bicycle link between US 1 and Indian River Drive between Midway Road (6 miles north) and Jensen Beach Blvd (4 miles south).

The study begins at Lennard Road as a four-lane section for approximately 600 feet and transitions into a two-lane section with no paved shoulders or bicycle facilities all the way to Indian River Drive (the end of the study), with a roadway right of way (ROW) width varying from 50 feet to 150 feet.

The surrounding land use is predominantly residential and includes the Savannas Preserve State Park, a convenience store, churches, a private hospital, vacant school board property, and the Florida East Coast Railway (FECR) crossing at the east end of the project. The St. Lucie County School District owns a vacant property on the southeast corner of Walton Road and SE Belcrest Street. The Port St. Lucie Hospital (private hospital) is located on the southeast corner of Walton Road and SE Grand Drive.

Savannas Preserve State Park entrance is located on Walton Road within the study segment between SE Belcrest Street and SE Grand Drive. This park entrance provides access for hikers and bicyclists. The park contains over eight miles of multi-use trails for hiking, bicycling and horseback riding. The Greater Savanna Preserve Natural Area stretches for more than 10 miles from Ft. Pierce to Jensen Beach and it is the most intact remnant of Florida's east coast savannas.

The overall study area map is shown in **Figure 1.1**. The study corridor has several multimodal trip generators nearby. There is a large residential community, St. Lucie Civic Center, St. Lucie Medical Center, Port St. Lucie High School, Sandhill Crane Park, Wood Stork Trail, Savannas Preserve State Park hiking and kayak trails, Green River Parkway Trail, connections to the beach via Indian River Drive, and the National East Coast Greenway Trail.

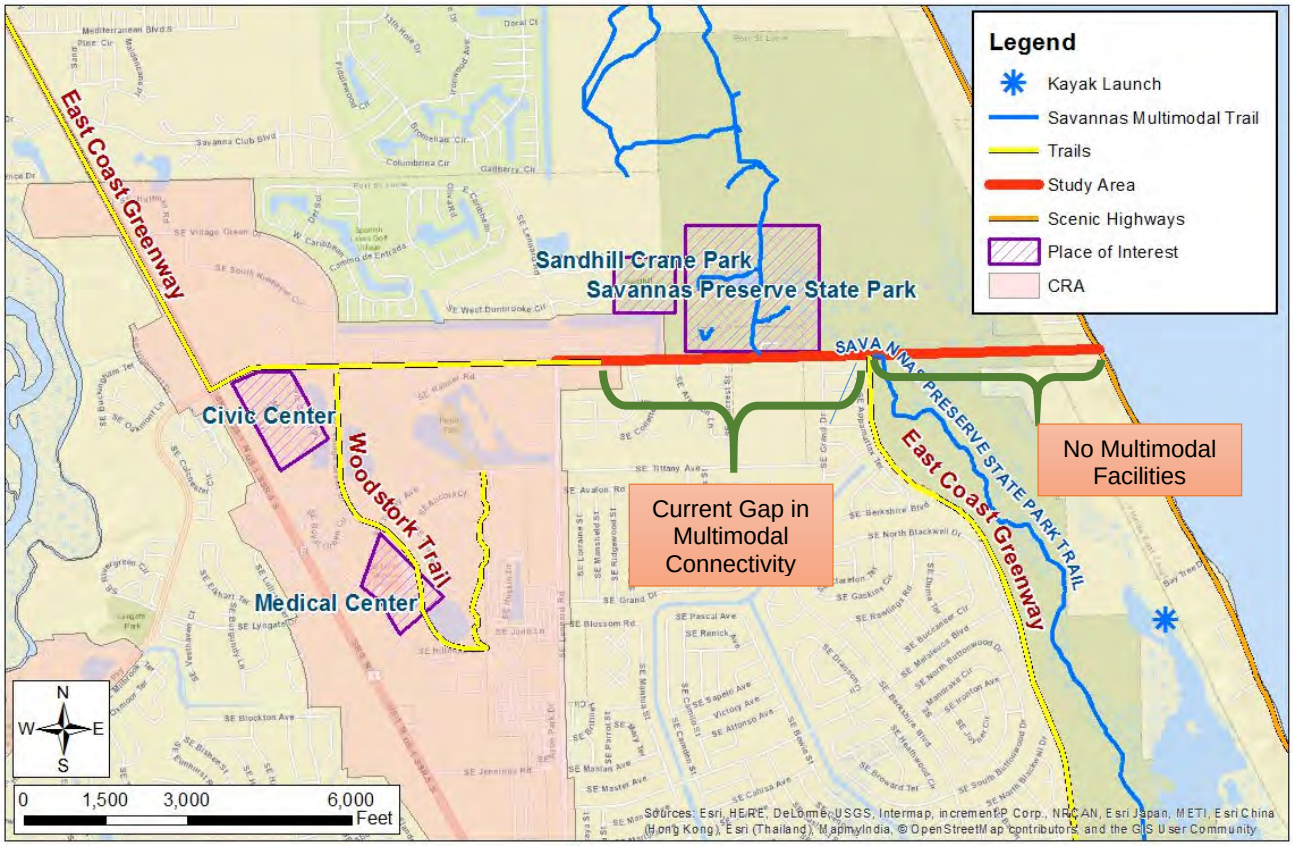

Figure 1.1 Overall Study Area

The National East Coast Greenway Trail is a 3,000-mile trail linking major cities along the Atlantic coastline from Maine to Florida. Within the Walton Road study segment, the East Coast Greenway Trail follows a variety of sidewalks and shared use paths. However, a multimodal gap exists and the national trail must utilize the two-lane rural roadside grass shoulder as the pathway until reaching the south connection that follows the Green River Parkway Trail. This study identifies improvements to fill the gap in the trail and complete other local trail and multimodal network connectivity.

The study corridor was divided into three segments based on the existing conditions and potential alternative solutions. These segments are described below and illustrated in **Figure 1.2**.

- **Segment A**: Begins at the intersection of Lennard Road and extends 800 feet east. This is where the four-lane divided roadway transitions to the two-lane rural section. The existing roadway segment contains multimodal facilities on both sides of Walton Road and is the only segment with a divided four-lane typical section.

- **Segment B**: Begins 800 feet east of Lennard Road and ends at SE Green River Parkway for a total length of 0.94 miles. This two-lane rural roadway has a ROW width from 50 ft to 150 ft. The existing roadway segment contains one sidewalk multimodal facility on the north side of Walton Road from the segment beginning to SE Scenic Park Street.

- **Segment C**: Begins at SE Green River Parkway and ends at Indian River Drive for a total length of 0.8 miles. This two-lane rural roadway has a ROW width that varies from 50 ft to 100 ft. The existing roadway segment contains no multimodal facilities.

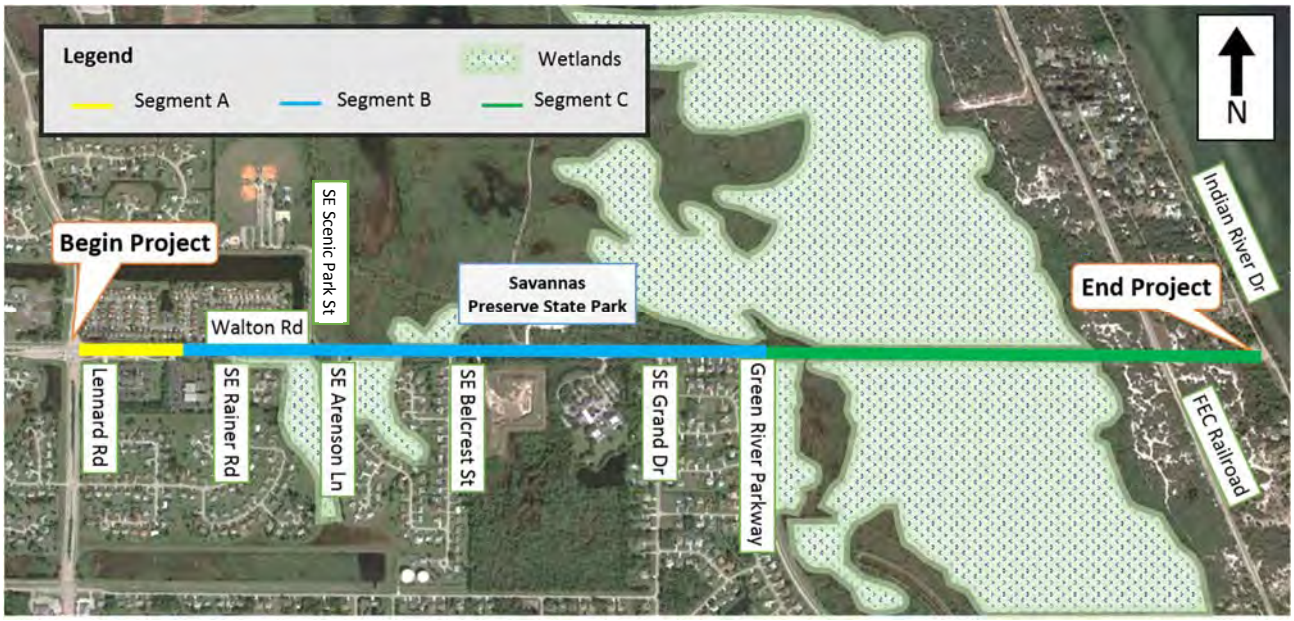

Figure 1.2 Project Segment Map

1.2 Study Purpose and Need

The purpose of this study is to evaluate the feasibility of adding multimodal improvements along the Walton Road corridor between Lennard Road and Indian River Drive to improve multimodal connectivity, pedestrian and bicyclist safety.

There are no existing bike lanes or paved shoulders on the two-lane portion of Walton Road between Lennard Road and Indian River Drive. Several multimodal trails and pathways end at Walton Road due to the lack of multimodal facilities. Vehicles and multimodal users must share the roadway travel lanes or roadside within the two-lane rural section.

An existing twelve foot wide off-road shared use path begins west of the study corridor at US-1 and meanders along the south side of Walton Road stopping at the driveway access to Highpoint Community Church between Lennard Road and SE Rainer Road. **Figure 1.3** shows the end of the path within the study corridor on the east side of the Highpoint Community Church driveway. A need exists to connect this shared use path with the paved trail at the southeast corner of Walton Road and SE Green River Parkway. This connection would provide a cohesive, safe facility for the East Coast Greenway.

Figure 1.3 End of Shared Use Path

According to the East Coast Greenway website, the section of the trail on Walton Road from Lennard Road to SE Green River Parkway is described as “on-road routing” until it joins the Green River Parkway Trail. **Figure 1.4** shows the Green River Parkway Trail termini at Walton Road. A screenshot from the website showing the East Coast Greenway trail through the study corridor is included in **Appendix D**.

Figure 1.4 End of Green River Parkway Trail

Within the study corridor an existing six-foot wide sidewalk, shown in **Figure 1.5**, is located on the north side of Walton Road from Lennard Road to SE Scenic Park Street leading north to Sandhill Crane Park which is owned by the City of Port St. Lucie. There is a need to continue the sidewalk east to the Savannas Preserve State Park entrance and also provide a safe pedestrian connection to the existing paved Green River Parkway Trail.

Figure 1.5 Sidewalk on North

Walton Road crosses the Savannas Preserve State Park kayakTrail, designated for non-motorized recreational water craft. There is a kayak launch located south of the study area off of Riverview Drive, west of the FEC railroad. The kayak trail has a gap at Walton Road due to the lack of an over-the-road kayak portage or an under-the-road kayak culvert crossing. This multimodal feasibility study evaluates kayak alternatives in **Section 3.7** in order to improve connectivity of the kayak launch across Walton Road.

2.0 Existing Conditions Analysis

2.1 Physical

Assessing existing conditions along the corridor included data collection and analysis, office and field reviews and documenting deficiencies. Plans were requested and received from St. Lucie County Engineering Division for the Walton Road Widening (County Project No. 05-51) showing the typical section, sidewalk details and improvements east of Lennard Road. A field review was conducted on Thursday, March 24, 2016 to document existing conditions, identify deficiencies and verify information from the office review.

The existing ROW width varies along the Walton Road from 50 feet to 150 feet. Between Lennard Road and SE Scenic Park Street the existing ROW width is 150 feet and narrows to 100 feet just east of SE Belcrest Street. Adjacent to the parcels owned by St. Lucie County School District and the Savannas Preserve State Park the existing ROW width is 50 feet and widens to 65 feet adjacent to Port St. Lucie Hospital, Inc. The existing ROW width is 80 feet west of SE Grand Drive to the east of SE Green River Parkway and narrows to 50 feet through the Savannahs Preserve State Park. The existing ROW width is 100 feet from the FEC railroad crossing to Indian River Drive. The variation of ROW width is illustrated on the next page in **Figure 2.1.**

An existing raised median on Walton Road is present only within the four-lane section east of Lennard Road. The existing off-road shared use path on the south side is in good condition. Six foot wide concrete sidewalk exists along the north side between the beginning of the project at Lennard Road to SE Scenic Park Street and was found to be in good condition.

In the two-lane section, the travel lanes were measured and found to be 11 feet wide for a total paved roadway width of 22 feet. The pavement condition for the two-lane section (Segment B & C) was found to be in good condition based on a full depth resurfacing of the existing roadway completed as a maintenance project by St. Lucie County in 2015.

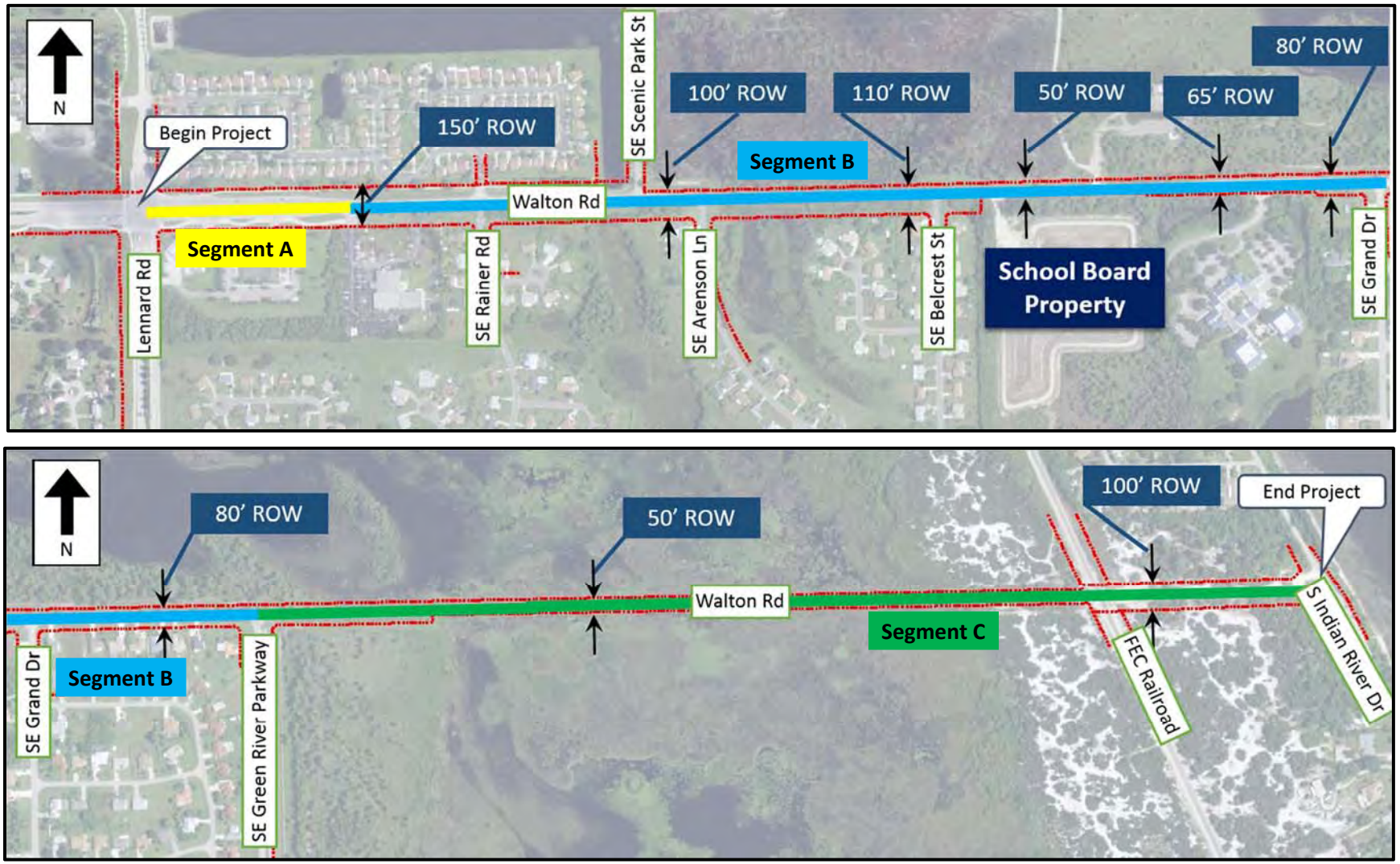

Figure 2.1 Existing Right Of Way

Segment C of Walton Road includes existing guardrail on the north and south side from SE Green River Parkway to the FEC Railroad crossing. The guardrail is damaged in some locations and measured to be approximately nine feet from the edge of pavement. A photo of damaged guard rail can be seen in **Figure 2.2**. The section of damaged guardrail appeared to be marked for maintenance. At some locations the existing guardrail has settled and is located beyond nine feet from the edge of pavement and in standing water. The study area experienced heavy rain prior to the field review.

Figure 2.2 Damaged Guardrail

Information was provided by St. Lucie County Public Works Department (SLCPWD) showing the approximate location of two 48" x 60' RCP and two 72" x 60' CPM culverts east of Green River Parkway. The approximate culvert locations can be seen in the existing conditions map found in **Appendix D** based on a hand sketch provided from St. Lucie County. Additional information provided by SLCPWD verified that a permit was issued by the United States Army Corps of Engineers for the cleaning and restoration of the existing pipes and the work was completed in 1999. These culverts under Walton Road east of SE Green River Parkway were not visually located and could not be verified during the field review. The culverts should be evaluated due to age and environmental conditions.

Figure 2.3 Intersection Lighting

Street lighting in Segment A was located along the north and south side east of Lennard Road and terminated where the roadway transitions from four lanes to two lanes, approximately 800 feet east of the intersection. Intersection lighting is located at the following intersection locations along the study corridor: the northeast corner of SE Scenic Park Street, the southwest corner of SE Grand Drive, and the southwest corner of SE Green River Parkway. A photo of intersection lighting on a single pole can be seen in **Figure 2.3**. Existing overhead utilities are present along the south side of Walton Road and appeared to be within the 20-foot utility easement located adjacent to the existing ROW line shown on the widening plans provided from St. Lucie County. The existing overhead utility lines located on the south side stop east of SE Green River Parkway and continues underground to just west of the FEC Railroad crossing and then continues overhead to Indian River Drive. **Appendix D** provides a detailed map of existing conditions.

No transit stops are currently located within the study corridor, nor do any transit routes pass through the corridor. An exhibit showing nearby transit stops and routes can be found in **Appendix E**.

2.2 Operation

Evaluation of the average vehicle speed was completed based on speed data collected at three locations along the corridor on Thursday March 17, 2016. The posted speed on the study corridor is 45 mph and a posted speed limit sign can be seen in **Figure 2.4**. The results from the data collected east of Lennard Road, as well as east and west of SE Green River Parkway indicate the 85th percentile speed is 43 MPH. The posted speed for Walton Road is 45 MPH. The collected speed data can be found in **Appendix A.**

Figure 2.4 Speed Limit Sign

Field observations confirmed that roadway operating conditions along the corridor and the stop controlled intersections are satisfactory. All stop controlled intersections within the study corridor were observed to operate at an acceptable level of service for vehicles. Several bicyclists were observed sharing the roadway with vehicles.

The current access control is limited to a raised median within the four-lane section east of Lennard Road as well as right and left turn lanes at SE Powderly Place/SE Rainer Road intersection, SE Scenic Park Street and the driveway access to Port St. Lucie Hospital west of SE Grand Drive.

2.3 Safety

A review of crash data received from TPO staff for the most recent 5-year period from 2011-2015 was performed to evaluate safety conditions along the corridor within the study limits.

Table 2.1 Crash Distribution by Year

Year	Number of Crashes
2011	3
2012	2
2013	2
2014	9
2015	12
Total Crashes	28

A total of 28 crashes occurred within the study limits from 2011 to 2015 and is represented in **Table 2.1**. A significant increase in crashes is apparent between year 2013 and 2014. The largest number of crashes was reported for year 2015 with twelve crashes, followed by 2014 with nine crashes. A more detailed crash analysis was completed for 2014 and 2015 due to the large increase of crashes and is presented later in this section.

The crash distribution by location was also analyzed and illustrated in **Figure 2.5**. The intersection with the most amount of crash incidents for the study corridor during the five year period was Lennard Road with nine crashes, followed by Indian River Drive with eight crashes. Seven out of the nine crashes that occurred at Lennard Road were "rear end" crashes, with one crash reported as "other" and one "bicycle" crash. The large number of "rear end' crashes at this intersection could be due to congestion at the intersection signal. Three "rear end", three "run off" road, and two "other" crashes make up the eight collisions reported for the Indian River Drive intersection. At SE Green River Parkway four out of five of the collisions were "left turn" crashes and one was an "off road" crash. No "pedestrian" collisions were reported for the study corridor. The crash data can be found in **Appendix C.**

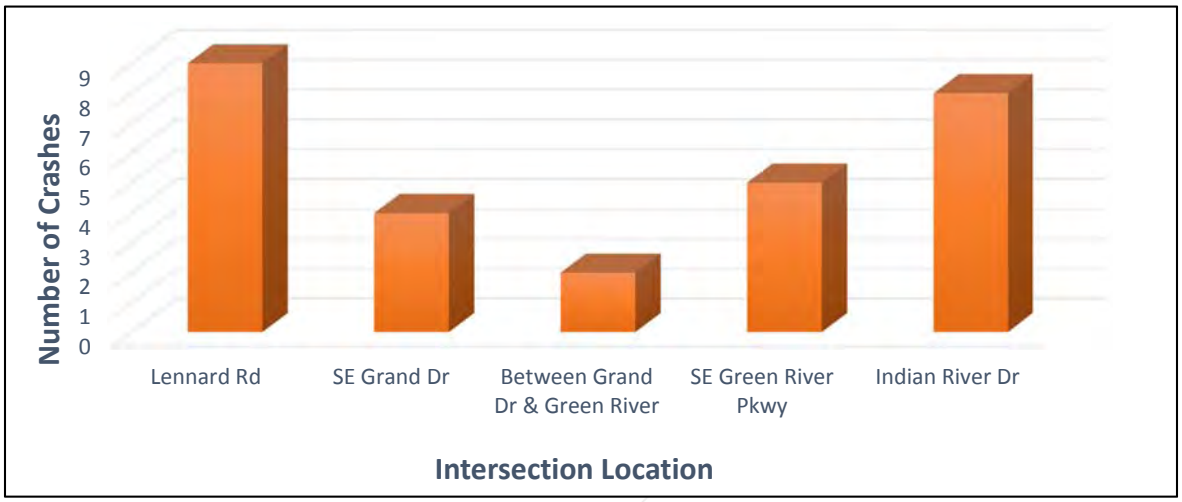

Figure 2.5 Five Year Crash Distribution by Intersection Location

Table 2.2 shows that the majority of crashes occurred during clear conditions. The study corridor does not have a pattern of crashes occurring in wet/rainy conditions.

Table 2.2 Crash Distribution by Weather Condition

Weather Condition	Number of Crashes
Clear	24
Cloudy	1
Rain	2
Fog, Smog, Smoke	1

The majority of crashes occurred in the daylight condition, as shown in **Table 2.3**. Only four crashes were reported in dark, unlit conditions and one dark crash did not report the lighting condition. Including the unknown lighting crash, the percentage of crashes that occurred in dark is 18%.

Table 2.3 Crash Distribution by Lighting Condition

Lighting Condition	Number of Crashes
Daylight	19
Dawn/Dusk	2
Dark - Lighted	2
Dark - Not Lighted	4
Dark - Unknown Lighting	1

Table 2.4 illustrates that Rear End collisions account for the largest percentage of collision type with 12 crashes and 43%. The next major collision type is Off-Road with 6 crashes and 21%. Left Turn crashes was the third most reported collision type with 14% of the crashes within the study corridor. There was one reported bicycle crash that occurred at Lennard Road.

Table 2.4 Crash Distribution by Collision Type

Collision Type	Number of Crashes
Rear End	12
Left Turn	4
Off-Road	6
Bicycle	1
Other	5

Further analysis was completed to evaluate the large increase of crashes from 2013 to 2014 and from 2014 to 2015. **Table 2.5** and **Table 2.6** illustrate the detailed analysis completed for the year 2014 by crash location and crash type.

Table 2.5 Location Distribution Year 2014

Intersection Location	Number of Crashes
Lennard Road	3
SE Grand Drive	1
Between Grand Drive & Green River	0
SE Green River Pkwy	2
Indian River Drive	3

Table 2.6 Crash Type for Year 2014

Collision Type	Number of Crashes
Rear End	3
Left Turn	2
Off Road	3
Bicycle	0
Other	1

All the crashes for 2014 were analyzed by location and crash type in order to determine if a pattern exists to explain the jump from two crashes in 2013 to nine crashes in 2014. Lennard Road and Indian River Drive were reported to have three crashes each. The most common crash type for 2014 was rear end crashes and 3 off road crashes. The three crashes that occurred at Lennard Road were two rear end crashes and one other crash. The three crashes that occurred at Indian River Drive consisted of one rear end crash and two off road crashes.

Further detailed crash analysis was also completed for year 2015 and can be seen in **Table 2.7** and **Table 2.8**.

Table 2.7 Location Distribution for Year 2015

Intersection Location	Number of Crashes
Lennard Road	5
SE Grand Drive	0
Between Grand Drive & Green River	2
SE Green River Pkwy	1
Indian River Drive	4

Table 2.8 Crash Type for Year 2015

Collision Type	Number of Crashes
Rear End	7
Left Turn	0
Off Road	2
Bicycle	0
Other	3

It can be seen in **Table 2.7** that for the year 2015 five crashes occurred at the intersection of Lennard Road. Further analysis revealed that all five of those crashes are rear end crashes. Out of the four crashes that occurred at Indian River Drive, two were rear end crashes and two were other crashes.

From conducting additional analysis for 2014 and 2015 it can be concluded that more crashes occurred on Walton Road at the intersections of Lennard Road and Indian River Drive. These rear end crashes could have occurred more frequently in 2014 and 2015 due to multiple reasons including driver error/distraction and/or congestion.

2.4 Traffic

Existing traffic volume data was collected on March 17, 2016 at three locations along the corridor. The average daily traffic (ADT) for the location east of Lennard Road is 9,997 vehicles per day. The location west of Green River Parkway has an ADT of 8,625 vehicles per day and east of SE Green River Parkway the ADT is 6,285. The daily traffic volumes from the count data appear to be consistent when compared to the annual average daily traffic (AADT) shown in the St. Lucie County TPO Traffic Counts and Level of Service Report Fall 2015. In this report, the AADT from Lennard Road to SE Green River Parkway is 9,600 and the ADT from SE Green River Parkway to Indian River Drive is

5,700. Based on the 2016 ADT, the roadway is operating at an acceptable level of service (LOS) C for a two-lane undivided urban minor arterial.

The 2040 future volumes for Walton Road are from the TCRPM 4 model used for the adopted 2040 Cost Feasible alternative analysis for the Go2040 LRTP update. These future volumes and the St. Lucie County TPO 2015 AADT are represented in **Table 2.9**.

Table 2.9 Traffic Volumes and LOS for Walton Road

Walton Road Section	2015 AADT	2040 Volumes	Future LOS
Lennard Road to Green River Pkwy	9,600	12,480	C
Green River Pkwy to Indian River Drive	5,700	9,600	C

A preliminary LOS analysis was completed for the expected future year volumes of 2040 using the Florida Department of Transportation Generalized Level of Service tables from the most recent (2013) Quality/Level of Service Handbook. For an urban undivided two lane roadway section with a speed greater than 40 mph, the LOS AADT volume threshold is 15,120. This volume accounts for the roadway being a non-state signaled roadway. The predicted future 2040 volume meets the threshold for a two-lane undivided roadway. Therefore, the need for capacity improvements is not expected.

2.5 Environmental Conditions

A review of existing environmental conditions for the study corridor was completed. According to the U.S. Fish and Wildlife Service National Wetlands Inventory database there are wetlands adjacent to the study corridor. The wetland map can be seen in **Figure 2.6**.

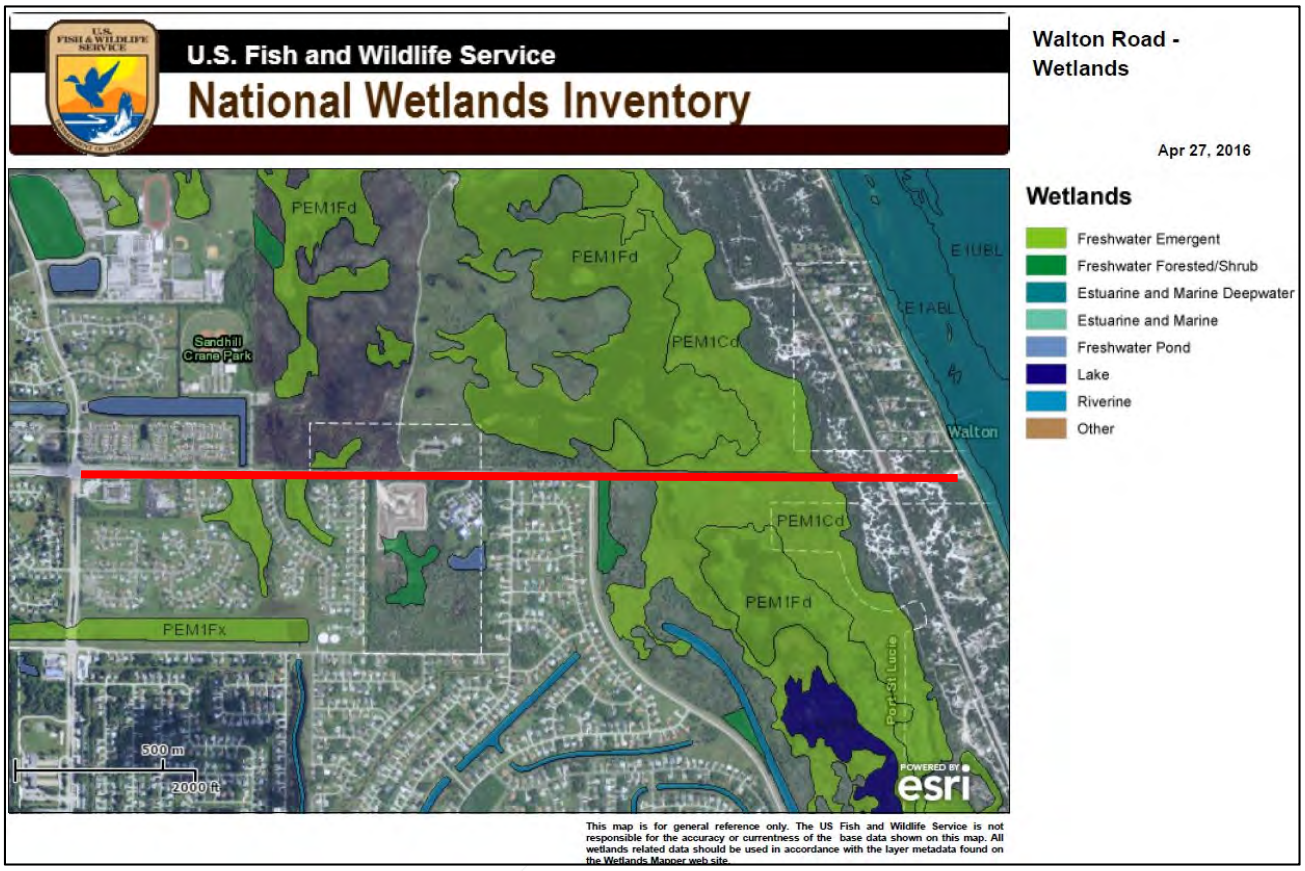

Figure 2.6 Wetland Map

Generally the area beyond the roadside shoulders are wet and contain pools of water. A photo of the wetlands observed between SE Arenson Lane and SE Grand Drive is shown in **Figure 2.7**.

A preliminary review of threatened and endangered species within the study corridor revealed a total of 26 species and 35 migratory birds using the Information for Planning and Conservation (IPaC) tool from the U.S. Fish & Wildlife Service website. Some notable endangered species that have a potential to be located throughout the study area include the Everglade Snail Kite, Florida Scrub Jay, Wood Stork, and the Eastern Indigo Snake. A copy of the full report can be found in **Appendix A**.

Figure 2.7 Roadside Wetland

A preliminary review of historic and cultural resources was completed for the study corridor using GIS shapefiles obtained from the Bureau of Archaeological Research and can be seen in **Figure 2.8**. Two cultural sites related to transportation are located within the study corridor and one agricultural/transportation site is located near the study corridor to the north. Both the FECR corridor and Indian River Drive are listed as having historic transportation integrity. The FECR is eligible for National Register of Historic Places (NRHP) and Indian River Drive has not been evaluated by the State Historic Preservation Office (SHPO). The agricultural/transportation site located approximate 750 feet north of Walton Road on the west end near Lennard Road is called Hog Pen Slough Canal and was constructed to create dry land for agriculture and development. According to the Bureau of Archaeological Research January 2016 ArcGIS shapefile it is ineligible for NRHP.

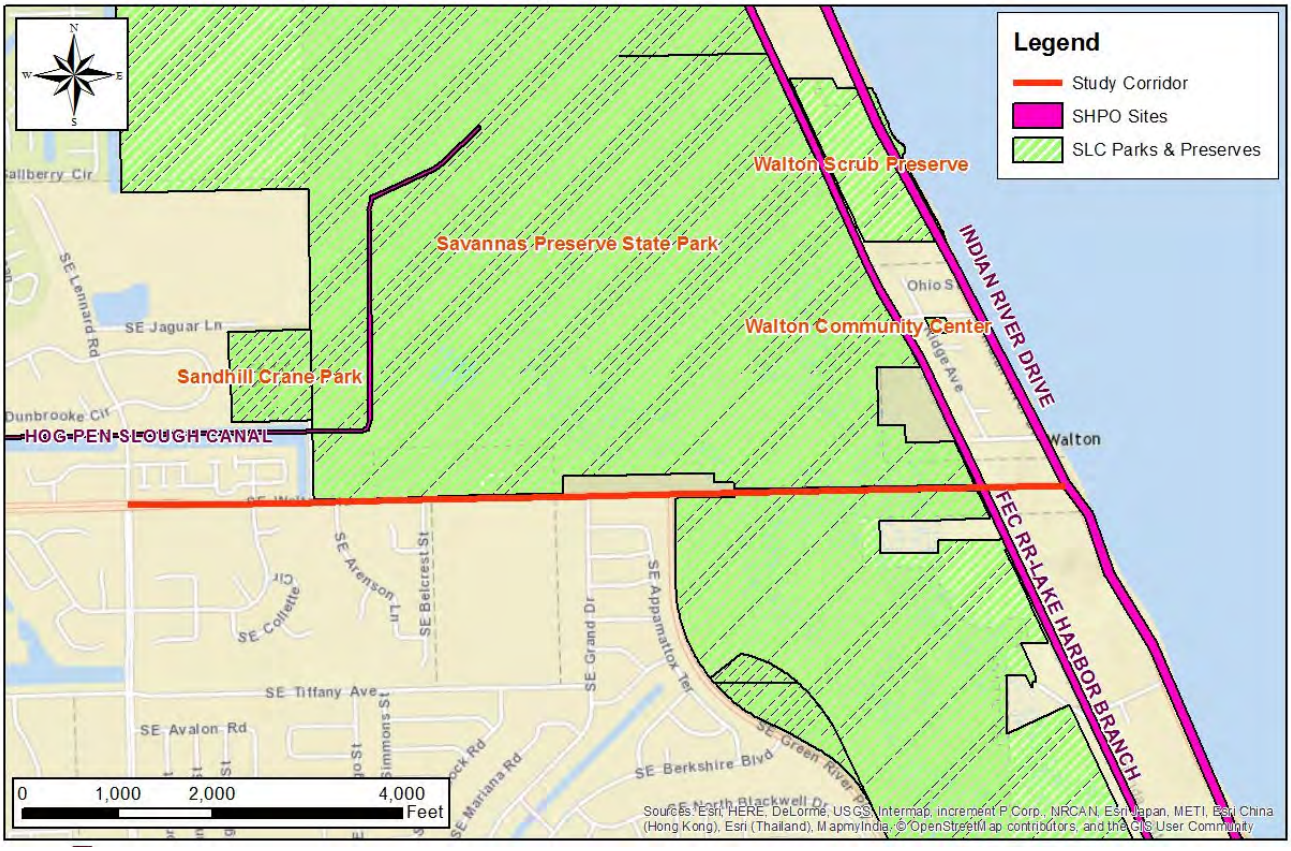

Figure 2.8 Historic and Cultural Sites

2.6 Deficiencies

During the office and field review the study corridor was analyzed to determine multimodal deficiencies including missing bicycle and pedestrian facilities, lighting, paved shoulders and signage. The following deficiencies were noted:

- There are no paved shoulders on the two-lane section east of Lennard Road to Indian River Drive as shown in **Figure 2.9**.
- The only pedestrian crossings within the corridor are located at Lennard Road.
- There is no existing sidewalk on the north side of Walton Road east of SE Scenic Park Street and no sidewalk on the south side beyond the existing off-road shared use path ending west of SE Rainer Road.
- There is no street lighting along Walton Road on the two-lane section east of Lennard Road to Indian River Drive except at the SE Scenic Park Street and SE Green River Parkway intersections.

Figure 2.9 Walton Road Two-Lane Section

3.0 Alternatives Evaluation

Existing multimodal facilities consisting of on-street bike lanes, off road shared use path and sidewalk are located within Segment A; therefore, no alternatives are presented for Segment A in this study. Alternatives for adding multimodal improvements in Segment B and C were evaluated based on a planning level analysis with respect to available right of way, connectivity to existing bicycle and pedestrian facilities, environmental and social-cultural factors as well as feasibility of implementation. Increasing mobility and improving safety for both bicycles and pedestrians by enhancing or expanding existing facilities was part of the evaluation process. There are no existing multimodal facilities on Indian River Drive. Multimodal improvements to Indian River Drive would require a separate study.

As stated in **Section 2.4**, the existing 2016 traffic volumes on Walton Road show that the two-lane section is operating at an acceptable LOS and projected 2040 traffic volumes indicate widening of the roadway is not expected to be needed to meet future capacity requirements. Therefore, roadway capacity improvements were not evaluated for this study. Alternatives presented in this section are summarized in **Table 3.1**.

Table 3.1 Summary of Alternatives

Segment	Alternatives
Segment A	Maintain existing multimodal features
Segment B	1. Bike lanes, sidewalk, multiuse path 2. Curb and gutter – bike lanes, sidewalk, multiuse path
Segment C	1. Add bike lanes & sidewalk 2. Roadway reconstruction with curb and gutter – add bike lanes & sidewalk 3. No roadway improvements – add raised shared use boardwalk 4. Bridge roadway – add sidewalk and paved shoulders

Segment B has two alternatives; Alternative B1 includes four-foot paved shoulder bike lanes, a sidewalk on the north side and a shared use path on the south side, Alternative B2 reconstructs the roadway with curb and gutter and includes four-foot paved shoulder bike lanes, a sidewalk on the north side and a shared use path on the south side of Walton Road.

Four alternatives are presented for Segment C. Alternative C1 includes adding fill for paved bike lanes and sidewalk north along Walton Road with a roadside swale south of Walton Road for drainage. This alternative would require additional right of way through the Savannas Preserve State Park depending on elevation changes and not including temporary construction easements. Alternative C2 recommends reconstructing the roadway, adding curb and gutter, a pond and paved shoulder bike lanes, with a sidewalk along the north side of Walton Road. The roadway would need to be elevated approximately four feet. This would provide enough hydraulic grade for runoff to be routed to a proposed pond at the vacant school board parcel located to the east of Belcrest St. A

drainage report and analysis would need to be completed during design that will support the permit requirements. In order not to require additional right of way, this alternative initially utilized Mechanically Stabilized Earth (MSE) wall to eliminate side slopes and additional right of way. Constructing MSE wall through Savannas Preserve State Park is not considered feasible since this concept limits wildlife crossings and does not confirm to the aesthetics of the adjacent land use. Therefore, Alternative C2 was re-evaluated with roadside slopes that encroach outside of the existing ROW into the Savannas Preserve State Park. Permitting and mitigation would be required with federal & state agencies. Some mitigation credits might be earned through the improvements presented in this alternative since stormwater runoff would be conveyed to a proposed pond for water quality in lieu of direct discharge to the park. Coordination with permitting agencies is required for consideration of this possibility. Alternative C3 is a lower cost alternative for Segment C that proposes no roadway improvements and a separate elevated shared use 10-foot boardwalk structure extending on the north side along Walton Road through Savannas Preserve State Park and continuing with a six-foot sidewalk west of the FEC railroad crossing to Indian River Drive. The elevated boardwalk may require additional ROW, depending on the design and placement of guardrail and the deflection distance to the boardwalk, within the 50-foot ROW section that traverses through the State Park. Depending on the guardrail replacement, additional ROW might not be needed.

A fourth alternative was added to Segment C due to comments from the June 1, 2016 TPO Board meeting. Alternative C4 is a bridge alternative that proposes building a new bridge on Walton Road east of Green River Parkway spanning approximately 3,000 feet over the Savannas Preserve State Park to west of the FEC crossing. The bridge design evaluated is concrete pre-stressed beams (Florida I Beams) with a concrete deck and supported in pile bents. The typical section of the bridge would include 11-foot travel lanes, 8-foot paved shoulders, type F barriers on both sides, a 6-foot sidewalk and pedestrian railing. Drainage and a pond would also need to be considered for this alternative in complying with runoff water quality standards. All four alternatives for Segment C would require pedestrian crossing improvements at the FEC railroad crossing.

A pond for water quality treatment will be needed if curb and gutter in Alternative B2, C2 and/or C4 is placed along Walton Road. A pond location option could be the vacant parcel located east of Belcrest Street which is owned by St. Lucie County School Board. Substantial financial savings is possible if the School Board is willing to donate ROW for the pond.

Furthermore, all alternatives in Segment C would require additional ROW and permitting with federal and state agencies during design for construction. In the past, Stanley Consultants has experienced a time frame of six to eight months for permit modifications or new permit applications. The cost of the permit is dependent on the type of permit required (modification or new) and the improvements being competed. If mitigation is required, it is recommended to use a mitigation bank. Moreover, it is recommended that pre-application meetings be held with South Florida Water Management District (SFWMD) and the US Army Corps (land owners) in order to ensure that the alternative will avoid or minimize impacts.

3.1 Bike Lanes and Paved Shoulders

Adding on-street bike lanes (paved shoulders) to the two-lane section in Segments B and C was evaluated based on increasing safety within the corridor and increasing bicycle mobility to existing surrounding bike paths. A four foot bike lane is the minimum functional width for a roadway without

curb and gutter and flush shoulders per Chapter 9 of the Florida Green Book. Paved shoulders, four feet or wider, may be marked as bicycle lanes and considered to be bicycle facilities.

Bicycle counts were taken during the AM and PM peak period on a weekday and also during the midday period on a weekend to evaluate existing bicycle usage along the corridor. The count data at the Lennard Road intersection indicated a low number of riders using the roadway but some bicyclists were observed riding on the existing off road shared use path. Data from the counts at the Green River Parkway intersection also showed a low number of riders overall with the largest number of bicyclists south of the intersection utilizing the shared use path. However, some bicyclists were observed riding east of Green River Parkway on Walton Road towards Indian River Drive reassessing the need of bike lanes for safety along this portion of roadway. The collected bicycle count data can be found in **Appendix A**.

There are two sections within the study corridor with existing ROW widths of 50 feet. A photo of the two-lane section with an existing 50 foot ROW width east of SE Green River Parkway is shown in **Figure 3.1**. One section in Segment B is located east of SE Belcrest Street spanning the current vacant school board parcel and the other section in Segment C is located from east of SE Green River Parkway to west of the FEC Railroad. Adding paved shoulder bike lanes in each direction is included for both Segment B alternatives and in Segment C for the roadway widening (Alternative C1), roadway reconstruction (Alternative C2), and bridge roadway (Alternative C4) alternatives.

Figure 3.1 Two Lane Section from Segment C

The cost for bike lane improvements was estimated using the FDOT Long Range Estimation System for milling and resurfacing a two-lane rural road with five-foot paved shoulders and will be included for the overall cost estimate for each alternative presented later in this section. A typical section diagram showing how bicycle lanes can be accommodated within the existing ROW width is also presented later in this section.

3.2 Sidewalks

Adding missing sidewalks and connecting residential areas to the Savannas Preserve State Park as well as increasing pedestrian access, safety and enhancing mobility was evaluated for the entire corridor.

Pedestrian counts were taken during the AM and PM peak period on a weekday and also during the midday period on a weekend to evaluate existing pedestrian usage along the corridor. The count data at the Lennard Road intersection showed no pedestrians using the sidewalk on the north side of Walton Road but some pedestrians were observed walking on the shared use path. During the field review one pedestrian was observed walking along the south side of Walton Road between SE Arenson Lane and SE Scenic Park Street as shown in **Figure 3.2**.

Figure 3.2 Pedestrian Walking Along Walton Road

Data from the count at the Green River Parkway intersection also revealed a low number of pedestrians overall and all observed pedestrians were using the existing paved trail on the east side of SE Green River Parkway south of Walton Road. The collected pedestrian count data can be found in **Appendix A**.

Adding a six-foot wide sidewalk on the north side of Walton Road in Segment B between SE Scenic Park Street and SE Green River Parkway is included for both alternatives. Adding six-foot wide sidewalk on the north side of Walton Road from SE Green River Parkway to Indian River Drive in Segment C is included for Alternatives C1 and C2. There is a possibility that portions of the proposed sidewalk will traverse existing wetland areas requiring fill, gravity walls and lateral offsets to minimize impacts to environmentally sensitive areas. It is recommended that the quality of delineated wetland areas be evaluated during the design and permitting phases to make a determination of potential impacts and costs. A six-foot sidewalk could be provided for the Walton Road Bridge Alternative C4 on the south side of Walton Road.

The estimated cost associated with only the sidewalk was based on projects listed in the latest St. Lucie TPO TIP and was estimated to be approximately $390,800 per mile. Cost estimates for the sidewalk for each section are shown in **Table 3.2**. A typical section diagram showing how sidewalks can be accommodated within the existing ROW width is presented in **Section 3.5**.

Table 3.2 Sidewalk Estimated Cost per Study Section

Segment	Sidewalk Cost
Segment A	N/A
Segment B (Alternatives B1 and B2)	$281,000
Segment C (Alternatives C1 and C2)	$313,000
Segment C (Alternative C3)	$98,000

3.3 Shared Use Path

Continuing the existing off-road shared use path on the south side of Walton Road in Segment B to the shared use path east of Green River Parkway was evaluated based on increasing both bicycle and pedestrian mobility for all users. Based on the Bicycle/Pedestrian Corridor Study Area of Interest Analysis completed by the St. Lucie TPO in November 2011, continuing the existing off-road path east of Lennard Road to the existing Green River Trail was included as part of the recommended preferred alternative. In addition to recommendations from previously completed studies, counts taken at both the Lennard Road and Green River Parkway intersections, documented that there is some current usage of the existing off road path and paved trail by both bicyclists and pedestrians. The collected bicycle and pedestrian count data can be found in **Appendix A**.

Continuing the meandering 12-foot wide off-road path, east of Lennard Drive, between the existing edge of pavement and 20-foot wide utility easement adjacent to the south ROW line is included in Segment B. Coordination with utility owners will be required. However, there would be wetland impacts within Segment B due to clearing and grubbing and fill material necessary to construct the road. To minimize wetland impacts, an elevated boardwalk style structure with a pedestrian railing at a minimum of 10 feet wide would have less impacts than an at-grade paved path. Moreover, in order to reduce wetland impacts in Segment C, Alternative 3C recommends adding a 10 foot wide elevated boardwalk style structure on the north side of Walton Road through Savannas Preserve State Park and not implementing any improvements to the roadway. There are no shared use path improvements presented in Alternative C1 and C4. The typical section of Alternative C2 was evaluated with a shared use path and no sidewalk in order to provide better level of service for pedestrians but would require even more ROW. Therefore, Alternative C2 does not provide a shared use path.

The segment east of SE Belcrest Street adjacent to the parcel owned by the St. Lucie County School District has an existing ROW width of 50 feet. Continuation of the 12’ wide off road shared use path along the south side in addition to on-street bikes lanes and sidewalk on the north side is not feasible within the existing ROW. Based on coordination with St. Lucie Public Schools, the property owned by the school district could be donated for ROW to add off-road shared use paths or sidewalks.

The estimated cost associated with only the shared use path improvements is shown in **Table 3.3**. The estimated costs were based on $400,000 per mile of path. For the elevated boardwalk in Segment C a cost estimate of $1,200,000 per mile was used based on coordination with St. Lucie County Environmental Resources regarding the existing boardwalk in Savannas Preserve State Park. A typical section showing the shared use path improvements is presented in **Section 3.5**.

Table 3.3 Shared Use Path Estimated Cost per Study Section

Segment	Shared Use Path Cost
Segment A	N/A
Segment B (Alternatives 1B and 2B)	$368,000
Segment C (Alternative 3C)	$600,000

3.4 Pedestrian Crossings

Pedestrian crossings at the SE Belcrest Street and SE Green River Parkway intersections are recommended for better connectivity with residential areas along the south side of Walton Road to Sandhill Crane Park and Savannas Preserve State Park located on the north side of Walton Road. **Figure 3.3** shows an example of a proposed pedestrian crossing using Florida Green Book standards.

Cross walk markings with a minimum of a Pedestrian Warning Sign (W11-2) and diagonal downward pointing arrow (W16-7P) plaque together with a roadside flashing beacon assembly or rectangular rapid flashing beacon would enhance pedestrian safety by improving the crosswalk visibility. Additionally, a Pedestrian Warning Sign (W11-2) and supplemental ahead (W16-15P) plaque are also recommended in advance of all cross walk markings as an added safety benefit. It is recommended that these cross walk improvements be made at all cross street intersections with Walton Road and two north-south crossings, east of SE Belcrest Street and east of SE Green River Parkway. The location of these recommended improvements can be found in **Appendix F**.

Figure 3.3 Example of Pedestrian Crossing on Green River Parkway

3.5 Alternative Typical Sections

There are several alternatives presented in this study for the Walton Road corridor from Lennard Road to Indian River Drive. Due to the existing multimodal conditions, no multimodal improvements for Segment A, were recommended.

The typical section for Alternative B1, of Segment B, can be seen in **Figure 3.4**. In Alternative B1, bicycle lanes are proposed for both travel directions on four-foot paved shoulders with sufficient pavement markings and signs. The shared use path is extended from 800 feet east of Lennard Road on the south side of Walton Road to connect with the shared use path east of Green River Parkway providing off road connectivity for the East Coast Greenway. The sidewalk on the north side of Walton Road is extended from SE Scenic Park Street to Green River Parkway. The minimum ROW requirement for this typical section is expected to be 65 feet with 11-foot roadway widths, four-foot bike lanes, five to six-foot sidewalk, and 10 to 12-foot shared use path.

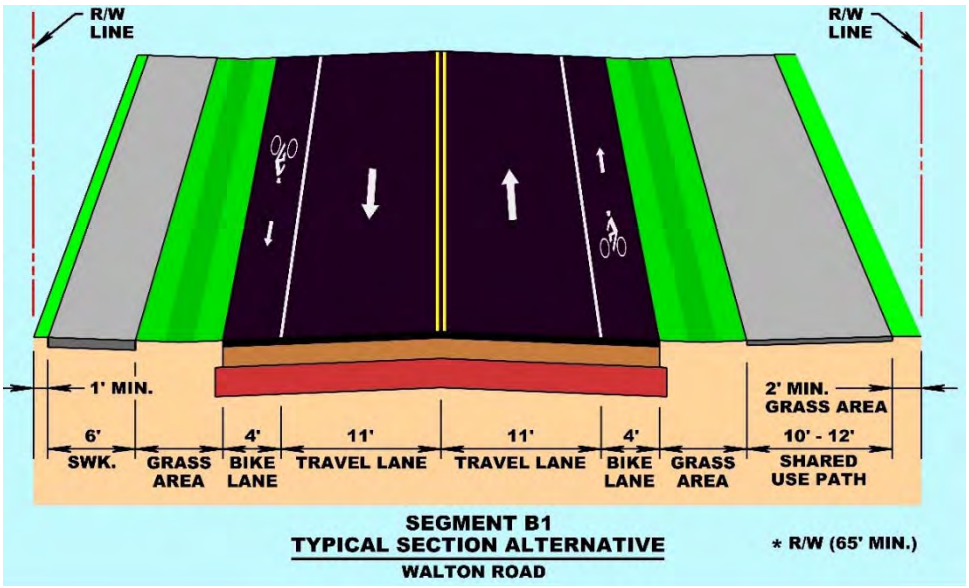

Figure 3.4 Alternative B 1 Typical Section

A second alternative for Segment B is Alternative B2, which provides the same multimodal improvements of Alternative B1 but includes the addition of curb and gutter along both sides of Walton Road. Currently, there is curb and gutter along the four lane section of Walton Road east of Lennard Road, and a matching curb and gutter typical section could also be constructed in Segment B.

The typical section for the Alternative C1 can be seen in **Figure 3.5**. Alternative C1 proposes bicycle lanes for both travel directions on four-foot paved shoulders with sufficient pavement markings and signs, sidewalk on the north side of Walton Road to extend to Indian River Drive on gravity wall with a pedestrian railing and separated from the bike lane with a two-foot shoulder and three-foot guardrail, and a swale and guardrail on the south side. Sidewalk could not be provided on the south side of Walton Road due to ROW restrictions.

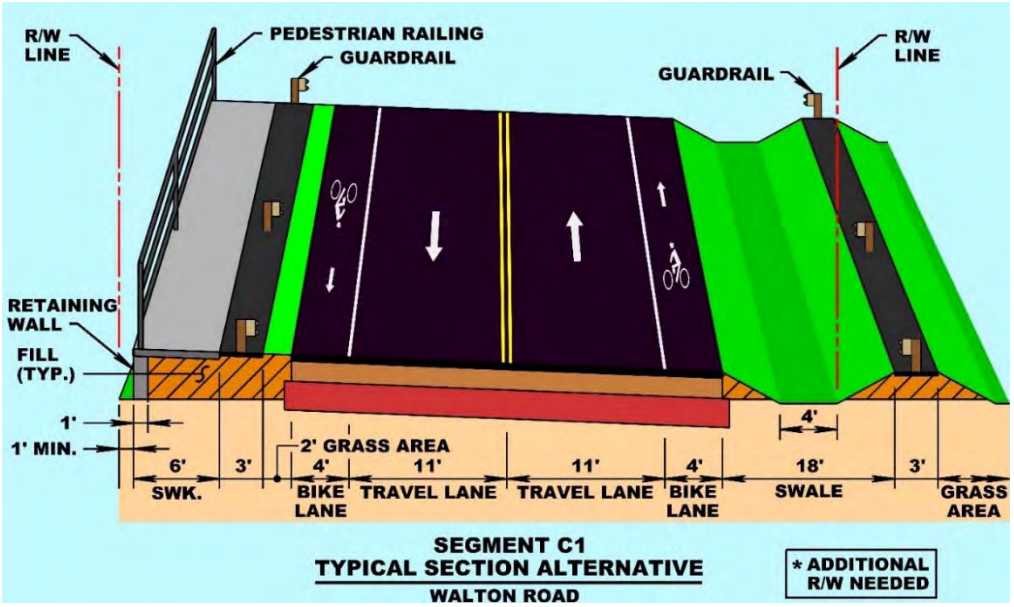

Figure 3.5 Alternative C1 Typical Section

In order to reduce impacts to surrounding wetlands and the State Park, the typical section recommends 11-foot roadway widths, four-foot bike lanes and five to six-foot sidewalk. Preliminary calculations indicate 0.60 acre feet of water retention is needed to meet water quality criteria. This can be accomplished within a roadside swale. Florida Greenbook requires the bottom width of a new swale to be four feet. A drainage analysis and report are recommended during the design phase to support the permitting requirements.

Due to the additional ROW needed to accommodate the swale in Alternative C1, another typical section for Segment C was evaluated which includes curb and gutter. Alternative C2 can be seen in **Figure 3.6**. Alternative C2 proposes roadway reconstruction and elevating the roadway by approximately four feet in order to route runoff to a proposed pond located west of Segment C at the St. Lucie School Board's vacant parcel.

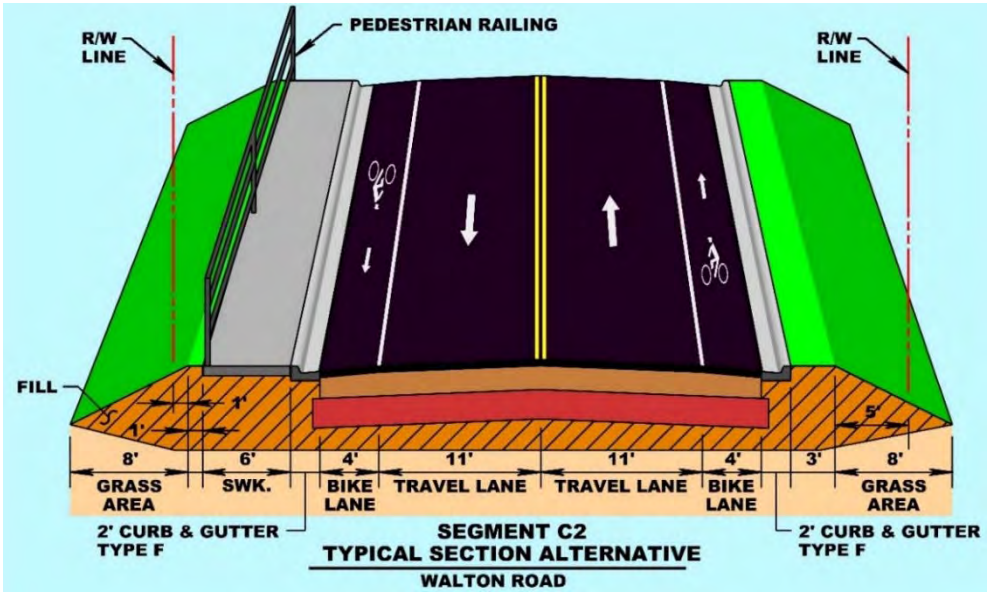

Figure 3.6 Alternative C2 Typical Section

In order to reduce ROW impacts, Alternative C2 was first evaluated with MSE wall and roadway barrier but this is not considered feasible because it does not promote wildlife crossings or recreational use. The alternative was then re-evaluated with roadside slopes that will encroach beyond the existing ROW.

For the typical section in Alternative C2, the sidewalk proposed for this alternative is located adjacent to the curb and gutter which improves pedestrian safety and pedestrian Level of Service (LOS) from the existing conditions.

The roadway typical section for Alternative C2 was further evaluated to see if pedestrian LOS could be further improved by providing multimodal facilities separated from the roadway travel ways. It was determined that by reducing the shoulder width to 2 ft on both sides, removing the 6-foot sidewalk and providing a 10-foot multi-use path with the required minimum of a 3-ft grass section, the typical section would be 4 ft wider then providing 4-ft paved bike lanes and 6ft sidewalk. Therefore, the separated multimodal facilities were remove from the alternative.

A third alternative was evaluated for Segment C that has no roadway improvements but provides an elevated shared use boardwalk structure. Alternative C3 can be seen in **Figure 3.7**. This alternative is a lower cost alternative and depending on the guardrail re-placement, additional ROW might not be needed.

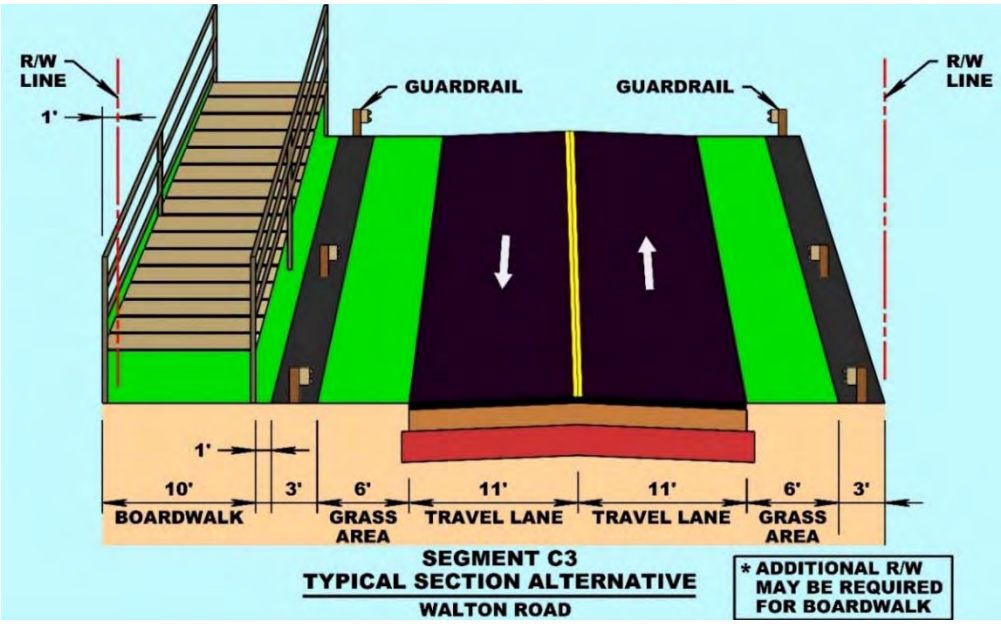

Figure 3.7 Recommended Alternative for Segment C Typical Section

A fourth alternative was added to Segment C due to comments from the June 1, 2016 TPO Board meeting. Alternative C4 is a bridge alternative that proposes building a new bridge on Walton Road east of Green River Parkway spanning approximately 3,000 feet over the Savannas Preserve State Park to west of the FEC crossing. The bridge design evaluated is a concrete pre-stressed beams (Florida I Beams) with a concrete deck and supported in pile bents. The fifty-foot typical section of the bridge would include 11-foot travel lanes, 8-foot paved shoulders, type F barriers on both sides, a 6-foot sidewalk and pedestrian railing. Protected bike lanes were considered but not included in the alternatives because the existing bike lanes on Walton Road are unprotected and the additional cost associated. A planning level cost estimate of the Bridge alternative is roughly $44 million.

3.6 Total Alternative Costs

As stated in Section 3.1, the cost for adding bicycle lanes was estimated using the FDOT Long Range Estimation System for milling and resurfacing a two-lane rural road with five-foot paved shoulders. This estimated cost is provided by the FDOT per mile of roadway and is included in Appendix F. The estimated cost for milling and resurfacing the two-lane roadway as well as the addition for bicycle lanes for each study segment are provided in Table 3.4.

Table 3.4 Estimated Roadway and Bike Lane Cost

Segment	Milling and Resurfacing with Bike Lanes
Segment A	N/A
Segment B (Alternatives B1 and B2)	$392,000
Segment C (Alternative C1)	$341,000

Alternative C2 proposes adding bike lanes with a reconstruction of the current roadway with curb and gutter and elevating the roadway four feet. A preliminary planning level cost estimate of these improvements is provided in **Table 3.5** below.

Table 3.5 Alternative C2 Cost Estimate for Reconstruction

Description	Unit	Price	Approximate Cost
Embankment and Fill (CY)	18,245.00	$ 20.90	$ 381,320.50
Roadway with 5' paved shoulders (mile) - curb & gutter, inlets	0.8	$ 4,200,000.00	$ 3,360,000.00

The total of each roadway and multimodal improvement estimated cost per each alternative is provided in **Table 3.6**. Contingency, maintenance of traffic, preliminary engineering and design and construction engineering and inspection was approximated at 10% construction cost. The cost estimation for Segment C includes an estimated $145,000 FEC railroad crossing improvements cost. If yearly maintenance for Alternative C3 is assumed at $1 per square foot, the boardwalk alternative would incur a $72,000 yearly maintenance cost. Assuming that the boardwalk is adequately maintained, the expected life cycle of the boardwalk is 16 years.

Mitigation, permitting and right of way costs are not factored into the total alternative cost estimate.

Table 3.6 Total Alternative Cost Estimate

Segment	Alternative	Description	Approximate Cost
Segment A (Lennard to 800' E of Lennard)	Maintain existing facilities	Maintain existing multimodal features	N/A
Segment B (800' E of Lennard to Green River Parkway)	**B1**	Bike lanes, sidewalk, multiuse path	$ 1,980,000
	B2	Curb and gutter – bike lanes, sidewalk, multiuse path	$ 6,980,000
Segment C (Green River Parkway to Indian River Drive)	**C1**	Add bike lanes and sidewalk	$ 3,100,000
	C2	Roadway reconstruction with curb and gutter- add bike lanes & sidewalk	$ 6,500,000
	C3	No roadway improvements- add raised boardwalk	$ 1,310,000
	C4	Bridge roadway – add sidewalk and paved shoulders	$43,950,000

3.7 Other Multimodal Alternatives

Other multimodal alternatives were considered for this feasibility study due to the expressed intent of the St. Lucie TPO Board to improve connectivity of the kayak launch located south of the study area to the area of Savannas Preserve State Park north of Walton Road. Currently Walton Road divides the multimodal trail of Savannas Preserve State Park. Two options were evaluated and presented in the following sub sections.

3.7.1 Crossing Under Walton Road Option

Currently there are four culverts located under Walton Road in Segment C. It could be considered to replace one these culverts with an arch culvert large enough to accommodate multimodal users in the Savannas to gain access and connectivity within the park. The culvert would need to be placed on adequate foundations, roadway embankment will be needed for the roadway to pass over the culvert, and MSE wall will be needed to retain the embankment in minimal ROW conditions and have a five-foot minimum required vertical clearance between the lowest member and the design high water table elevation. Other considerations for the culvert include enough natural daylight passing through the 50 foot long section for safety and user encouragement. A rough estimate for this option, assuming roadway construction cost is absorbed in Segment C cost estimation, is approximately $900,000. If Alternative C3 is moved forward, the cost of roadway reconstruction (base material and asphalt) would need to be included in the Kayak Crossing cost estimation. This would raise the cost estimation for alternative 3C to $1,750,000.

3.7.2 Crossing Over Walton Road Option

Another option that could be considered in order to improve the connectivity of Savannas Preserve State Park for multimodal water users is a kayak/canoe portage where users would carry their non-motorized watercraft over Walton Road. Adequate ingress and egress structures or embankment would be needed for all users to be able to access the portage and a mid-block pedestrian crosswalk with a button control signal would need to be provided. A rough estimate for this option is approximately $115,000.

3.8 Other Project Considerations

Discussion with the St. Lucie County Environmental Resources Department found that they are currently applying for multimodal improvements for Walton Road from Green River Parkway west to the entrance of Savannas Preserve State Park through a Sun Trail funding application. Coordination should be completed with St. Lucie County in order to efficiently allocate multimodal funding for the corridor without duplicated effort. A representative at St. Lucie County also mentioned a new trail project effort to re-route the east coast Greenway Trail through the Savannas Preserve State Park which would require DEP to provide easement for a boardwalk trail structure. A telephone record with St. Lucie County can be found in Appendix F.

Any alternative chosen to move forward into design and construction will require permitting. It is recommended that pre-application meetings be held with South Florida Water Management District and DEP to lessen challenges and expedite the permit process. In previous design projects completed by Stanley Consultants the permit process typically takes between six months to one year. The cost of the permit varies with amount of right of way impacted, the type of impact and if a new or modification permit is required. The estimated cost for permitting is approximately $3,000 but varies per agency. If a permit has more than 0.5 acres of wetlands impacted mitigation will need to occur. Mitigation costs could not be accurately estimated for this study due to the amount of variables factored into the cost. Mitigation costs are provided from the Florida Department of Environmental Protections and vary on quality of wetlands, amount, type of impact, and if the impacts have to be mitigated at a rate greater than one to one.

If the existing culverts located on Walton Road through the Savannas Preserve State Park are determined to need replacement through the findings of a separate hydrology and hydraulic study, a

preliminary cost estimation was completed in this study. The findings of the preliminary cost estimation are summarized in **Table 3.7**.

Table 3.7 Culvert Replacement Cost Estimate

Description	Unit	Total Cost
48" x 60' RCP pipe & Endwall concrete and steel	2	$ 90,000
72" x 60' CMP & Endwall concrete and steel	2	$ 141,000
Total (including contingency, preliminary engineering & CEI)		$ 304,000

4.0 Conclusions and Recommendations

4.1 Conclusions

Based on data collected and information received during the office and field reviews, an analysis of the Walton Road corridor existing conditions showed there are deficiencies with bicycle, pedestrian and transit facilities as well as street lighting. For the purpose of this report the corridor was divided into three segments as seen in **Table 4.1**.

Table 4.1 Study Corridor Segment Description

Segment Name	Description
Segment A	Lennard Road to 800' east of Lennard Road
Segment B	800' east of Lennard Road to Green River Parkway
Segment C	Green River Parkway to Indian River Drive

Deficiencies found within the study corridor include: no bike lanes or paved shoulders in Segment B and C, sidewalk missing in Segment B and C, no pedestrian access to Savannas Preserve State Park in Segment B, and a gap in the existing off-road shared use path on the south side of Walton Road to Green River Parkway for the East Coast Greenway. The existing roadway physical and operating conditions were documented. Walton Road has excess capacity based on existing and projected traffic volumes, and an 85th percentile speed of 43 MPH which is below the posted speed of 45 mph. The evaluation found that there is not sufficient ROW width at some location for incorporating the proposed multimodal improvements. In addition, the property owned by the school board may be needed for stormwater management and temporary construction easements for Alternative C. All alternatives proposed for Segment C would require ROW acquisition, with Alternative 3C requiring the least amount or possibly none.

Field observations confirmed that the roadway operating conditions along the corridor and the stop controlled intersections are satisfactory. According to the field review, all intersections within the study corridor appeared to operate at an acceptable level of service for vehicles. Several bicyclist and pedestrians were observed sharing the roadway. A review of crash data received from TPO staff for the most recent 5-year period from 2011-2015, found a total of 28 crashes occurred within the study limits. No "pedestrian" collisions were reported, and one "bicycle" crash occurred within the study corridor at the intersection of Lennard Road. However, there is a need for multimodal improvements within the corridor to enhance mobility, connect existing shared use paths, and provide pedestrian access to Savannahs Preserve State Park.

Based on the evaluation of alternatives, adding on-street bike lanes, sidewalk on the north side and completing the missing link of off-road shared use path between Lennard Road and SE Green River Parkway are proposed for Segment B. Both on-street bike lanes and sidewalk on the north side are also possible based on the existing 50 to 100 feet ROW width between SE Green River Parkway and Indian River Drive within Segment C but ROW, permitting and stormwater drainage costs significantly increase the total cost of this alternative. These improvements would provide safety benefits to both bicyclists and pedestrians as well as potential connections to future trails.

4.2 Recommendations

There are two alternatives for Segment B and four alternatives for Segment C presented in this study for the Walton Road corridor from Lennard Road to Indian River Drive. A summary of these alternatives are summarized in **Table 4.2** below. The alternatives for Segment C include the $145,000 FEC crossing, $3,000 permit fee and the under Walton Road kayak option.

Table 4.2 Study Alternatives

Segment	Alternative	Total Cost
Segment A	Maintain existing multimodal features	None
Segment B	**B1.** Bike lanes, sidewalk, multiuse path	**$ 1,980,000**
	B2. Curb and gutter – bike lanes, sidewalk, multiuse path	**$ 6,980,000**
Segment C	**C1**. Add bike lanes & sidewalk	$ 3,100,000
	Permitting	$ 3,000
	Kayak Crossing	$ 900,000
	Total Alternative C1 Cost	**$ 4,020,000**
	C2. Roadway reconstruction with curb and gutter – add bike lanes & sidewalk	$ 6,500,000
	Permitting	$ 3,000
	Kayak Crossing	$ 900,000
	Total Alternative C2 Cost	**$ 7,420,000**
	C3. No roadway improvements – add raised Boardwalk*	$ 1,310,000
	Permitting	$ 3,000
	Kayak Crossing	$ 1,750,000
	Total Alternative C3 Cost	**$ 3,040,000**
	C4. Bridge roadway – add sidewalk and paved shoulders	$ 43,950,000
	Permitting	$ 3,000
	Kayak Crossing	$ 1,750,000
	Total Alternative C4 Cost	**$ 44,900,000**
*Does not include $72,000 yearly maintenance cost		

The lower preliminary cost alternative for Segment B is alternative B1 (approximately $1,980,000) which widens the roadway with four-foot bike lanes, sidewalk on the north side of Walton Road and a shared use path on the south. This alternative would require a swale and is much lower cost than alternative B2 ($6,980,000) which includes roadway reconstruction with curb and gutter.

St. Lucie Transportation Planning Organization

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

AGENDA ITEM SUMMARY

Board/Committee:	Citizens Advisory Committee (CAC)
Meeting Date:	July 12, 2016
Item Number:	6c
Item Title:	Annual Public Involvement Program (PIP) Evaluation of Effectiveness and Update
Item Origination:	Unified Planning Work Program (UPWP)
UPWP Reference:	Task 6.1 – Public Involvement, Education & Outreach
Requested Action:	Review and recommend acceptance of the Annual PIP Evaluation of Effectiveness and Update, recommend acceptance with conditions, or do not recommend acceptance.
Staff Recommendation:	Based on the performance measurement results, it is recommended that the Annual PIP Evaluation of Effectiveness and Update be recommended for acceptance by the TPO Board

Attachments

- Staff Report
- PIP Performance Measures
- Public Outreach Matrix

St. Lucie Transportation Planning Organization

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

MEMORANDUM

TO: Citizens Advisory Committee (CAC)

THROUGH: Peter Buchwald
Executive Director

FROM: Yi Ding
Livability Planner

DATE: July 5, 2016

SUBJECT: Annual Public Involvement Program (PIP) Evaluation of Effectiveness and Update

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BACKGROUND

The Unified Planning Work Program (UPWP) includes substantial public involvement efforts within a continuous and ongoing task which includes compliance with all Title VI and Nondiscrimination requirements. These public involvement efforts are advanced through the PIP of the St. Lucie TPO.

Annually reviewing the effectiveness of the St. Lucie TPO Public Involvement Goal, Objectives, and Strategies enables the TPO to adjust and modify the public involvement techniques accordingly. Various performance measures identified in the attached summary were used by TPO staff to evaluate the effectiveness of the PIP. The results of the annual Evaluation of Effectiveness can quantify public access to transportation planning activities as well as the level of public participation and impact within FY 2015-16. The public participation tools and techniques in the attached public outreach matrix subsequently are continued, refined, and/or replaced based on the results.

ANALYSIS

The PIP Annual Update includes evaluating the effectiveness of the PIP by applying the performance measures to the strategies for meeting the PIP objectives. It is the second time that performance measures data has been collected, and the result will be used to compare to last year's data for evaluating and refining the PIP tools and techniques. The 3 greatest measures for FY 2015-16 were the increase in the number of online hits to the TPO

website and social media (13,188), the increase in the number of students who participated in TPO activities (5,315), and the percentage increase in questionnaire recipients who responded to the questionnaire (236%).

Revising the Public Outreach Matrix with the addition of new tools and techniques is part of the Annual Update as well. Based on the performance measures, “Social Media” has provided the best results and it is recommended to continue to use “Social Media” for public outreach for the upcoming List of Priority Projects (LOPP) and Congestion Management Process (CMP).

RECOMMENDATION

Based on the performance measurement results, it is recommended that the Annual PIP Evaluation of Effectiveness and Update be recommended for acceptance by the TPO Board.

Public Involvement Plan - Performance Measures and Annual Update FY 15-16

Objective A - Hold Regularly Scheduled and Advertised Meetings Open to the General Public				
Strategy	Measure of Effectiveness			
	Measure	Quantity FY 14-15	Quantity FY 15-16	Increase/ Decrease
Strategy A1: All TPO Policy Board and Advisory Committee meetings, times, agendas, and locations will be publicly noticed in local newspapers and online.	Overall increase in attendance at meetings	372	484	112
Strategy A2: Video recorded TPO meetings will be available for replay on the local government channels and the internet (St. Lucie Online - Video on Demand - via link from TPO website - www.stlucietpo.org).	Increase in number of online hits to TPO website and social media	566	13,754	13,188
Strategy A3: TPO meetings will be held in ADA-compliant locations accessible to transit and traditionally underserved communities	Overall increase in number of meeting participants who are transit riders and/or the physically challenged.	4	19	15
Strategy A4: TPO meetings and workshops will be publicly noticed in a variety of means to ensure that a variety of communities are reached and a scrapbook of the notifications will be maintained. Build data base of all meeting requests, concerns and inquiries regarding meeting schedules and logistics.	Overall increase in meeting attendance by minority and traditionally underserved communities	85	108	23
Strategy A5: Ensure that all Advisory Committee positions are filled.	Overall decrease in the number of meetings where advisory committee positions remained unfilled.	0	0	0
Strategy A6: Ensure all Advisory Committee recommendations are presented to the TPO Board. Keep log of all Committee recommendations to the TPO Board and the respective actions taken by the Board.	Percentage increase in number of persons contacted for all surveys and questionnaires	23,584	7,451	-68%
Strategy A7: Incorporate specialized surveys and questionnaires in meetings and events where appropriate.	Percentage increase in recipients who responded to the questionnaire	799	2,684	236%

Objective B - Seek Out Traditionally Underserved Communities				
Strategy	Measure of Effectiveness			
	Measure	Quantity FY 14-15	Quantity FY 15-16	Increase/ Decrease
Strategy B1: The TPO will create electronic newsletters and pamphlets describing its purpose and activities to be widely distributed throughout the TPO area as well as placed on the TPO website. Materials will also be made available in Spanish and Haitian Creole. Strategy B2: All televised TPO meetings will be closed-captioned for the hearing impaired.	Percentage increase in meeting attendees/survey respondents who indicate they saw/received the TPO newsletters and flyers.	0	0	0%
Strategy B3: TPO notices, meeting agendas, and packets will be sent to minority communities or traditionally underserved populations to ensure notification of TPO events. Strategy B4: TPO staff will provide presentations to community groups throughout the County to discuss the TPO process and projects.	Overall increase in the participation of Spanish and Creole speakers.	6	8	2
Strategy B5: Tailor outreach methods according to socio-economic characteristics summarized in the community profiles.	Percentage increase of traditionally underserved and minority community participants who indicate they saw/received TPO communications.	0	0	0%
Strategy B6: Identify communities with higher concentrations of minority and/or under-served populations, develop relationships with community and religious leaders in these communities, and hold workshops and meetings in these communities. Strategy B7: A contact list of minority and underrepresented citizens will continue to be maintained and updated by the TPO.	Overall increase in participation by religious and community leaders in minority and underserved communities.	30	35	5
Strategy B8: Utilize public transportation equipment and infrastructure for advertising community-based TPO workshops and planning activities.	Overall increase in participants who use public transportation.	2	0	-2

Objective C - Engage the Public Clearly, Continually, and Comprehensively through a Variety of Outreach Activities to Maximize Public Impact				
Strategy	Measure of Effectiveness			
	Measure	Quantity FY 14-15	Quantity FY 15-16	Increase/ Decrease
Strategy C1: Schedule at least two workshops or community presentations per year in the evening and/or at locations other than government buildings to increase public awareness and outreach. Strategy C2: Track and keep records of public comments and contacts to the TPO through telephone calls, emails, letters, and include summary in annual update.	Overall increase in the percentage of telephone, email, and regular mail public inquiries to TPO programs and planning activities.	20	23	15%
Strategy C3: Use TPO website to improve amount of information available, its appeal, its usefulness, and make the site interactive so that public input can be obtained electronically.	Percentage increase in positive public responses to website performance and interaction capabilities.	1	0	-100%
Strategy C4: Continue to explore and document new and/or alternative tools and techniques for reaching out to the community and facilitating public impact including advancements in social media outlets, engagement activities, and the TPO Visualization Campaign.	Overall increase in the percentage of comment forms and survey responses.	584	73	-88%
Strategy C5: Create an outreach link with local schools and universities to emphasize the relationships between transportation, mobility, and livability.	Overall increase in the number of students who participate in TPO activities.	4,235	9,550	5,315

Objective D - Integrate the Principles and Special Projects Adopted in the 2035 RLRTP in Public Outreach Efforts, Emphasizing Key Concepts of the Plan Including Enhanced Mobility, the US 1 Corridor Retrofit Project, and the Treasure Coast Loop Trail				
Strategy	Measure of Effectiveness			
	Measure	Quantity FY 14-15	Quantity FY 15-16	Increase/ Decrease
Strategy D1: Partner with other transportation planning agencies, local governments, and community leaders to broaden the awareness of TPO priorities and objectives in the 2035 RLRTP, especially in traditionally under-served communities.	Overall increase in the number of non project-specific meetings with other planning agencies to discuss broader range issues.	6	9	3
Strategy D2: Include key concepts of the Go2040 LRTP in outreach tools including TPO newsletters, annual reports, and project postcards.	Overall increase in the output of Go2040 LRTP special project visualization products (postcards, flyers, posters, etc).	N/A	3	N/A
Strategy D3: Maintain the Go2040 LRTP website and outreach database to ensure continuity through each future planning effort.	Overall increase in the number of Go2040 LRTP implementation projects underway.	N/A	16	N/A
	Percentage increase in the number of public inquiries regarding the Go2040 LRTP-specific planning efforts and special projects.	N/A	0	N/A

Public Outreach Matrix

		PIP	LRTP	TIP		UPWP	CMP	Projects
				Priorities	Document			
Public Review and Comment	Comment Forms	X	X	X	X		X	X
	Surveys & Questionnaires		X					
	Email, Mail, In Person, or Telephone Comments		X		X			
	Formal Review and Comment Periods	X	X		X	X		
TPO Website		X	X	X	X	X	X	X
Social Media Networking (Facebook/Twitter)		X	X	X	X	X	X	X
TPO Committee and Board Meetings		X	X	X	X	X	X	X
Visualization Campaign	TPO Newsletter							
	TPO Gallery and Kiosks		X					X
	Posters, Flyers, and Brochures		X					
Engagement Activities	Public Workshops or Charrettes		X					X
	Event Booths		X			X		
	Community Associations							
	Telephone Town Hall Meetings		X					
Efficient Transportation Decision-Making Process		N/A				N/A		
Media and Meeting Notification	Newspapers		X		X	X		
	Television							
	Radio							
	Direct Mailing							
	Email	X	X	X	X	X	X	X

PIP: Public Involvement Program LRTP: Long Range Transportation Plan TIP: Transportation Improvement Program
UPWP: Unified Planning Work Program CMP: Congestion Management Process N/A: Not applicable

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

AGENDA ITEM SUMMARY

Board/Committee:	Citizens Advisory Committee (CAC)
Meeting Date:	July 12, 2016
Item Number:	7a
Item Title:	Water Taxi Feasibility Study
Item Origination:	Unified Planning Work Program (UPWP)
UPWP Reference:	Task 3.2 – Transit Planning
Requested Action:	Discuss and provide comments to staff
Staff Recommendation:	It is recommended that the draft Water Taxi Feasibility Study be reviewed and comments be provided.

Attachments

- Staff Report
- Water Taxi Feasibility Study

St. Lucie Transportation Planning Organization

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

MEMORANDUM

TO: Citizens Advisory Committee (CAC)

THROUGH: Peter Buchwald
Executive Director

FROM: Ed DeFini
Bike-Ped Program Manager

DATE: July 5, 2016

SUBJECT: Water Taxi Feasibility Study

BACKGROUND

The FY 2014/15 – FY 2015/16 Unified Planning Work Program (UPWP) for the St. Lucie TPO included in Task 3.2 the completion of a Water Taxi Feasibility Study. A draft study has been prepared which will be presented for review and comments.

ANALYSIS

A water taxi or a water bus is a watercraft used to provide public or private transport, usually, but not always, in an urban environment. Service may be scheduled with multiple stops, operating in a similar manner to a bus, or on demand to many locations, operating in a similar manner to a taxi. In general, the term water taxi is usually confined to a boat operating on demand, and water bus to a boat operating on a schedule. A boat service shuttling between the same two points would normally be described as a ferry rather than a water bus or taxi.

Public and private operators willing to participate in operating water taxi or bus service need to enhance and maintain existing facilities such as docking, sidewalks, bike lanes, and transit service. Local jurisdictions may support the service by establishing regulations to define the standards of the operation, goals, objectives, policies and performance measures.

With the proper mix of public and private investment, the TPO area, which includes both the Indian River Lagoon and the North Fork of the St. Lucie River as waterway corridors, has the potential and opportunity to provide water taxi transportation as an alternative transportation option for tourists and commuters.

There are several challenges to establishing water taxi or water bus service. One of the challenges is the current state of public transportation funding. Transit systems generally have a history of uneven support and rising costs against a relatively flat revenue. This often threatens the viability of public and private transit systems.

Investments in water taxi service may be viewed as a diversion of needed revenue from an existing transit system attempting to meet the area's growing mobility needs. In addition, without relatively seamless connection to effective and available public transportation services, water taxi or bus service may evolve into a purely excursion-focused service operating only during the tourist season. Those challenges can be minimized with the considerations identified in the Feasibility Study.

RECOMMENDATION

It is recommended that the draft Water Taxi Feasibility Study be reviewed and comments be provided.

St. Lucie Transportation Planning Organization

Water Taxi Feasibility Study

Prepared by the St. Lucie Transportation Planning Organization

466 SW Port St. Lucie Boulevard, Suite 111

Port St. Lucie, Florida, 34953

July 5, 2016

CONTACT INFORMATION

Edward DeFini, Program Manager
(772) 462-1593

www.stlucietpo.org

Table of Contents

I: Introduction

The FY 2014/15 – FY2015/16 Unified Planning Work Program includes the Martin/St. Lucie Regional Waterways Plan (RWP). The RWP notes that waterfront development opportunities could be enhanced by water taxi service with connections to key commercial, cultural, recreational, and marine-oriented destinations.

Waterborne transportation holds enormous potential for improving mobility, increasing accessibility and supporting transportation objectives in the area. As congestion levels build on area roadways and bridges, the demand continues to rise for tourism, housing and jobs. Meanwhile, the TPO and its partners manage limited financial resources to provide transportation options related to growth. Water taxis can support sustainability of public transportation and reduce congestion on constrained corridors such as US 1.

Most water taxi systems provide public or private transport in an urban environment. Service is more often scheduled with multiple stops, operating in a similar manner to a bus rather than on demand to any accessible location like a land taxi. In densely populated cities of Boston, Sydney, and Fort Lauderdale, some form of on demand service is offered. However, the service is generally offered only along an already existing route with already existing fixed scheduled stops. In large cities like New York and Chicago, there is a clear differentiation between land busses and land taxis. Both serve a specific purpose and each function as distinct form of land transportation to benefit the needs of different commuters. The size of a bus running on a fixed route with fixed stops scheduled cannot meet the need of many commuters. That is why land taxis are successful in large cities. In many rural areas busses run on fixed routes with scheduled stops but also will stop in a safe location when flagged down. The Fort Lauderdale Water Taxi System operates more like a rural land bus than a city land taxi.

A water taxi or a water bus, is a watercraft used to provide public or private transport, usually, but not always, in an urban environment. Service may be scheduled with multiple stops, operating in a similar manner to a bus, or on demand to many locations, operating in a similar manner to a taxi. A boat service shuttling between the same two points would normally be described as a ferry rather than a water bus or taxi.

The term water taxi is usually confined to a boat operating on demand, and water bus to a boat operating on a schedule.

Public and private operators willing to participate in operating water taxi or bus service need to enhance and maintain existing facilities such as docking, sidewalks, bike lanes, and transit service, by establishing regulations to define standards of operation, goals, objectives, policies and performance measures.

With the proper mix of public and private investment, the TPO area, which has both the Indian River Lagoon, and the North Fork of St. Lucie River, has the potential and opportunity to provide water taxi transportation as an alternative transportation option for tourists, boat owners, workers, and others who may not own a boat but prefer to travel on the water.

There are challenges and areas of caution. A major challenge to consider is the current state of public transportation funding. Transit systems generally have a history of uneven support, and rising costs against a relatively flat revenue. This often threatens the viability of public and private systems.

Investments in Water Taxi Service may be viewed as a diversion of needed dollars from an existing transit system with real needs to meet the area's growing mobility problems. Furthermore, without relatively seamless connection to effective and available public transportation services, the water taxi initiative is likely to experience only marginal success, and may evolve into a purely excursion-focused endeavor during the season or simply cease operations entirely as a public service. Those challenges can be minimized by the TPO and its partners through careful transportation planning.

Chapter II: Potential Market Evaluation

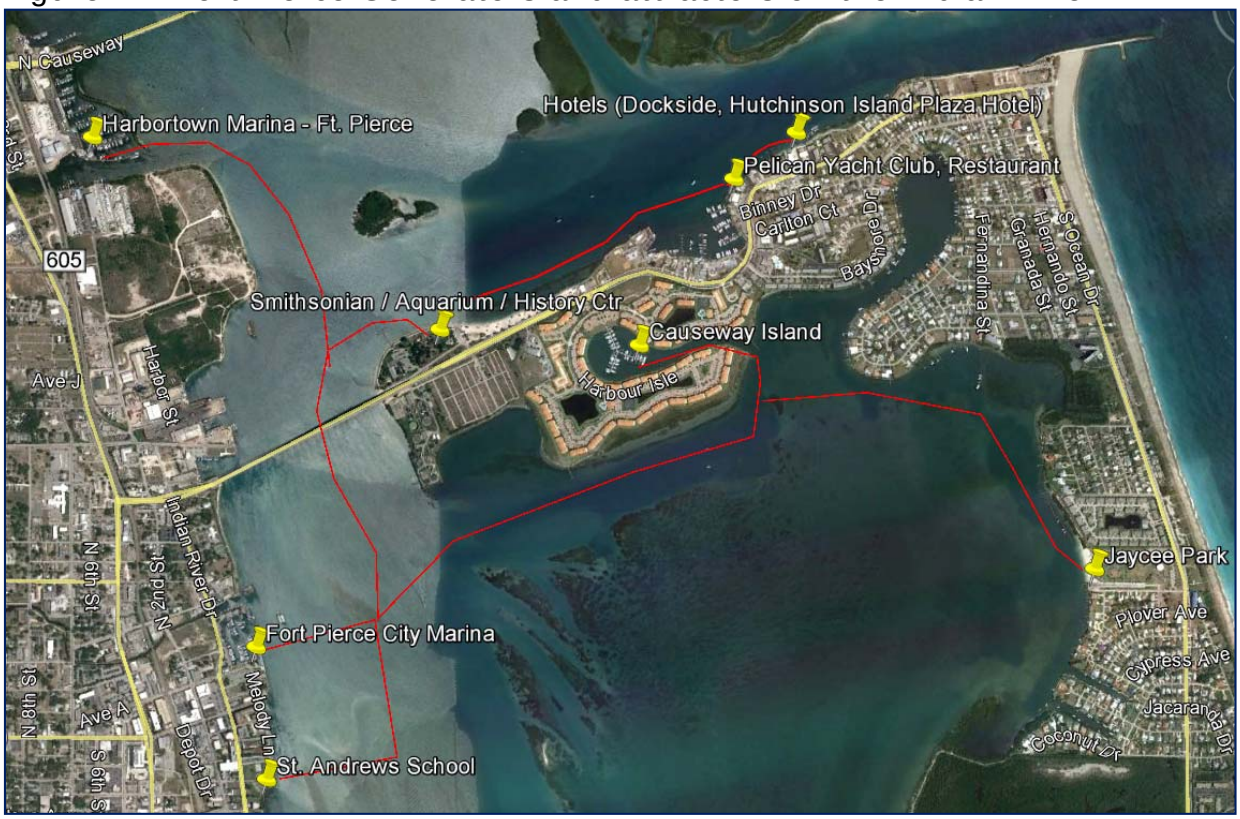
A. Demand

1. Generators and Attractors

Indian River

Generators and attractors on the Indian River include Fort Pierce City Marina, Harbortown Marina, Causeway Island, the Smithsonian/Aquarium/History Museum, and the proposed St. Andrews School campus. Additional connections are possible with Jaycee Park to facilitate access for beach-side residents to events downtown as well as the island hotels (e.g., Dockside Inn, Hutchinson Island Plaza Hotel and Suites), and Pelican Yacht Club. Ideally, an on demand water taxi will connect residential properties and commercial marinas with cultural resources and activities.

Figure 1 – Fort Pierce Generators and attractors on the Indian River



The existing Water Taxi (Indian River Lagoon Boat Tours) offers a 1 1/2 hour loop of the Indian River Lagoon area around Ft. Pierce. Participants can stay on the boat for a complete tour or get off and on at the various restaurant stops and check out the local menus before completing the tour. Three two hour tours a day are tentatively scheduled. One at 10:30am, a second at 1:30pm, and a third at 3:45pm. Figures 2 and 3 depict the exiting Indian River Boat Tour / Water Taxi at various locations.

Figure 2: Indian River Water Taxi/Treasure Coast Scenic Highway Fort Pierce

Figure 3: Indian River Water Taxi Entering Fort Pierce City Marina

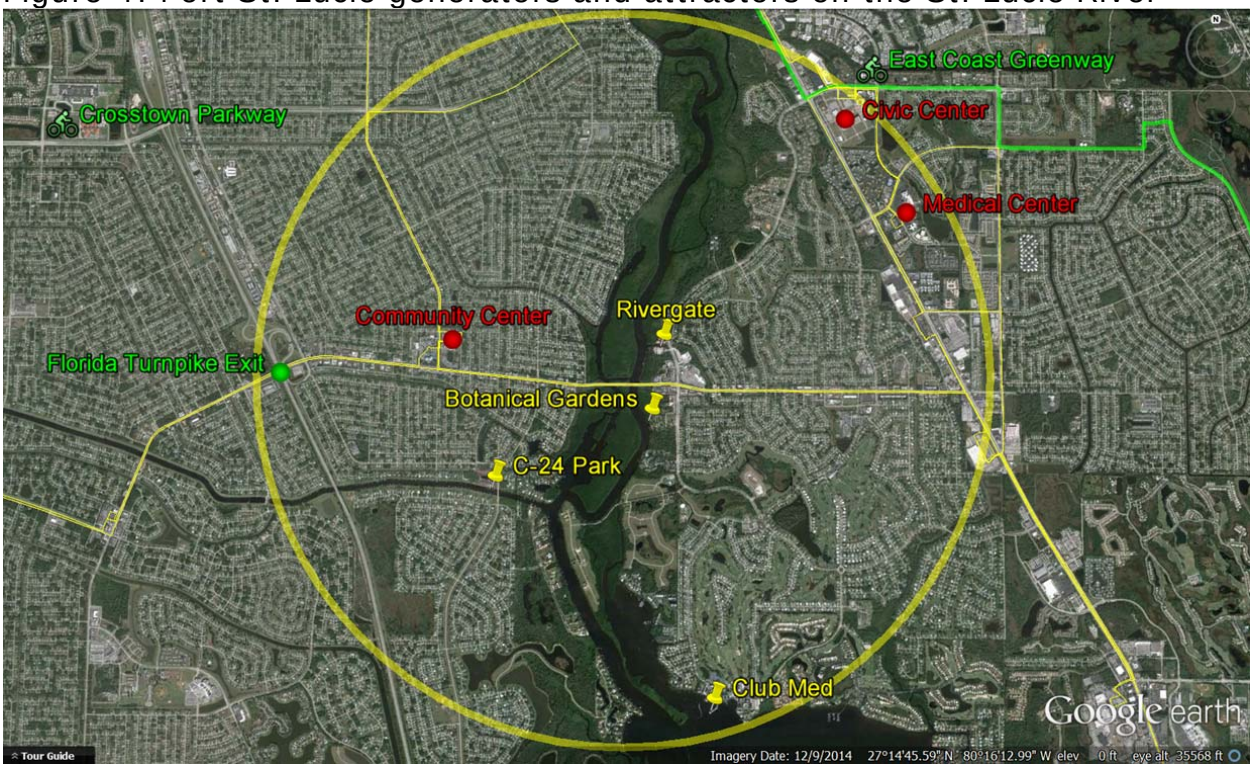
The boat is moored in the Fort Pierce City Marina in Downtown Fort Pierce. It is in the first slip on the marina directly behind the Tiki-Hut Restaurant. Boat Tours and Taxi services are conducted seasonal Monday thru Sunday.

St. Lucie River

Generators and attractors on the St. Lucie River include Veteran's Memorial Park at Rivergate, Port St. Lucie Botanical Gardens, C-24 Canal Park, Port St. Lucie Riverwalk, and the Club Med Resort. A service connecting these facilities ideally will connect residential properties and recreational uses with cultural resources and activities currently being organized for the Port St. Lucie Civic Center, Riverwalk, and Botanical Gardens. These connections have a short distance and short travel time, provide key connections, and build upon the ongoing special events currently being organized for Veteran's Memorial Park at Rivergate, Port St. Lucie Riverwalk, and Botanical Gardens.

C-24 Canal Park is on the west side of the St. Lucie River. There are 30,000 households (75,000 people) within two 2 miles of the dock located within the park. The dock is 7.5 miles (30 minutes) from the dock at Downtown Stuart's Riverwalk and Martin Memorial Medical Center. Generators and attractors on the St. Lucie River within the TPO Area are depicted in Figure 4.

Figure 4: Port St. Lucie generators and attractors on the St. Lucie River



2. *Water Accessibility*

The Indian River is a 121-mile long brackish lagoon and is part of the Indian River Lagoon system which forms the Atlantic Intracoastal Waterway. The Indian River extends southward from the Ponce de Leon inlet in New Smyrna Beach in Volusia County southward and across the Haulover Canal and along the western shore of Merritt Island. The Banana River flows into the Indian River on the island's south side. The Indian River continues southward past Fort Pierce to the St. Lucie Inlet.

The North Fork of the St. Lucie River flows south from St Lucie County into Martin County where it joins the north-flowing South Fork, which was once called the Halpatiokee River, just south of the old Roosevelt Bridge (Old Dixie Highway) in Stuart to form the main St. Lucie River. It then passes under the Florida East Coast Railway drawbridge and the high-level Roosevelt Bridge (U.S. Route 1) and flows east with Rio on the north side and Stuart on the south until it reaches the northern end of the Sewall's Point peninsula. It then runs south under the Evans Crary Bridge to the end of Sewall's Point, where it then flows into the Indian River Lagoon directly west of the St. Lucie Inlet which flows into the Atlantic Ocean. The entire river is accessible to Lake Okeechobee by the Okeechobee Waterway.

The main river passes through Sewall's Point, Port Salerno, Stuart, and Jensen Beach. The South Fork passes through Palm City. Although brackish for most of its length, the salt content of the South Fork diminishes considerably south of the Kanner Highway Bridge. The headwaters of the South Fork are located in ranchland and scrub forest, primarily to the east of I-95 and northwest of Hobe Sound. The North Fork passes through Port Saint Lucie and White City. A Club Med resort lies on the eastern shore of the North Fork of the river at Greenridge Point. The North Fork is brackish along most of its length, but takes on the character of a fresh-water creek from White City northward. The headwaters of the North Fork are in the farmlands of St. Lucie County near Interstate 95 at an elevation of 20 feet (6 m) above sea level.

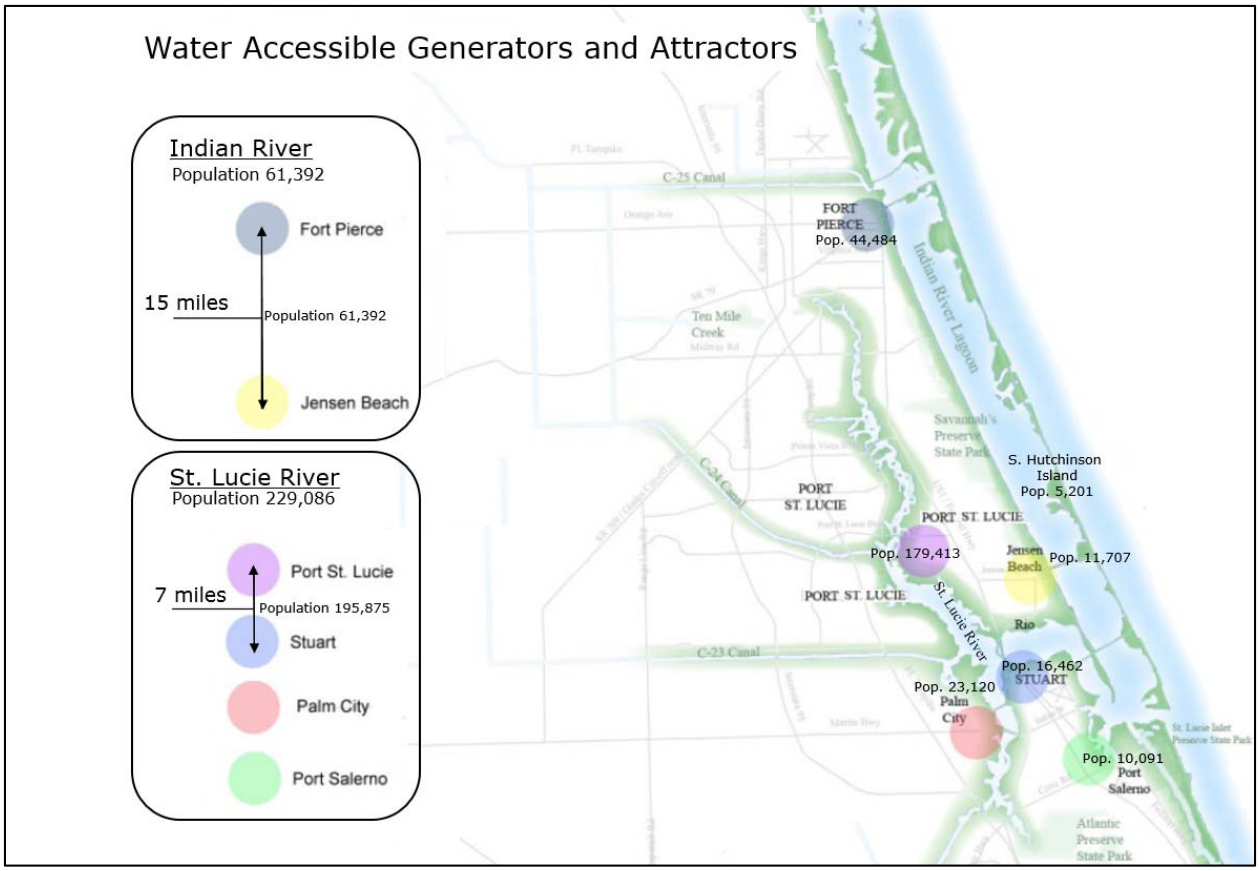
As a whole, the Indian River provides access to Fort Pierce and local generators and attractors near the Fort Pierce Inlet. The St. Lucie River provides access to Port St. Lucie, Stuart, Palm City, and regional generators and attractors near the St. Lucie Inlet.

Figure 5 on the following page depicts the TPO Area with each river’s accessibility to municipal destinations having generators and attractors. The population of municipalities along each river are included and those in close proximity to the TPO Area are shown with the distance between the two municipalities.

Indian River

1. Medium population density (30,000) around Fort Pierce
2. High employment density – Fort Pierce (FP)
3. Jensen Beach serviceable in 30-45 minutes from FP
4. Nettles Island serviceable in 30-45 minutes from FP

Figure 5: Water Accessible Generators and Attractors



Data Source: July 2015 Census Estimates

St. Lucie River

1. Port St. Lucie - high population density (179,413)
2. Club Med Resort - 15 minutes from Port St. Lucie
3. Stuart – High number of waterfront generators and attractors
4. Palm City - 30 minutes by water from Port St. Lucie
5. Port St. Lucie Civic Center / St. Lucie Medical Center
   (7 miles by water from Stuart to Port St. Lucie Rivergate)
   (2 miles by land from Rivergate to Civic Center and Medical Center)

B. Supply

1. *Indian River*

The current water taxi service being supplied is for seasonal sightseeing and connections to generators and attractors that are within a short distance (two-miles) of each other. There is currently no known demand for a water taxi service that operates other than on a regular route with fixed scheduled stops like a bus service.

The existing Indian River Water Taxi (pg. 2) holds 37 passengers and has multiple stops operating in a similar manner to a bus. While it is advertised as a water taxi from Fort Pierce to local generators and attractors, the boat is operated like a waterbus on a fixed schedule route departing three times a day with a 6 passenger minimum at twenty-three dollars per passenger. That is not to say there is lack of demand for an on demand water taxi that travels anywhere the passengers wants to go. The size of the boat makes it cost efficient as a waterbus with a six passenger minimum but running on a fixed route limits its ability to act as an on demand water taxi. The existing waterbus breaks even doing lagoon tours based on seasonal demand and downtown special events. Figure 4 depicts the 37 passenger boat. Figure 7 depicts a small 6-9 passenger water taxi that could operate as an on demand water taxi. Figures 6 depicts the existing water taxi. Figure 8 depicts it at the Fort Pierce City Marina.

Figure 6: Indian River Water Taxi Fort Pierce

Figure 7: Small Taxi

Figure 8: Water Taxi Docked at Fort Pierce City Marina

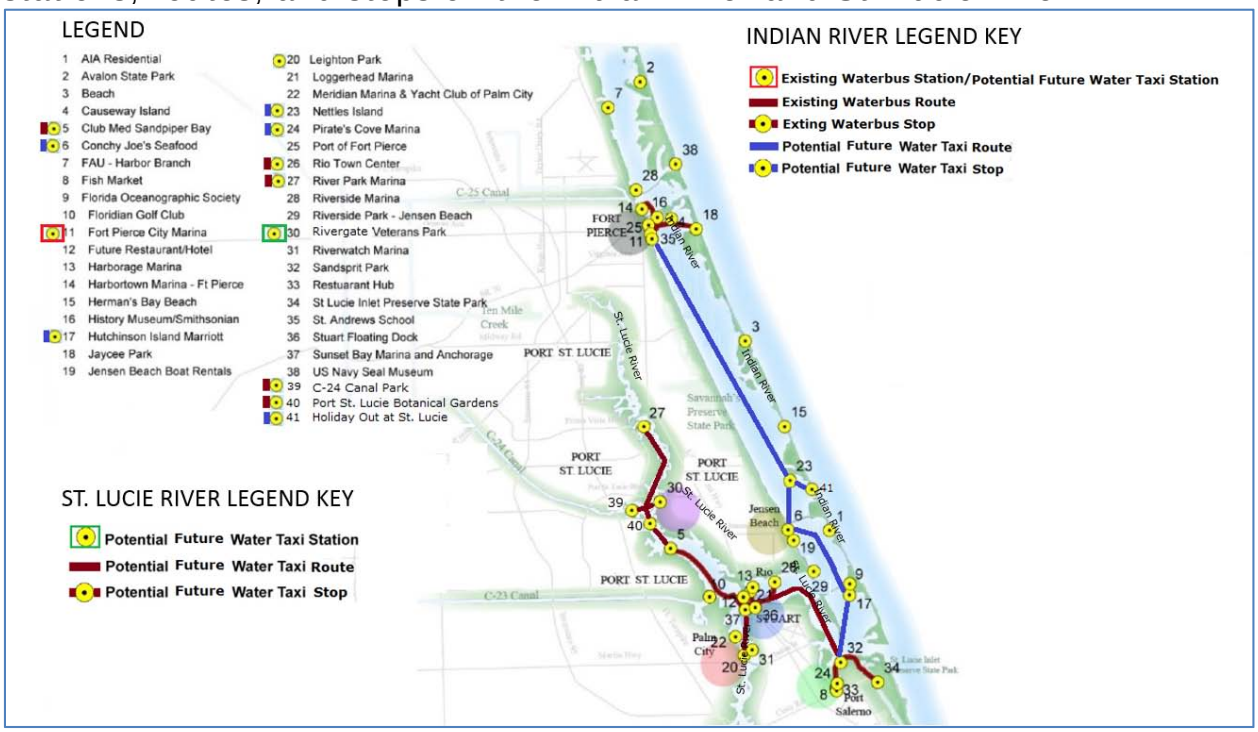
2. *St. Lucie River*

Two riverboat sightseeing tours of the St. Lucie River have existed for decades. However, the St. Lucie River Princess will no longer operate out of Veterans Park at Rivergate. The last day the public could take a scenic tour of the North Fork of the St. Lucie River from Veterans Park at Rivergate was Thursday, March 31, 2016. A request for proposals by the City of Port St. Lucie to replace the St. Lucie River Princess is expected in the near future.

River Lilly Eco Cruises still travels the St. Lucie River north from River Park Marina daily. In addition, River Lilly Eco Cruises is planning a specialty cruise. A “Brunch Specialty Cruise,” will leave River Park Marina, follow the St. Lucie River south for one hour, reach downtown Stuart for a one hour Brunch, then cruise back to River Park Marina. The “Brunch Specialty Cruise,” will pass by Veteran’s Memorial Park at Rivergate, Port St. Lucie Botanical Gardens, C-24 Canal Park, Port St. Lucie Riverwalk, and the Club Med Resort.

Neither the Indian River nor the St. Lucie River have a boat operating on demand in a similar manner to a taxi. There is a small supply of generators and attractors that exist along the Indian River accessible from Fort Pierce (Figure 1, pg.1). There is a large supply of generators and attractors along the St. Lucie River accessible from Port St. Lucie, Stuart, Palm City, and Port Salerno (Figure 4, pg.3) Figure 9 on the following page depicts water accessibility to existing and potential future water taxi stations, routes, and stops on the Indian River and St. Lucie River.

Figure 9: Water accessibility to existing and potential future water taxi stations, routes, and stops on the Indian River and St. Lucie River.



Source: Martin St. Lucie Waterways Plan / TPO Staff

C. Challenges

Challenges to the successful implementation of water taxi service include the following:

1. *Geographic*

The Indian River converges with the St. Lucie River 20 miles south of Fort Pierce at Sewell's Point making Port St. Lucie, Stuart, and Palm City accessible in 60 minutes from Fort Pierce. Port St. Lucie, Stuart, and Palm City are which are accessible to each other in 30 minutes or less since they are clustered in close proximity (less than 10 miles of each other).

An opportunity to overcome this geographic challenge exists by providing service to the most populated area of Port St. Lucie, which has existing docks on both sides of the St. Lucie River. This opportunity is elaborated on in the study and identifies an existing 40 mile waterway potentially connected by a 10 mile roadway trolley between River Park Marina and Fort Pierce City Marina.

2. *Environmental*

There are three canals that empty into the St Lucie River/Indian River Lagoon, C-44 built in the 1920s, and C-23 and C-24, built later, between 1959 and 1961. Ft Pierce Inlet takes in water from C-25. This water exits directly into the Indian River at Taylor Creek.

Vibrio Vulnificus, which many view as a threat to tourism, is a type of bacteria found in the Indian River. It was responsible for one death near Fort Pierce in July 2015. Harbor Branch Oceanographic Institute in 2014 confirmed the bacteria's presence in the Indian River, specifically in the water, sediment, shellfish and mucous covering smooth-skinned fish. Researchers believe the bacteria, a natural inhabitant not related to pollution, always has and always will exist throughout the Indian River year-round, with increasing abundance April to October. The bacteria is not found in saltwater. The risk of infection is low for healthy people, but higher for those with cuts and weak immune systems. Eating raw seafood, especially oysters, from contaminated water also causes infection.

The Indian River continues southward to St. Lucie Inlet. Algae Blooms occur periodically. At certain seasons of the year, bridges have tended to impede the flow of red drift algae, resulting in an odor of hydrogen sulfide in the area.

There are different kinds of algae, some more serious than others. The most problematic one for the Indian River and St. Lucie River is blue-green algae, which can be toxic. Symptoms include skin rashes, runny nose, sore throat, allergic reactions, severe gastroenteritis, liver or kidney toxicity and neurological problems. Fertilizer and pesticide runoff from farmlands, sugar cane fields, and homes, along with septic and treated sewage outflow enter into the Indian River Lagoon.

Historic modifications to the St. Lucie River, most notably digging of the Okeechobee Waterway (C-44 Navigational Canal), connections with the C-24 and C-23 drainage canals, and the associated water control structures, have impacted water quality throughout the river basin. Intermittent freshwater discharges from Lake Okeechobee have negatively affected the river itself and the connected Indian River Lagoon. The impact takes several forms. First, this water tends to be rich in nutrients as a result of agricultural runoff, and thus has a tendency to cause algae blooms and other imbalances. Second, it contains pollutants found in street runoff and other urban sources, which are carried south by the Kissimmee River from the southern Orlando suburbs into Lake Okeechobee. Third, it is a source of turbidity and particulates that settle along the river bottom as a layer of muck. Finally, the discharges radically reduce salinity levels, making the river temporarily uninhabitable by fauna and flora that are intolerant to fresh water. In 2013, heavy rains in southern Florida resulted in high runoff into the lake and rising lake levels forced the U.S. Army Corps of Engineers to release large volumes of polluted water from the lake through the St. Lucie River. Therefore, the normal mix of fresh and salt water in was replaced by a flood of polluted fresh water resulting in ecological damage. The results of a 2015 algae bloom “Fish Kill” (Figure 12) in Brevard County was not caused by releases from Lake Okeechobee, but rather by storm water runoff, septic, and treated sewage outflow entering the Indian River from Brevard County. The Indian River takes water from the C-25 Canal. This water exits directly into the Indian River at Taylor Creek.

In 2016 heavy rains are resulting in high runoff into the lake with rising lake levels forcing the U.S. Army Corps of Engineers to release large volumes of polluted water from the lake (Figure 10) through the St. Lucie River (Figure 11). Many believe 2016 will be a repeat of 2013.

Figure 10: Lake Water

Figure 11: River Algae Bloom

Figure 12: Fish Kill

Chapter III: Water Taxi Peer System Review

The State of Florida has different types of water taxi services operating across the state, which differ in scale, market, and commercial viability. There are several operating in Palm Beach County, including the Palm Beach Water Taxi and Water Taxi of the Palm Beaches, as well as Fort Lauderdale's Water Bus, Jacksonville's Marine Taxi, and New Smyrna Beach's Water Taxi.

Funding sources include federal and state grants that are available to cover capital and operating assistance for water taxi service, particularly if the service operates within a congested corridor and caters to functional trips. A local match is typically required.

The following pages depict five water taxi systems marketed on the Internet in Palm Beach Florida, Sydney Australia, Boston, Massachusetts, and Fort Lauderdale, Florida. They provide a description of each system along with their offerings to consumers. All five water taxies travel a fixed route scheduled with multiple fixed stops operating in a similar manner to a bus. Each system differs in scale, market, and commercial viability.

Water Taxi Systems in Boston and Sydney have taxis running on a fixed route with scheduled stops (operating like an urban land bus) and taxis available on demand for pick up and drop off at any accessible location (operating like a limousine service). Fort Lauderdale Taxis running on a fixed route with scheduled stops will pick up and drop off at any accessible location along the route (operating like a rural land bus).

A. Jacksonville, Florida

City Council to approve a joint funding deal that operators of the city's downtown water taxi service proposed to make up for a shortage of riders. The bill (2015-397) would set aside a total of $240,000 for use over two years that water taxi operator Lakeshore Marine Services would have to match dollar-for-dollar with donations from private supporters before it could get the city money.

Two companies, the Jaguars and the Florida Times-Union, had committed earlier to being "founding partners" in the effort, named OnBoard Jax! Each of those businesses pledged either cash or in-kind support worth $30,000 per year for two years.

Figure 1: Jacksonville Water Taxi

Figure 2: Jacksonville Water Taxi

B. Palm Beach, Florida

The Palm Beach Water Taxi (Figure 11) operates in a similar manner to an urban bus on a fixed route with multiple scheduled stops.

Figure 3: Palm Beach Water Taxi near Peanut Island

The Palm Beach Water Taxi offers a 90 minute sightseeing cruise past the mansions and yachts of the "rich and famous" and the newly renovated Peanut Island. The tour provides a history of Palm Beach as well as up to date information about what's new on the island.

The tour departs Sailfish Marina daily at 10am, 12pm, 2pm, and 4pm. Adult tickets are $30 and children's tickets are $15. Reservations highly recommended due to space on the boat.

During special events, the tour departs Sailfish Marina at 9:45am, 11:45am, 1:45pm, 3:45pm, and returns to Sailfish Marina: 11:30am, 1:30pm, 3:30pm, and 5:30pm.

Sea Burials are offered and private charters are available for any occasion.

C. Sydney, Australia

Sydney Water Taxis (Figure 12) operate similar to a bus on a fixed route scheduled with multiple fixed stops. Reservations are required for on demand service to and from any accessible location.

Figure 4: Sydney Water Taxi

Water Taxis on Sydney's Water Taxi system are available to and from any part of Sydney's Harbor, for any number of passengers from 1 to 500. Online quotes are valid from between 9:30am until 10:00pm, any transfers outside these times incur additional costs. The majority of the fleet's taxis have the capacity of up to 16 passengers. Book a time and place and one or more of the water taxis will be there waiting. The water taxis, unlike a normal road taxi, work on exact times. It is more like a limousine / hire car service where you choose the time and place and a water taxi will be there waiting at that time. They can have a Yellow Water Taxi anywhere on Sydney Harbor within 30 minutes. Services include, Harbor Restaurant & Hotel transfers, VIP & Corporate Events, Harbor Island Parties, Marriage proposals, TV Film & Movie shoots, Harbor Treasure hunts and "Private charters." Charges depend on the distance and the number of passengers travelling, although for an average group a fare would be approximately $15 per person. They offer, as a guide, an "Instant Quote" facility on their homepage.

Table 1: Sydney Water Taxi Fee Schedule

15 Minute MINI TOUR Departures every 20 minutes* from 10:00am until sunset!
Mini Tour Rates: $15.00 Adults, $12.50 Concession $10.00 Children (12-4 years of age) Family $45.00
45 Minute Harbor Highlights Tour
$40.00 Adults, $30.00 Concession & $20.00 Children (12- 4 years of age) Family $110.00
Note: There are no set departure times for the Mini-Tour or Harbor Highlights Tour

D. Boston Harbor, Massachusetts

Boston Harbor Water Taxis (Figure 13) operate in a similar to a bus on a fixed route scheduled with multiple fixed stops. Reservations are required for on demand service to and from any stop that is not fixed along the fixed route.

Figure 5 – Boston Harbor Cruises (BHC) Water Taxi,

BHC Water Taxis operate on demand, and are covered and heated in winter to provide access to Boston's entire waterfront every day. A passenger can call anytime during business hours for pick-up or just look for the checkerboard boat at the dock. Tickets can be purchased on their website. Year round daily hours of operation are Mondays – Saturdays 6:30 AM – 10:00 PM and Sundays 6:30 AM to 8:00 PM. Adults are $12.00 and children are $2.00. They offer a 10-Ride Pass (valid for 10 trips) for $100 and a Monthly Pass (unlimited travel within the month of purchase) for $350. Special rates available for stops not shown on their fixed route map.

E. Fort Lauderdale Florida

Fort Lauderdale Water Taxis operate in a similar to a bus on a fixed route scheduled with multiple fixed stops. You can wave down a taxi or make reservations for on demand service at nonscheduled stops along the route.

Figure 6: Fort Lauderdale Water Taxi

Figure 7: *Fort Lauderdale Water Taxi*

The Fort Lauderdale Water Taxi offers rides all day in Fort Lauderdale and Hollywood.

Table 2: Fort Lauderdale Water Taxi Fee Schedule

Fort Lauderdale, FL		
Ticket Type	Price	Restrictions
Adults	$26	None
Seniors Citizens	$21	65+ Years Old
Military Personnel	$21	Must have Military ID
Children	$12	Ages 5-11, Under 5 Free
Moonlight Madness	$16	Adults and Seniors after 5:00p
Annual Pass	$225	Must be purchased at the Water Taxi headquarters.

Water Taxi System Review Findings

Most water taxi systems in Florida provide public or private transport in an urban environment. Service is more often scheduled with multiple stops, operating in a similar manner to a bus rather than on demand to any accessible location like a land taxi. In densely populated cities of Boston, Sydney, and Fort Lauderdale, some form of on demand service is offered. However, the service is generally offered only along an already existing route with already existing fixed scheduled stops. In larger cities such as New York and Chicago, there is a clear differentiation between land busses and land taxis. Both serve a specific purpose and each function as a distinct form of land transportation to benefit the needs of different commuters. The size of a bus running on a fixed route with fixed stops scheduled cannot meet the need of many commuters because it is not operating like an on demand urban taxi. That is why land taxis operating no fixed route are successful in large cities. In many rural areas busses run on fixed routes with scheduled stops but also will stop in a safe location when flagged down. The Fort Lauderdale Water Taxi System operates more like a rural land bus than a city land taxi.

Chapter IV. Service Development – Indian River/St. Lucie River

A. Indian River

In the City of Fort Pierce, an initial pilot water taxi service could begin with operations to and from Fort Pierce City Marina. Future routes possible within 20 miles include the Jensen Beach.

A pilot project is recommended because the Waterways Study identified increased tourism, coupled with historic attractions, and regular events within a 2 mile radius of Fort Pierce City Marina. The area provides numerous activities, events, and attractions. In addition, the City has accessible oceanfront adjacent to the Fort Pierce Inlet. Fort Pierce has a population of approximately 20,000 people within two miles of the marina.

Several near-term opportunities for new or expanded water taxi service have been identified. In downtown Fort Pierce (Figure 16, pg. 16), a few connections have been identified around the Fort Pierce City Marina, the Harbortown Marina, Causeway Island, the Smithsonian/Aquarium/History Museum, and the proposed St. Andrews School campus. Additional connections are possible with Jaycee Park to facilitate access for beach-side residents to events downtown as well as the island hotels (e.g., Dockside Inn, Hutchinson Island Plaza Hotel and Suites), and Pelican Yacht Club. A service connecting these facilities ideally will connect residential properties and commercial marinas with cultural resources and activities including the Farmer's Market and the Smithsonian/Aquarium/History Museum. These connections have a short distance and short travel time; provide key connections; and build upon the ongoing special events and activities currently being organized in the downtown (Table 3, pg. 18).

Opportunities

- Slow short trips (15 minutes) at slow speed
- Local (Fort Pierce) recreational and leisure tours
- East Coast Greenway connectivity
- Treasure Coast Scenic Highway connectivity
- Treasure Coast Loop Trail/East Coast Greenway connectivity
- Clustered attractions, activities and events within a one (1) mile radius
- Potential to connect a fifty (50) mile "Treasure Coast Loop Waterway" (Fort Pierce City Marina / River Park Marina Trolley needed as shuttle)

Constraints

- Speed restricted
- 20 miles by water to nearest city (Jensen Beach)
- Low population concentration (20,000 within 2 miles)
- No St. Lucie River access
- Seasonal destination for tourism

Figure 1: Fort Pierce City Marina Area Water Taxi Destinations - Docks

Figure 2: Indian River Water Taxi/Treasure Coast Scenic Highway Fort Pierce

The existing Indian River Lagoon Water Taxi services the Fort Pierce Area. It is available for three 2 hour tours a day during the season to accommodate tourists attending events and attractions. Table 1 one on the following pages lists events in the City of Fort Pierce. Figure 3 depicts a Friday Festival event at Fort Pierce Gazebo Park

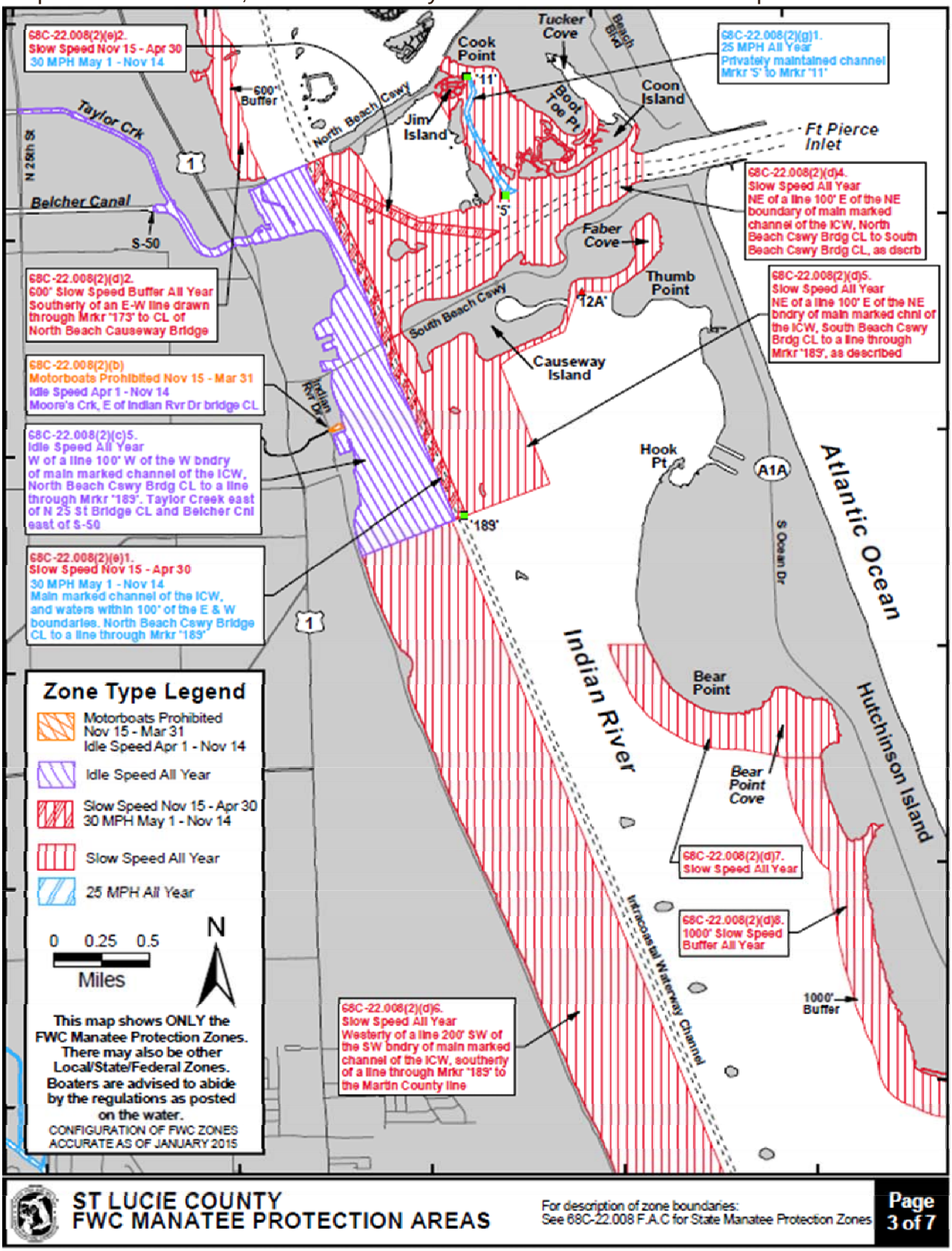
Table 1: Events in the City of Fort Pierce

TYPICAL MONTH	LOCATION	EVENT	SPONSOR/ORGANIZER
Annual - Tuesdays	Fort Pierce	Free Day at Smithsonian Marine Station	Treasures of Fort Pierce
Annual - Thursdays	Fort Pierce	Bike Night	Fort Pierce Main Street
Annual - First Fridays	Fort Pierce	Friday Fest	Fort Pierce Main Street
Annual - Last Fridays	Fort Pierce	Classic Car Cruise In	Fort Pierce Main Street
Annual- Saturdays	Fort Pierce	Farmer's Market	Fort Pierce Main Street
January/February	Fort Pierce	Trawlerfest (Ft. Lauderdale to Ft. Pierce)	Passage Maker
March	Fort Pierce	Taste of the Sea & Sandy Shoes Seafood Festival	Fort Pierce Main Street
March	Fort Pierce	Taste of Saint Lucie in Downtown Ft. Pierce	Big Brothers and Big Sisters
April	Fort Pierce	Oysterfest	City of Fort Pierce and Marina
July	Fort Pierce	Dog Days of Summer	Heathcote Botanical Gardens
July	Fort Pierce	Backus Bingo Bash	E.E. Backus Gallery & Museum
September	Fort Pierce	Indian River Lagoon Science Festival	Friends of Harbor Branch
October	Fort Pierce	Bat-tastic Night Out With Nature	Florida Manatee Center
November	Fort Pierce	Annual Navy SEAL Muster & Music Festival	Navy Seal Museum
December	Fort Pierce	Sights and Sounds on 2nd St & Christmas Parade	Fort Pierce Main Street
December	Fort Pierce	The Best of the Best juried art show	E.E. Backus Gallery & Museum
December	Fort Pierce	Holiday Kick Off Regatta Offshore Race	Fort Pierce Yacht Club

SOURCE: s, Main Street Organizations, Chambers of Commerce, Local Governments, TCRPC.

Figure 3: Friday Festival event at Gazebo Park

Map 1: Indian River, Fort Pierce City Marina Area Water Taxi Speed Limits



B. St. Lucie River

Dock #1 River Park Marina - Opportunities and Constraints

The River Park Marina in St. Lucie County has no southbound water taxi. Therefore, potential water taxis arriving from the south could unload tourists at Rivergate (Port St. Lucie) or continue north to unload tourists at River Park Marina (St. Lucie County). They could then potentially catch a trolley or bus from the marina to Fort Pierce City Marina (Fort Pierce).

Opportunities

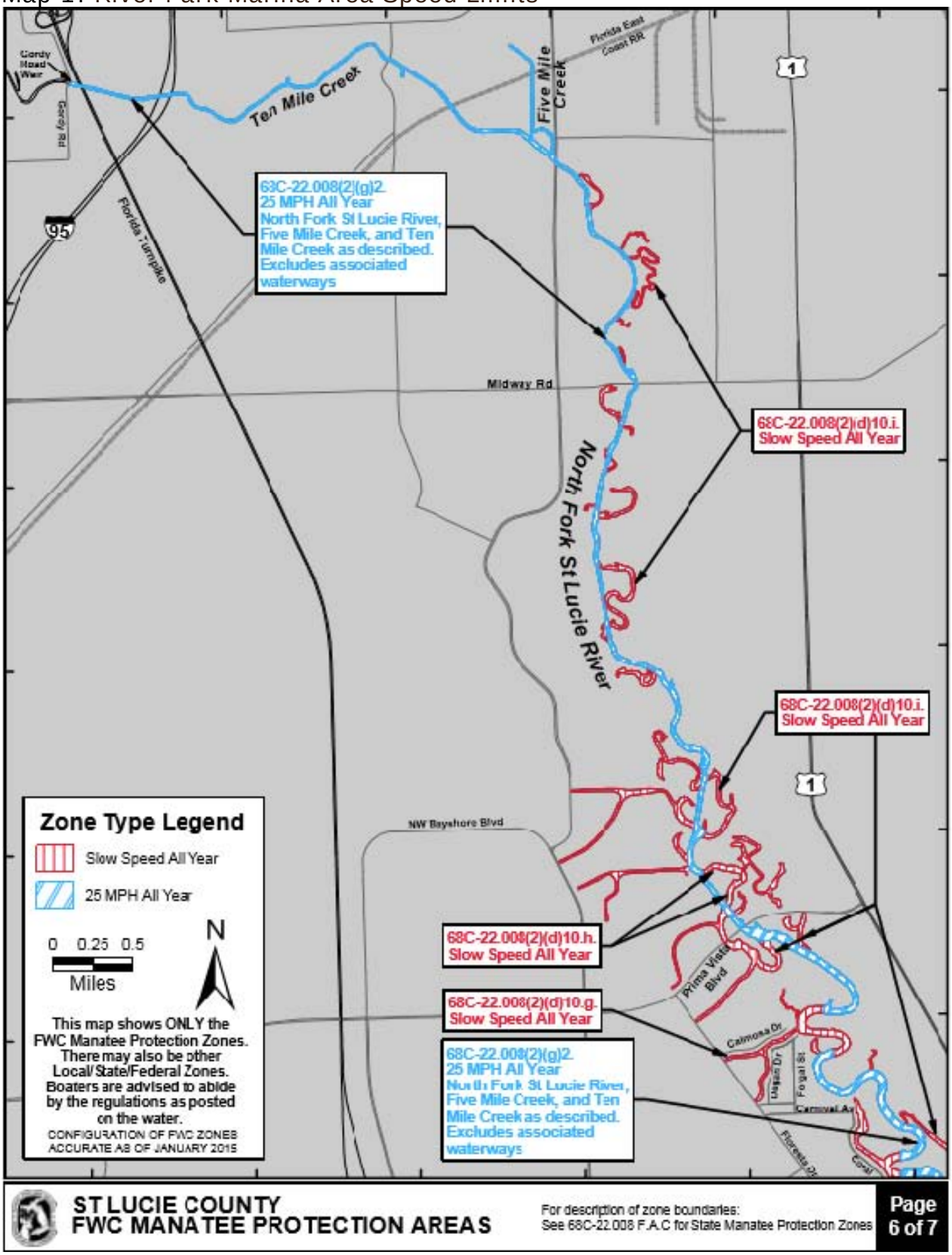
- East Coast Greenway connectivity (via trolley)
- Potential to connect a fifty (50) mile “Treasure Coast Loop Waterway” (Fort Pierce City Marina / River Park Marina Trolley needed as shuttle)
- High Population Density (40,000 people within 2 miles)

Constraints

- Only scenic destinations north without Trolley to Fort Pierce City Marina

Figure 1: River Park Marina

Map 1: River Park Marina Area Speed Limits



Dock #2 Rivergate - Opportunities and Constraints

The opportunity exist for an (on demand) water taxi service connecting the Port St. Lucie Riverwalk, at Veteran's Memorial Park and Rivergate Park, with the Port St. Lucie Botanical Gardens, C-24 Canal Park, Club Med, and Stuart Riverwalk. Marketing the service with the ongoing special events activities currently being organized for the Port St. Lucie Riverwalk, Port St. Lucie Civic Center, and Downtown Stuart could be an option.

Opportunities

- East Coast Greenway connectivity with 2 mile trolley service
- Port St. Civic Center connectivity with 2 mile trolley service
- St. Lucie Medical Center connectivity with 2 mile trolley service
- Located at Veterans Memorial Parkway (City's Main Parade Route)
- 10 minutes from Port St. Lucie Botanical Gardens
- Potential link to in a fifty (50) mile "Treasure Coast Loop Waterway"
- High Population, 60,000 people within 2 miles
- Potential "Riverboat to Water Taxi Transfer Stop" going south
- Potential "Water Taxi to Riverboat Transfer Stop" going north
- Potential "Water Taxi to Work" commute south to Club Med, Stuart, Rio, Palm City, and Port Salerno
- Minimal speed restrictions
- Access from the largest number of households

Constraints

- No destinations north of Rivergate Marina without Trolley to Fort Pierce

Figure 2: Veteran's Park at Rivergate - Port St. Lucie Riverwalk Boardwalk

Figure 3: Port St. Lucie Riverwalk

https://www.youtube.com/watch?v=X2AmfKSVP4M

Veteran's Memorial Park at Rivergate & Riverwalk Boardwalk is on Veteran's Memorial Parkway, 2 miles to Port St. Lucie Civic Center. The Civic Center offers cultural events and activities year-round.

Figure 4: Port St. Lucie Civic Center

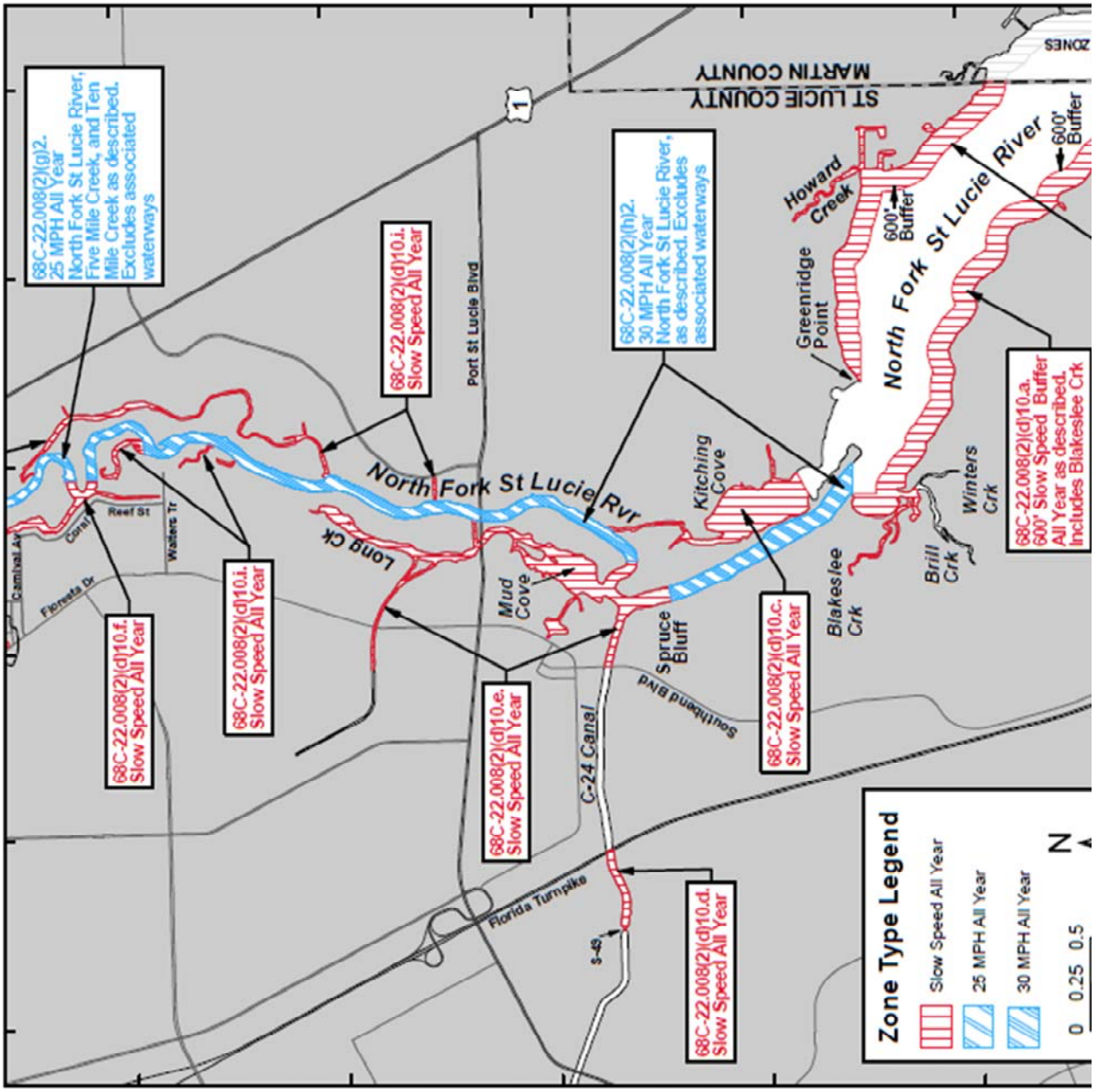
http://www.cityofpsl.com/civic/events/index.html

Veterans Memorial Park Rivergate

Veterans Memorial Park Rivergate is on the east side of the St. Lucie River. There are 10,000 households within 2 miles of the dock. The dock is 2 miles by trolley to Port St. Lucie Civic Center. It is 2 miles by trolley to St. Lucie Medical Center.

An initial pilot water taxi service could begin operations from the dock at Veterans Memorial Park at Rivergate, stop at the Botanical Gardens dock, stop at the C-24 Canal Park dock, and stop the Club Med dock.

Map 2: St. Lucie River, Port St. Lucie Area Water Taxi Speed Limits



Dock #3 Botanical Gardens - Opportunities and Constraints

Opportunities

- 10 minutes from Rivergate Riverboat Water Taxi Transfer Dock #2
- Weekly events
- Port St. Civic Center connectivity with 3 mile trolley service
- St. Lucie Medical Center connectivity with 3 mile trolley service
- One-half mile from Veterans Memorial Parkway (City's Parade Route)
- Potential link in fifty (50) mile long "Treasure Coast Loop Waterway"
- High Population, 60,000 people within 2 miles
- Potential "East River" stop for "Water Taxi to Work" commute south to Club Med, Stuart, Rio, Palm City, and Port Salerno
- Minimal speed restrictions

Constraints

- No destinations north of Rivergate Marina without Trolley to Fort Pierce
- Funding

Figure 5: Port St. Lucie Botanical Gardens on Westmoreland Boulevard

The Botanical Gardens is located on 20 acres of property on the west side of Westmoreland Boulevard, just south of Port St. Lucie Blvd. on the banks of the St. Lucie River. The site boasts a lake with a fountain, paved public paths, beautiful gardens, a pavilion, a gift shop and a special place for weddings, as well as ample public parking. This beautiful sanctuary includes a butterfly garden, orchid room and rose garden. The Gardens also hosts a variety of children's programs, plant sales and the popular Fort Pierce Jazz and Blues Society concerts. It is ¼ of a mile to the nearest bus stop.

Figure 6: Port St. Lucie Botanical Gardens on Westmoreland Boulevard

Dock #4 C-24 Canal Park - Opportunities and Constraints

Opportunities

- Highest population density (75,000 people within 2 miles)
- 2 miles by trolley to Port St. Lucie Community Center and City Hall
- Port St. Civic Center connectivity with 3 mile trolley service
- St. Lucie Medical Center connectivity with 3 mile trolley service
- One mile from Veterans Memorial Parkway (City's Parade Route)
- Potential link in fifty (50) mile long "Treasure Coast Loop Waterway"
- Potential stop for "Water Taxi to Work" commute south to Club Med, Stuart, Rio, Palm City, and Port Salerno
- Minimal speed restrictions
- Connectivity to the "St. Lucie Walk Bike Network"
- Connectivity to the "St. Lucie Transit System"

Constraints

- No destinations north of Rivergate Marina
- Funding
- No connectivity to the "St. Lucie Walk Bike Network"
- No connectivity to the "St. Lucie Transit System"

The C-24 Park water taxi stop is on the west side of the St. Lucie River. It has over 30,000 residential households within 2 miles of the dock. Many drive to the City of Stuart daily. The Downtown Stuart water taxi stop at the Stuart Riverwalk Dock is 30 minutes away by car or water taxi. This could be a point of departure and return is for those working in Stuart or Palm City.

Figure 7: C-24 Canal Park

100' queuing docks with cleats
1 large pavilion with 4 picnic tables, grill, electric, and water
2 small pavilions with 2 picnic tables, grill, electric, and water
Restroom building with covered porch
Open 7 a.m. to sunset, 7 days a week
Dog walk area with waste station
Canal bank fishing allowed

Figure 8: C-24 Canal Park

Figure 9: St. Lucie River

Dock #5 Club Med Resort - Opportunities and Constraints

Opportunities

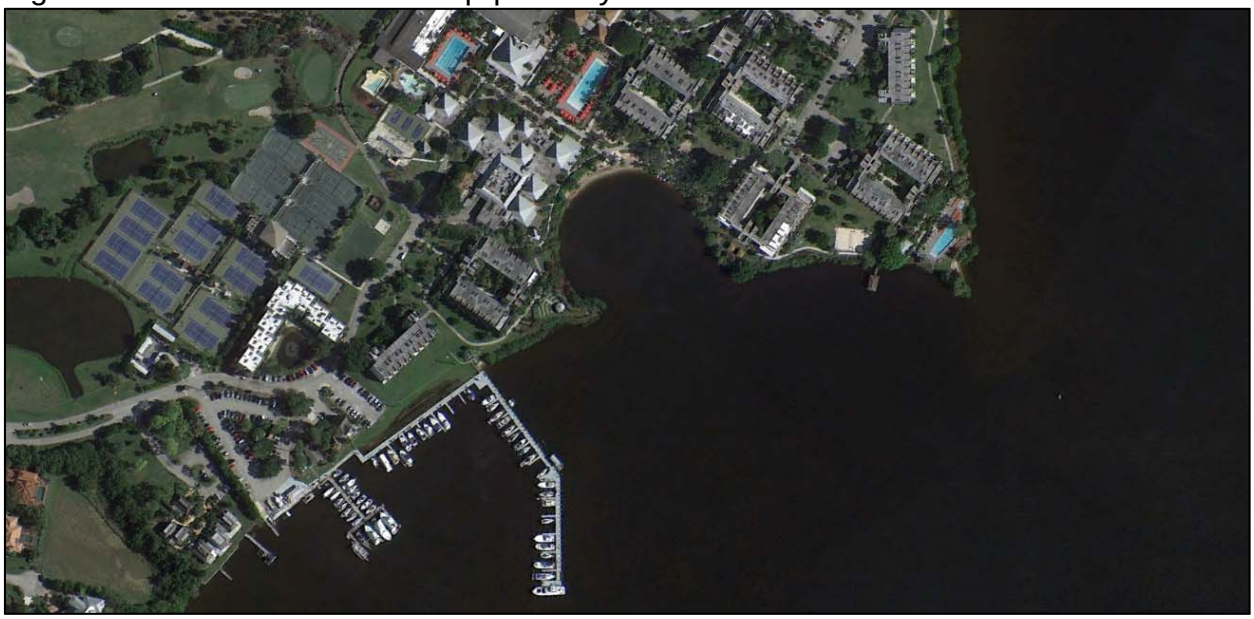
- Potential stop for “Water Taxi to Events South” (US 1 Bypass) commute to Stuart, Rio, Palm City, and Port Salerno
- Potential stop for “Water Taxi to Events” commute north to Botanical Gardens, Rivergate Riverboat Water Taxi Transfer Dock #2, Riverwalk 2 mile Trolley to Port St. Lucie Civic Center or St. Lucie Medical Center
- Potential link in fifty (50) mile long “Treasure Coast Loop Waterway”
- Potential stop for “Water Taxi to Work” commute south to, Stuart, Rio, Palm City, and Port Salerno, and north to Port St Lucie Water Dock 4 and 5.
- Very Minimal speed restrictions

Constraints

- Funding
- TBD No connectivity to the “St. Lucie Public Bus System”

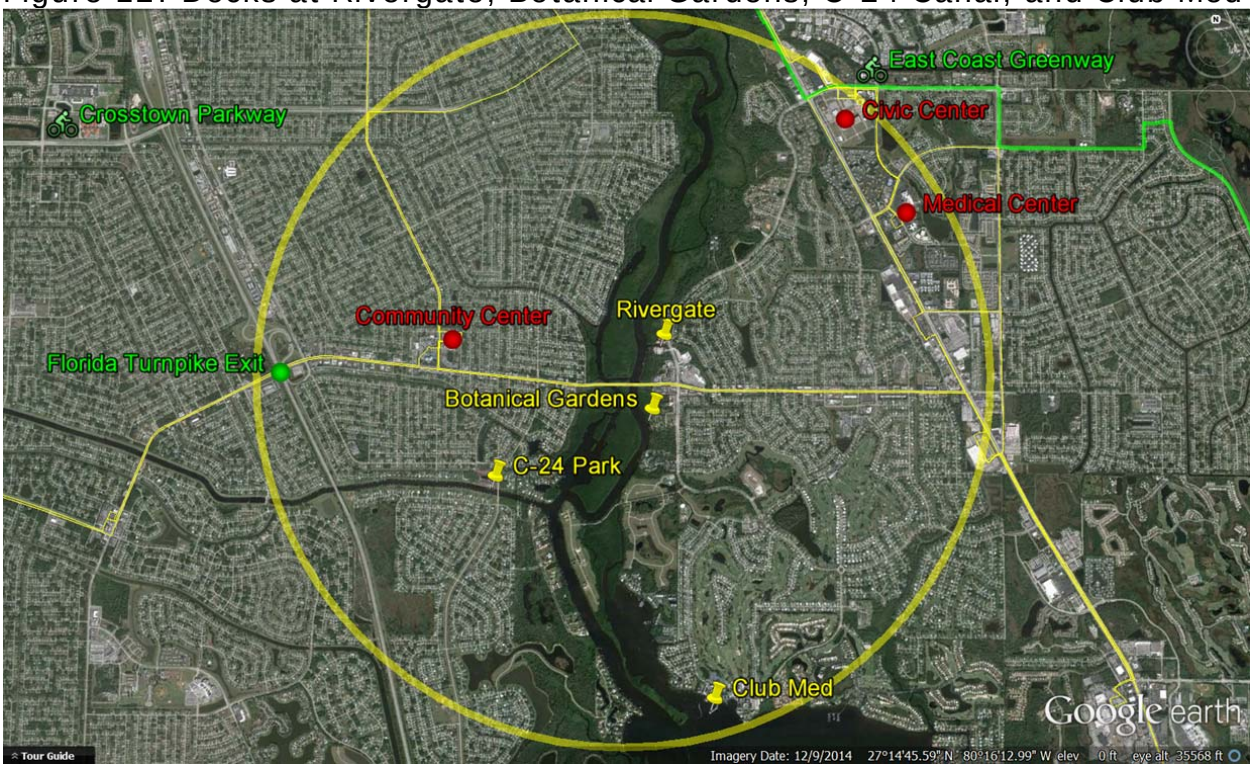
Figure 10 Club Med at Sandpiper Bay on the St. Lucie River in Port St. Lucie

Figure 11: Club Med at Sandpiper Bay on the St. Lucie River in Port St. Lucie



Club Med's dock is minutes from the docks in the Port St. Lucie and Stuart. Vacationers reach this dock in 20 minutes by water from Stuart Riverwalk and Port St. Lucie Riverwalk. This dock could be a potential point of departure and return for people that live in Port St. Lucie or in Stuart working at Club Med.

Figure 12: Docks at Rivergate, Botanical Gardens, C-24 Canal, and Club Med



Note: 2 mile radius around existing docs in Port St. Lucie for trolley service to events

Dock #6 Stuart Riverwalk - Opportunities and Constraints TBD

Figure 13: Approaching Stuart Riverwalk from Port St. Lucie Riverwalk

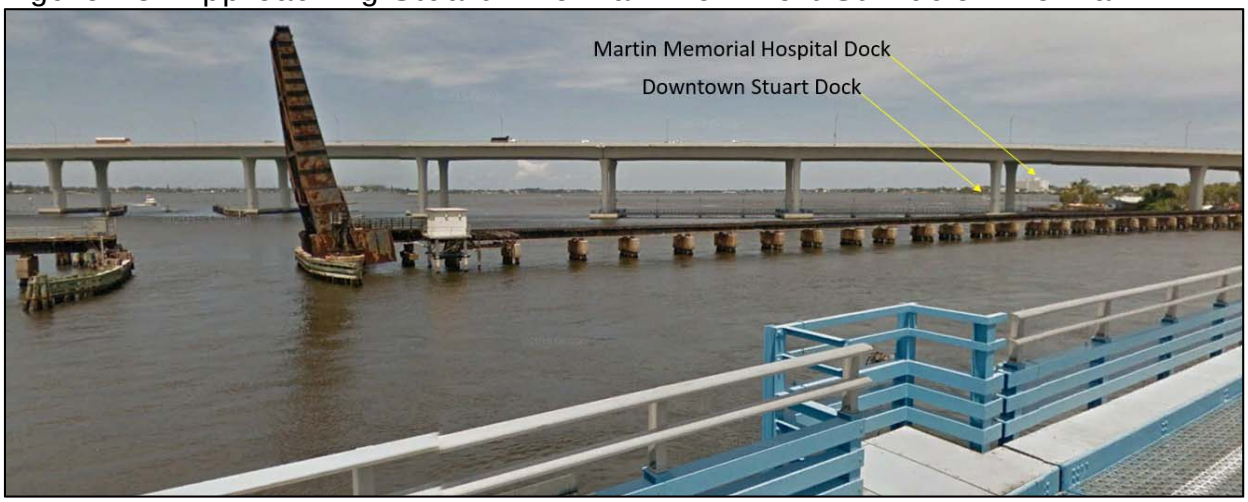
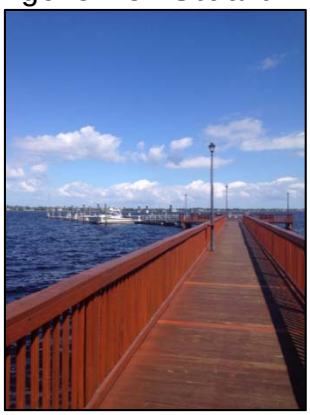


Figure 14: Stuart City Hall / Martin Medical Center Area

Figure 15: Stuart Pier



C. Costs, Funding and Revenue

Estimated Costs, Funding, and Revenues

For the purposes of this feasibility study, general cost estimates were developed for two initial areas providing different types of service. One on the Indian River in Fort Pierce and one on the St. Lucie River in Port St. Lucie. Actual costs will differ somewhat based on the final operating plan and public-private responsibilities. To the extent practical, costs reflect local conditions in each municipality based on local knowledge and observational analysis. Costs were developed that allow for one boat and one route or a system of two boats with two routes. While the addition of trolley service is recommended to service each route, costs have not yet been determined.

Capital costs for vessel acquisition range from $150,000 to more than $2.5 million, depending on the type of vessel. The type of vessels needed will vary by market and passenger loads. Given the requirements for St. Lucie River and the Indian River in terms of expected passenger demand, tides and weather conditions, a reasonable estimate is $250,000 per boat for planning purposes. Two taxis may be needed for each route depending on route, desired frequency, and market demand. A spare taxi may be needed in case of a breakdown or increased demand.

Capital Costs ($300,000 - $400,000)

It is expected that an initial pilot program would entail capital costs of about $300,000 for one boat and $50,000 for one boat lift.

Operating Costs ($425,000 – $500,000 annually)

One boat will consume about 20 gallons of gas an hour. At $4.00 a gallon, operating one boat, seven days a week, 12 hours a day, 365 days a year, is estimated to cost approximately $960 a day or $350,000 a year for gas and $10,000 a year for maintenance (1*20*$4*12*365+$10,000 = $365,000). It is estimated that the cost for one 40 hour operator is approximately $60,000 per year, $10,000 a year for insurance and $50,000 a year one 32 hour part time operator (1*$60,000+$10,000+$50,000 = $120,000). Therefore, total annual operating costs for one boat, one route, and two operators is estimated to be approximately $485,000 a year.

Revenue Target ($1,522 daily)

Revenue of approximately $1,330 a day can cover annual operating costs ($485,000/365 = $1,330). Addition revenue of $192 a day will pay down capital costs in 5 years ($350,000/1825 days). Approximately fifty-one (51) passengers per day, each taking a 30 minute trip at $1.00 per minute, covers capital and annual operating costs for approximately five years. (51*30*$1.00 = $1,530 daily * 365 = $558,000)

D. Performance Criteria

Performance Criteria to include yearly increases in revenue to reach five year breakeven point. (See costs, funding, and revenue on page 33)

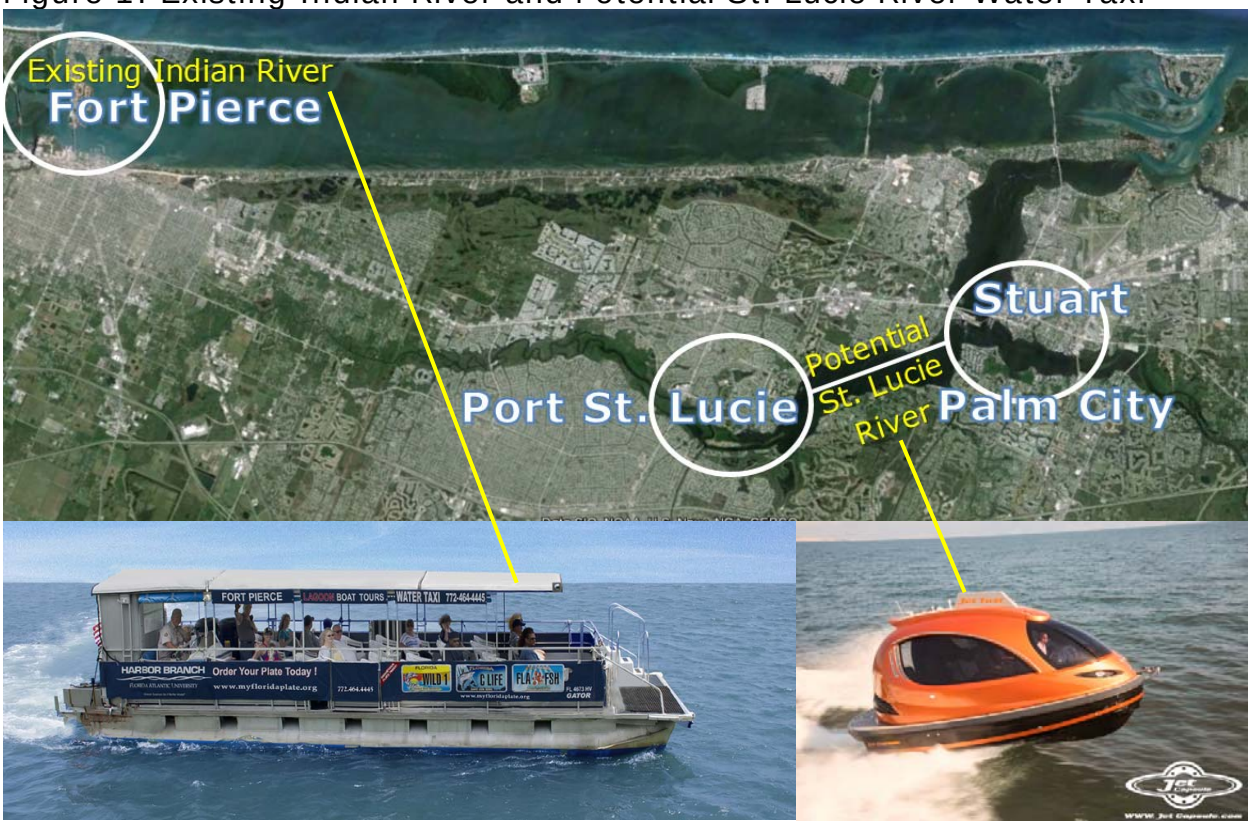
Figure 16: Sydney, Australia Water Taxi

Chapter: V. Implementation Plan

Due to the large population along the St. Lucie River in Port St. Lucie being more water transportation disadvantaged (not having a water taxi) than the smaller advantaged population along the Indian River in Fort Pierce (having a water taxi), it is recommended that an initial on demand water taxi service be provided to any accessible location along the St. Lucie River, and that a fixed route system with regularly scheduled fixed stops be developed based on demand for the initial service. A fixed route system with regularly scheduled fixed stops would potentially connect the Port St. Lucie Riverwalk, at Veteran's Memorial Park and Rivergate Park, with the Port St. Lucie Botanical Gardens, C-24 Canal Park, Club Med, and Stuart Riverwalk.

Figure 16 depicts the existing Indian River (Fort Pierce) water taxi service area and existing vessel. It also depicts the potential St. Lucie River water taxi service area and potential vessel.

Figure 1: Existing Indian River and Potential St. Lucie River Water Taxi



An online water taxi transportation network similar to Uber could be a way to determine actual demand on the existing services. Since the existing Fort Pierce Water Taxi serves the local (Fort Pierce) demand for a scheduled route with fixed stops and charters, additional water taxis would be the needed which could operate out of Port St. Lucie or Fort Pierce to destinations south.

Chapter: VI. Conclusions and Recommendations

This study finds water taxi service to and from the TPO area to be feasible as an additional element of the area's transportation network. It can provide both social/recreational and work related trips enabling commuters to reach homes, businesses and other destinations along the Indian River Lagoon and the North Fork of the St. Lucie River. Water taxi feasibility is related to existing routes and stops taken by boat owners, population density, Community Redevelopment Areas (CRAs), willing local government, private partners, and a relatively low capital and operating cost to provide initial service. Success is dependent on the degree to which the public/private sector is brought into the program as active and equal partners in marketing the service.

Production has begun on Italian boat company jet capsule's latest invention, a private 5 person and nine person taxi version. The design team sought to create a floating transportation device that was different from all others on the market. This type of boat could be an option for advertising, marketing, branding and capturing commuter interest, thereby drawing attention to water taxi service in the TPO area.

Figure 1: Jet Capsule's water taxi