



Chapter 5
STRATEGY



Illustrative projects are next in line to be funded when additional funds become available.

5. 2035 LRTP Strategy

“Strategy” is the action plan designed to achieve the goals set out for the LRTP. Four elements of the plan are described in this section:

- Cost Feasible Plan
- Illustrative Projects
- Unfunded Needs
- Policies

The Cost Feasible Plan includes projects and programs for which a reasonable expectation of funding has been identified based on historical trends and economic models. The Cost Feasible Plan is fairly conservative in its estimation of revenue that will be available for transportation investments. As a result, the projects identified have a high certainty of implementation. All of the bike, pedestrian, and greenway projects identified in the Needs Plan are included in the Cost Feasible Plan.

Illustrative Projects are those that have been identified through the Needs Assessment and meet overall objectives of the LRTP; however, revenues within the Cost Feasible Plan are not sufficient to cover them. Illustrative Projects are next in line to be funded if additional funds become available during the plan period. Many of the Illustrative Projects have some phase of planning and engineering programmed, but no monies allocated for construction to qualify as an official Cost Feasible Plan Project.

Unfunded Projects include transit projects identified with lower ranking during the prioritization process and have no funding associated with them, but are within the identified strategy of shifting mode share to alternative forms of transportation.

Policies transcend all elements of the plan and help achieve success of the overall vision. The Policies Section 5.4 of this chapter focuses on increasing share for alternative modes through support of all the projects and services identified.

5.1 Cost Feasible Plan

State and federal planning regulations require the development of a revenue constrained plan. Such a plan is based only on current sources and levels of federal, state, and local transportation revenue projected out to the year 2035. This element includes federal and state formula funds as well as federal and state discretionary funds for existing projects and reasonable assumptions for new projects based on historical information. However, future increases in federal and state gas taxes, or the establishment of other new revenue sources are not included in the revenue-constrained plan.

Total revenue available for the Cost Feasible Plan is \$8.5 billion (2009 dollars). The range of required funding from the Needs Plan is \$9 to 20 billion (2009 dollars) for the technology scenarios evaluated. This

creates a shortfall in terms of what the region can afford compared with identified needs.

The adopted Cost Feasible Plan includes:

- **Premium Transit**—81 miles of Bus Rapid Transit and 75 miles of Rapid Bus. Capital cost is estimated \$1,441 million plus \$504 million Operating and Maintenance (O&M) cost over 10 years, for a total of \$1,945 million. Also includes “Strategic Opportunistic Service Initiatives” identified in the FY2009-2018 Transit Development Plan (TDP).
- **Broward County Transit (BCT)**—A portion of BCT’s O&M and all capital costs are funded in the Cost Feasible Plan.
 - 33% of FY2009-2018 TDP service: or \$1,234 million for existing plus expanded service including new routes, route extensions and higher frequencies (additional buses). This leaves a gap in funding for expanded service of 66% or \$2,557 million.
 - 50% of current levels of service: or \$1,234 million—with no expansion in service. (Twice the available funds are needed to continue to provide the service running today through 2035—a shortfall of \$1,244 million.)
 - 100% of BCT’s capital cost needs of \$212 million.
- **Transit (Community Buses)**—\$158 million in O&M cost.
- **Mobility Hubs**—20 Gateway, 20 Anchor and 63 Community Hubs for a capital cost of \$207 million with \$73 million O&M. The specific locations of Mobility Hubs are dependent on further planning studies to select sites based on availability of land, public-private partnership opportunities, delineation of Premium Transit services, and bike/pedestrian facilities as well as local desire. Many Mobility Hub locations in the LRTP involve multiple jurisdictions and will require coordination among neighborhoods.
- **Tri-Rail**—\$88 million for capital and O&M.
- **Bicycle**—485 miles at \$113 million.
- **Pedestrian Walkways**—314 miles at \$113 million.
- **Greenways**—251 miles at \$251 million.
- **Roadways (arterials)**—45 projects at \$815 million (capital) and \$125 million O&M (all local roadways).
- **Freight/Seaport/Airport**—42 projects at \$112 million. This compares to the total need of \$477 million; however, an additional \$137 million may be provided pending prioritization of Transportation Regional Incentive Program (TRIP) funds by Southeast Florida Transportation Council that are not included in the LRTP revenue forecast. Seaport and Airport projects will be funded through the implementing agency’s respective capital improvement programs that are not part of the LRTP efforts.

2035 Cost Feasible Plan

What is Funded:

- Broward County Transit
 - O&M—50% existing or 33% expanded service per 2018 TDP
 - Capital—3rd O&M Facility and transit infrastructure
- Premium Transit
 - BRT (81 miles; 6 corridors)
 - Rapid Bus (75 miles; 5 projects)
- Mobility Hubs
 - 20 Gateway
 - 20 Anchor
 - 63 Community
- All Greenways, Bike and Pedestrian Projects defined in the Needs Plan
- ITS Priority Projects
- Select Roadway Needs (not covered by SIS/FIHS/ Turnpike Programs)

What is NOT Funded:

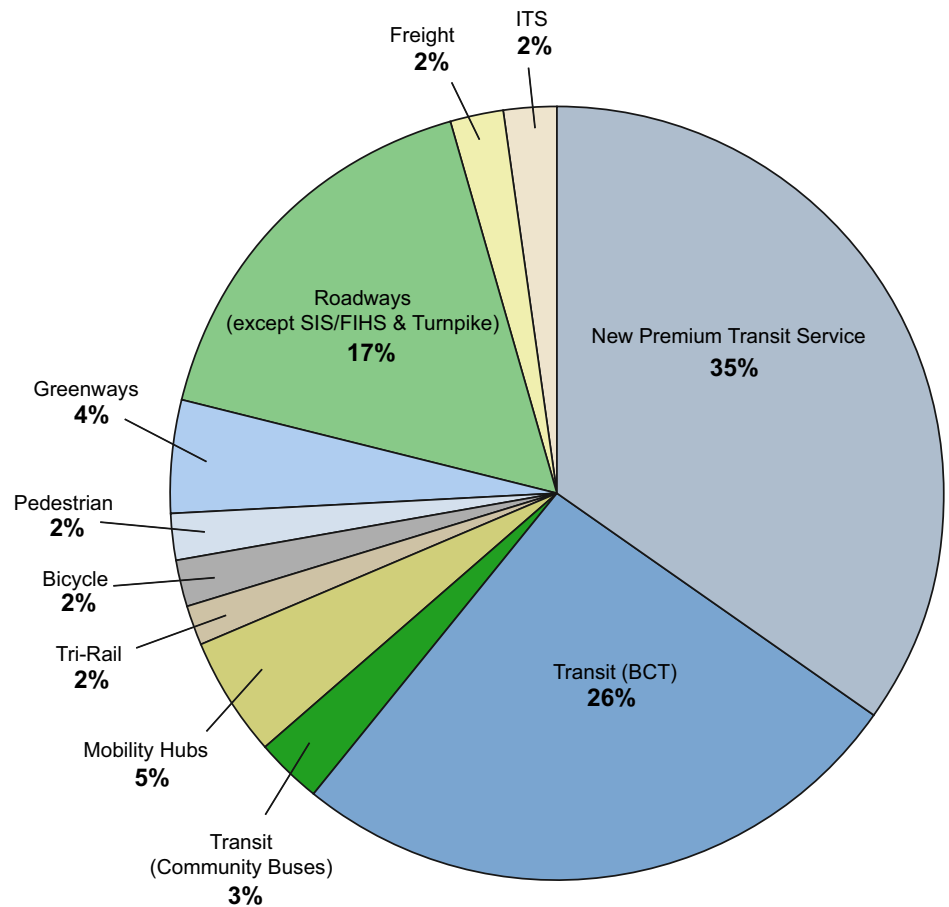
- BCT O&M has a shortfall of 50% existing or 66% including expanded service per 2018 TDP.
- Premium Transit Corridors defined as BRT could be upgraded to LRT pending future innovative funding options.

- **ITS**—Funds Automatic Traffic Management Systems to increase roadway capacity at \$121 million. (Open Road Tolling is funded separately through Florida’s Turnpike Enterprise.)

The pie chart shown in Exhibit 21 represents the allocation for Greenways, Pedestrian, Bikeways, Tri-Rail, Mobility Hubs, Transit (Community Buses), Transit (BCT), and New Premium Transit Services. Projects listed above and percentages shown in Exhibit 21 are of the revenues available for allocation to priority projects, or \$5,567 million. This excludes the SIS/FIHS/Turnpike funding in the amount of \$2,915 million for which funds have been previously allocated and committed.

Exhibit 21—Funding Distribution by Cost Category

Approximately 79% of available funds are allocated to alternative transportation modes.



Approximately 79% of available funds are allocated to projects and services that support the implementation and use of alternative modes. Of the remaining allocations, roadway funding at 17% was allocated for projects selected based on the ability to directly or indirectly support transit improvements and ITS funding at 2% was allocated for projects selected to provide infrastructure to support transit. Freight at 2% addresses both freight movement and capacity expansion on roadways.

Roadways are still funded in this plan through \$2,637 million in Strategic Intermodal System Highways and Florida Intrastate Highway System programs; \$278 million for Florida’s Turnpike Enterprise; and \$940 million for roadways. Turnpike revenues were forecast in this plan for planning purposes, but were not officially provided by Florida’s Turnpike Enterprise. Some highlights for funded projects are:

- I-95/595 Mega Project
- Six Turnpike Projects (widening and Open Road Tolling)
- 45 Arterial Roadways and Other Improvements

Exhibit 22, “Funding Breakdown for 2035 Cost Feasible Plan,” summarizes funding levels by project type and the revenue sources for each.

All cost affordable transit projects (Premium Transit in addition to BCT) and Mobility Hubs are mapped in Exhibit 23. Premium Transit, BCT, and SFRTA projects are listed in Exhibit 24. See also Section 5.1.2 “Cost Feasible Plan (Phasing: Implementation)” for a discussion of Year of Expenditure (YOE) dollars and project timing. Transit project phasing is detailed in the Appendix as Exhibit 66 for Cost Feasible Transit Projects. The plan is shown in both current 2009 and YOE dollars to represent the effect of timing for implementation.

Other transit-supportive projects are mapped in Exhibits 25 through 28, including Greenways, Bicycle, Pedestrian, and Roadways. Detailed project listings for Transit, Mobility Hubs, transit-supportive projects, ITS, and Freight/Seaport/Airport are included in the Appendix, Exhibits 66 through 73.

Refer to the *Cost Feasible Plan Technical Report* for complete information on project evaluation methodology and ranking.



Exhibit 22-Funding Breakdown for 2035 Cost Feasible Plan

Transportation Mode	Total Cost (in millions) (Capital and O&M)	Percent Share of Forecast Revenue	Capital Revenue Source	Revenue Allocated (in millions) (2009 dollars)	O&M Revenue Source	Revenue Allocated (in millions) (2009 dollars)	Total Revenue (in millions) (Capital and O&M)
New Premium Transit Service ¹	\$1,945	34.9%	Constitutional Fuel Tax	\$159	Local Option Fuel Tax (6-Cents)	\$333	\$1,945
			Local Option Fuel Tax (6-Cents)	\$79	TMA	\$53	
			FDOT Transit	\$209	Local Option Fuel Tax (5-Cents)	\$17	
			Local Option Fuel Tax (Ninth Cent)	\$117	Fare Box Recovery	\$101	
			County Fuel Tax	\$90			
			TMA	\$187			
			Broward County Transit Capital (partially fulfills TDP corridors)	\$175			
			State & Federal New Starts funds	\$425			
Transit (BCT)	\$1,446	26.0%	Broward County Transit Capital	\$212	BCT operating (Fare Box Recovery, County General Fund, State Grants, & Other operating revenues)	\$1,234	\$1,446
Transit (Community Buses)	\$158	2.8%			Municipal Fuel Taxes	\$158	\$158
Mobility Hubs	\$280	5.0%	TMA	\$19	TMA	\$28	\$280
			Local Option Gas Tax (City Share)	\$187	Local Option Fuel Tax (5-Cents)	\$46	
Tri-Rail (Existing Service)	\$88	1.6%	County General Fund	\$25	County General Fund	\$63	\$88
Bike	\$113	2.0%	Local Option Fuel Tax (5-Cents)	\$113	N/A	N/A	\$113
Pedestrian (Sidewalk)	\$113	2.0%	Local Option Fuel Tax (5-Cents)	\$113	N/A	N/A	\$114
Greenways	\$251	4.5%	TMA	\$176	N/A	N/A	\$251
			Transportation Concurrency Fees	\$48	N/A	N/A	
			Local Option Fuel Tax (5-Cents)	\$27	N/A	N/A	

Exhibit 22-Funding Breakdown for 2035 Cost Feasible Plan (continued)

Transportation Mode	Total Cost (in millions) (Capital and O&M)	Percent Share of Forecast Revenue	Capital Revenue Source	Revenue Allocated (in millions) (2009 dollars)	O&M Revenue Source	Revenue Allocated (in millions) (2009 dollars)	Total Revenue (in millions) (Capital and O&M)
Roadways (SIS/FIHS)	\$2,637	N/A	SIS Highways/ FIHS Construction/ ROW	\$2,637	N/A	N/A	\$2,637
Roadways (Turnpike)	\$278	N/A	Turnpike	\$278	N/A	N/A	\$278
Roadways (Arterials & Others)	\$940	16.9%	Other Arterial Construction/ ROW	\$662	Constitutional Fuel Tax	\$40	\$940
			Local Option Gas Tax (City Share)	\$153	Local Option Gas Tax (City Share)	\$85	
Freight	\$112	2.0%	Other Arterial Construction/ ROW	\$112	N/A	N/A	\$112
ITS	\$121	2.2%	Other Arterial Construction/ ROW	\$121	N/A	N/A	\$121
Total ² (Excluding SIS/FIHS and Turnpike)	\$5,567	100.0%		\$6,352		\$2,130	
Grand Total	\$8,482		\$8,482				\$8,482

Notes:

- A. Totals do not add due to rounding.
- B. Freight projects are funded through Other Arterial Construction/ROW funds. Additional airport and port projects have been identified in the cost feasible plan but will be funded through port and aviation programs. Freight projects are also eligible for TRIP and SIS funds. TRIP funds (\$137 million) may become available pending SEFTC's evaluation of regional freight projects and prioritization.
- C. Allocated O&M funds (\$1,234 million) cover approximately 33% of BCT's total O&M cost per FY 2009-2018 TDP (\$3,791 million). These funds are not sufficient to support the existing BCT service, estimated to cost \$2,478 million, over the plan period (2015-2035).
- D. Premium High Capacity Transit project capital and O&M cost estimate is based on BRT technology. Both the capital and O&M cost are adjusted based on the length of the proposed corridor. Therefore they should not be compared with the project cost from the 2035 needs assessment phase.
- E. The O&M cost for Premium Transit projects is based on the assumption that these projects would operate for 10 years over the plan period (2015-2035).
- F. TRIP and New Starts funding are discretionary.
- G. Costs for illustrative projects that will require additional revenues are not reflected in this table.
- H. FDOT funding under "Other Arterial Construction/ROW" program includes 20% funding for product support (planning and engineering design).





¹Revenue to support Premium Transit Service includes fare box recovery (passenger revenue) assumed at 20% (\$101 million) of the total O&M cost (\$504 million).

²Does not include monies allocated for roadway projects from SIS/FIHS and Turnpike funding sources because they are not controlled by the local jurisdiction(s).



Exhibit 23–2035 Cost Feasible Transit Projects & Mobility Hubs Map

LEGEND




PREMIUM TRANSIT PROJECTS

-  Premium Rapid Bus
-  Premium High Capacity
-  Service in Neighboring Counties
-  Service in Neighboring Counties


BROWARD COUNTY TRANSIT SERVICE

-  Existing Local Bus Route
-  New Local Bus Route

MOBILITY HUBS

-  Community Hub
-  Anchor Hub
-  Gateway Hub

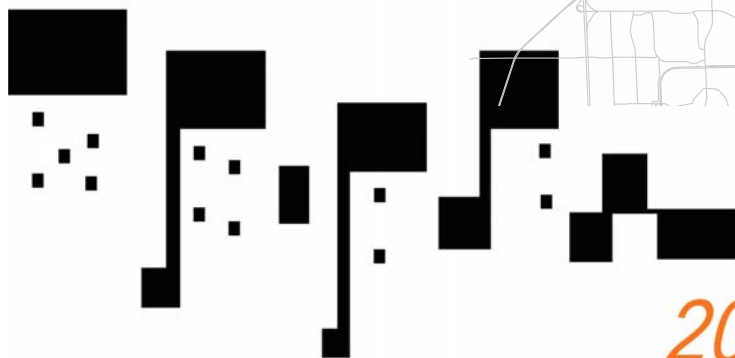
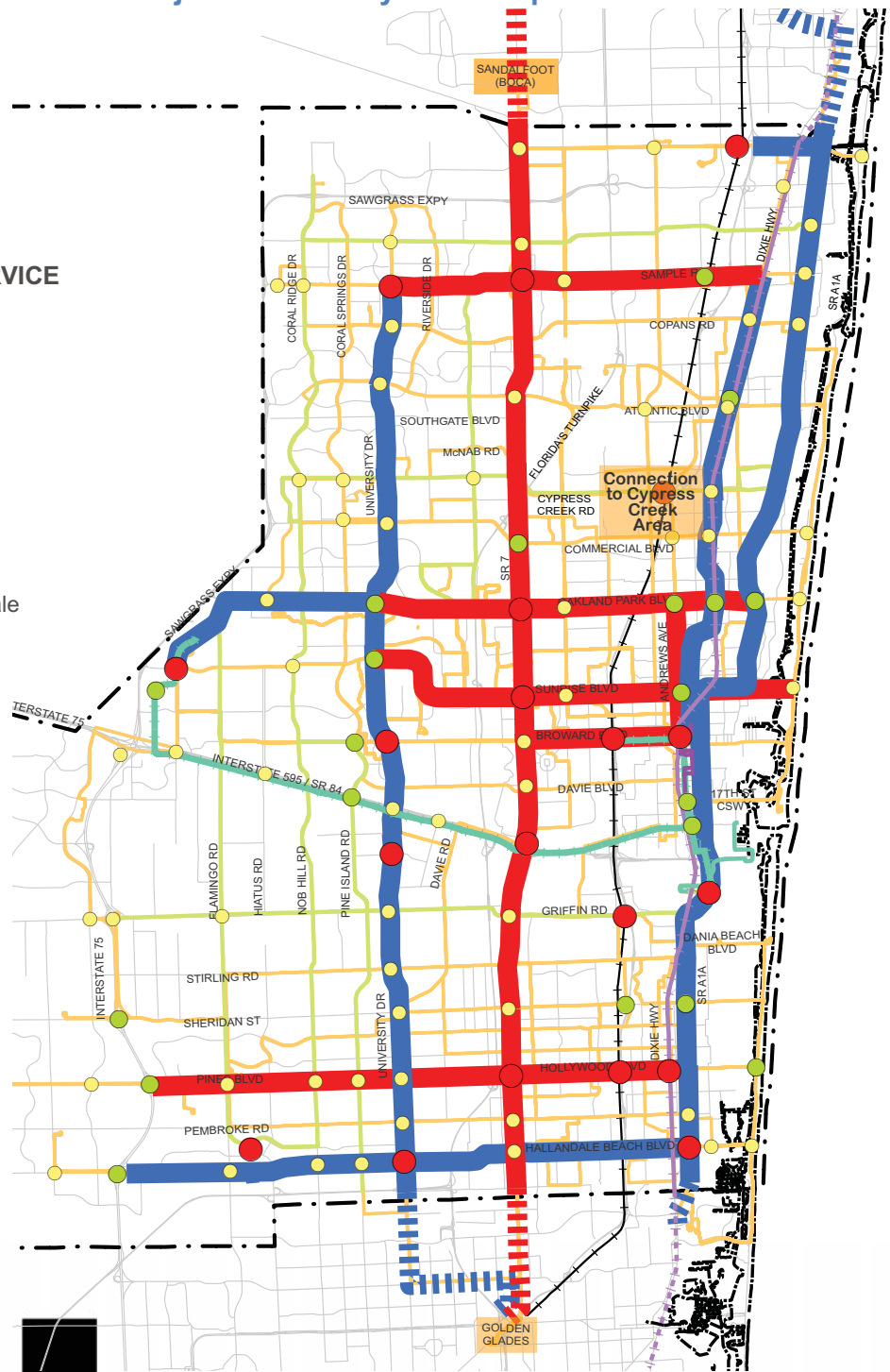
ILLUSTRATIVE PROJECTS

-  The Wave (City of Fort Lauderdale Downtown Circulator)
-  Peoplemover-SunPort (Airport/Seaport)
-  Central Broward Transit (not final routing)
-  South Florida East Coast Corridor (FEC)

Notes:

Illustrative projects are shown for context and are not part of the 2035 Cost Feasible Plan.

50% of the existing transit service's operating and maintenance are funded with existing sources. Local bus services that are partially funded may be restructured to better serve mobility hubs and Premium Transit corridors.



2035 *BROWARD*
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Exhibit 24–2035 Cost Feasible Transit Projects

Project/Corridor/Route	Transit Mode	2035 CFP (Peak/ Off Peak) (Headway in minutes)	Capital Cost (2009 Dollars)	Total O&M Cost (2009 Dollars)	Revenue to Support Capital Improvement (2009 Dollars)	Revenue to Fund O&M Cost (2009 Dollars)
Premium Transit Projects–Bus Rapid Transit & Rapid Bus						
SR 7/US 441 ¹	Premium High Capacity	5/7.5	\$442,910,400	\$117,000,000	\$1,441 million	\$504 million ⁴
University Drive	Premium Rapid Bus	10/15	\$15,180,000	\$44,000,000		
US 1	Premium Rapid Bus	10/15	\$18,760,000	\$53,200,000		
Oakland Park Blvd ²	Premium High Capacity	5/7.5	\$271,040,000	\$61,600,000		
Sunrise Blvd	Premium High Capacity	5/7.5	\$209,622,000	\$49,588,000		
Pines/Hollywood Blvd ³	Premium High Capacity	5/7.5	\$219,856,800	\$54,540,000		
Dixie Hwy	Premium Rapid Bus	10/15	\$7,704,400	\$22,660,000		
Miramar Pkwy/ Hallandale Beach Blvd	Premium Rapid Bus	10/15	\$9,144,800	\$25,760,000		
Sample Rd ³	Premium High Capacity	5/7.5	\$165,457,600	\$45,696,000		
Broward Blvd (SR 7 to Downtown Fort Lauderdale) ³	Premium High Capacity	5/7.5	\$77,568,550	\$19,807,350		
Oakland Park Blvd (University Drive to Sawgrass Mills) ³	Premium Rapid Bus	10/15	\$3,815,000	\$10,900,000		
Total- Premium Transit Projects			\$1,441,059,550	\$504,751,350		
Broward County Transit (BCT)						
Supporting Facilities						
Third Operations/ Maintenance Facility	Systemwide	N/A	\$58,710,000	N/A	\$212 million	\$1,234 million
Intermodal Centers/ Hubs	Systemwide	N/A	Integrated with Mobility Hub cost estimates	N/A		
Park-n-Ride Facilities	Systemwide	N/A	\$29,870,000	N/A		
Bus Shelters/Bus Bays/ Bus Stop Upgrades	Systemwide	N/A	\$54,590,000	N/A		
Local Bus Service						
BCT Bus Capital Maintenance Needs	Systemwide	N/A	\$3,790,223	N/A		
New LOCAL BUS Service (8 routes ⁵)/ Route Extension/ Headway Improvement	Fixed Route Bus Service (Local Bus)	N/A	\$64,815,000	N/A		
Broward County Transit (BCT) including TDP Improvements (Capital Cost) & Partial BCT O&M Cost			N/A	\$1,234,289,600 ⁶		
Total-Broward County Transit			\$211,775,223	\$1,234,289,600⁶		

Exhibit 24–2035 Cost Feasible Transit Projects (continued)

Project/Corridor/Route	Transit Mode	2035 CFP (Peak/ Off Peak) (Headway in minutes)	Capital Cost (2009 Dollars)	Total O&M Cost (2009 Dollars)	Revenue to support Capital Improvement (2009 Dollars)	Revenue to Fund O&M Cost (2009 Dollars)
South Florida Regional Transit Authority (SFRTA)						
Tri-Rail	Commuter Rail	20/60 (CRT)	N/A	\$62,972,723	N/A	\$63 million
Tri-Rail/I-95 Corridor	All Tri-Rail Shuttles	20/60	N/A		N/A	
Tri-Rail Deerfield Beach Station New Parking Deck	Commuter Rail (Station)	N/A	\$11,398,610	N/A	\$25 million	N/A
Tri-Rail Hollywood Station New Parking Deck	Commuter Rail (Station)	N/A	\$13,628,667	N/A		
Total-SFRTA			\$25,027,277	\$62,972,723		

Notes:

- A. Premium High Capacity Transit project capital and O&M cost estimate is based on BRT technology.
- B. The O&M cost for Premium Transit projects is based on the assumption that these projects would operate for 10 years over the plan period (2025-2035).

¹ SR 7 premium service includes adding two exclusive lanes for transit use between Palm Beach County Line and Sample Road within available right of way, to provide for a total of eight lanes, six for general purpose traffic and two for transit.

² Project added and/or modified based on BCTs recommendation. Andrews Ave Premium High Capacity Transit project is part of the Oakland Park Blvd Premium High Capacity Transit project.

³ Per Steering Committee recommendation, Sample Rd, Pines/Hollywood Blvd, and Broward Blvd (SR 7 to downtown Fort Lauderdale) projects were upgraded from Premium Rapid Bus to Premium High Capacity Transit while Oakland Park Blvd Premium Rapid Bus service between University Dr and Sawgrass Mills Mall was added.

⁴ Revenue to support Premium Transit Service includes fare box recovery (passenger revenue) assumed at 20% (\$101 million) of the total O&M cost (\$504 million, 2009 dollars).

⁵ BCT new local bus routes include Flamingo Road, Nob Hill Road, Palm Avenue, Douglas Road, Rock Island Road, Wiles Road, McNab Road, and Griffin Road.

⁶ Allocated O&M funds (\$1,234 million) cover approximately 33% of BCTs total O&M cost per FY 2009-2018 TDP (\$3,791 million). This allocation covers 50% of the existing BCT O&M cost (\$2,478 million) over the plan period (2015-2035), all in 2009 dollars.

Exhibit 25–2035 Cost Feasible Greenway Projects Map

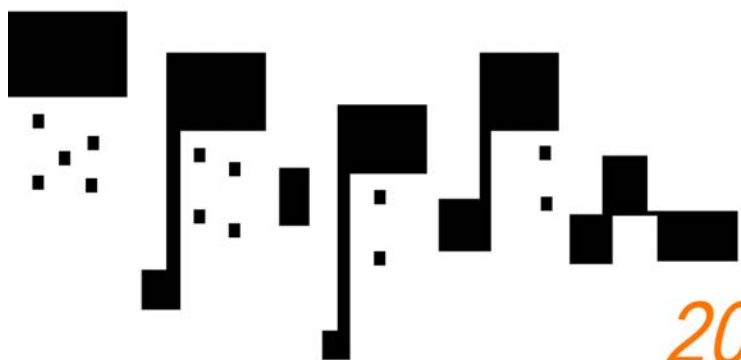
LEGEND

GREENWAYS

- Planning Priority 1
- - - Planning Priority 2
- · · Planning Priority 3



Atlantic Ocean



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Exhibit 26–2035 Cost Feasible Pedestrian Projects Map

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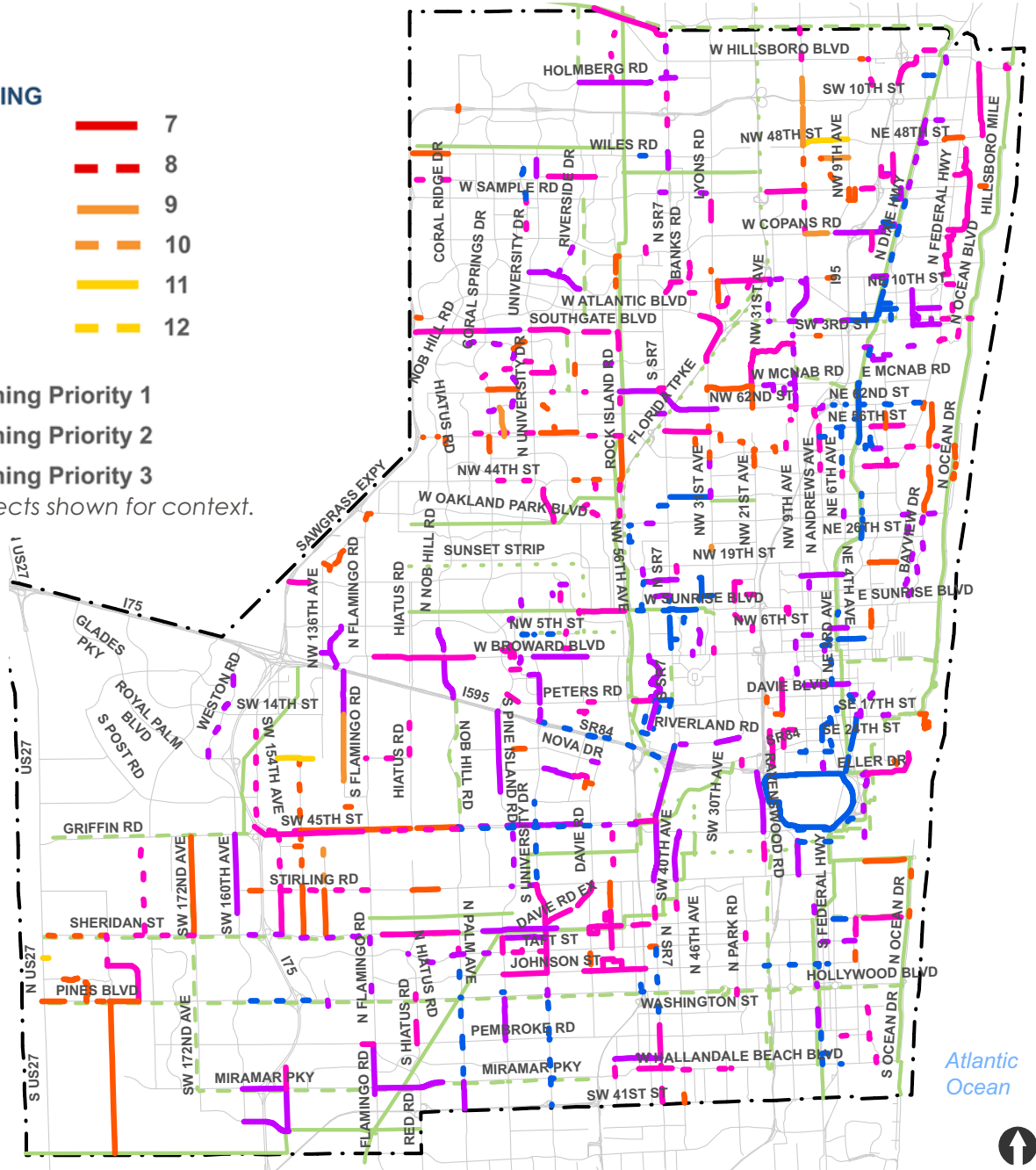
PROJECT RANKING

	1		7
	2		8
	3		9
	4		10
	5		11
	6		12

GREENWAYS

- Planning Priority 1
- Planning Priority 2
- Planning Priority 3

*Greenways projects shown for context.



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Exhibit 27–2035 Cost Feasible Bicycle Projects Map

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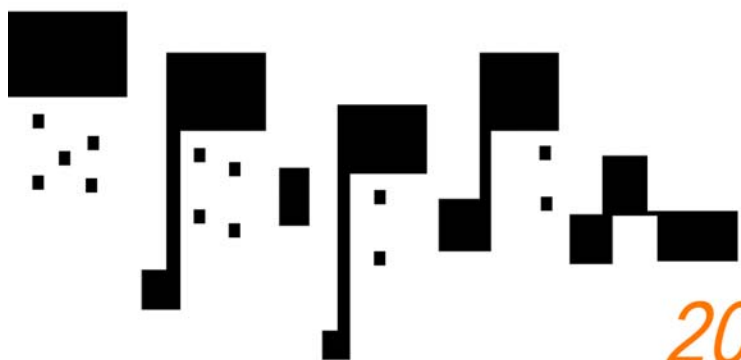
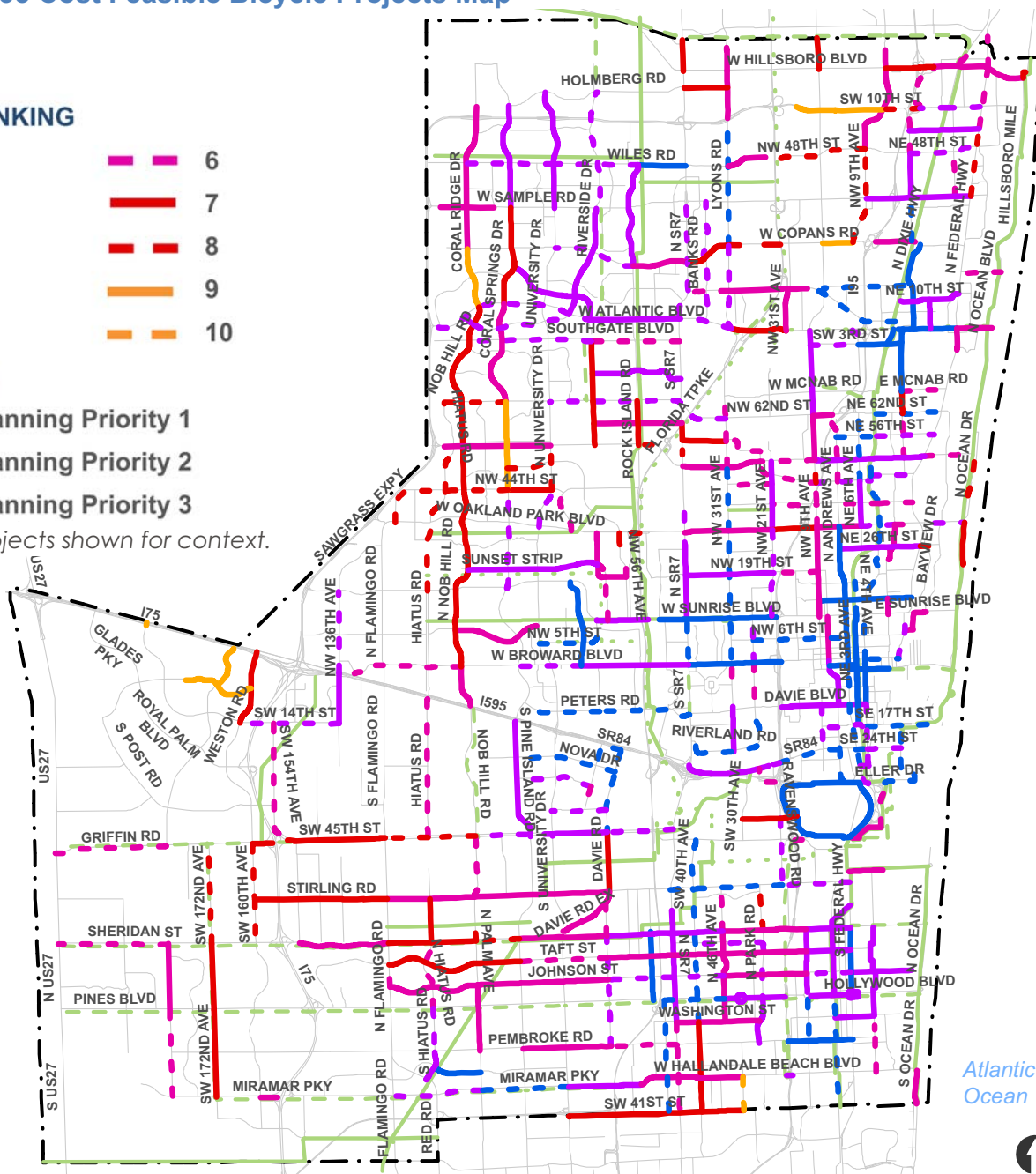
PROJECT RANKING

	1		6
	2		7
	3		8
	4		9
	5		10

GREENWAYS

- Planning Priority 1
- Planning Priority 2
- Planning Priority 3

*Greenways projects shown for context.



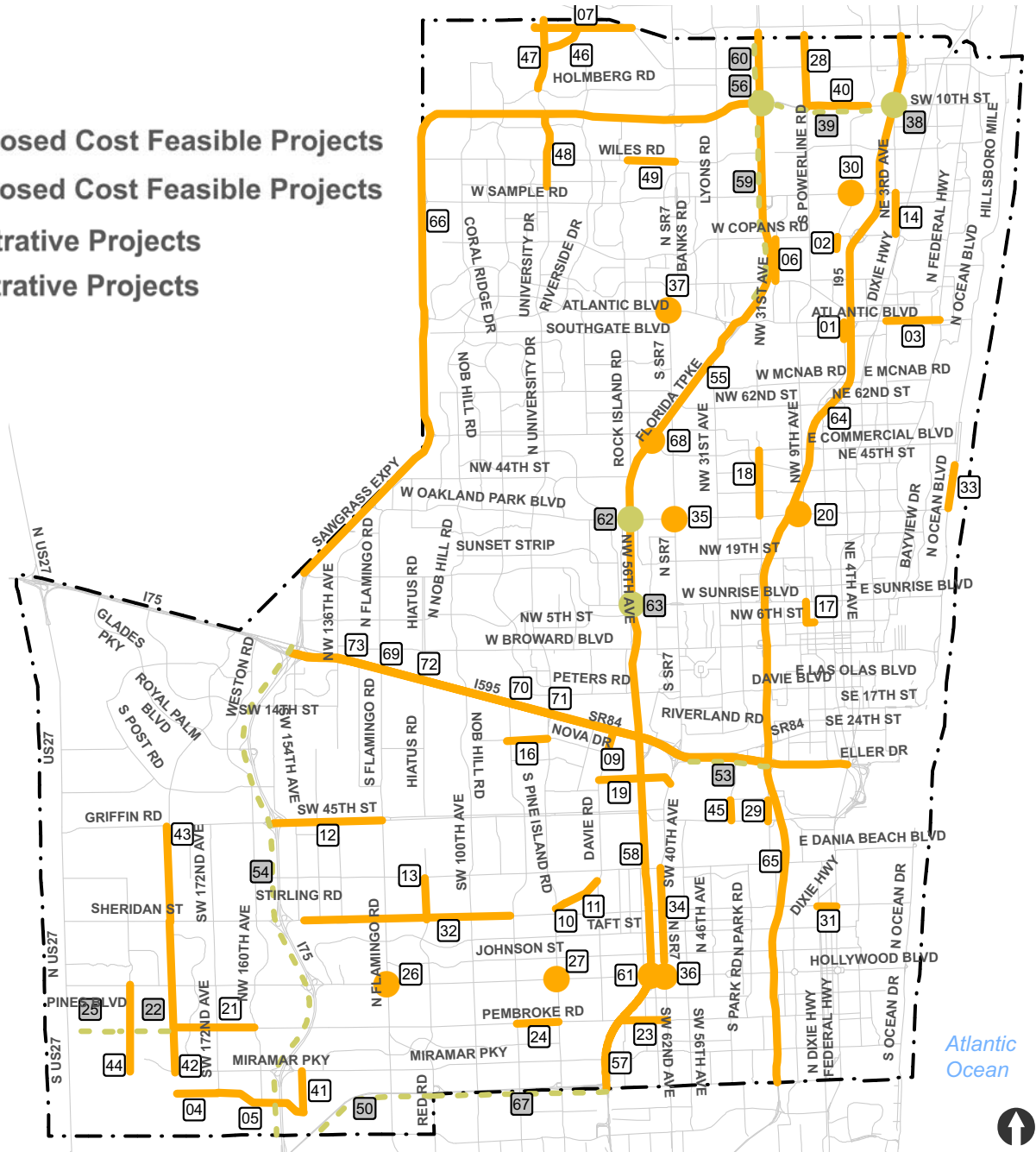
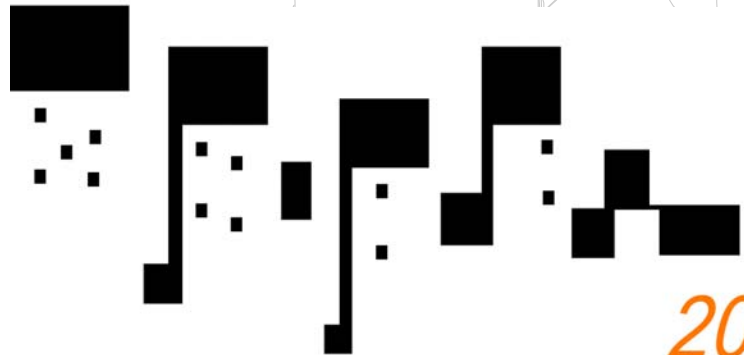
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Exhibit 28–2035 Cost Feasible Roadway Projects Map

LEGEND

-  Proposed Cost Feasible Projects
-  Proposed Cost Feasible Projects
-  Illustrative Projects
-  Illustrative Projects

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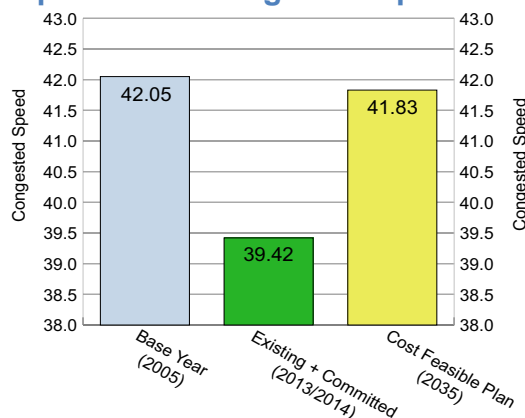
5.1.1 Cost Feasible Plan Performance Results

Measuring the effectiveness of the Cost Feasible Plan is a way to identify some of the potential benefits. The tool used to measure many of these factors is the regional travel demand forecast model. This tool, which now encompasses the South Florida tri-county area, provides us with an indication of whether proposed actions support goals and objectives. However, the LRTP with a focus on alternative modes is a paradigm shift. The model utilizes systems and services currently not in place or accounted for as part of the estimation of travel behavior and pattern and does not fully represent the new concepts of Mobility Hubs, Premium Transit, and widespread emphasis on the use of alternative modes. Evidence across the nation shows with a dramatic investment in new modes, travel behavior changes significantly more than traditional travel demand models are able to predict. Significant updates to the model will be undertaken in the future to improve their effectiveness in demonstrating effects of transportation investments.

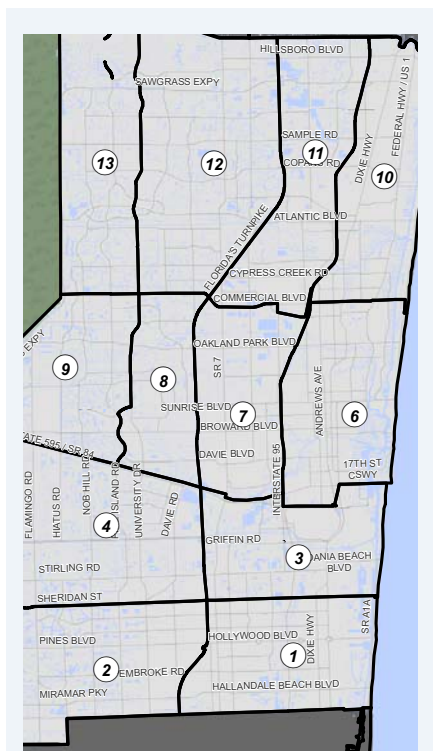
The Southeast Florida Regional Planning Model (SERPM) Version 6.5 does, however, provide the following indications regarding the Cost Feasible Plan. Comparisons are made to the E+C (Existing+Committed) network which includes projects and services already selected from approved plans for implementation prior to FY 2014-2015. E+C provides the baseline for comparison with the new LRTP. Key performance comparisons are reviewed below for Broward County as of 2035.

Congested speeds on major roadways improve from 39 mph to 42 mph during busy peak periods for the Cost Feasible Plan compared to E+C. A three mile per hour improvement may appear to be slight. However, it is very difficult to improve roadway flows when roadways are already congested. As shown on the Traffic Congestion map (Exhibit 11 in Chapter 2 “Challenges & Opportunities”) a majority of the roadways in Broward County are already at high levels of congestion during peak periods today. Due to limited availability of right-of-way and potential negative impacts of more roadways on existing development and neighborhoods, the Cost Feasible Plan includes few additional roadway widening projects or new roadways.

Exhibit 29-Comparison of Congested Speed



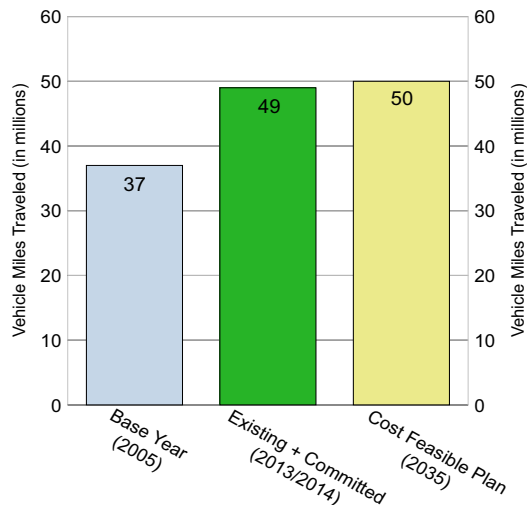
The travel demand forecast model used for analysis incorporates the tri-county area for the first time.



SERPM Version 6.5 was used for model analysis.

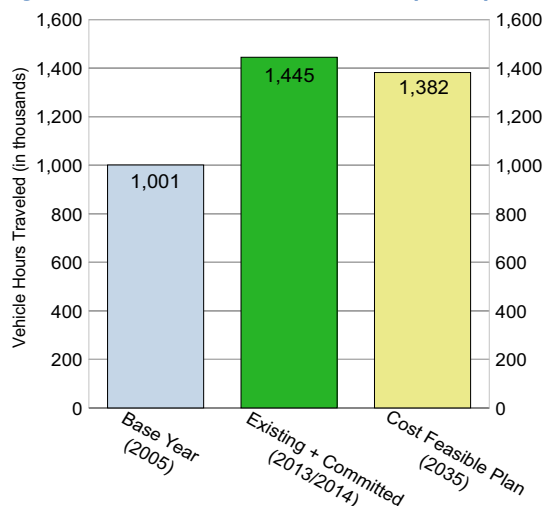
Vehicle Miles Traveled (VMT) for private passenger vehicles, (single and high-occupant vehicles) increases slightly with the new plan, 49.9 million VMT per day for Cost Feasible Plan and 48.9 million VMT per day for E+C in Broward County. The total VMT for Broward County increases only 2% compared to E+C. However, the VMT per person per day **decreases** by 18%, from 26.5 to 21.7 miles per person per day. Reduced travel per person for a larger population base reflects a reduction in average trip length and a modal shift that contributes to less roadway congestion.

Exhibit 30-Daily Vehicle Miles Traveled (VMT)



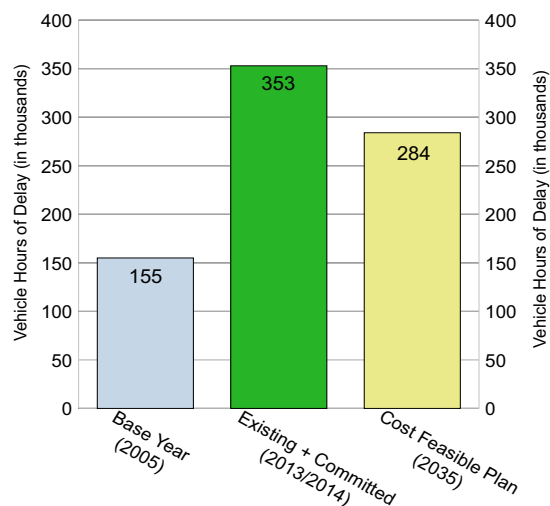
Vehicle Hours Traveled decrease from 1,445 to 1,382 million hours per day with the Cost Feasible Plan. On average, a Broward County resident would drive approximately 36 minutes per day (combined for all trips) compared to 47 minutes as a result of transportation improvements proposed in the Cost Feasible Plan. This is a significant improvement (23% reduction in daily vehicle hours traveled) considering that both population and the number of vehicles increase by 29% and 22%, respectively. More people and vehicles will move around, but more efficiently.

Exhibit 31-Daily Vehicle Hours Traveled (VHT)



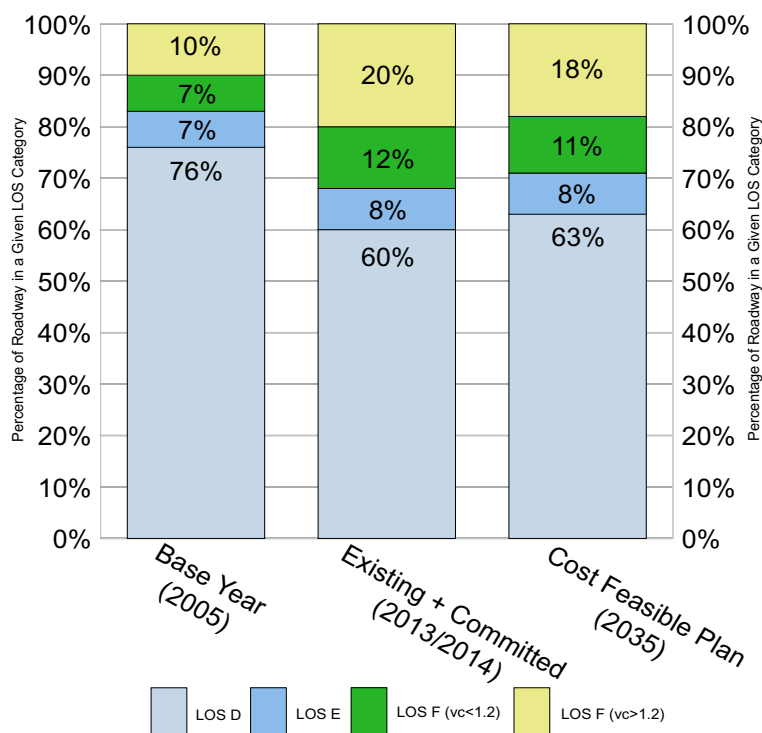
Vehicle Hours Delay decrease from 353 to 284 thousand hours per day with the Cost Feasible Plan. Travelers in Broward County will spend approximately 20 million fewer hours each year sitting in traffic (combined for all trips). This represents 20% reduction in delay due to reduced traffic congestion that can be attributed to the transportation improvements proposed in the Cost Feasible Plan.

Exhibit 32-Daily Vehicle Hours of Delay (VHD)



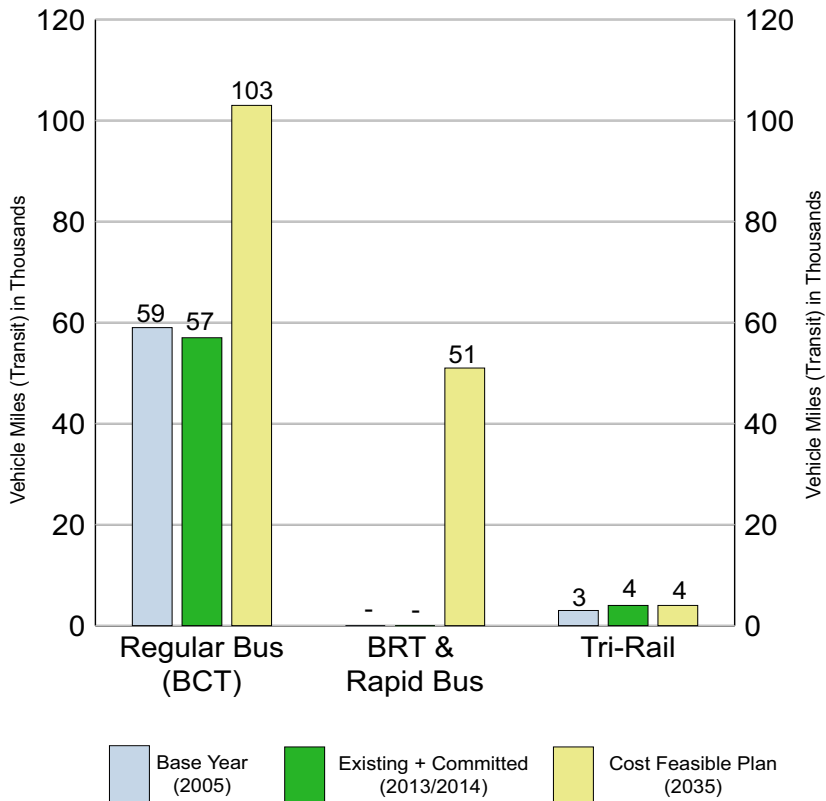
Traffic Level of Service: The percent of major roadways at Level of Service "F" decreases from 32% to 29%, even with higher volumes of transit vehicles from added service. This reflects an increase in mode shift from single-occupant vehicle travel to Premium Transit service.

Exhibit 33-Roadway Level of Service (LOS)



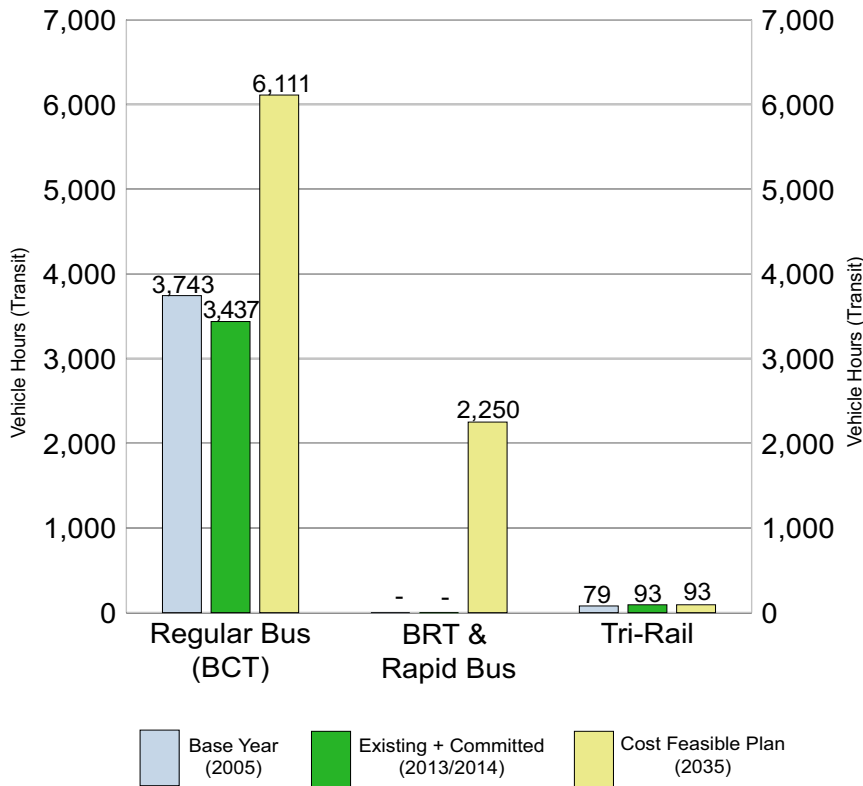
Daily Vehicle Miles for Transit Modes with the Cost Feasible Plan is projected to reach 2.6 times the E+C transit service. Local bus VMT increases from 57,290 to 103,157 VMT for transit; Premium Transit services represent 50,938 VMT for new modes of travel not available today, namely BRT and Rapid Bus.

Exhibit 34-Daily Vehicle Miles for Transit Modes



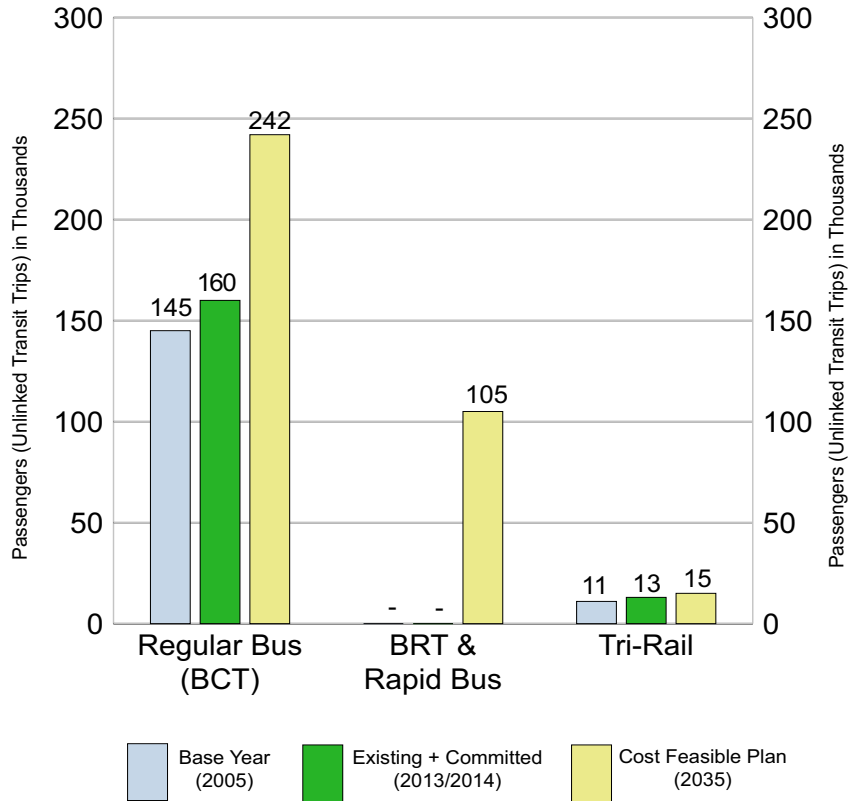
Daily Vehicle Hours with the Cost Feasible Plan compared to E+C increases 2.4 times for all transit modes: 6,111, increased from 3,437 vehicle hours traveled by local bus service. New services for BRT and Rapid Bus will run 2,250 vehicle hours each day. This results in an additional 4,924 daily vehicle hours of transit service with the Cost Feasible Plan compared to E+C.

Exhibit 35-Daily Vehicle Hours (Transit)



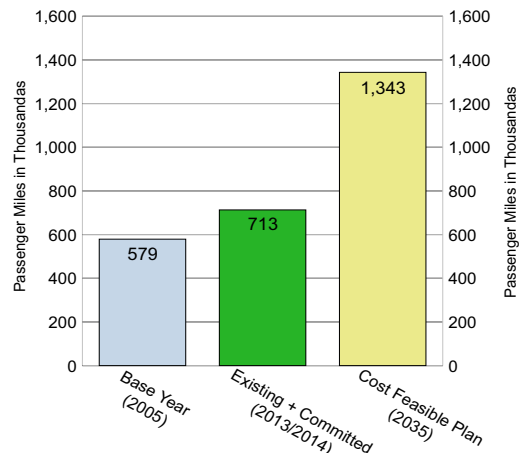
Daily Transit Ridership (boardings) double for the Cost Feasible Plan compared to E+C. Daily riders for local bus increases to 241,529 boardings with the Cost Feasible Plan, up from 159,834 with E+C, an increase of 50%. Daily riders for new BRT and Rapid Bus services result in 104,619 new boardings made possible by this new service. In addition, Commuter Rail boardings increase to 14,577 daily riders compared to 13,426 with E+C. The composite result for total daily transit ridership from all transit services with the Cost Feasible Plan increases to 360,725 versus 173,260 with E+C, an additional 187,465 daily riders (boardings).

Exhibit 36-Daily Transit Ridership (Unlinked Transit Trips)



Passenger Miles for all transit modes increase two-fold with the Cost Feasible Plan compared to E+C.

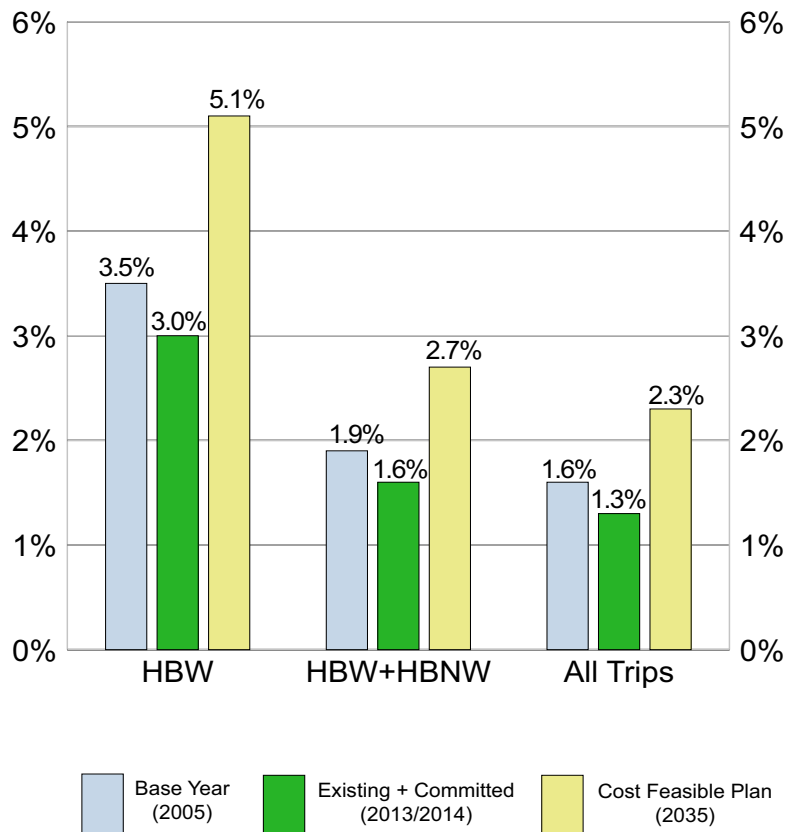
Exhibit 37-Daily Transit Ridership (Passenger Miles)



Transit Mode Split for home-based work trips for the Cost Feasible Plan compared to E+C increases from 3% to 5.14%, a 70% increase in total transit use.

Level of transit service in 2035 vehicle miles traveled is expected to be 2.6 times that of today's service.

Exhibit 38-Daily Transit Ridership (Mode Split)



A key point to mention is that there are other elements of the plan that are not modeled, but provide significant improvements for access and mobility. The Cost Feasible Plan includes 251 miles of new greenways, 314 miles of new sidewalks, and 485 miles of on-road and off-road bikeways. This intermodal access promotes the utilization of transit and decreases travel by single-occupant vehicles. Freight, ITS and safety improvements included in the Cost Feasible Plan also encourage better and more efficient mobility options.

Performance of Cost Feasible Plan

- ↑ Roadway speeds increase by 3 mph
- ↓ VMT decrease by 18%
- ↓ Vehicle hours lower by 23%
- ↓ Vehicle hours of delay lower by 35%
- ↓ Failed roadways decrease by 10%

Additional transit service:

- ↑ 96,805 increase in daily vehicle miles
- ↑ 4,924 increase in daily vehicle hours

Daily transit ridership:

- ↑ Ridership doubles to 187,465 boardings
- ↑ Passenger miles double to 1,343,182 miles per day

Transit mode split:

- ↑ Mode split for work trips increases by 71%

5.1.2 Cost Feasible Plan (Phasing: Implementation)

The 2035 Cost Feasible Plan is programmed and phased in five-year increments and the dollars are expressed in Year of Expenditure (YOE) dollars. Previous LRTPs have reviewed cash flow in current year dollars. This revision for the 2035 LRTP to YOE dollars allows the plan to better represent availability of funds for the program elements and potentially to better plan for timing of projects and manage project costs.

The financial plan was developed using the 2035 Revenue Forecast Handbook prepared by the Florida Department of Transportation (FDOT) in May 2008. The balancing of high-priority improvements with estimates of expected revenue sources to the time of expected

expenditure is determined by applying proscribed inflation factors to the expected implementation schedule for those improvements. Two sets of inflation factors were used to convert project cost from current 2009 cost to YOY dollars—one set for Premium Transit projects and another for all other projects (roadway, mobility hubs, ITS, greenways, pedestrian, bicycle, seaport/airport/freight) as shown in Exhibit 39 below.

Exhibit 39—2035 Revenue Forecast Handbook Inflation Factors

Project Type	FY 2014-15	FY 2016-20	FY 2021-25	FY 2026-30	FY 2031-35
Transit	1.14	1.24	1.40	1.59	1.80
Roadway and All Other	1.22	1.37	1.61	1.89	2.22

Inflation factors were developed for roadway and all other projects reflect Florida-specific experience and are forecast based on the average for the statewide 2008 Revenue Estimating Conference. Transit inflation factors were less defined by FDOT due to more limited practical experience in project implementation. The Consumer Price Index was used as the most relevant forecast of inflation; however, project sponsors are encouraged to develop more project-specific inflation factors in financial planning.

Revenue sources applied to program elements are subject to constraints on allowable uses of those funds. For example, only 20% of constitutional fuel taxes are available for maintaining local roads. Also, FDOT SIS/FIHS funds can only be used for facilities meeting these classifications. Some sources have more flexibility as to what they can be used for. For example, Transportation Management Area Funds, county fuel tax, and 80% of constitutional fuel taxes are eligible for spending on Premium Transit capital improvements in addition to roadway projects.

Revenue streams by funding source are detailed in Exhibit 40. Due to the uncertainty of timing for revenues forecast for the mega-projects, receipt of funds is assumed for the mid-point period of FY 2021-2025. Fare-box revenues from Premium Transit are projected following start-up of those new services in the last ten years of the program period FY 2026-2035. See *Financial Resources Technical Report* for details of revenue forecasts of all other sources.

Exhibit 40—Revenue Forecast Year of Expenditure (YOE) Dollars (in millions)

Revenue Projections by Source	FY 2014-15	FY 2016-20	FY 2021-25	FY 2026-30	FY 2031-35	21-year Total
FDOT-SIS/FIHS	\$97	\$639	\$63	\$0	\$0	\$799
FDOT-“Mega-Projects” (uncertain timing)			\$3,304			\$3,304
FDOT-Other Arterial, Transit, TMA	\$91	\$517	\$570	\$607	\$645	\$2,430
FDOT-Product Support (Equal to 20% of Other Arterial)	\$9	\$54	\$60	\$64	\$70	\$257
State & Federal Transit New Starts	\$45	\$175	\$163	\$163	\$163	\$708
Turnpike (revenues available for capital)	\$16	\$92	\$108	\$125	\$143	\$484
Fuel Taxes (constitutional, county, municipal, LOGTs)	\$126	\$648	\$681	\$716	\$753	\$2,925
Transportation Concurrency Fees	\$3	\$16	\$19	\$22	\$25	\$84
Broward County Transit Operating ¹	\$80	\$428	\$480	\$539	\$606	\$2,133
Broward County Transit Capital ¹	\$26	\$137	\$151	\$167	\$185	\$666
County contribution to SFRTA	\$5	\$29	\$34	\$39	\$46	\$153
Estimated Fare Revenue from Premium Transit				\$95	\$111	\$206
TOTAL	\$498	\$2,735	\$5,632	\$2,538	\$2,745	\$14,148

¹Not included elsewhere

Exhibit 41—2035 Cost Feasible Plan—Phasing in Year of Expenditure (YOE) Dollars (in millions)

Transportation Improvement Portfolio	FY 2014-15	FY 2016-20	FY 2021-25	FY 2026-30	FY 2031-35	21-Year Total
Premium Transit Service (Capital)	\$65	\$541	\$689	\$575	\$608	\$2,478
Premium Transit Service (On-going Studies, PD&E)	\$50	\$0	\$0	\$0	\$0	\$50
Premium Transit Service (O&M)	\$0	\$0	\$0	\$403	\$456	\$858
Broward County Transit (BCT) (Capital)	\$26	\$137	\$111	\$0	\$0	\$274
Broward County Transit (BCT) (O&M)	\$80	\$428	\$480	\$539	\$606	\$2,133
Community Bus (O&M)	\$12	\$58	\$63	\$68	\$84	\$284
Mobility Hubs (Capital)	\$48	\$213	\$0	\$0	\$0	\$261
Mobility Hubs (O&M)	\$0	\$26	\$29	\$35	\$41	\$131
Tri-Rail (O&M)	\$5	\$29	\$34	\$39	\$46	\$153
Bicycle	\$8	\$44	\$62	\$43	\$28	\$185
Pedestrian	\$7	\$44	\$63	\$43	\$28	\$185
Greenways	\$11	\$62	\$156	\$127	\$70	\$426
Roadways (SIS/FIHS)	\$97	\$639	\$3,367	\$0	\$0	\$4,103
Roadways (Turnpike)	\$16	\$92	\$108	\$125	\$143	\$484
Roadways (Arterial & Others) (Capital)	\$29	\$199	\$352	\$414	\$482	\$1,476
Roadways (Arterial & Others) (O&M)	\$9	\$45	\$49	\$52	\$71	\$226
Freight	\$5	\$47	\$69	\$74	\$81	\$276
ITS	\$30	\$133	\$0	\$0	\$0	\$163
Total (w/o SIS/FIHS and Turnpike)	\$385	\$2,005	\$2,157	\$2,412	\$2,602	\$9,559
Total (w SIS/FIHS and Turnpike)	\$498	\$2,735	\$5,632	\$2,537	\$2,745	\$14,147

Note: Totals do not add due to rounding

Exhibit 42–2035 Cost Feasible Plan–Phasing in Current Year FY 2009 Dollars (in millions)

Revenue Projections by Source	FY 2014-15	FY 2016-20	FY 2021-25	FY 2026-30	FY 2031-35	21-Year Total
FDOT - SIS/FIHS	\$79	\$466	\$39	\$0	\$0	\$585
FDOT - “Mega-Projects” (uncertain timing)			\$2,052			\$2,052
FDOT - Other Arterial, Transit, TMA	\$74	\$378	\$354	\$321	\$290	\$1,418
FDOT - Product Support (Equal to 20% of Other Arterial)	\$7	\$39	\$37	\$34	\$32	\$149
State & Federal Transit New Starts	\$37	\$128	\$101	\$86	\$73	\$425
Turnpike (revenues available for capital)	\$13	\$67	\$67	\$66	\$64	\$278
Fuel Taxes (constitutional, county, LOGTs)	\$103	\$473	\$423	\$379	\$339	\$1,718
Transportation Concurrency Fees	\$2	\$12	\$12	\$11	\$11	\$48
Broward County Transit Operating ¹	\$65	\$307	\$290	\$275	\$262	\$1,199
Broward County Transit Capital ¹	\$21	\$100	\$94	\$88	\$83	\$387
County Contribution to SFRTA	\$5	\$27	\$29	\$31	\$32	\$124
Estimated Fare Revenue from Premium Transit				\$50	\$50	\$100
Total	\$408	\$1,996	\$3,498	\$1,343	\$1,237	\$8,482

¹Not included elsewhere

Phasing for capital projects and timing of availability for operating funds to support those projects after construction was developed at the project level for each major program in the transportation investment portfolio for all modes/categories. This was accomplished in consideration of project implementation schedules for individual projects within each program in a manner that provides an intermodal balance for timing of project service start-up. Project development time for environmental processes, engineering and vehicle purchases were also factors in phasing. Development of phasing by mode and the resulting timing for each program is discussed in this section. Aggregate results in YOE dollars for phasing of programs in the transportation investment portfolio for the Cost Feasible Plan are shown in Exhibit 41.

Lower inflation factors for transit projects were considered after the Cost Feasible Plan had already been developed. The phasing above using the new inflation factors for transit projects results in a surplus of \$384 million in current year 2009 dollars. However, these funds are available in FY 2026-2030 (\$48 million YOE dollars) and in FY 2031-2035 (\$644 million in YOE dollars). These additional funds are dedicated for Premium Transit use and will be available for purchase of right-of-way and project contingency. These funds may also be made available earlier if they are reserved to service bonds issued to accelerate projects.

The timing assumptions used for the phasing of project implementation and funding of O&M costs are discussed for each program type in the following and is detailed in the Appendix for each project. Exhibit 77 in the Appendix lists the roadway improvement projects completed between FY 2005/2006 and FY 2007/2008. Roadway improvements and major transit improvements programmed in the FY 2009/2010-FY 2013/2014

TIP are considered as committed projects. A list of committed projects is provided in Exhibits 78 and 79 in the Appendix.

First, a discussion of what projects will be implemented in the near-term period of FY 2014-2020 and the longer term period of FY 2021-2035 is provided to give an overall sense of the implementation strategy.

Near-term Implementation (FY 2014-2020)

Expansion of the local bus system occurs in the near-term, including a number of support facilities. Operating funds are provided by the 2035 Cost Feasible Plan up to 50% of existing service or 33% of expanded plus existing service. Funding shortfalls need to be addressed in the near-term to ensure long-term operations.

Early implementation of Mobility Hubs and bicycle/pedestrian/Greenway connectivity projects will provide the transit-supportive land use to promote transit. All Mobility Hubs, including 20 Gateway Hubs, 20 Anchor Hubs, and 63 Community Hubs will be implemented in the near-term. Operating funds for Mobility Hubs are programmed to begin in FY 2015. Approximately one third of all connectivity projects will be constructed in the near-term including 167 miles of bikeways, 107 miles of pedestrian sidewalks. Greenways will be expedited with almost two thirds of the total system (153 miles) in place by FY 2020. All identified ITS projects will be implemented in the near-term. This includes both Open Road Tolling and Automated Traffic Management Systems.

Systems planning, alternatives review, environmental processes and public involvement required to implement High Capacity Premium Transit projects (BRT for the Cost Feasible Plan and possibly LRT should funding be identified) and Rapid Bus will also begin by or before FY 2014 and continue through FY 2020. Projects now in the planning stage are included in the 2035 LRTP as Illustrative Projects.

Almost half of the roadway projects and all of the freight projects on roadways are expected to be constructed prior to FY 2020. Other mega-projects, Florida Turnpike projects, and SIS/FIHS roadway projects will be implemented in accordance with the implementing agency's respective program, which is determined outside of the 2035 LRTP.

Long-term Implementation (FY 2021-2035)

Project development for High Capacity and Rapid Bus Premium Transit projects involve significant front-end planning to study and secure federal and local funding commitments. Construction on these projects could begin as early as FY 2021. These projects are not expected to be in operation until FY 2026; therefore, Premium Transit operating funds are provided for in the ten-year period from FY 2026 through FY 2035. Operating funds are also provided for Mobility Hubs during this period.

Completion of all connectivity projects occurs in the long-term period including 317 miles of bikeways, 207 miles of pedestrian sidewalks and 98 miles of Greenways. The remaining 50% of highway projects



are completed during this period. Partial funding of local bus service (BCT and community bus) and Tri-Rail continues in this phase.

Details of each mode and phasing of projects for each over the near and long term plan period follows.

Local Bus and Premium Transit

The Broward County Transit (BCT) bus system and supporting infrastructure will be expanded in the early years of the plan. This expansion will include a third bus operations/maintenance facility, park-n-ride facilities, bus shelter/bus bays/bus stop upgrades, and expansion of the bus fleet by 150 vehicles to a total fleet of 450 vehicles. There is a shortfall of operating funds for BCT that necessitates a restructuring of operations or additional resources. The constraints associated with certain revenue sources limits funds available for operations. New sources of revenue will be needed for local bus service.

Mobility Hubs are planned for implementation by local jurisdictions, in cooperation with the Broward MPO, BCT and FDOT. The first Gateway Hubs scheduled for implementation in FY 2014-2015 are the top four (Broward Boulevard and NW/SW 1st Avenue; Broward Boulevard and I-95; Hallandale Beach Boulevard and US1; and Hollywood Boulevard and Dixie Highway) plus all 63 of the Community Hubs. The remainder of 16 Gateway Hubs and all 20 Anchor Hubs will be completed during FY 2016-2020. This reflects an expedited schedule that will require considerable coordination, cooperation and commitment from all involved parties.

In the first period of FY 2014-2015, Project Development and Environment (PD&E) studies are expected to be initiated for all Rapid Bus and High Capacity Premium Transit projects. Studies for high capacity projects are expected to carry into FY 2016-2020. Start-up of operations for High Capacity Premium Transit projects are planned to begin in FY 2025-2030; therefore, O&M funds are provided for the last 10 years of the total program.

Currently, funds are not allocated from the FY 2009/2010-FY 2013/2014 Transportation Improvement Program (TIP) for two Illustrative Projects-the Florida East Coast Corridor and The Wave. Should these projects advance into the next phase of preliminary and final engineering, Premium Transit capital funds will be made available for that purpose in FY 2014-2015. An allocation is made for this purpose in the amount of \$50 million in YOY dollars.

A portion of operations funding is also provided in this plan for community bus and Tri-Rail services.

Bicycle/Pedestrian/Greenway Improvements

All projects identified are funded in this plan. The timing of implementation is based on priorities established during project evaluation and spans the entire program period through 2035. Priorities were developed in consideration of timing for Mobility Hub

All bicycle/pedestrian/greenway improvements shown in the Needs Plan are funded.

implementation to ensure that connectivity to transit occurs when it is needed.

Roadways

SIS/FIHS project timing is taken directly from the cost feasible 2035 SIS/FIHS Long Range Highway Capacity Plan (FY 2014-FY 2035) prepared by FDOT. Turnpike projects were matched to available revenues so as to complete projects timely and efficiently without project interruption or overruns.

Mega projects including I-595 and I-95 reconstruction and managed lanes were not phased at the request of project sponsors due to uncertain timing. For purposes of cost adjustment to YOY dollars, funds were programmed to the midpoint period of FY 2021-2025.

All local roadway projects are either supporting connectivity to transit or they are addressing congestion management needs. Projects for intersection improvements and connecting roadways were scheduled in priority order.

Freight

Freight/airport/seaport facilities are eligible for funding under FDOT's SIS/FIHS, TRIP and Other Arterial/Right-of-Way Program funds. SIS/FIHS funds have already been programmed by FDOT for this plan period and available TRIP funds are uncertain. In January 2010, TRIP funds will also be reviewed and some of the projects included in this category may receive funding at that time. However, at the time of this report, only Other Arterial/Right-of-Way Program funds were available for these projects.

Projects selected for funding included in the 2035 Cost Feasible Plan total \$276 million over the 21-year program for highway and ITS projects eligible for Other Arterial/Right-of-Way Program funds. Sufficient funds were available to fund all identified projects in the Needs Plan as well as studies for additional projects. Depending on the TRIP fund allocations and potential for future SIS/FIHS funds, additional projects could be funded during this plan period. Other sources of revenues could come from aviation and seaport capital improvement programs outside of the LRTP efforts.

Intelligent Transportation Systems

The Automated Traffic Management System (ATMS) for all of Broward County is scheduled for planning and design in FY 2014-2015 with implementation to follow in FY 2016-2020. Open Road Tolling is included in Florida's Turnpike Enterprise plan.

A graphic representation of program phasing by each time period is shown comparatively in Exhibit 43.

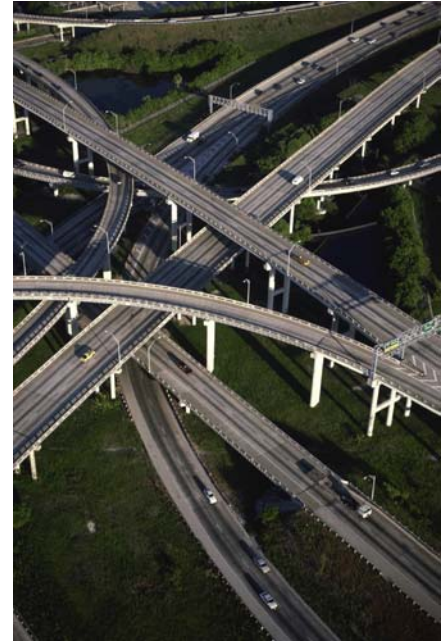
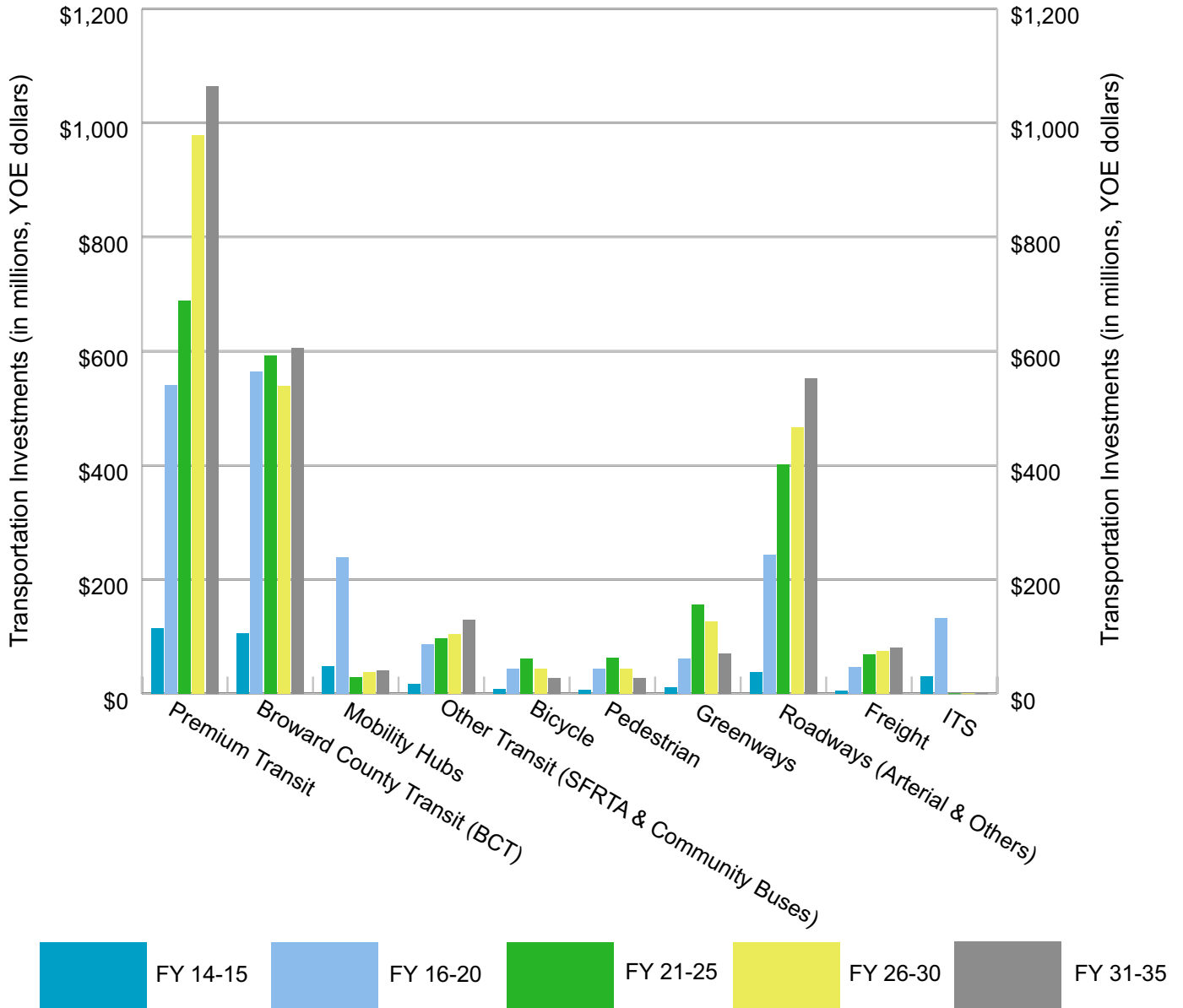


Exhibit 43-Transportation Investment Portfolio Phasing (in millions, YOY dollars)





5.1.3 Strategic Intermodal Systems

Florida’s Strategic Intermodal System (SIS) is a transportation system that consists of statewide and regionally significant facilities and services which include commercial service airports, spaceport, deepwater seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways and highways. Currently designated SIS facilities accommodate almost all rail freight, more than 68 percent of truck traffic, and 54 percent of total traffic on Florida’s State Highway System.

Exhibit 44 maps SIS and Emergency SIS corridors and hubs. Cost feasible SIS projects are listed in Exhibit 71 of the Appendix.

As the Broward 2035 LRTP was developed, special attention was placed on SIS facilities for the following reasons:

1. Regional impacts and benefits are expected; therefore projects must undergo thorough evaluation;
2. SIS improvements are eligible for SIS specific funding sources;
3. SIS improvements involve FDOT in the development and implementation phases of a project;
4. Many improvements emphasize the focus on alternative modes as referenced in the Statewide Plan; and
5. SIS facilities are emphasized in the *2025 Florida Statewide Transportation Plan* developed by FDOT. FDOT is a reviewing agency for the Broward 2035 LRTP.

In support of the fifth item above, the long-term objectives of the 2025 Florida Statewide Transportation Plan focus on SIS facilities include:

- Provide for smooth and efficient transfers for both people and freight between transportation modes and between the SIS and other transportation facilities.
- Reduce delay on and improve the reliability of SIS facilities;
- Preserve new capacity on the SIS for projected growth in trips between regions, states, and nations, especially for trips associated with economic competitiveness;
- Expand the use of modal alternatives to SIS highways for travel and transport between regions, states, and nations; and
- Establish statewide criteria for identifying and developing new SIS facilities where such facilities are needed to connect the economic regions of the state, especially economically distressed areas, in coordination with regional and community visions.

According to the 2025 Florida State Transportation Plan, the state will:

“Play the lead role in enhancing mobility for international, interstate, and interregional trips, primarily through its oversight and implementation of the Strategic Intermodal System (SIS) Strategic Plan...and... use alternative modes.”

Exhibit 44-SIS & Emerging SIS Corridors & Hubs

SIS & Emerging SIS Hubs, Corridors & Connectors

**July 20
2008**

DISTRICT 4(a)

LEGEND

SIS Hubs

- Airports
- General Aviation Reliever Airports
- Seaports
- Passenger Terminals
- Spaceport
- Intermodal Freight - Rail Terminals

Corridors

- Highway
- Rail
- Waterways

Connectors

- Road Connectors
- Rail Connectors
- Waterway Connectors

Other

- Areas that are Urbanized¹

Emerging SIS Hubs

- Airports
- Seaports
- Passenger Terminals
- Intermodal Freight - Rail Terminals

Corridors

- Highway
- Rail
- Waterways

Connectors

- Road Connectors
- Rail Connectors
- Waterway Connectors

Planned Facilities

Hubs

- SIS/Emerging SIS (Planned Add)
- SIS/Emerging SIS (Planned Drop)

Corridors

- SIS/Emerging SIS Highway (Planned Add)
- SIS/Emerging SIS Highway (Planned Drop)
- SIS/Emerging SIS Railway (Planned Add)

Connectors

- SIS/Emerging SIS Highway (Planned Add)
- SIS/Emerging SIS Highway (Planned Drop)
- SIS/Emerging SIS Railway (Planned Add)

FDOT Districts

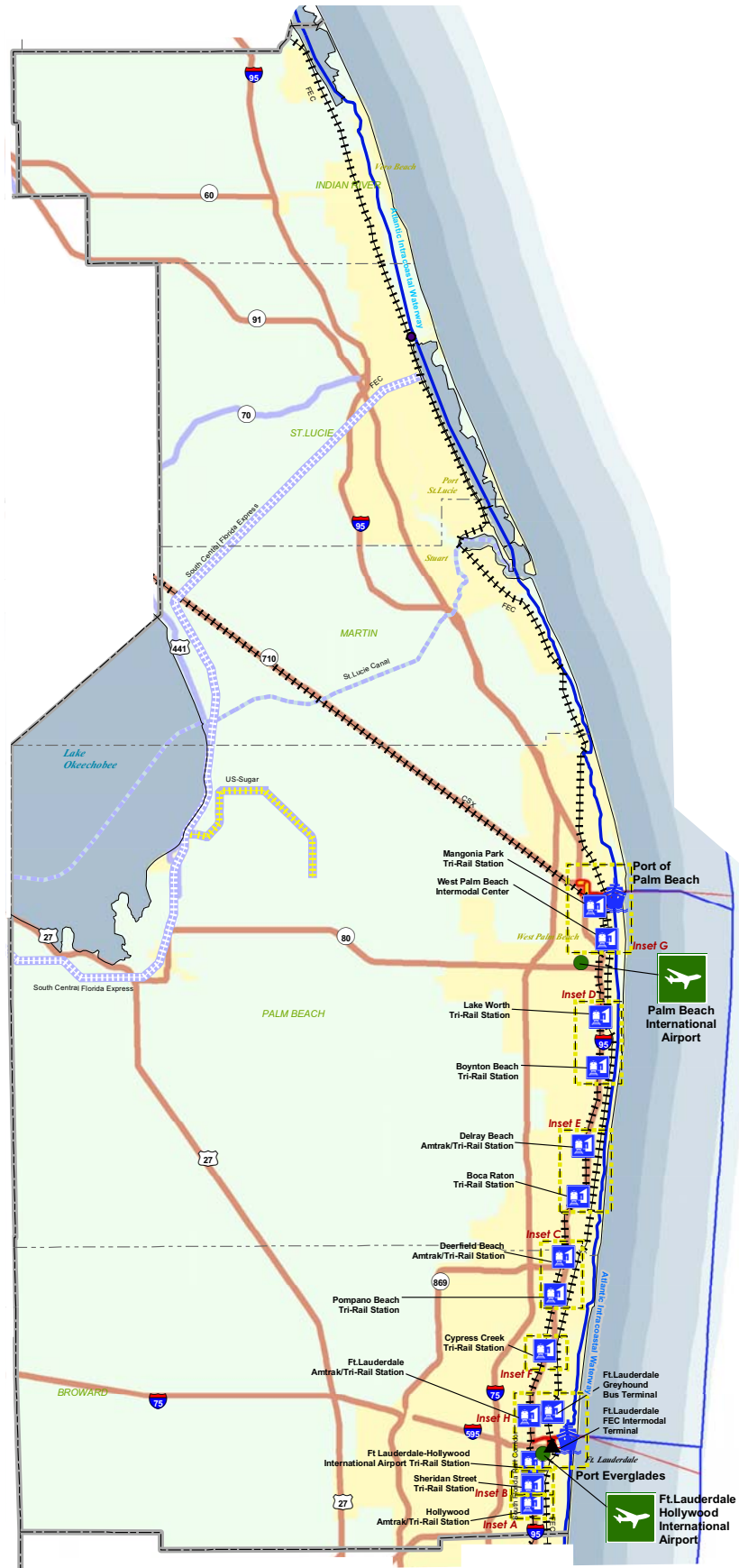
District Contact:
Amy Goddeau
(954) 777-4343

NOTES

¹ Population density greater than 1,000 persons per square mile. (2000 Census)

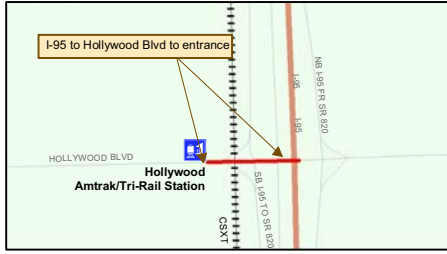
- Rail Connector Description
- Road Connector Description
- Waterway Connector Description

State of Florida
Department of Transportation
Office of Policy Planning



Source: Florida Department of Transportation

Exhibit 44-SIS & Emerging SIS Corridors & Hubs (continued)



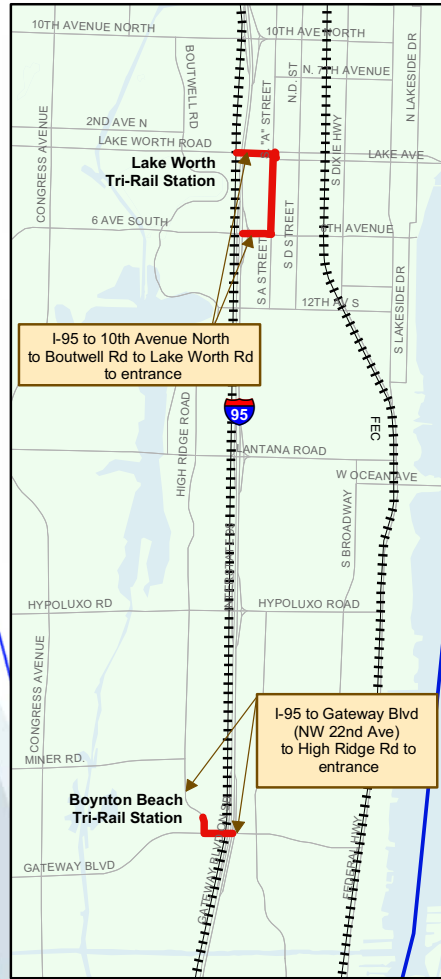
Inset A



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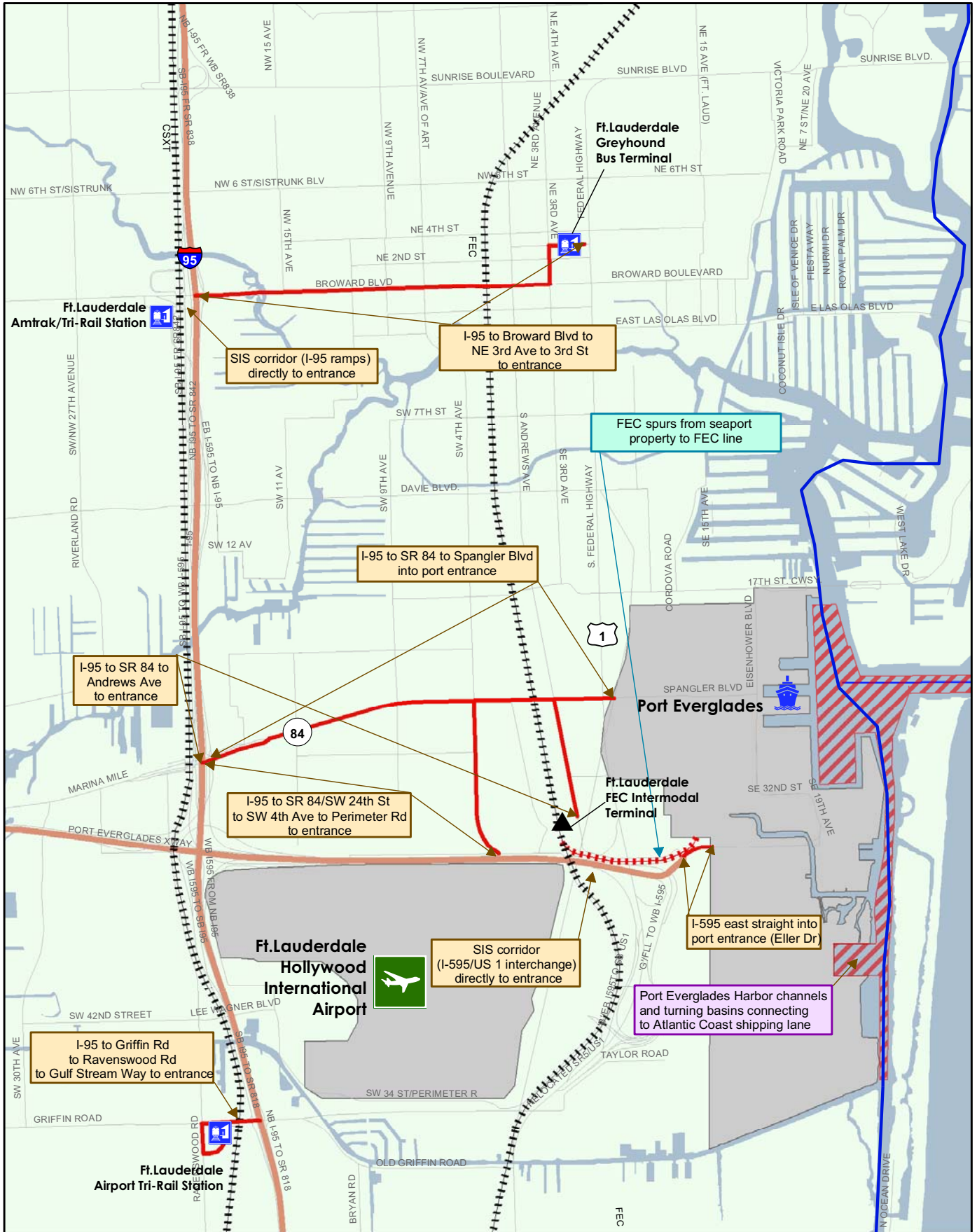


Inset E



Inset F

Exhibit 44-SIS & Emerging SIS Corridors & Hubs (continued)



Fort Lauderdale Area

Source: Florida Department of Transportation

Per the 2007 SIS Data and Designation Update, the following SIS categories have been developed and were considered in the LRTP:

- **Hubs** include ports and terminals that move goods or people between Florida regions or between Florida and other markets in the United States and other parts of the world. These include airports, spaceports, seaports, interregional passenger terminals, and freight rail terminals.
- **Corridors** include highways, rail lines, waterways, and other exclusive-use facilities that connect major markets within Florida or between Florida and other states.
- **Connectors** are highways, rail lines, and waterways that connect hubs and corridors.

5.1.4 Congestion Management

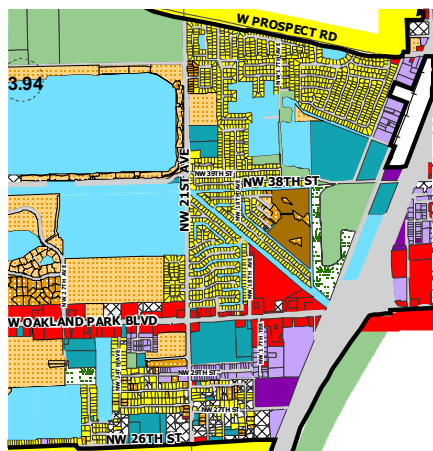
As congestion continues to grow with population in Broward County, planners will employ new tactics as an alternative to increasing infrastructure for single-occupant vehicle (SOV) travel. In 2005, the federal government elevated the national response to congestion in its reauthorization of national transportation program funding by recognizing the need to target specifically the sustained demand for SOV travel in the United States. The revised legislation targeted demand-side as well as supply-side techniques for reducing SOV travel. In particular, the need for integrated land use policies, pricing incentives, and investment in alternatives to automobile travel was recognized. This trend is expected to be expanded in the Transportation Appropriations Act of 2010 and the proposed Climate Change bill, with potentially significant implications for 2035 LRTP projects.

The current transportation planning process for Broward County analyzes and evaluates the county's transportation network (roadway and transit) annually, depicting the most congested areas through GIS maps, and recommending mitigation solutions in the form of roadway and transit improvements. In the past couple of years, the analysis of the freight network has been added to the process. Until several years ago, the county received approximately \$10 million per year in the form of federal Congestion Mitigation & Air Quality (CMAQ) grants for these improvements. The money was mostly divided between traffic and transit improvements and allocated evenly to operating agencies. These grants were eliminated with the designation of the tri-county area as an attainment area. Nonetheless, congestion management continues to be a critical element of long-term transportation planning.

The Broward MPO's latest Congestion Management Plan entitled "Broward County Congestion Management System, 1995" outlines strategies for corridors throughout the county. This plan addressed multi-modal solutions to congestion. The Broward 2035 LRTP approach expands upon these concepts. A recommendation of the 2035 LRTP is to revise the county's Congestion Management Plan to reflect new programs and facilities identified in the 2035 LRTP.

Congestion Management Strategies:

- *Decrease trip making and length*
- *Shift from auto travel*
- *Enhance existing operations*



As shown in the “Challenges and Opportunities” Section 2 of this document, many roadways and intersection are anticipated to be congested by 2035. The mitigation strategies addressed in the sections are intended to mitigate the identified needs.

Mitigation Strategies for Congested Areas in Broward County

A primary component of the congestion management approach involves developing a toolbox of mitigation strategies that are consistent with federal guidelines and can be applied to the identified congested corridors and intersections. The strategies are intended to provide a methodology for congestion mitigation that begins with the most cost-effective and efficient strategies and ends with the most cost prohibitive and intrusive strategies (i.e. road widening for capacity improvement). Important to note, is that the 2035 LRTP includes few roadway capacity improvements compared to previous efforts. As a result, congestion management provides an alternative method to improve mobility and access in a less capitolly intensive manner.

There are three primary levels of mitigation strategies summarized below:

Decreasing the Need for Trip Making and Trip Length

The Mobility Hubs Concept will change the need for trip making by serving as portals for vanpooling, carpooling, transit, walking, and biking, thereby decreasing the need for trips on roadways. In addition, multi-use developments around Mobility Hubs are likely to decrease average trip lengths by providing concentrated nodes of activity. Real-time messaging of both the roadway and transit systems may also encourage more efficient trip patterns.

Shifting Trips from Automobiles to Other Modes

The LRTP allocates 8% of non-previously programmed funding for pedestrian, bicycle, and Greenway improvements. This represents a very large increase in funding compared to any previous LRTP, especially considering the lower cost of these types of facilities compared to roadway and transit. Over 70% of funding is allocated to Premium Transit which further encourages modal shift over the long term. Based on model runs, more than a doubling of mode share for transit is anticipated by 2035. This is calculated from a travel demand forecast model that is calibrated to the limited transit system that we have operating today. It is anticipated, based on national experience, that mode shift to transit will be much higher than what is forecast with the tools available. In addition, pedestrian and bicycle travel is expected to increase greatly with the extensive construction of new sidewalks, bikeways and Greenways; however, a quantitative method to measure these changes has not been established for the region. Also of note is the importance of providing information to the public on the various types of facilities in the LRTP to educate the general public about products and choices. The Mobility Hubs placed throughout the county are ideal locations to disseminate information about transportation choices.

Enhancing Operations on Existing Roadway Facilities

The 2035 LRTP roadway focus is on lower cost operational improvements, which is very much in line with congestion management approaches. Intersection improvements, physical expansion for operational efficiency in select areas, and signal priority comprise the majority of roadway facilities included in the 2035 LRTP.

5.1.5 Travel Demand Management

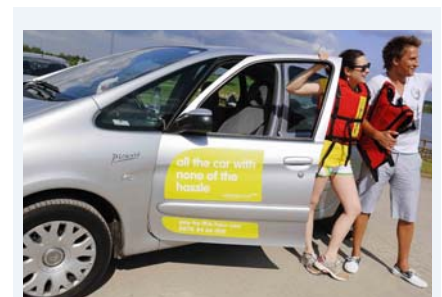
Travel demand management (TDM) has traditionally included carpooling and vanpooling programs and ridesharing network options. Public information and education about available transit services, high occupancy vehicle lanes, park-n-rides, high occupancy toll lanes and congestion pricing, emergency ride home programs, flextime, and environmental benefits of reducing vehicle miles traveled are important components of a successful TDM strategy. These strategies have worked for both workforce commuters and college students. In some cities, high occupancy vehicle lanes provide an incentive to two or three-plus occupancy vehicles to gain access to the faster-moving special use lanes on limited access highways. In Broward County, the South Florida Commuter Services (an FDOT program) and South Florida Transportation Management Association provide information and promote a wide range of travel options including bicycle, transit, and telecommuting, in addition to ridesharing.

The 2035 LRTP will focus on introducing new options known as carshare and bikeshare in conjunction with Mobility Hubs to broaden access to support more transit use and reduce the necessity for car ownership. Although both carshare and bikeshare operate under the same premise of making vehicles available at various locations for a small charge, there are different challenges in implementing each of these programs. In addition, Traveler Information Services will be included at Mobility Hubs.

Carshare

Now a mainstay in European and Asian cities, the carshare business is catching on in the U.S. The first commercial carsharing company in the U.S. was founded in Portland, Oregon in 1998. Today, a number of carsharing companies (Zipcar nationwide and I-Go in Chicago) are growing throughout the country and major auto industry (Toyota, Ford, Daimler), and car rental firms (Hertz Connect, Enterprise WeCar, U-Haul U Carshare) have entered the market. Private and public sector alike are also interested in options which will reduce the cost of car ownership for their company non-revenue vehicle fleets.

Initially popular on U.S. college campuses, carsharing provides an alternative to car ownership and can eliminate the need for a second car in many households. This service is capable of dramatically reducing the number of cars on the road. The University of California at Berkeley reports a reduction in vehicle miles travelled of 44% and average savings of \$600 per month per household. Carsharing is a way of life for many European residents facing high car ownership



Carshare is a mainstay in Europe and Asia, and catching on in the U.S.

costs and limited space for parking. Surveys estimate CO₂ emissions reductions of 50% per user.

Here's how it typically works. Potential carshare users become members of the carshare organization. Cars are stored at centrally-located areas of neighborhoods, community or commercial centers or campuses. When a member needs a car, they reserve one via the internet and mobile devices that can access the internet which transmits information to an onboard computer system. Upon arrival at the car location, a cell phone can help locate the car by making the horn beep. Once found, the car is unlocked with either a card or cell phone. Members are charged an annual membership fee (\$50/year for Zipcar) and are automatically charged by the hour or day for use. If you are running late, you can extend your carshare as needed; however, late fees are applied to those who fail to do so. Reliability of the availability of a reserved car is important to the success of this type of service. Other rules also apply to ensure that cars are left clean, not left with empty gas tanks, and no smoking is allowed.

Some of the success factors include walkable neighborhoods, educated population with few children, areas with parking problems and available alternative modes of transportation. It should be kept in mind that carsharing is an extension of transit and is not expected to function as a standalone service. The demographic of the typical user is changing from eco-minded young college students to older cost-conscious middle-class workers. Some of the challenges with carsharing include zoning restrictions and permitting which can be easily overcome by supportive land use policies.

Two programs were introduced this year at the University of Miami (Zipcar) and at University of Southern Florida in Tampa (WeCar by Enterprise). The Florida Atlantic University in Boca Raton is also studying the idea. State grants are being tapped to help universities fund new carshare programs.

The 2035 LRTP calls for incorporation of space for carshare staging and storage at Mobility Hubs. Proximity to transit at centrally located transfer locations provides the kind of convenience carshare users expect. The creation of carshare programs at Mobility Hubs will be identified through the planning and design process.

Bikeshare

Bikeshare programs have been a popular means to increase intermodal transportation in densely populated urban areas and college campuses by allowing people to transfer to/from transit to bicycle. The primary function of bikeshare programs is to promote free or affordable access to bicycles to reduce the use of automobiles for short trips and reduce traffic congestion and the carbon footprint of commuting, and promote exercise.

Many bikeshare programs operate similar to carshare programs in that memberships are required and a small fee may be involved. Most bicycle sharing systems are operated as community programs

Bikeshare is one of many modes planned at Mobility Hubs to provide travel options.

where bicycles are left unattended at urban locations. Some systems offer bicycles at no cost. A common problem is theft and vandalism. This can be managed through user electronic identification systems. Deposit systems do not seem to deter theft. Some programs are operated by public-private partnerships where private advertising agencies are allowed to advertise on the bikes in return for operating the service. Other successful partnerships have been made with railway operators in Europe.

The earliest bikeshare program was started in the 1960s in the Netherlands. Programs in the U.S. have experienced mixed results. The most successful large-scale system in the U.S. is by far Washington D.C.'s SmartBikes which is operated by Clear Channel Outdoor Advertisers through a public-private partnership with the District Department of Transportation. Denver, Colorado and Austin, Texas rolled out BCycle this year, a new bikeshare program born from a corporate collaboration among health firm Humana, Trek Bicycles and advertisers Crispin Porter + Bogusky. Key to the success of bikeshare systems is high density in urban settings at centrally located hubs where they can complement transit modes.

The 2035 LRTP envisions similar systems to be operated at Mobility Hubs which will provide the transfer locations at locations that foster intermodal connections. The programs should be carefully planned to match public-private partnership goals with community needs and desires. There are many experiences across the globe that Broward County can now draw from as these transportation options begin to reach acceptance and popularity in similar urban settings.

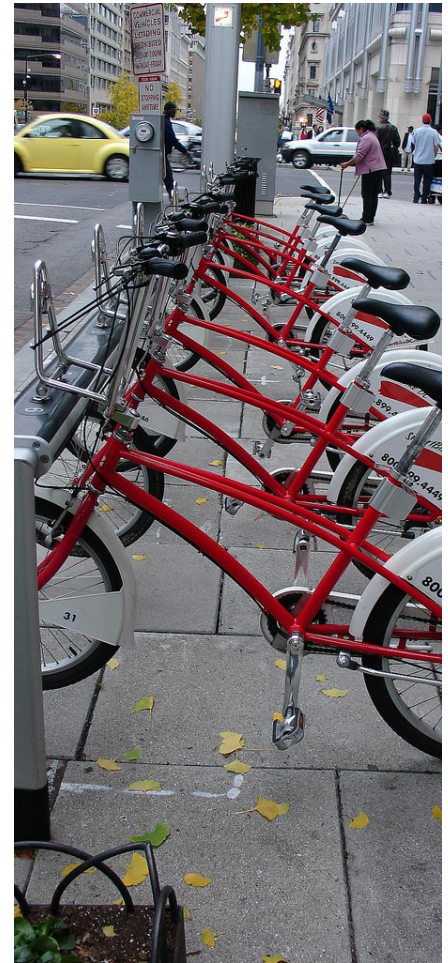
Traveler Information Services

Another important component of TDM strategies is the incorporation of information systems to provide schedule and functional information to travelers to ensure awareness of transportation options. This will be accomplished with real-time passenger information and changeable message boards located on major transportation corridors, transit facilities and at Mobility Hubs.

Implementation Strategies

Considerable planning and coordination with a number of parties and vendors will be required to ensure success of all components envisioned for Mobility Hubs. The TDM strategies will be a critical component to the success of Mobility Hubs. Project components included in the Cost Feasible Plan include:

1. Surface parking for carshare at Gateway Hubs (30 spaces each) and Anchor Hubs (20 spaces each);
2. Wi-Fi infrastructure at Gateway Hubs;
3. Real-time passenger information (LED/LCD panels) for all hub types; and
4. Dynamic Message Signs (DMS) on arterials leading up to the hubs (incorporated into ITS technology projects).



The first bikeshare program was developed in the 1960s in the Netherlands.

All 63 Community Hubs for Broward will be implemented in the near-term.

Mobility Hubs are scheduled for early implementation of four Gateway Hubs and all 63 Community Hubs. Gateway Hubs would be the most appropriate locations for incorporation of carshare and bikeshare due to the expected availability of off-street parking and staging areas. However, smaller applications would also be appropriate for Anchor and Community Hubs with on-street or private sector parking. Funding is also available for traveler information systems. Planning for incorporation of carshare and bikeshare services and design of the facilities which includes traveler information services should begin immediately. Some early planning activities could include:

1. Determine roles and responsibilities for Mobility Hub implementation;
2. Stakeholder/community meetings to plan for Mobility Hub design elements and standards;
3. Review of potential public-private partnerships and financing mechanisms;
4. Review potential for advertising programs to accelerate implementation and reduce future operating cost;
5. Development of policies to address Mobility Hub implementation and operations; and
6. Development of a solicitation for proposals to provide and operate carshare and bikeshare services. (It is expected that separate providers/operators would be involved for each.)

One of the first four Gateway Hubs will serve as a satellite Transportation Management Center (TMC) at Broward and NW/SW 1st Avenue in downtown where \$500,000 is budgeted for communications technology to tie-in to the main facility known as SmartSunGuide TMC located at 2300 Commercial Boulevard. Broward County Transit currently operates a central transfer facility at this future Gateway Hub location. The second Gateway Hub on Broward is located at the Tri-Rail Station to facilitate intermodal transfers to the local bus network initially, and later to high capacity Premium Transit. Two other Gateway Hubs were prioritized at Hallandale Beach Boulevard and US 1, slated for future Rapid Bus service, and at Hollywood Boulevard which will tap that major activity center adjacent to Dixie Highway. All of the first four Gateway Hubs are located within a designated Community Redevelopment Area (CRA) which was determined to also be a potential Tax Increment Financing District.

Since all of the 63 Community Hubs will be implemented initially, outreach to the neighborhoods where these projects will be located is needed to initiate the design and planning for these features to ensure community participation in their development. Including all Community Hubs in the first phase of Mobility Hub implementation will ensure widespread benefits and provides numerous opportunities for adjacent businesses interested in enhanced access for their customers.

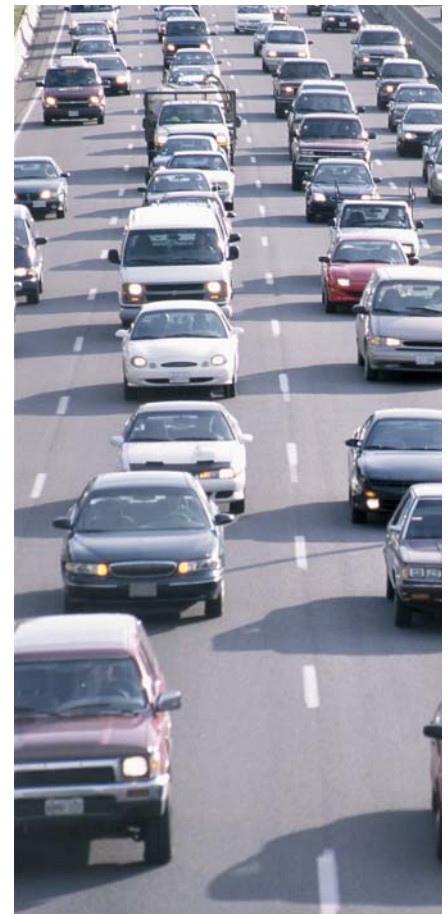
5.1.6 Hurricane Evacuation

The federal government, through the Federal Emergency Management Agency (FEMA), mandates that all states have comprehensive emergency operations plans for disasters such as hurricanes. Evacuation planning, response, and recovery activities are done at the county level while the state is responsible for coordinating local emergency management activities and state-level law enforcement and transportation.

Broward County has a well-established and efficient hurricane evacuation transportation system consisting of roadways, public transportation, and hurricane shelters. The roadway system consists of numerous east-west facilities and several high capacity freeways and arterial streets. The east-west facilities are designed to allow residents living in vulnerable coastal areas to rapidly access high capacity evacuation routes, such as Interstate 95, US 1/Federal Highway, Florida's Turnpike, Interstate 595, Interstate 75, and US 27 (State Road 25). These high capacity facilities provide access to out-of-county refuge areas. The east-west evacuating routes are located in the immediate vicinity of residential areas and cover the entire east coast of Broward County from Hallandale Beach Boulevard on the south to Hillsboro Boulevard on the north.

When a hurricane evacuation order is issued, Broward County Transit and Tri-Rail cease regularly scheduled service and begins emergency evacuation service from evacuation zones. The service coincides with the opening of American Red Cross shelters, and will not begin before the shelters open. For a Category 1–2 hurricane, all SR A1A bus stops can be used to access a hurricane shelter via a Broward County bus. Buses will run along SR A1A and Federal Highway/ if a Category 3–5 hurricane is approaching the county. The regional hurricane shelters located in Broward County are shown in Exhibit 45.

Broward County has a well-established emergency evacuation plan.





Transportation is key to saving lives in a disaster situation.

The 2035 LRTP includes roadway and transit improvements that will decrease the hurricane evacuation clearance time for Broward County evacuees. The following list of roadway improvements, recommended in the 2035 LRTP (see Exhibit 28, page 59), will enhance the county's hurricane evacuation plan. Evacuation routes are shown in Exhibit 46.

- **Atlantic Boulevard–Cypress Road to US 1 (restripe to 6 lanes):** This improvement will increase the vehicular capacity of this hurricane evacuation route.
- **Oakland Park Boulevard–I-95 to Powerline Road (intersection improvements):** Improvements will provide relief to this bottleneck segment of Oakland Park Boulevard (a designated hurricane evacuation route).
- **Sheridan Street–Dixie Highway to US 1 (widen from 4 to 6 lanes):** A significant increase in throughput capacity during hurricane evacuation conditions.
- **SW 10th Street–Powerline Road to Military Trail (widen from 4 to 6 lanes):** By widening this arterial roadway, which is also designated as a Strategic Intermodal System (SIS) connector, the vehicular capacity of this hurricane evacuation route is significantly increased.
- **I-595 (new reversible lanes):** This improvement will increase the vehicular capacity of this hurricane evacuation route.

The following list of transit improvements, recommended in the 2035 LRTP, will enhance the county's hurricane evacuation plan.

Improvements along State Road A1A

Anchor Hub at:

- Hollywood Boulevard

Community Hubs at:

- Hillsboro Boulevard
- Commercial Boulevard
- Oakland Park Boulevard
- Sunrise Boulevard
- Hallandale Beach Boulevard

Improvements along Federal Highway (US 1)

Gateway Hubs at:

- Fort Lauderdale/Hollywood International Airport
- Hallandale Beach Boulevard

Anchor Hubs at:

- Oakland Park Boulevard
- Sheridan Street

Community Hubs at:

- NE 48th Street
- Sample Road
- Copans Road
- Pembroke Road

Exhibit 45-Regional Hurricane Shelters in Broward County

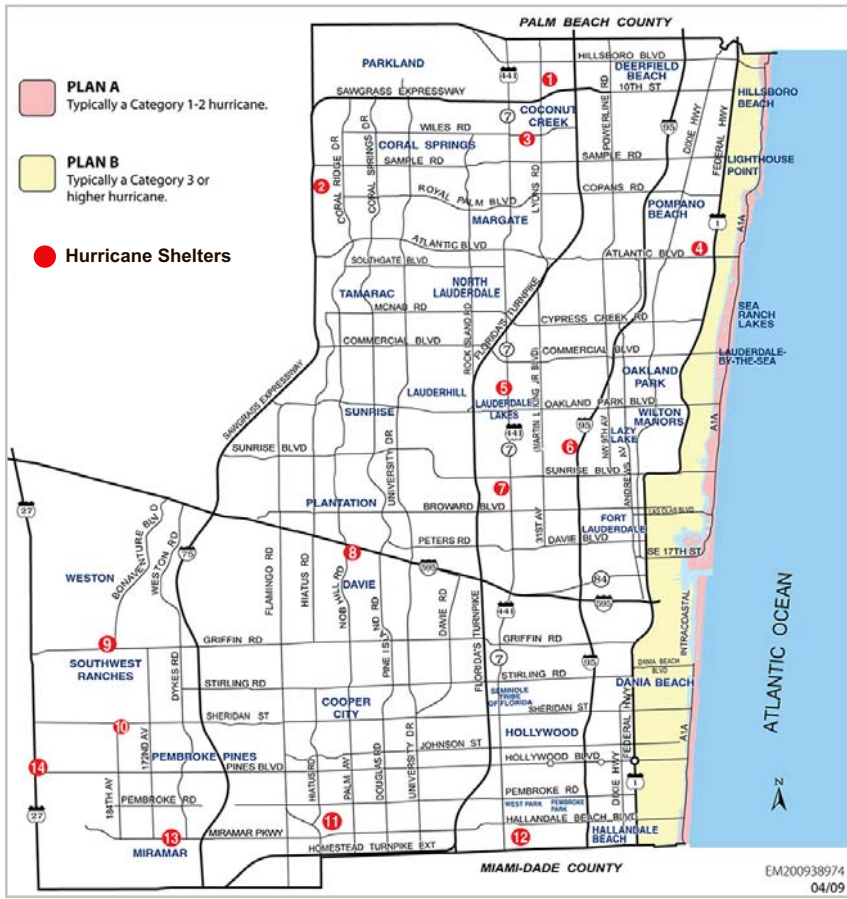
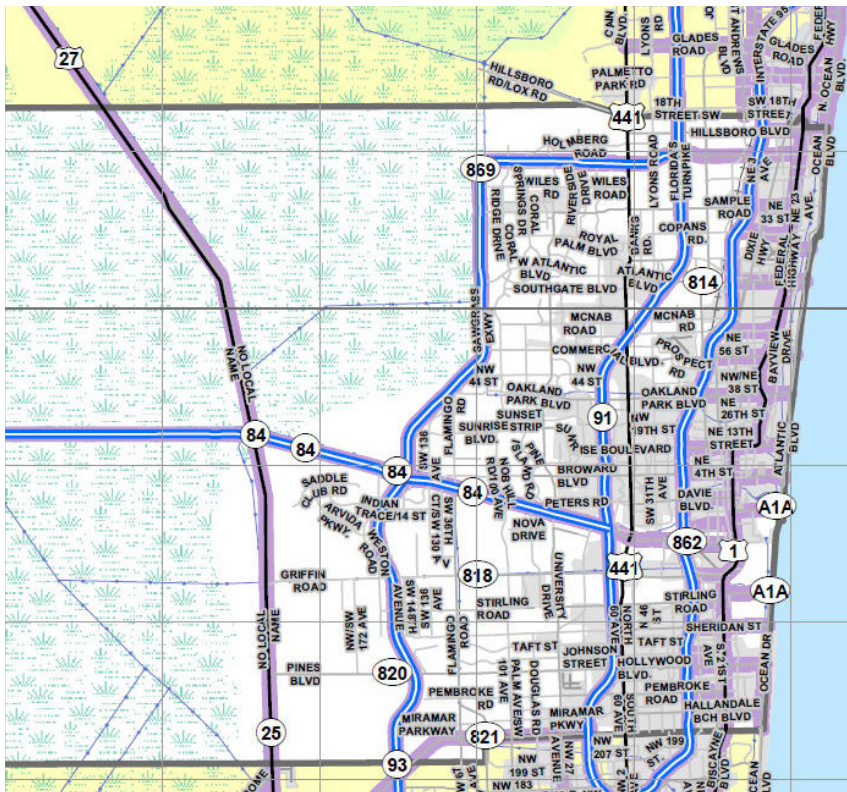


Exhibit 46-Hurricane Evacuation Routes



Source: Broward County

Illustrative projects represent priorities identified by the region or cities.

5.2 Illustrative

The financial-constraint requirement for the Cost Feasible Plan limits the number of needed projects that can be programmed. Despite this limitation, it is widely recognized that the needs and the desires of communities to improve mobility far exceed resources available. As a result, LRTPs are permitted to include Illustrative Projects that would be included in future approved Transportation Improvement Programs if reasonable additional resources beyond those identified in the cost feasible financial plan were available. The transit projects identified in the LRTP as Illustrative Projects include:

1. Florida East Coast (FEC) Railway commuter service,
2. The Wave Fort Lauderdale Streetcar,
3. Central Broward East-West Transit,
4. SunPort-Airport/Seaport People Mover,
5. Broward County Intermodal Center (IMC),
6. Broward County Transit O&M Cost (50%),
7. FEC/CSX Connector (Commuter Rail), and
8. Broward County Transit Administration Building.

These transit projects are representative of the MPO's desire to achieve more for Broward County residents than is defined in the Cost Feasible Plan, and to encourage the pursuit of additional resources linked to specific projects that meet the goals of the LRTP. The first four of the transit projects in the list above are already in a phase of environmental study. They represent priorities previously established by the region or cities. With the exception of the Wave project which is for a streetcar system, technology determinations have not yet been finalized. The environmental studies, when completed, are anticipated to provide input into the project definition. These four projects are currently actively engaged in pursuing a combination of federal, state, regional and local funds. As such, until full funding for implementation is identified, they will remain in the "Illustrative" designation as an indication of project intent pending funding availability. (See Appendix, Exhibit 74.)

In addition to the transit projects and an administration building for BCT, several roadway projects were added to the illustrative list as projects that are necessary for improved mobility where there is a desire to procure funding through future efforts. These projects are listed in the Appendix, Exhibit 75. The SR 93/I-75 Corridor Study is described beginning on page 96 of this section.

Florida East Coast Railway

The need for passenger transit service along the east side of Miami-Dade, Broward and Palm Beach counties has long been apparent to transportation planning agencies. In 2004, several independent transit studies were conducted to assess the potential for transit along the Florida East Coast (FEC) Railway Corridor. Florida East Coast

Many important transit facilities are designated as Illustrative due to current fiscal constraints.

Industries, the owner of the FEC Railway Corridor, asked the South Florida Regional Transportation Authority (SFRTA) to coordinate these into one regional study for the tri-county area.

As a result, these various studies and project concepts were incorporated into a regional Alternatives Analysis, termed the South Florida East Coast Corridor Transit Analysis (SFECCTA). This analysis is a comprehensive study of the FEC Corridor extending 85 miles from downtown Miami to Jupiter and is being coordinated through FDOT District IV with participation by the three MPOs, FDOT District VI, the SFRTA, local transit operators, and the South Florida and Treasure Coast Regional Planning Councils.

Phases of Analysis

The SFECCTA is currently underway to develop a locally preferred alternative and a Detailed Conceptual Alternatives Analysis/ Environmental Screening Report for the entire 85-mile corridor. To manage the magnitude of the study, the analysis was broken into two phases. Phase 1, completed in Spring 2009, conducted a preliminary environmental screening of approximately 36 conceptual regional transit alternatives consisting of combinations of service segment, alignment and modal technology. These alternatives were evaluated for their ability to meet the project's purpose and need using as criteria ridership, environmental impacts, cost effectiveness and equity. Phase 1 concluded with a recommendation to move forward into Phase 2 with 13 build alternatives.

Phase 2 of the SFECCTA, begun in the Spring of 2009, is utilizing a multi-step screening process to define, analyze, narrow and refine the range of viable alternatives in services, modal technologies and detailed alignments. Site-specific issues such as transit stations and operations and maintenance facilities will be identified and evaluated, as well as recommendations for highway and waterway crossings by the transit service. Phase 2 completion is anticipated in 2010. A Detailed Conceptual Alternatives Analysis/Environmental Screening Report (AA/ESR) will document the process and will result in the selection of a Locally Preferred Alternative (LPA) which could possibly consist of different modes operating in the corridor. Both phases of the SFECCTA AA/ESR are currently funded by a combination of MPO and FDOT funds.

Upon selection of a LPA, a draft Environmental Impact Statement (EIS) will be initiated concurrent with conceptual engineering for the entire 85-mile corridor. This work is expected to begin in 2010 and be completed in 2013. When completed, it is anticipated that the draft EIS and conceptual engineering will be submitted to the Federal Transit Administration (FTA) as a New Starts funding request. As part of this process, it is anticipated FTA would provide approval for the SFECCTA Transit Project to proceed into preliminary engineering which would likely be issued for an initial operable segment of the corridor. Anticipated timeframe for engineering and construction is four to eight years after completion of the draft EIS/conceptual engineering, enabling service to begin potentially in 2017.

Corridor Segments

At the conclusion of Phase 1, the 85-mile corridor was ultimately subdivided into a series of smaller segments of independent utility for a more detailed analysis in Phase 2. These segments, based on forecasted travel patterns and market analysis, are generally described as follows:

- South Corridor Section:*** Generally located between downtown Miami and Pompano Beach
- Middle Corridor Section:*** Generally located between Pompano Beach and West Palm Beach
- North Corridor Section:*** Generally located between West Palm Beach and Jupiter
- Southeast Florida Corridor Section:*** Includes the entire 85-mile length of the corridor and incorporates the South, Middle, and North Sections

Transit Technologies

There are a variety of transit technologies under consideration in Phase 2, including light rail transit, bus rapid transit, regional rail transit, rail rapid transit, and regional bus. The Tri-Rail Jupiter Extension, could occur on the North Corridor Section in the form of regional rail transit as an initial phase of passenger service.

Cost Estimates & Revenues

There are two general categories of costs related to the SFECCTA: (1) Planning, Design & Engineering, and (2) Capital Construction Costs. As the total project could potentially require 15 to 20 years for build-out of all currently envisioned segments and development phases, cost estimates are still being developed for some of the longer-term aspects of the project. Similarly, there are multiple layers of revenues that will be required for the project, many of which can only be estimated for this 2035 LRTP. Both types of costs and revenues are further described in Exhibit 47.

Planning, Design and Engineering Costs, and Revenues

Currently, the SFECCTA is developing a Detailed Conceptual Alternatives Analysis/Environmental Screening Report for the entire 85-mile corridor. This portion of the study, estimated to cost \$24.5 million, is fully funded.

Upon the completion of Phase 2 and the selection of an LPA, the SFECCTA will likely proceed towards the development of a Draft EIS for the entire corridor and conceptual engineering for all or part of the corridor. This phase, estimated to cost \$50 million, is anticipated to be funded.

Florida East Coast Railway costs are dependent on the selection of technology and alignment.

After completion of a draft EIS and conceptual engineering, cost estimates associated with the project could vary considerably. FTA approval would be sought for the project to proceed into preliminary engineering, likely to be issued for a particular segment of the



corridor. Project costs will vary according to segment and type of service to be engineered; therefore, costs associated with preliminary engineering and additional planning and design would be determined at a future date.

Exhibit 47-Detailed Funding for Each SFECCTA Phase

Detailed AA/ESR (PHASES 1 & 2) (All Funding Committed; Completion Anticipated 2010)	
Palm Beach MPO (Federal Funds)	\$2.0 million
Broward MPO (Federal Funds)	\$2.0 million
Miami-Dade County MPO (Federal Funds)	\$2.0 million
FDOT (State Funds)	\$18.5 million
TOTAL	\$24.5 million
Draft EIS/Conceptual Engineering (Partial Funding Committed; Anticipated Timeframe 2010-2013)	
Palm Beach MPO (Federal Funds)	\$6.6 million
Broward MPO (Federal Funds)	\$3.8 million
Miami-Dade County MPO (Federal Funds)	\$2.1 million
FDOT (State Funds)	\$37.5 million
TOTAL	\$50 million

Capital Construction Costs and Revenues

Capital construction costs for the SFECCT Transit Project will also vary depending upon the segments of service and types of technology chosen for particular segments, with considerable variation in the capital costs per technology type and distance of service. It is anticipated that a combination of federal, state, and local funding will be sought for the system’s capital costs. Operating revenues are undetermined at this time but would be assessed to ensure viability of the system.

The Wave Fort Lauderdale Streetcar

The Downtown Fort Lauderdale Streetcar referred to as “The Wave” is a 2.7 mile electric streetcar system that will serve destinations in Fort Lauderdale’s urban core. The Wave will provide residents, workers and visitors with an attractive, easily accessible, and quality transportation option that will link the community and the existing regionally-based Broward County Transit bus and Tri-Rail systems.

It will have 10 solar powered stations that will feature real-time arrival/ departure information. There will be streetscape improvements around the stations, to include pedestrian crosswalks, shade trees, lighting, and improved sidewalks. A traffic signalization system will help maintain headways of 7 ½ minutes during peak periods and 10 minutes during off peak periods.

The Broward County Board of County Commissioners voted in 2008 to be the owner and operator of the Wave Streetcar.

The Wave will have solar powered stations.

Background

In 2004, a Downtown Transit and Pedestrian Mobility Study was completed through partnerships with the following agencies:

- Downtown Development Authority of Fort Lauderdale (DDA)
- City of Fort Lauderdale (City)
- Fort Lauderdale Community Redevelopment Agency (CRA)
- Florida Department of Transportation (FDOT)
- Broward County
- Broward Metropolitan Planning Organization (MPO)
- Clean Air Cooperative
- Downtown Fort Lauderdale Transportation Management Association (TMA)
- South Florida Regional Transportation Authority (SFRTA), Tri-Rail operator

The study results indicated the need for transit and pedestrian improvements in downtown.

Along with many other steps taken to improve transit connectivity and the pedestrian realm, the DDA, in partnership with FDOT and the Broward MPO, hired a consultant in 2005 to complete an Alternative Analysis (AA) and Environmental Assessment (EA).

During the AA process, there was a large outcry from the community for the proposed transit system to link up to hospital district. In 2006, the southern project boundary was extended south to Broward General Hospital at SE 17th Street.

In 2008, a locally preferred alternative was endorsed by Broward County, the City of Fort Lauderdale, and the DDA. The route extends from Sistrunk Boulevard/6th Street on the north to SE 17th Street on the south.

In addition, Broward County committed to be the owner and operator of the system and the City of Fort Lauderdale pledged a capital contribution of \$10.5 million and agreed to go through a special assessment process to raise the remaining local share.

Cost Estimates & Revenues

The project is estimated to cost a total of \$124.34 million, which includes unique elements like retrofitting the 3rd Avenue Bridge, double-tracking, purchasing land for the maintenance and storage facility, and constructing the facility. Exhibit 48 details cost by phase.

Planning

The initial planning stages including the AA, the EA, and an Advanced Alternatives Analysis are complete. These phases were funded in partnership with the Federal Transit Administration/Federal Highway Administration (FTA/FHWA), DDA, FDOT, and the Broward MPO.

Design and Engineering

It is anticipated that FTA will approve entry into project development for preliminary engineering and final design in early 2010.



Construction and Procurement

After completion of final design, it is anticipated that a construction Full Funding Grant Agreement will be executed with FTA and construction and procurement for construction will commence.

Operations and Maintenance

Annual operations and maintenance are estimated to cost approximately \$2.4 million (2008 dollars). The Broward County Board of County Commissioners voted in 2008 to be the owner and operator of the system and will be responsible for operations and maintenance. It is estimated the Wave will be in operation in 2013.

Exhibit 48-Proposed Funding for The Wave

Initial Planning Phases (AA/EA/AAA) (in 2008 dollars)	
FTA/FHWA	\$1,075,020
DDA	\$1,697,880
FDOT	\$1,250,000
MPO	\$95,000
TOTAL	\$4,117,900
Project Development, Prelim. Eng., & Final Design (YOE dollars)	
Federal	\$7,158,600
FDOT	\$2,386,200
Local (City & Assessment)	\$2,386,200
TOTAL	\$11,931,000
Construction/Procurement (YOE dollars)	
Federal	\$67,445,400
FDOT	\$22,481,800
Local (City & Assessment)	\$22,481,900
TOTAL	\$112,409,000

Central Broward East-West Transit

The need for an east-west Premium Transit service in Central Broward County was identified in the I-95/I-595 Master Plan. This Master Plan, which was coordinated with the Broward Metropolitan Planning Organization’s Long Range Transportation Plan, identified the need for both roadway and Premium Transit improvements in this corridor to meet future travel demand. In 2002, at the request of the Broward MPO, the FDOT initiated an AA to identify a preferred transit alignment and technology to provide this east-west transit service. The study area boundaries for the AA were defined as Oakland Park Boulevard in the north, the Weston-Sawgrass area in the west, Griffin Road in the south, and the Intracoastal Waterway in the east.

At the end of 2006, an LPA was selected and FDOT initiated the National Environmental Policy Act (NEPA) process. Using the same study area boundaries as for the AA, the draft EIS for the Central Broward East-West Transit Analysis will better define the proposed transit alignment and technology and identify the anticipated benefits and costs of the project to the human, natural, and economic environments.

Phases of Analysis

The Central Broward East-West Transit Analysis is following the FTAs project development process to be eligible to receive federal funding through the New Starts discretionary grant program. The AA, conducted from 2002 to 2006, identified a number of alignments within the study area that could meet the east-west travel demand. The AA consisted of four distinct phases through which the number of alternatives was narrowed down based on the results of a progressively quantitative evaluation. The alternatives were evaluated for their ability to meet the project's purpose and need using as criteria ridership, environmental impacts, cost effectiveness and equity. The AA concluded with a recommendation to take the LPA, and some specified variations to it, through the NEPA process.

The NEPA process was officially kicked-off with the publishing of a Notice of Intent in the Federal Register on September 2, 2008, and the conduct of scoping meetings during that same month. As part of the scoping process, additional alignment alternatives were identified. Initial Screening identified a total of nine alignment options which were evaluated based on criteria that comply with New Starts and NEPA requirements, as well as consistency with the project's purpose and need. In addition to re-evaluating alignment options, the draft EIS is considering potential transit technology. As part of the adopted LPA, light rail transit was selected as the preferred technology. Through the draft EIS, bus rapid transit is also being considered. The Build Alternatives for the draft EIS will be selected during the Initial Screening process and the detailed evaluation of this against the No Build and Transportation Systems Management/Baseline alternatives will begin. A draft EIS will be circulated and a public hearing held to determine the Preferred Action. Presuming that a Build Alternative is selected as the Preferred Action, an application to enter into New Starts and subsequently Preliminary Engineering will be submitted to FTA.

Preliminary Engineering and the Final EIS are anticipated to begin in early 2012 and to be completed in 2016. If approved by FTA, the next step would be Final Design, which would require two years to complete. Upon funding award and execution of a Full Funding Grant Agreement, construction on the project could begin as early as 2019, with operations beginning in 2021.

Cost Estimates & Revenues

There are two general categories of costs related to the Central Broward East-West Transit Analysis: (1) Planning, Design & Engineering, and (2) Capital Construction Costs. As the detailed design of the project is five to six years off, cost estimates are still being developed for the project. Similarly, there are multiple layers of revenues that will be required for the project, many of which can only be generalized for this 2035 LRTP. Both types of costs and revenues are further described below.

The next phase of the Central Broward East-West Transit Analysis is included in the current Transportation Improvement Program (TIP).



Planning, Design and Engineering Costs, and Revenues

Currently, the Central Broward East-West Transit Analysis is underway towards the development of a draft EIS. This portion of the study, estimated to cost \$11.7 million, is fully funded by FDOT. The Department was able to flex \$7.7 million of these funds specifically to this transit project from dedicated highway funding.

Upon the completion of the draft EIS and the selection of a Preferred Action, the Central Broward East-West Transit Analysis will likely proceed towards the development of a final EIS and completion of Preliminary Engineering. Estimates for this next phase will be developed as the draft EIS reaches conclusion. The current Transportation Improvement Program (TIP) for the Broward MPO allocates \$10 million for right-of-way acquisition in FY 2011/12 and \$16.9 million for Preliminary Engineering in FY 2012/13.

Capital Costs and Revenues

Capital costs for the construction of the Central Broward East-West Transit project and acquisition of right-of-way and vehicles will vary depending upon the alignment configuration and type of technology chosen, with considerable variation in the capital costs per technology type. It is anticipated that a combination of federal, state, and local funding will be sought for the system’s capital costs. Operating revenues are undetermined at this time, but would be assessed to ensure viability of the system.

Exhibit 49-Proposed Funding for Each Phase of the Central Broward East-West Transit Analysis

Planning Phase	Funding (in millions)	Timeframe*
Draft EIS	\$11.7	Ongoing
ROW Acquisition	\$10.0	FY 2011/12
Preliminary Engineering	\$16.9	FY 2012/13

*Timeframe from FY 2009/10 - 2013/14 TIP

SunPort-Airport/Seaport People Mover

Vision 2020, prepared in 2002, includes the Broward County Intermodal Center (IMC) and People Mover system. The IMC and People Mover Project was further examined in a June 2004 Feasibility Report, which sought to identify operational issues and concept-level financial feasibility for the proposed system. In April 2005, the Broward County Board of Commissioners authorized staff to proceed with the Project Development and Environment (PD&E) Study Phase of the Broward County IMC and People Mover (later known as the SunPort PD&E Study). The Broward County IMC and People Mover are planned to meet the county’s goals to (1) promote regional mass transit, (2) develop airport/seaport synergy, and (3) fuel economic development, acting as a catalyst to support transit and continued economic and viability of the county and the region.

The IMC and the Automated People Mover Project (SunPort) consists of an approximately five-mile long Premium Transit route, between



Fort Lauderdale-Hollywood International Airport and Port Everglades, with station stops at the airport terminals, the Broward County IMC, the Midport and Northport of Port Everglades cruise terminals.

The IMC is anticipated to include a transit transfer station that provides a connection between the People Mover and the proposed elements of the regional transportation network such as Central Broward East-West Transit Analysis and South Florida East Coast Rail Corridor Transit Analysis and Broward County Transit’s planned bus route improvements. The IMC component of the project, located within the US 1/airport interchange, will introduce a major transportation focal point that will facilitate connectivity and access to and from the airport, seaport, and other existing transit services. The Locally Preferred Alternative was approved by the Broward County Board of County Commissioners on June 10, 2008.

Cost Estimates

Estimated capital costs for the proposed project are based on infrastructure, rolling stock or fleet, and associated systems necessary for the operation and maintenance (O&M) of the proposed facility. Capital cost estimates include cost of acquisition of right-of-way. Contingency allowances and soft costs have been applied and included as part of the total capital cost. All costs estimated are in year 2007 dollars and escalated to the year of expenditure from 2016 to 2022. Capital and O&M costs in 2007 dollars were escalated at a rate of 4% annually to the anticipated midpoint year of the implementation period for each project element.

Project Phasing: Potential Phasing Schemes

Given the high capital costs and competing county priorities, the project could be developed in phases. The order and scope of each phase will depend on funding and facility needs and priorities. A potential initial phase could involve construction of lower cost elevated busways as an immediate measure to mitigate traffic congestion along the seaport entrance roadway (Eller Drive) to Midport. A potential second phase would be an elevated busway from the IMC to the airport terminals. Busways would be constructed in a manner that would allow for later conversion to an automated People Mover system.

Exhibit 50-SunPort Cost Estimates (in millions)

Segment of System	Period of Development	Capital		Annual O&M	
		Cost in 2007\$	Escalated to YOY	Cost in 2007\$	Startup Year
On-Airport	2016-2020	\$173	\$267	\$4.6	\$6.3
Extend to Midport	2018-2022	\$410	\$683	\$8.5	\$12.3
Extend to Northport	2020-2022	\$177	\$295	\$3.6	\$5.3
IMC	2020-2022	\$79	\$132	\$1.0	\$1.4
Totals		\$840	\$1,377	\$17.7	\$25.3

Potential Revenue Sources

A portion of Customer Facility Charges paid by airport rental car and transportation user fees may be available to cover on-airport operating costs assuming the People Mover replaces the existing consolidated shuttle for rental car patrons on-airport. The remaining revenue source may be a user fee of \$10 collected from multi-day cruise passengers who use the system. The \$10 collection is comparable to per trip fees currently paid by cruise passengers traveling between the airport and seaport. The cruise passenger user fee may cover approximately 40% of People Mover project costs leaving the project with a shortfall which may be covered by external federal, state, and/or public-private partnership (P3).

SR 93/I-75 Highway and Transit Corridor Study

The I-75 Project Development and Environment (PD&E) Study is evaluating improvements pertaining to additional auxiliary lanes between interchanges, interchange modifications, bridge replacement and/or widening, special use lanes, and a potential future transit corridor. The limits for this study are for SR 93/I-75 from SR 826/Palmetto Expressway in Miami-Dade County to the I-595 interchange in Broward County, a distance of approximately 17 miles. The study includes a transit option to determine the feasibility of connecting Miami-Dade's Metrorail to the Central Broward East-West Transit Project near I-595 in Broward County which is also currently under study.

The projected 2013 Annual Average Daily Traffic for the I-75 corridor is 206,700 vehicles per day. Major traffic generators in this area include residential and business traffic to and from the five airports and four hospitals located in the surrounding project corridor. There is significant traffic congestion along the mainline of I-75, particularly at the southern terminus near SR 826 and between Sheridan Street and the Florida Turnpike for southbound I-75. As it exists, I-75 is currently below an acceptable Level of Service and will face steadily increasing traffic demand over the 10-year outlook. Over the next 20 years the anticipated growth in traffic will range from 62% to 80%. This increase in traffic will significantly exceed the capacity of I-75, causing heavier levels of congestion on both I-75 and the adjacent street network, and limitation of mobility in the southwest Broward area.

Proposed interchange modifications at Miramar Parkway, Pines Boulevard, Sheridan Street and Griffin Road will facilitate both safety and efficiency of ingress and egress from the I-75 main lanes to the arterial roadways. A future interchange at Pembroke Road and special-use travel lanes within the median of the highway are also under evaluation in this study. The special-use lanes would serve longer commuter trips within the corridor to facilitate more efficient regional travel patterns. These lanes may include variable time of day tolling similar to the new I-95 Express lanes.

The transit capital improvements will be incrementally implemented. A potential initial phase under evaluation would be to add two park-

and-ride lots in Broward County at Pines Boulevard and Griffin Road, and one lot in Miami-Dade County at Miami Gardens Drive. These lots would potentially be located within the existing right-of-way at the interchanges. New express bus service could be provided from these lots by either Broward County Transit or Miami-Dade Transit using the main lanes of the highway and transitioning to the special-use lanes as they are constructed. Although no transit guideway is recommended at this time, a transit envelope will be preserved within the right-of-way to provide maximum flexibility for a possible future guideway. In Broward County, this envelope will be within the I-75 right-of-way. In Miami-Dade County, two guideway alignments are recommended, one along I-75 and SR 924/Gratigny Expressway to connect to the future Metrorail Orange Line station at Miami-Dade College, and the other along the HEFT and US 27/Okeechobee Road to connect to the existing Palmetto Metrorail Station. As capital improvements are made along this corridor, space should be preserved for the transit envelope.

Phases of Analysis

The examination of potential improvements along SR 93/I-75 began with the completion of the Master Plan for the corridor in January 2006. The PD&E study now underway consists of two elements – one study led by FDOT District 4 for Broward County, and a coordinated study led by FDOT District 6 for Miami-Dade County. These studies are progressing on a coordinated schedule and the final results will be combined into a single report for approval by the Federal Highway Administration.

Three rounds of public meetings have been held. The public kickoff meetings were held in September 2007, the concept workshops were held in October 2008, and the alternatives workshop was held in October 2009. The public hearing is scheduled for the fall of 2010; final Location Design Concept Acceptance is anticipated by summer 2011.

The design phase is partially funded, but no funding has been identified for construction. It is anticipated that modest improvements may be incrementally constructed to alleviate spot problems, but no funding source has been identified for the corridor-wide improvements. Should the decision be made to toll the potential special-use lanes, this revenue stream could provide a portion of the necessary funding for the identified improvements. The federal New Starts program could also provide capital funding, should transit options be pursued.

Cost Estimates & Revenues

Cost estimates are under development and will not be finalized until the time of the public hearing.

5.3 Unfunded

In addition to Illustrative Projects, an additional category was defined as “unfunded.” These projects have not entered into any phase of study. The unfunded list was restricted to Premium Transit projects. With the emphasis on alternative modes, it was envisioned that all transit needs identified through the Needs Assessment should be

captured in the final plan (all pedestrian, bicycle, and Greenway needs projects have already been incorporated in the Cost Feasible Plan.) The MPO intends to continue working with federal, state, regional, and local entities to maintain an upgraded system above and beyond the Cost Feasible Plan. Unfunded Projects are listed in the Appendix, Exhibit 76.

5.4 Policies

Public transit is an essential component of our urban transportation system. Transit plays an important role in serving peak period travel demand associated with travel to work and school; it also provides basic mobility for those persons who do not have an alternative, including transit dependent students, lower income workers, seniors, and other persons who cannot afford or choose not to own an automobile.

Problems facing transit markets today involve land use planning, parking policies, and tax legislation spanning all levels of government, and are beyond the realm of transit systems. What is needed is a collaborative effort among a number of public and private interests focused on increasing transit's share of the transportation market.

The following policies were identified to overcome the problems of transit markets and increase the overall use of alternative modes in Broward County.

1. Communicate the results of the LRTP to governments, agencies, and other groups to stimulate action. The MPO and partners should continue to host workshops for the community to refine concepts captured in the LRTP.
2. Develop a cooperative strategy to broaden the base of support for transit. Continue partnership with transit operating agencies to further enhance the image and quality of transit services. Build coalitions with other planning entities and interest groups.
3. Get businesses and employers on board with specific incentives towards favoring alternative modes. This may include free passes for transit use or special amenities for carpoolers, vanpoolers, bikeshare, carshare, and transit users.
4. Influence local governments to remove impediments to transit such as large parking minimums and wide setbacks for development projects.
5. Influence planners and developers to encourage land use decisions which will create an urban structure supportive of transit. Influence transportation planners and engineers to design road and parking facilities which are both transit-friendly and safe, including bus bay pull-outs and pedestrian amenities.
6. Consider innovative funding mechanisms that support transit, including taxation measures that contribute to more adequate transit funding.



7. Make appropriate changes to legislation to remove obstacles to widespread transit use such as removing limitations on funding sources dedicated exclusively for roadways.
8. Encourage land use development opportunities, especially around Mobility Hubs.
9. Encourage integration of transit services with other modes such as conducting multimodal studies, rather than segregating projects as roadway, transit, pedestrian or other.
10. Provide adequate local funding support and long term commitment to opportunities to increase transit modal share.
11. Actively pursue federal and state funds which could increase transit modal share including New Starts, Small Starts, Very Small Starts, Climate Change Initiatives, and Livable Communities Grants.
12. Encourage development that supports transit such as incorporating the Mobility Hubs into the County and Local Land Use Plans and Comprehensive Plans.
13. Encourage developers to integrate transit service into developments and share in the funding of the capital facilities and operations by developing successful models for Mobility Hub areas.
14. Enhance tourism through the provision of additional mobility options and effective marketing.
15. Implement bikeshare and carshare programs at Mobility Hubs.
16. Distribute investments to serve transit dependent population and new markets.
17. Simplify transit routes and access to transportation information.

Next Steps:

- *Communicate 2035 LRTP at all levels*
- *Build coalitions*
- *Influence transit-supportive land use*
- *Develop new funding sources*
- *Encourage multi-modal strategies*
- *Create a transit culture*
- *Build Mobility Hubs*
- *Encourage tourism*
- *Simplify bus routes and access to information*