

Miscellaneous Improvements Related to Rail Operations

6. Metromover Rehabilitation/Refurbishment (Phases I and II)

The Metromover Phase I Fleet of 12 rail cars went into service in 1986 with a life expectancy of 20 years. While some rehabilitation/refurbishment work has been done, engineering analyses determined that it was more cost effective to replace the Phase I cars in lieu of overhaul. In addition, during the contract negotiations with Bombardier, MDT determined that it would be technically and commercially advisable to replace all 29 Metromover vehicles in the same contract. The PTP amendment (R-1240-04) approved by the Board to replace the 12 Phase I cars was subsequently expanded by Board action (R-486-08) to include replacement of the remaining 17 Phase II vehicles.

The project is 41% complete overall. All twelve (12) Phase I replacement vehicles have been delivered, tested and commissioned to revenue service, February 2008 to April 2009. The option was included in the Phase I contract with Bombardier for the seventeen (17) Phase II vehicles, and Notice to Proceed was issued effective July 17, 2008. Delivery of the first two (2) vehicles was July 2010, to be complete by August 2011. Total cost is \$75.367 million with \$60.967 million expended to date (\$14.4 million is balance to complete Phase II). Following is more detailed information from Approved Capital Plan, for Phase II currently in progress.



From 2010-2011 Approved Capital Plan

MOVER VEHICLES REPLACEMENT PHASE II (17 CARS)

PROJECT # 675590

LOCATION: 100 SW 1 St, City of Miami

DISTRICT LOCATED: 5

ESTIMATED ANNUAL OPERATING IMPACT: \$0

DISTRICT(s) SERVED: Countywide

Revenue Schedule	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
PTP Bonds	25,417	12,159	620	0	0	0	0	0	38,196
Expenditure Schedule:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
Equipment Acquisition	20,112	10,729	0	0	0	0	0	0	30,841
Project Administration	607	1,330	620	0	0	0	0	0	2,557
Project Contingency	633	100	0	0	0	0	0	0	733
Capital Maintenance	4,065	0	0	0	0	0	0	0	4,065
Total Expenditures:	25,417	12,159	620	0	0	0	0	0	38,196

Contract SS1908-0/7 (See Appendix for fuller listing of Trust-approved contracts)



7. Test Track for Metrorail

A Metrorail test track is critically important to test railcar reliability and for acceptance testing of replacement vehicles. A 2,500 ft. test track with the ability to accelerate Metrorail vehicles to 38 mph is planned for the William Lehman Center Maintenance Facility. The length of the test track was reduced from the previously planned 4,000 feet and the County no longer needs to acquire additional land adjacent to the Lehman Center for this track construction. Once completed, the track will be used to test automatic train operations, program station stops and door operations, test propulsion systems, diagnose electric brake faults and perform safe brake testing. Also, the acceptance testing for new vehicles can be accomplished without affecting normal rail service operations. This project is necessary to provide the required test facility in support of the procurement of the new Rail Vehicle fleet with delivery beginning in 2013.

This project is overall 1% complete (based on amount expended out of total estimated cost). It will be implemented using a Design/Build Procurement method in conjunction with the Lehman Yard Rehabilitation-Expansion (Phase I) project (page 96). Total estimated cost is \$16.6 million, about \$730,000 expended to date, and 100% PTP funded. A Test Track S&I Building and a Siding Track were added to the project by MDT Operations to facilitate the movement of vehicles to the Test Track from both ends of the S&I Building. Thus the cost estimate increased from the previous 2009 budget of \$12.23 million with timing deferred from April 2012. The original \$4 million cost estimate was revised to account for inflation among other costs. Project is currently in procurement (RFP advertisement was scheduled February 2010, actual June 2010) and Design/Build Firm Selection Phase is approximately 59% complete. Construction Notice to Proceed expected October 2011 with project completion including testing and startup by January 2013.

The following is more detailed information from 2010-2011 Approved Capital Plan.

From 2010-2011 Approved Capital Plan

TEST TRACK FOR METRORAIL

PROJECT # 678220

LOCATION: 6601 NW 72 Ave, Unincorporated Miami-Dade County

DISTRICT LOCATED: 12

ESTIMATED ANNUAL OPERATING IMPACT: \$0

DISTRICT(s) SERVED: Countywide

Revenue Schedule	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
PTP Bonds	755	6,594	9,241	0	0	0	0	0	16,590
Expenditure Schedule:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
Planning and Design	136	0	0	0	0	0	0	0	136
Construction	0	5,337	8,363	0	0	0	0	0	13,700
Construction Management	0	307	214	0	0	0	0	0	521
Project Administration	619	649	407	0	0	0	0	0	1,675
Project Contingency	0	301	257	0	0	0	0	0	558
Total Expenditures:	755	6,594	9,241	0	0	0	0	0	16,590

Contracts: (See Appendix for fuller listing of Trust-approved contracts)

CIP028-CT1-TR09 Design-Build Services for the Lehman Center Test Track / Lehman Yard Rehabilitation - Expansion Phase 1

CIP030-CT1-TR09 Construction Engineering and Inspection Services for the Lehman Center Test Track, Palmetto Station Traction Power Sub-Station, Metrorail Central Control Upgrade and Lehman Yard Rehabilitation & Expansion Phase 1

8. Station refurbishment

The original project was completed in FY2007. Station refurbishments include emergency bench repairs and refurbishment of station lighting, billboard lights, chain link fences, bathrooms, exit doors, roll-up gates, and automatic doors. The cost for this project was originally estimated at \$12 million, funded via \$3 million in Sunshine State Loans and \$9 million from the PTP. A total of \$12.2 million was expended on this project reflecting a \$6.122 million credit reconciling expenses in FY08.



Work is ongoing and includes repairs to damaged pole lights at bus bays, lighting in parking areas, fire sprinklers, Metromover tactile, Heating, Ventilation and Air Conditioning (HVAC) installation at train control and mechanical rooms, and miscellaneous repairs due to vandalism. These continued phases of the project are 5% complete based on \$503,000 expended out of total \$12M estimated cost. The \$11.5 million remainder is currently an unfunded project proposed for inclusion in IRP or in MDT Operating budget.

The following is from the Unfunded Priority Needs section of the 2010 TIP. The project is not listed as a line item of Transit projects in the 2010 Capital Budget’s Unfunded Needs.

MPO Project Num.	Facility/Project Name		Type of Work	Project Cost (\$000s)	Unfunded Projects					
Agency Project Num.	From/Location	To/Location	Remarks		(In \$000s)					
	Detailed Project Description									
TA0000080	Metrorail Station Refurbishment		Maintenance	20,000	Activity/ Phase					
0000080	Systemwide	Systemwide	This was an approved PTP project. Due to budgetary			Year 1	Year 2	Year 3	Year 4	Year 5
	Refurbish metrorail stations and Lehman Center including emergency lighting, safety systems, restrooms, irrigation, landscape, benches, building systems and controls.									
				MNT	2,000	0	0	0	0	



9. Paint Facilities

This project is now an ongoing effort to maintain the appearance of Metrorail and Metromover stations and maintenance facilities as a long term priority. Previously MDT's administrative facilities and maintenance garages were not painted at regular intervals. A painting program was established using in-house painters and purchasing materials, and to date MDT has painted the following stations: Bayfront, Brownsville, Civic Center, College North, Financial District, Freedom Tower, Knight Center, Martin Luther King, Jr., Overtown, Park West, Riverwalk, Tenth Street and Third Street (about 30%, 13 complete of 43 total stations).

The cost for this project was originally estimated at \$4 million as a one-time effort. The total expended to date is \$1.3 million. As this is now an ongoing project, the annual cost is approximately \$250,000 and will be funded in the MDT Operating Budget requiring several years to complete a first pass for the remaining 70% of stations.

The following is from the Unfunded Priority Needs section of the 2010 TIP. The project is not listed as a line item of Transit projects in the 2010 Capital Budget's Unfunded Needs.

MPO Project Num.	Facility/Project Name		Type of Work	Project Cost (\$000s)	Unfunded Projects					
Agency Project Num.	From/Location	To/Location	Remarks							
	Detailed Project Description									
TA0000076	Paint/Refinish Transit Facilities Systemwide			4,000	Activity/ Phase	(in \$000s)				
0000076	Systemwide	Systemwide	The project was initially an approved PTP project. Due to							
	Paint and refinish transit facilities					Year 1	Year 2	Year 3	Year 4	Year 5
					MNT	243	142	142	193	0

10. Replace Escalators (Mover and Rail)

The escalators in 21 Metrorail Stations and the eight inner loop Metromover Stations are on average 18 years old. While the useful life of an escalator is approximately 25 years, major components have begun to fail and it is no longer feasible or economical to continue to overhaul the units. The County is planning to implement a comprehensive escalator replacement program to include installation of 66 waterproof, heavy duty transit escalators with state-of-the-art safety devices and to upgrade existing electrical facilities and interfaces.

For the inner loop stations, the scope of work for the Metromover Escalator Covers Replacement and New Canopies Project consists of the preparation of a complete set of bid documents and construction work required for the replacement of escalators and the installation of canopy covers over existing escalators/stairs at seven Metromover stations to include: Government Center Station, Miami Avenue Station, Bayfront Park Station, First Street Station, College/Bayside Station, College North Station and Arena/State Plaza Station. This subset of the project is funded by federal stimulus revenues as noted below.

The original cost for this project was \$4.7 million and has been revised to \$30 million (\$7.29 million funded for current phase at seven stations, \$22.7 million unfunded at 22 remaining stations) because of a change in project scope. The change in scope includes the installation of canopy covers and oil/water separators. Although the primary purpose of these canopies is to protect the mechanical components from the elements, they will also provide cover to commuters during inclement weather. Design is complete and construction Notice To Proceed issued January 2011. Next year's FY12 Capital Plan will reflect project funding revised to be \$140,000 from PTP and remainder ARRA. Currently the project is less than 5% complete overall (total expended to date \$111,551). For the remaining Metromover inner loop station and the 21 Metrorail stations, it is currently an unfunded project.

Following is detailed information from 2010-2011 Approved Capital Plan.



From 2010-2011 Approved Capital Plan

METROMOVER STATION CANOPIES AND ESCALATOR REPLACEMENT

PROJECT # 672360

Install canopies at Metromover stations and replace escalators

LOCATION: City of Miami

DISTRICT LOCATED: 5

ESTIMATED ANNUAL OPERATING IMPACT: \$0

DISTRICT(s) SERVED: 5

Revenue Schedule	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
FTA Section 5307/5309 Formula Grant	153	4,655	2,007	0	0	0	0	0	6,815
PTP Bonds	475	0	0	0	0	0	0	0	475
Total Revenue:	628	4,655	2,007	0	0	0	0	0	7,290
Expenditure Schedule:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
Planning and Design	277	70	0	0	0	0	0	0	347
Construction	0	4,200	1,829	0	0	0	0	0	6,029
Construction Management	0	60	41	0	0	0	0	0	101
Project Administration	351	119	50	0	0	0	0	0	520
Project Contingency	0	206	87	0	0	0	0	0	293
Total Expenditures:	628	4,655	2,007	0	0	0	0	0	7,290

The following is from the Unfunded Priority Needs section of the 2010 TIP. The project is not listed as a line item of Transit projects in the 2010 Capital Budget's Unfunded Needs.

MPO Project Num.	Facility/Project Name		Type of Work	Project Cost (\$000s)	Unfunded Projects						
Agency Project Num.	From/Location	To/Location	Remarks								
	Detailed Project Description										
TA0000056	Metrorail Canopies		Purchase and Installation of Metrorail Canopies	3,200	Activity/ Phase	(In \$000s)					
0000056			This project was defunded based on FDOT Variance Rep			Year 1	Year 2	Year 3	Year 4	Year 5	
	Plan and install canopies at metrorail stations which will extend to bus stops.					PLN	0	0	0	0	0
					PLN	0	0	0	0	0	

11. Replace Elevators (Mover and Rail stations and at MDT's bus facilities)

As with the escalators described above, it has become uneconomical to continue to overhaul these 18 year old units. The planned elevator replacement program will include design and installation of state-of-the-art transit quality elevators and required electrical interface upgrades. The original estimate for this project was \$2.9 million, which has been revised to \$8.1 million as a result of rapidly increasing costs. When the PTP amendment was approved in 2003, the installation of a new elevator was estimated to cost \$100,000. The average replacement cost in FY 2009-10 was approximately \$400,000 per elevator. Therefore, to minimize cost while optimizing service life, the project now entails replacing major wear components such as the custom made cab, seals and motors, and refurbishing the shaft and other items.

Since 2003, the following cabs have been replaced: Schoolboard, Omni, Eleventh Street, Park West, Freedom Tower, First Street, College Bayside, Bayfront Park and Douglas Road overpass 1&2. Project is approximately 10% complete and total amount expended to date is \$652,000. The new estimated project completion date is FY 2035. It is funded from MDT Operations budget instead of as a separate item in the Approved Capital Plan.



The following is from the Unfunded Priority Needs section of the 2010 TIP. The project is not listed as a line item of Transit projects in the 2010 Capital Budget's Unfunded Needs.

MPO Project Num.	Facility/Project Name		Type of Work	Project Cost (\$000s)	Unfunded Projects					
Agency Project Num.	From/Location	To/Location	Remarks							
Detailed Project Description										
TA0000078	Replace Elevators		Procurement and Installation	6,170	Activity/ Phase	(In \$000s)				
0000078	Systemwide	Systemwide	This project was a PTP approved project. Due to budget							
	Replace and/or refurbish elevators at 21 metrorail stations, nine inner loop metromover stations, Coralway and Northeast facilities.					Year 1	Year 2	Year 3	Year 4	Year 5
					CST	1,500	2,222	0	0	0



12. Guideway Painting

This includes painting of all steel girders on the Metrorail (total estimated cost \$17.4 million) and the entire original loop of the Metromover (\$12.7 million). These structures have been in service for more than 23 years and have only received remedial touch-up painting. The Long Term Painting for Metromover extensions (\$10.61 million for Brickell, \$9.68 million for Omni) are currently unfunded IRP projects, see page 101. The Short Term Painting for Metromover Brickell is included with the Metrorail Piers Coating component of the Track and Guideway Rehabilitation Subset, as discussed in following item.

13. Metrorail Piers Grounding

This project was originally a separate line item in the 2003 PTP Amendment. This is a system reliability issue. Metrorail train tracks and the guideway are electrically isolated. Testing needs to be performed to prevent deterioration of the guideway and the utilities (metal piping) to assure system integrity and lightning protection. Testing should be performed on a 4 to 6 year cycle and corrective work performed. The project is not yet started and total cost is now revised to \$5.0 million (previously estimated \$2.5 million). It is an unfunded item, Conduit Grounding Rebuild on page 103 in the Infrastructure Renewal Plan, estimated to take two years to implement.

14. Track and Guideway Rehabilitation (formerly known as Guideway Painting/Refurbishment)

Several projects are now combined into a single grouping, which rehabilitates existing track and guideway equipment and fixtures. Total cost is \$46.786 million, funded solely by Surtax. Total expended to date is \$14.672 million. There are several components of this subset, each described further below, and all work performed by MDT staff. Two were originally a separate line item in the 2003 PTP Amendment: Metrorail Piers Coating; and Replacement of Metal Acoustical Barrier Panels. The remaining components were the original Guideway Refurbishment item: Coverboard Replacement, Palmetto Yard Road Crossing & Mainline Replacement, Mainline Miter Joint Replacement, Rail Fastener Replacement and Seal Gland Rehabilitation. (Note, cost estimates for individual components may be reallocated year to year within the \$46 million total.)

Metrorail Piers Coating - This project was a separate Amendment line item and is now included as part of the Track & Guideway Rehabilitation Subset. It entails the cleaning and coating of Metrorail piers, which are the vertical concrete columns supporting the concrete or steel girders and rail tracks. Coating will restore and improve the aesthetics of the structure and protect the concrete and reinforcement steel from deterioration. The Metrorail guideway has been in service since 1984 and is starting to weather and show its age. In addition to recoating the structure, drains will also be repaired to minimize guideway staining and facilitate easier removal of graffiti, mold and mildew.



The long term project is not yet started and total cost is \$5.0 million. Expected completion is FY2016. In addition, this item includes the Metromover Brickell extension short term painting project, which is to repaint the exterior areas of the steel girders and piers of the guideway and achieve an aesthetically acceptable appearance that will last until the guideway is repainted by a contractor, which is expected in approximately three years. The Brickell painting began July 2010 and is expected complete February 2011. Total expended as of FY2010 is about \$802,000 (\$4.2 million balance to complete).

Acoustical Barrier Replacement - This project was originally a separate line item in the 2003 PTP Amendment and is now included as part of the Track & Guideway Rehabilitation Subset. There are approximately 12,000 feet of metal acoustic barrier panels on the Metrorail guideway that have been in place since the beginning of passenger service. These panels act as sound barriers between the train and adjacent properties to ensure sound levels are within the acceptable limits set by cities and the County. The metal barrier connections are rusting and the panels need to be replaced for aesthetic and safety reasons. Acoustic barriers and hardware will be upgraded and an additional 8,000 feet will be installed in specific areas identified by P & D noise study to bring to total length of the noise barrier to 20,000 feet. Project is 5% complete (less than \$5,000 expended as of FY2010 of \$2.5 million total cost). Currently preparing bid package for materials, in house forces to perform the work. Scheduled complete by September 2015.

Coverboard replacement - of safety items on curves that have deteriorated. Includes procurement of 53.3 miles of new coverboard and brackets, 28,150 insulators, and 800 hurricane anchors to be installed by in-house forces. Specification and bid package for material was completed March 17, 2007, and coverboard installation is underway (for example, completed Tracks 1 & 2 between I-95 and Culmer). Project is 15% complete (6 miles of 54 total), with \$2.9 million expended to date as of FY2010 and total cost revised estimate at \$17.0 million. Completion expected September 2013.

Palmetto Yard Road Crossing and Mainline Replacement – This project is to replace 32 at-grade road crossings, six mainline access crossings, and five concrete crossings in the Palmetto Yard. It is currently 70% complete, with \$2.3 million expended of \$2.7 million total cost. All 32 road crossings in the Palmetto Yard are complete and selection of road crossing material for mainline crossing is pending. Completion expected December 2011.



Rail Fastener Replacement - Replacement of 50,000 rail fasteners and shims in mainline curves including core drilling and replacing anchor bolt inserts. This replacement is critical to maintain the mandated track standards from FTA and MDT. Material bid package completed December 2006 with in house forces performing the work. Replacement started August 2007 and is currently 42% complete (20,678 fasteners installed) with \$8.04 million expended to date of \$15.0 million total cost. Completion scheduled September 2013.



Seal Gland Rehabilitation - The primary objective of the seal gland rehabilitation project (currently 40% complete) is to ensure that rainwater does not intrude into the stations. This is accomplished by replacing the seal glands and clearing drains. Once the stations are watertight, the guideway will receive the same attention. Material bid package completed September 2007. Work began in January 2007; employees were hired and trained including three (3) Structural Repairers to begin training class January 2011. Procurement of material has been completed to begin the project; in house forces to perform the work. To date, all guideway transverse seal glands have been cleaned; \$1.80 million expended as of FY2010 of \$3.500 million total cost. Current completion date is September 2012.

Mainline Miter Joint Replacement – This project was to replace (168) Standard Insulated Joints at stations with Mitered Insulated Joints to increase service life at joints including 56 to 60 rail fasteners and shims to level the joints. The standard joints required constant maintenance and are very noisy, while the mitered joints require no maintenance and create low noise. The mitered joints also increase the reliability of the system with fewer Train Control circuit problems. Total project cost was approximately \$601,000. This work was completed September 2008; replacement equipment also now on hand in inventory.

Following is detailed information for this subset from 2010-2011 Approved Capital Plan.

From 2010-2011 Approved Capital Plan

TRACK AND GUIDEWAY REHABILITATION

PROJECT # 6710900

LOCATIONS: Various Sites

DISTRICT LOCATED: 2, 3, 5, 6, 7, 12

ESTIMATED ANNUAL OPERATING IMPACT: \$0

DISTRICT(s) SERVED: Countywide

Revenue Schedule	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
PTP Bonds	16,661	7,413	7,243	6,377	5,503	3,589	0	0	46,786
Total Revenue:	16,661	7,413	7,243	6,377	5,503	3,589	0	0	46,786
Expenditure Schedule:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
Construction	9,941	4,653	4,488	4,049	3,352	1,739	0	0	28,222
Equipment Acquisition	540	385	380	320	260	100	0	0	1,985
Project Administration	6,180	2,375	2,375	2,008	1,891	1,750	0	0	16,579
Total Expenditures:	16,661	7,413	7,243	6,377	5,503	3,589	0	0	46,786

15. Replace Rail Vehicle Wash

This project has been completed. The project entailed replacement of the Metrorail vehicle wash system at the Lehman Center maintenance facility. The old automatic wash was inoperable and could not be repaired. Rail cars were being washed by hand. The project cost \$1 million (currently being confirmed by MDT) and was funded by the PTP Surtax.

16. Rail F & G Inspections

This project is considered complete. Thorough periodic maintenance inspection of the 136 railcars (68 married pairs) is required to increase reliability and ensure passenger comfort. F and G Inspections are comprehensive vehicle maintenance inspections that are required every four and eight years respectively. To date, 32 pairs of railcars have undergone a G-Inspection and 58 pairs of railcars have undergone an F-Inspection. Vehicles in the fleet have exceeded the mileage and interval for the G-Inspection which includes braking systems; Heating, Ventilation and Air Conditioning (HVAC) equipment; couplers; gearboxes and wheels. Mean Distance Between Disruptions for the 26-year old fleet was 45,953 miles in FY10.

The cost of the project was \$2.7 million. Funding included \$54,250 in Sunshine State loans and \$2.6 million from the PTP Surtax revenues. The remaining 10 pairs of F-Inspections and 36 pairs of G-Inspections are not planned in light of improved maintenance results and approaching delivery of replacement rail vehicle in only a few years.



17. Facilities Roof Project

This project, now 77% complete based on amount expended of current estimated total cost, involved ongoing replacement of roofs, upgraded lightning protection and sealing of skylights at all Metrorail Stations and other facilities. The project was halted because of Hurricanes Katrina and Wilma after roof replacements except lightning protection were completed at several facilities. Primarily the lightning protection remains in process to complete all station post-hurricane roof repairs and replacements.

The original cost for this project was \$6.5 million which has since been revised to \$7 million. As of end of FY2010, \$5.4 million has been expended. Total of \$6.0 million is funded for this project (Sunshine State Loans totaling \$201,000 and \$5.8 million from the PTP Surtax). The remaining \$1.0 million is currently an unfunded need, however proposed for next year's IRP in addition to the following roof project.

Note the scope of the above project excludes the Bus Roofs project included in IRP (see page 101). The original scope of work for the IRP project was for a contractor to furnish and install new roofing at the Central Bus Garages and Offices; A/C and fan roof curbs to be resealed and insulated. Some roof ventilators and curbs may be necessary to replace as part of this project. The current cost estimate is \$300,000 and is currently 0% complete. Scope of work is in the process of being evaluated and to match allocated funds.

The following is from the Unfunded Priority Needs section of the 2010 TIP. The project is not listed as a line item of Transit projects in the 2010 Capital Budget's Unfunded Needs.

MPO Project Num.	Facility/Project Name		Type of Work	Project Cost (\$000s)	Unfunded Projects					
Agency Project Num.	From/Location	To/Location	Remarks							
Detailed Project Description				6,000	Activity/ Phase	(in \$000s)				
TA0000075	Transit Facilities Roof Replacement		Construction							
0000075	Systemwide	Systemwide	This project was an approved PTP project. Due to budge							
	Replace roofs on transit facilities including metrorail, metromover and bus facilities.					Year 1	Year 2	Year 3	Year 4	Year 5
					CST	545	544	544	2,113	0

18. Fare Collection System Replacement

This project is complete (not including AirportLink station now under construction, and closeout installation of fire panels). The new Automated Fare Collection System (AFCS) – EASY Card, was implemented on October 1, 2009. The EASY Card is a smart-card based system installed on the Metrobus fleet and at the Metrorail Stations. The AFCS meets the needs of the present fare structure with sufficient flexibility for future service. The system accepts cash and credit cards to purchase an EASYCard or EASY ticket at Ticket Vending Machines, Point of Sale locations or on-line. The new system utilizes new fareboxes for all Metrobuses, new faregates installed at all Metrorail stations, new revenue island equipment and computers at the garages and a new consolidated backend computer system. The system features open-ended architecture that will accommodate future integration with other local transportation agencies. The AFCS also has an Automatic Passenger Counter (APC) capability on all buses and at all Metromover stations. The system will also provide boarding and alighting data by bus stop. The AFCS ensures improved ridership data accuracy and enables MDT to better allocate resources and improve service planning. The new system is also expected to reduce fare evasion and fraud. Total cost to be reflected in next year's Capital Plan is \$63.648 million. Total expended is \$57.485 million, and remaining balance reflects pending AirportLink station and closeout items.



From 2010-2011 Approved Capital Plan

FARE COLLECTION EQUIPMENT

PROJECT # 6730051

LOCATIONS: Various Sites

DISTRICT LOCATED: Countywide

ESTIMATED ANNUAL OPERATING IMPACT: \$0

DISTRICT(s) SERVED: Countywide

Revenue Schedule	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
PTP Bonds	60,843	1,805	0	0	0	0	0	0	62,648
Expenditure Schedule:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
Planning and Design	185	0	0	0	0	0	0	0	185
Construction	401	0	0	0	0	0	0	0	401
Equipment Acquisition	47,142	1,500	0	0	0	0	0	0	48,642
Project Administration	13,115	305	0	0	0	0	0	0	13,420
Total Expenditures:	60,843	1,805	0	0	0	0	0	0	62,648





19. Upgrade Illumination

This project involves improvements to, and replacement of the lighting system for existing Metrorail stations and parking garages. Station and parking lighting need to be upgraded to newer energy efficient systems that provide better illumination and require less maintenance. There are two phases to this project. Phase 1 is completed, to re-lamp all Metrorail stations. Phase 2 of this project is included in the IRP (page 99), and scope is full replacement of lamps with either Light Emitting Diode (LED) or induction lighting for four Metrorail garages (Okeechobee, Martin Luther King, Jr., Dadeland North, South Miami) and one Metrobus Park and Ride (SW 244th Street). This project is separate from another proposal for LED replacements of all the Metrorail lighting fixtures at an estimated cost of \$7.5 million, which is currently an unfunded need.

Originally, the project was estimated to cost \$2.9 million and has been revised to cost \$2.7 million. The project is 56% completed and total expenditure is \$1.5 million.

20. Rail Midlife Rehabilitation (now Rail Vehicle Replacement)



This project originally involved mid-life (15-year) rehabilitation of 136 Metrorail vehicles which is now past due. The existing propulsion systems are more than 20 years old and parts are becoming obsolete and more difficult to obtain. Fleet modernization will include rebuilding and/or replacement of existing components and systems with newer technology.

However, the County began evaluating whether to replace the rail cars as opposed to completing mid-life rehabilitation and opted to purchase new car as opposed to rehabilitating the older units. This was after a careful review of the results of the Railcar Rehabilitation negotiations and undertaking a thorough assessment of the marketplace in regard to new versus rehabilitated vehicles. Factors considered

in this analysis included: the impact on existing service; the need for additional new vehicles for the planned Metrorail extensions; market options for providing the County the best rail service possible; a life cycle cost comparison of new versus rehabilitated vehicles; and cost factors related to maintenance and parts inventory showed that the procurement of new vehicles in lieu of rehabilitation would represent the best value procurement option for the County.

A PTP amendment to approve the procurement of new rail vehicles in lieu of rehabilitation was approved by the Board on May 6, 2008 with the requisite funding. The County will purchase a total of 136 new cars for an original total budgeted of \$407 million. The eight additional cars are no longer operationally required that were part of the AirportLink extension (page 30). The Request for Proposals (RFP No. 654) was issued March 31, 2009. Railcar manufacturers Alstom, AnsaldoBreda, and CAF submitted proposals on September 25, 2009. MDT Project Team reviewed proposals, and a County Manager award recommendation is scheduled to be presented to the Trust and the Board early 2011, followed by Notice to Proceed. Project currently is 22% complete with \$27.1M expended to date. Delivery of the vehicles scheduled November 2013 through March 2019. Current cost estimate based on Manager award recommendation is \$375.7 million.

From 2010-2011 Approved Capital Plan

RAIL VEHICLE REPLACEMENT

PROJECT # 6733001

LOCATION: Unincorporated Miami-Dade County

DISTRICT LOCATED: 12

ESTIMATED ANNUAL OPERATING IMPACT: \$500

DISTRICT(s) SERVED: Countywide

Revenue Schedule	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
PTP Bonds	40,565	25,969	28,878	48,420	108,685	121,731	31,260	1,676	407,184
Total Revenue:	40,565	25,969	28,878	48,420	108,685	121,731	31,260	1,676	407,184
Expenditure Schedule:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
Equipment Acquisition	13,159	21,384	23,303	36,462	97,050	110,451	27,174	0	328,983
Project Administration	12,396	3,121	4,012	10,071	7,388	6,604	2,948	1,676	48,216
Project Contingency	1,262	964	1,063	1,637	4,047	4,574	1,138	0	14,685
Capital Maintenance	13,748	500	500	250	200	102	0	0	15,300
Total Expenditures:	40,565	25,969	28,878	48,420	108,685	121,731	31,260	1,676	407,184



21. Enhancements (Central Control Modernization)

The existing Central Control facility consists of 20-year old obsolete electromechanical controls with no capacity for expansion. The Central Control modernization project will provide a modern, expandable Central Control facility with state-of-the-art computers and projection screens. The initial project was to cost the County \$14.5 million for Metrorail systems only. The revised scope includes installation of a system wide facility encompassing buses and Metromover which increased the project cost to \$32.4 million currently. Funding for this project include FDOT Funds and PTP. This project is estimated to be completed by June 2013 and is currently 15% complete. Advertisement was May 2010; six (6) bids received. Proposals evaluation and recommendation are underway, based on Technical Criteria (experience, qualifications and technical approach), Oral Presentation and Price Criteria. NTP anticipated April 2011, with construction, testing and startup complete by June 2013. Expenditures as of end FY2010 are \$3.076 million.

From 2010-2011 Approved Capital Plan

CENTRAL CONTROL OVERHAUL

PROJECT # 6733181

LOCATION: City of Miami

DISTRICT LOCATED: 5

ESTIMATED ANNUAL OPERATING IMPACT: \$0

DISTRICT(s) SERVED: Countywide

Revenue Schedule	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
FDOT Funds	1,845	839	0	0	0	0	0	0	2,684
PTP Bonds	1,845	13,895	12,171	1,185	0	0	0	0	29,096
Total Revenue:	3,690	14,734	12,171	1,185	0	0	0	0	31,780
Expenditure Schedule:	Prior Years	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Future	Total
Planning and Design	932	652	0	0	0	0	0	0	1,584
Construction	0	10,971	8,265	0	0	0	0	0	19,236
Equipment Acquisition	878	0	0	0	0	0	0	0	878
Construction Management	0	1,355	1,275	269	0	0	0	0	2,899
Project Administration	1,880	1,208	2,049	916	0	0	0	0	6,053
Project Contingency	0	548	582	0	0	0	0	0	1,130
Total Expenditures:	3,690	14,734	12,171	1,185	0	0	0	0	31,780

Contract (See Appendix for fuller listing of Trust-approved contracts)

CIP030-CT1-TR09 Construction Engineering and Inspection Services for the Lehman Center Test Track, Palmetto Station Traction Power Sub-Station, Metrorail Central Control Upgrade and Lehman Yard Rehabilitation & Expansion Phase 1

22. Additional Pedestrian Overpass (4)

The PTP amendment passed on October 2003 identified four Pedestrian Overpasses along US-1 at the following Metrorail Stations: Dadeland South, South Miami, University and Coconut Grove for a total value of \$10 million. In 2006 MDT proceeded with conceptual studies to evaluate alternatives to determine the optimum location and configuration for the pedestrian structures over US-1. The preliminary cost estimates as part of these studies indicated the funding required was approximately three times the PTP amendment budgeted amount.

In 2007 MDT completed a warrant and prioritization study, the "Pedestrian/Bicycle Crossing Study-Metrorail Stations along US-1 Corridor". The study established screening criteria including pedestrian counts and vehicle speeds to identify intersections that may justify the investigation of a pedestrian overpass as possible solutions to provide more pedestrian friendly crossing opportunities. Of the five locations were studied – the four Amendment locations and one other proposed at Dadeland North – University and South Miami met the criteria. The other three did not and are currently not funded to move forward.

University Pedestrian Overpass: MDT moved forward with this overpass at Mariposa Court and US-1, the preferred alternative indicated in the March 2006 University Metrorail Station Conceptual Study. Miami-Dade County in coordination with FDOT and the University of Miami took short term corrective actions beginning the middle of 2006. Safety improvements included installing a fence to channel pedestrians to the signalized crosswalk to cross US-1, additional signage on the Metrorail parking lot side of the fence to direct pedestrians to the safe crossing location, and backplates on the traffic signal at the safe crossing location to bring more attention to the drivers; as well as modifying the traffic signal phasing at the Mariposa/US-1 intersection to provide a pedestrian crossing phase prior to the westbound left turn phase.

In September 2008, 100% of planning and approximately 40% of final design phases (approximately 45% the overall project) were complete for the overpass when it was placed on-hold due to reductions in FDOT funding sources and fiscal challenges faced by MDT. In April 2010, MDT in cooperation with FDOT has been able to reprogram funds for this project. The funds estimated to be required to complete the project is approximately \$5.862 million, with \$766,000 expended of current estimated \$6.3 million (reduced from previous \$7.5 million estimate). The proposed new funding sources are as follows: 66% Federal, 17% State and 17% Local. This includes October 2010 TIP amendments transferring funding from three other overpasses (South Miami and the two at Dadeland) as noted below. Revised funding sources and estimated cost will be reflected in next year's Capital Plan.

FTA approval/concurrence of the re-evaluation of the project's 2007 Categorical Exclusion is anticipated for early 2011, which allows MDT to apply for the federal component of the funds. Design/permitting expected to be completed by April 2012, Right of Way Acquisition by July 2012, Construction by December 2013.

South Miami Pedestrian Overpass: MDT moved forward with the overpass at its optimum location at SW 72nd Street/Sunset Drive and US-1, as identified by the study performed by the City of South Miami in 2001 and confirmed by the 2006 MDT Conceptual Study. Design Notice To Proceed and coordination with various entities began April 2007, however this location became no longer feasible in December 2007 when the property identified for acquisition was deemed historical by the City of South Miami Commission.

Other locations within the area were analyzed in coordination with the City of South Miami. None were found to be effective. Design activities were placed on-hold in September 2008, like the University Overpass due to reductions in FDOT funding sources and fiscal challenges faced by MDT.

The City of South Miami began evaluating intersection improvements along US-1 including SW 72nd Street/Sunset Drive. FDOT is currently working with the City to gain a full understanding of the scope and cost



for the proposed intersection improvements and evaluate other funding options that may be appropriate and available. The South Miami Pedestrian Overpass previous scope was estimated at \$4.18 million and is not currently a funded project under the Miami-Dade County Capital Plan. MPO amended the TIP in October 2010 to transfer funding for this project to the University Overpass.

Coconut Grove, Dadeland South and Dadeland North Overpasses did not meet the 2007 warrant study's screening criteria. MPO amended the TIP in October 2010 to transfer funding for Dadeland projects to the University Overpass.

Total expenditures related to PTP Pedestrian Overpasses are \$1.495 million (\$766,000 University, \$729,000 all other such as South Miami). Funding has been primarily PTP (\$1.166 million), with the balance FDOT and FTA.

23. Additional Metrorail Crossovers

This project was for construction of two additional crossovers on the existing Metrorail line to facilitate system maintenance without impacting train schedules to support the Orange Line expansion. Due to increased passenger service and the anticipated increase in boarding once the MIC (now AirportLink) becomes operational, these crossovers may have been required to help MDT maintain desired headways while maintaining rail facilities and allow multiple areas of rail tracks to be “single-tracked” without affecting service schedules. Because of the existing distance between crossovers, single tracking for maintenance could result in headways that were longer than desired. Constructing these additional crossovers between the Culmer and Earlington Heights Crossovers and Dadeland South and Douglas Road Crossovers could significantly improve service reliability and on-time performance.

However, revised estimates developed in 2007 indicated each crossover would cost \$50 million, or \$100 million total, which far exceeds the \$10 million budgeted for two crossovers in the PTP amendment as passed October 2003. Current operational plans for the AirportLink reduce the need for an additional crossover, however once that extension is completed this project could be reevaluated and reinstated for the Capital Plan.



Additional Amendments

24. Patriot Passport Program; PTP Amendment (R-729-04)

See discussion for Golden Passport, page 17.

25. Discontinue overnight Metrorail and Metromover service (R-421-04)

Board adopted resolution in April 2004 to amend the PTP discontinuing the overnight Metrorail and Metromover service and implementing a replacement Metrobus route that would serve bus stops at or near Metrorail stations. Miami-Dade Transit (MDT) began 24-hour service on Metrorail and Metromover along with new 24-hour service on eleven bus routes serving Metrorail on May 25, 2003, as part of the implementation of the People's Transportation Plan. The Metrorail service which operated every 60 minutes between 1 am and 5am had an operating cost impact of \$2.0 million and security cost of \$1.3 million. Overnight Metromover service during these hours is \$145,973 per year of security cost for five guards. The average number of passengers during these four hours using the entire system of Metrorail was approximately 250 per night, and Metromover averaged 15 passengers per night. The cost of the new overnight Metrobus route would be approximately \$350,000 per year, for net savings of \$3.1 million.

26. Implement the December 7, 2003 bus service improvement lineup, 3 year service improvement plan; PTP Amendment; (R-64-04)

In January 2004, the PTP was amended to include the December transit line-up. The line-up included implementation of 52 improvements to 41 routes, acceleration of two other PTP bus route improvements, and introduction of twelve non-PTP bus service improvements. The improvements were completed and were funded as part of the total operational support received from PTP Surtax revenues.

27. PWD Two Year Plan, categories for Neighborhood Improvements, and district allocations (R-87-04, amended R-507-04 and R-1391-04)

Resolution R-87-04 approved the plan for FY2003-04 and FY2004-05 for Districts, Major Countywide, and Neighborhood Countywide projects in the two categories of the PTP Ordinance's Exhibit 1 that relate to PWD, as well as the operational needs for Traffic Signals and Signs (\$20.075 million). Further, to address the various non-site specific categories in the PTP ordinance Neighborhood Improvements in the most effective and efficient manner, the plan included PWD's "Neighborhood Improvement Projects Formula" to utilize \$91.425 million over 10 years evenly distributed among the Commission Districts. (See Neighborhood Improvements on page 46 for further status discussion.) Resolution R-507-04 then amended the Neighborhood Improvements section in Exhibit 1 of the PTP to specifically identify Roadway Signage, Roadway Lighting, Pavement Markings, and Traffic Calming. Lastly, Resolution R-1391-04 removed school flashing signals from the commission districts' yearly allocation and reassigned it within the countywide neighborhood improvements section.

28. Five-year service improvement plan; PTP Amendment (R-421-04 and R-422-04)

In April 2004, the PTP was amended to implement a five-year service improvement plan. Prior to this action, MDT accelerated improvements by adopting a Three-Year Plan that was not a part of the PTP. By reverting to the five-year plan, the implementation costs were reduced by approximately \$6.9 million. Among these improvements is the new Route 500, which is a bus service that replaces the discontinued Metrorail/Metromover overnight service. Route 500 runs from Dadeland South to the Government Center from 1 a.m. to 4 a.m. and serves approximately 250 customers.

29. Paratransit/Special Transportation Services (STS) project; PTP Amendment; (R-1365-04)

This project is complete. In November 2004, the PTP was amended to include Paratransit/Special Transportation as a PTP project to be funded in an amount not to exceed \$55.4 million over five years. This funding was to make up the budget deficit on the \$219 million STS contract executed in 2004. The contract was for \$55.4 million more than budgeted by MDT for STS through FY 2008-09. A total of \$6.3 million was reimbursed from Surtax funds through September 30, 2007.

30. Ordinance Amending Maintenance of Effort PTP Amendment; (R-148-05)

In July 2005, the PTP was amended to address issues related to the maintenance of effort for transit services that existed prior to the approval of the PTP (Existing Services). The amendment included three stipulations:

- a. An annual increase of 3.5% in the Countywide General Fund budget contribution to support Existing Services
- b. At least 1.5% annual increase in Local Option Gas Tax (LOGT) Revenues for Existing Services support
- c. Approval of a Line of Credit (Loan for Existing Services) for up to \$150 million in Surtax funds to support MDT Existing Services.

Item a is reflected in the 2010 Pro Forma as well as the Adopted FY 2010-11 Budget's Additional Comments for MDT: In FY 2010-11, the Countywide General Fund Maintenance of Effort (MOE) is \$151.346 million, a 3.5 percent increase above the FY 2009-10 MOE of \$146.228 million, as adopted in the People's Transportation Plan and as amended in May of 2005.

For Item b, the 2010 Pro Forma reflects the 1.5% annual increase in FYs 2011 through 2013. Also per Adopted FY 2010-11 Budget's Additional Comments for MDT: "In FY 2010-11... MDT will utilize... \$16.720 million of Capital Improvement Local Option Gas Tax funds to support the capitalization of major preventive maintenance expenses in the operating budget."

Regarding Item c, MDT received \$83 million under the Line of Credit for the three fiscal years ending September 30, 2007. The following is included among Adopted FY 2010-11 Budget's Additional Comments for MDT: "In FY 2010-11, the Countywide General Fund support to MDT includes \$12.698 million towards repayment of the loan for existing services; total borrowing remains at \$150 million; the final installment payment will occur by FY 2017-18." (However this MDT Repayment of Loan for Existing Services is not shown separately in the current 2010 Pro Forma.)



31. Public education campaign by GIC (R-308-07)

In 2007, the PTP was amended to provide for a public education campaign by the Government Information Center. Total cost was \$350,000.

32. Create Capital Reserve and unify system use of Surtax funds (R-222-09)

As a result of Board of County Commissioners (BCC) Resolution 222-09 adopted March 2009, which amended Exhibit 1 of the People's Transportation Plan by creating a capital expansion reserve fund and allowing for greater flexibility in the use of Surtax funds for the operation and maintenance of the Transit system, Adopted Budgets including for FY 2010-11 maintain a unified system. In FY 2010-11, programmed surtax support for MDT is \$126.618 million and includes \$91.968 million for operations including maintenance, \$22.913 million for PTP pledged debt service, and \$11.737 million for pre-existing debt service. The \$91.968 million of PTP funding is approximately 24 percent of MDT's total operating budget.

The Trust now reviews and approves contracts funded from MDT Operating budget in addition to contracts for Capital projects specifically funded by the Surtax. The Board amended Ordinance 02-116 in September 2010 to shift the sequence of approval of contracts utilizing Surtax funds and to require this Five Year Implementation Plan annually.

See page 111 for discussion on Detailed Capital Reserve Project Listing.