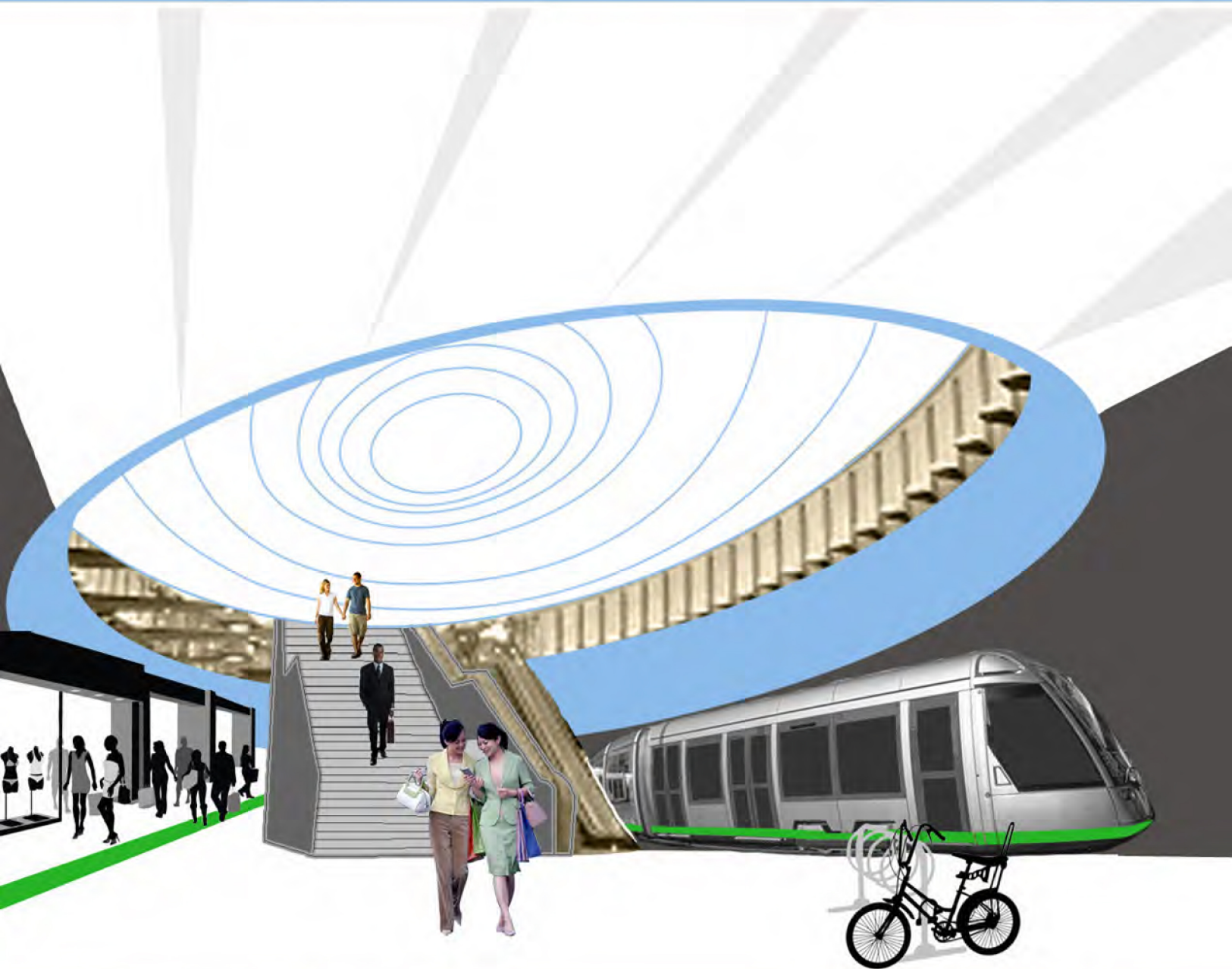


2035 *BROWARD* TRANSFORMATION *LONG RANGE TRANSPORTATION PLAN*

December 2009



FINAL REPORT

Amended on ~~October 10, 2013~~

JACOBS

Propose amended for December 12, 2013

The 2035 LRTP demonstrates the Broward MPO's plans for future capital investment in transportation infrastructure, as well as ongoing operating and maintenance expenses. The identification of available revenue resources was used to prioritize transportation investments in a "constrained" scenario which is limited to existing and reasonably likely funding sources. It is important to note, however, that some of the revenues identified in this review (specifically revenues for Florida's Turnpike Enterprise, Strategic Intermodal Systems, and Florida Interstate Highway System) have already been programmed by their respective agencies for transportation projects in Broward County. These funds were not available for prioritization by the MPO.

In addition, an approach described in Chapter 5 "Strategy" was developed to address potential new funding sources which could be used to fund additional transportation investments.

4.2.1 Capital and Operating & Maintenance Cost

Once projects were identified for the Needs Plan, their capital costs were estimated. Some of the assumptions used in development of capital program costing were developed specific to a given mode and in some cases taken from estimates prepared by others in separate planning processes. The aggregate intermodal cost for the Needs Plan with Rapid Bus projects totals \$9 billion. The cost with High Capacity Transit was expressed as two scenarios, BRT or LRT, totaling \$14 or \$20 billion in 2009 dollars respectively, as detailed in Exhibit 17.

The Needs Plan identified costs for both a LRT-focused plan and a BRT-focused plan.

Exhibit 17-Needs Plan Cost Summary (By Scenario)

Cost Category	Capital Cost (\$ millions 2009)	Annual O&M Cost (\$ millions 2009)
Broward County Transit	\$230	\$185
Rapid Bus Scenario	\$249	\$72
Bus Rapid Transit Scenario	\$4,502	\$135
Light Rail Transit Scenario	\$10,772	\$147
Mobility Hubs	\$220	\$0.12
Bicycle/Pedestrian	\$226	n/a
Greenways	\$309	n/a
Roadways	\$4,563	\$125
Intelligent Transportation Systems	\$182	n/a
Freight/Seaport/Airport	\$479 \$477	n/a
Illustrative (On-going Transit Projects) ¹	\$3,016	\$34
Total Needs Plan Range:		
Rapid Bus Scenario	\$9,472	\$416
Bus Rapid Transit Scenario	\$13,725	\$479
Light Rail Transit Scenario	\$19,995	\$491

¹Includes transit projects with corridor planning and environmental studies underway including Central Broward East-West Transit Analysis, South Florida East Coast Corridor Study, SunPort (Airport/Seaport People Mover), and the Wave (City of Fort Lauderdale Downtown Circulator).

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 75 miles of Rapid Bus and 2.7 miles of Street Car. Capital cost is estimated \$1,583 million plus \$590 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 ~~\$788~~^{\$781} million (capital) and ~~\$127~~^{\$128} million O&M (all local roadways).
- **Freight/Seaport/Airport**—~~42~~⁴³ projects at ~~\$112~~^{\$114} 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)
 - Wave Street Car
- 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

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)	\$909 \$915	16.9%	Other Arterial Construction/ ROW	\$628 \$635	Constitutional Fuel Tax	\$43 \$42	\$909 \$915
			Local Option Gas Tax (City Share)	\$153	Local Option Gas Tax (City Share)	\$85	
Freight	\$114 \$112	2.0%	Other Arterial Construction/ ROW	\$114 \$112	N/A	N/A	\$114 \$112
ITS	\$121	2.2%	Other Arterial Construction/ ROW	\$121	N/A	N/A	\$121
Total ² (Excluding SIS/FIHS and Turnpike)	\$5,538 \$5,542	100.0%		\$6,327 \$6,322		\$2,130	
Grand Total	\$8,780		\$8,780				\$8,780

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 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	\$122	\$175	\$163	\$163	\$163	\$786
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	\$575	\$2,735	\$5,632	\$2,538	\$2,745	\$14,226

¹ Not 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)	\$207	\$541	\$689	\$575	\$608	\$2,620
Premium Transit Service (On-going Studies, PD&E)	\$50	\$0	\$0	\$0	\$0	\$50
Premium Transit Service (O&M)	\$0	\$16	\$19	\$426	\$483	\$944
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)	\$162	\$144	\$175	\$174	\$168	\$329
Roadways (Arterial & Others) (O&M)	\$9	\$47	\$50	\$49	\$52	\$71
Freight	\$7	\$5	\$47	\$69	\$74	\$81
ITS	\$30	\$133	\$0	\$0	\$0	\$163
Total (w/o SIS/FIHS and Turnpike)	\$642	\$1,999	\$1,992	\$2,435	\$2,628	\$9,632
Total (w SIS/FIHS and Turnpike)	\$755	\$2,730	\$5,467	\$2,560	\$2,771	\$14,219

Note: Totals do not add due to rounding

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 YOE 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.

\$278

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 71-2035 Cost Feasible Roadway Projects (continued)

Project ID	Project Name	From	To	Miles	Project Description	Project Ranking	Score	Total Cost (2009 dollars)	Cumulative Project Cost (2009 dollars)	FYs 2014-2015 (YOE dollars in millions)	FYs 2016-2020 (YOE dollars in millions)	FYs 2021-2025 (YOE dollars in millions)	FYs 2026-2030 (YOE dollars in millions)	FYs 2031-2035 (YOE dollars in millions)	Total for 21 Years (YOE dollars in millions)
Cost Feasible Plan Projects (continued)															
9	Davie Rd	Nova Dr	I-595	0.5	From 4 to 6 lanes (6LD)	9	7	\$5,541,000	\$447,064,000				\$10.47		\$10.47
10	Davie Rd Ext.	University Dr	East of University Dr	0.3	From 2 to 4 lanes		7	\$3,185,000	\$450,249,000				\$6.02		\$6.02
44	SW 196th Ave	Miramar Pkwy	Pines Blvd	2	From 2 to 4 lanes (4LD)		7	\$18,446,000	\$468,695,000				\$34.86		\$34.86
1	Andrews Ave ¹	Pompano Parkway/ SW 3 St	Atlantic Blvd	0.4	New (4LD)	10	6	\$36,736,000 \$44,898,000	\$506,257,000 \$513,503,000	\$17.64 R, C	\$1.13 R		\$84.86 P/D, R, C	\$18.77	\$84.86
2	Andrews Ave Extension	NW 18 St	Copans Rd	0.7	From 2 to 4 lanes (4LD)		6	\$6,900,000	\$513,157,000 \$520,493,000				\$13.04		\$13.04
14	NE 3rd Ave	Copans Rd	Sample Rd	1	From 2 to 4 lanes (4LD)		6	\$12,860,000	\$526,017,000 \$533,353,000				\$24.31		\$24.31
41	SW 148th Ave	Bass Creek Rd	Miramar Pkwy	1	From 2 to 4 lanes (4LD)		6	\$11,012,000	\$537,029,000 \$544,365,000				\$20.81		\$20.81
42	SW 184th Ave	Sheridan St	Miramar Pkwy	3.5	From 2 to 4 lanes (4LD)		6	\$31,664,000	\$568,693,000 \$576,029,000				\$11.97	\$56.24	\$68.20
45	SW 30th Ave	Griffin Rd	SW 45th St	0.3	From 2 to 4 lanes (4LD)		6	\$4,615,000	\$573,308,000 \$580,644,000				\$1.31	\$8.71	\$10.02
4	Bass Creek Rd	SW 184 Ave	SW 172 Ave	1	New 4 lanes		5	\$11,387,000	\$584,695,000 \$592,031,000				\$4.30	\$20.22	\$24.53
5	Bass Creek Rd	SW 172nd Ave	SW 148 Ave	2.3	From 2 to 4 lanes	11	5	\$17,001,000	\$601,696,000 \$609,032,000				\$6.43	\$30.19	\$36.62
6	Blount Rd	Hammondville Rd	Copans Rd	1	From 2 to 4 lanes (4LD)		5	\$12,449,000	\$614,145,000 \$621,481,000				\$4.71	\$22.11	\$26.82
7	County Line Rd	University Dr	Hillsboro Blvd Ext.	2.75	New (4LD)		5	\$54,118,000	\$668,263,000 \$675,599,000				\$20.46	\$96.11	\$116.57
													P/D	R, C	

Exhibit 71-2035 Cost Feasible Roadway Projects (continued)

Project ID	Project Name	From	To	Miles	Project Description	Project Ranking	Score	Total Cost (2009 dollars)	Cumulative Project Cost (2009 dollars)	FYs 2014-2015 (YOE dollars in millions)	FYs 2016-2020 (YOE dollars in millions)	FYs 2021-2025 (YOE dollars in millions)	FYs 2026-2030 (YOE dollars in millions)	FYs 2031-2035 (YOE dollars in millions)	Total for 21 Years (YOE dollars in millions)				
Cost Feasible Plan Projects (continued)																			
21	Pembroke Rd	SW 160th Ave	SW 184th Ave	1.9	From 2 to 4 lanes (4LD)	12	5	\$16,966,000	\$685,229,000 \$692,565,000					\$37.66	\$37.66				
8	County Line Rd/HEFT Ext	Florida's Turnpike	I-95	3.9	Feasibility Study		4	\$975,000	\$686,204,000 \$693,540,000					\$2.16	\$2.16				
13	Hiatus Rd	Sheridan Rd	Stirling Rd	1	From 2 to 4 lanes (4LD)		4	\$12,449,000	\$698,653,000 \$705,989,000					\$27.64	\$27.64				
19	Oakes Rd	Davie Rd	SR 7/US 441	1.72	New 4LD, including overpass at Florida's Turnpike		4	\$40,805,000	\$739,458,000 \$746,794,000					\$90.59	\$90.59				
43	SW 184th Ave	Sheridan St	Griffin Rd	2.2	New (4LD)	13	2	\$28,129,000	\$767,587,000 \$774,923,000					\$62.45	\$62.45				
46	Trails End Rd	University Dr	County Line Rd	0.7	New (4LD)		2	\$9,389,000	\$776,976,000 \$784,312,000					\$20.84	\$20.84				
22¹	Pembroke Rd	SW 184 Ave	SW 200th Ave	1	New (4LD)	14	1	\$4,000,000	\$780,976,000 \$788,312,000				\$1.51	\$7.10	\$8.62				
Total - Ranked Cost Feasible Plan Projects								\$788,312,000		\$162	\$144	\$175	\$174	\$168	\$329	\$414	\$482	\$1,316	\$1,362
Arterials & Others									\$780,976,000		\$9	\$47	\$50	\$49	\$52	\$71	\$228	\$227	
											O&M	O&M	O&M	O&M	O&M				

1 Design-build funds advanced to FY 2014. PD&E completed in FY 2013 funds are included in the Total Cost (2009 dollars).

Exhibit 73-2035 Cost Feasible Freight/Seaport/Airport Projects (continued)

Project ID	Project Name	From	To	Miles	Project Description	Total Cost (2009 dollars)	FYs 2014-2015 (YOE dollars in millions)	FYs 2016-2020 (YOE dollars in millions)	FYs 2021-2025 (YOE dollars in millions)	FYs 2026-2030 (YOE dollars in millions)	FYs 2031-2035 (YOE dollars in millions)	Total for 21 Years (YOE dollars in millions)	
37	SR 84	At SW 15th Ave	-	-	Intersection Improvements	\$350,000		\$0.48 P/D, R, C				\$0.48	
38	SW 4th Ave	At 28th St	-	-	Install new traffic signal	\$40,000		\$0.05 P/D, R, C				\$0.05	
39	Terminal 4 Parking Garage	-	-	-	New parking structure	\$888,487				\$1.68 P/D, R, C		\$1.68	
40	Terminal 4 Second Loading Bridge	-	-	-	New passenger loading bridge	\$1,319,634					\$2.93 P/D, R, C	\$2.93	
41	Traveler Information via DMS	At Port exit		-	Information on major incidents; security	\$28,137,720		\$19.28 P/D, I	\$22.65 P/D, I			\$41.93	
42	US 27 Rail Corridor Study	Miami-Dade/ Broward County Line	Palm Beach/ Broward County Line	-	Freight Corridor Feasibility Study	\$1,000,000		\$1.37 P/D				\$1.37	
43	Southport Turning Notch Expansion (Phase I)	-	-	-	Turning notch design, bulkhead construction, and mitigation for Westlake Improvement	\$24,630,798	Potential Funding Source: TRIP, SIS, Port programs						\$0.00
44	ACOE Dredging Project	-	-	-	Portwide Dredging	\$96,405,158	Potential Funding Source: TRIP, SIS, Port programs						\$0.00
45	Slip 2 Expansion	-	-	-	Increase length to accommodate mega cruise ships	\$1,293,913				\$2.44 C		\$2.44	
46 ¹	FEC Quiet Zone	Miami-Dade/ Broward CL	Palm Beach/ Broward CL		Infrastructure Improvements	\$2,000,000							
Total (Port Everglades)						\$329,956,502	\$0	\$0	\$8	\$4	\$3	\$15	
Total (Aviation)						\$66,145,882	\$0	\$0	\$0	\$59	\$79	\$137	
Total (all other projects)						\$81,229,243	\$5	\$47	\$60	\$11	\$0	\$123	
Grand Total (all freight, seaport, and airport projects)						\$477,331,626	\$5	\$47	\$69	\$74	\$81	\$276	

1. This allocation is from the savings achieved by the fast tracking of SR 7 widening project

\$83,229,243
\$479,331,626

\$7
\$7