

**DRAFT 04/08/2011**

**2035 Plan Post Referendum Analysis**

**Technical Memorandum One: COST REDUCTION STRATEGIES**

**Prepared For:**



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## Introduction

For this memorandum, research on cost strategies for the Hillsborough Metropolitan Planning Organization (MPO) was undertaken for eight of the nine priority transit corridors identified in the MPO's 2035 Long Range Transportation Plan (LRTP). The ninth represents the demonstration project and/or recommended alternative undertaken by Hillsborough Area Regional Transit (HART). The Locally Preferred Alternative (LPA) developed in the HART AA, is the "West Corridor" from Downtown Tampa to Tampa International Airport (TIA), with a Linebaugh Avenue Extension (as dated March 2011). This twelve mile corridor runs west primarily along Interstate-275 to TIA, then turns north toward Linebaugh Avenue using an existing freight rail corridor. This is an incremental approach to implementation, spreading total cost over time and also distributing construction impacts over time.

The 2035 LRTP Cost Affordable Plan recommendations focused on Light Rail transit options. Research regarding costs strategies conducted was designed to compare a range of premium transit options assessing possible cost-saving approaches as compared to those identified by the LRTP. Roadway-focused mobility improvements are also discussed, expanding the assessment with other lower-cost means of improving mobility, with an eye to "smart-street" elements.

This memorandum presents sketch planning cost comparisons and should not be considered as a surrogate for a detailed corridor-by-corridor Alternatives Analysis (AA). While some attempt is made to standardize costs across modes, allowing for direct comparisons, more project definition and analysis work would be required to truly identify appropriate operating plans and appropriate modes for each corridor. It should be noted that each corridor would not be implemented or operated independently; they would function as extensions of a starter line within Hillsborough County, or as extensions into other counties. Additional steps and considerations are required to examine premium transit options in greater detail:

- Clearly define each corridor's travel market(s) served with a clearly defined County-wide system and operating plan.
- Review the Hillsborough County transit corridors in the context of the Regional Transportation Master Plan, developed by the Tampa Bay Area Regional Transportation Authority (TBARTA).
- Define and relate corridor travel markets to appropriate premium transit technologies and passenger-carrying capacities.
- Identify premium transit corridors that have the greatest potential to provide travel time savings and additional/alternate transportation capacities adjacent to congested roadway corridors.
- Identify opportunities to incorporate managed lanes within existing roadways.
- Identify critical intersections and roadway segments for priority "smart-street" and congestion management improvements (with reference to the MPO LRTP recommendations).
- Evaluate station placement strategies that reflect premium transit strategy and the travel market being served.
- Evaluate each premium transit option's ability to serve anticipated demand.
- Evaluate each premium transit option's conceptual engineering constraints.

## 1.0 Fixed Guideway Alternatives

In the Hillsborough MPO 2035 LRTP adopted December 2009, a new passenger rail system connecting major activity centers was proposed to be funded with a new one-cent sales tax with matching federal and state grants. The cost estimates assumed that median light rail vehicles on new tracks would be used.

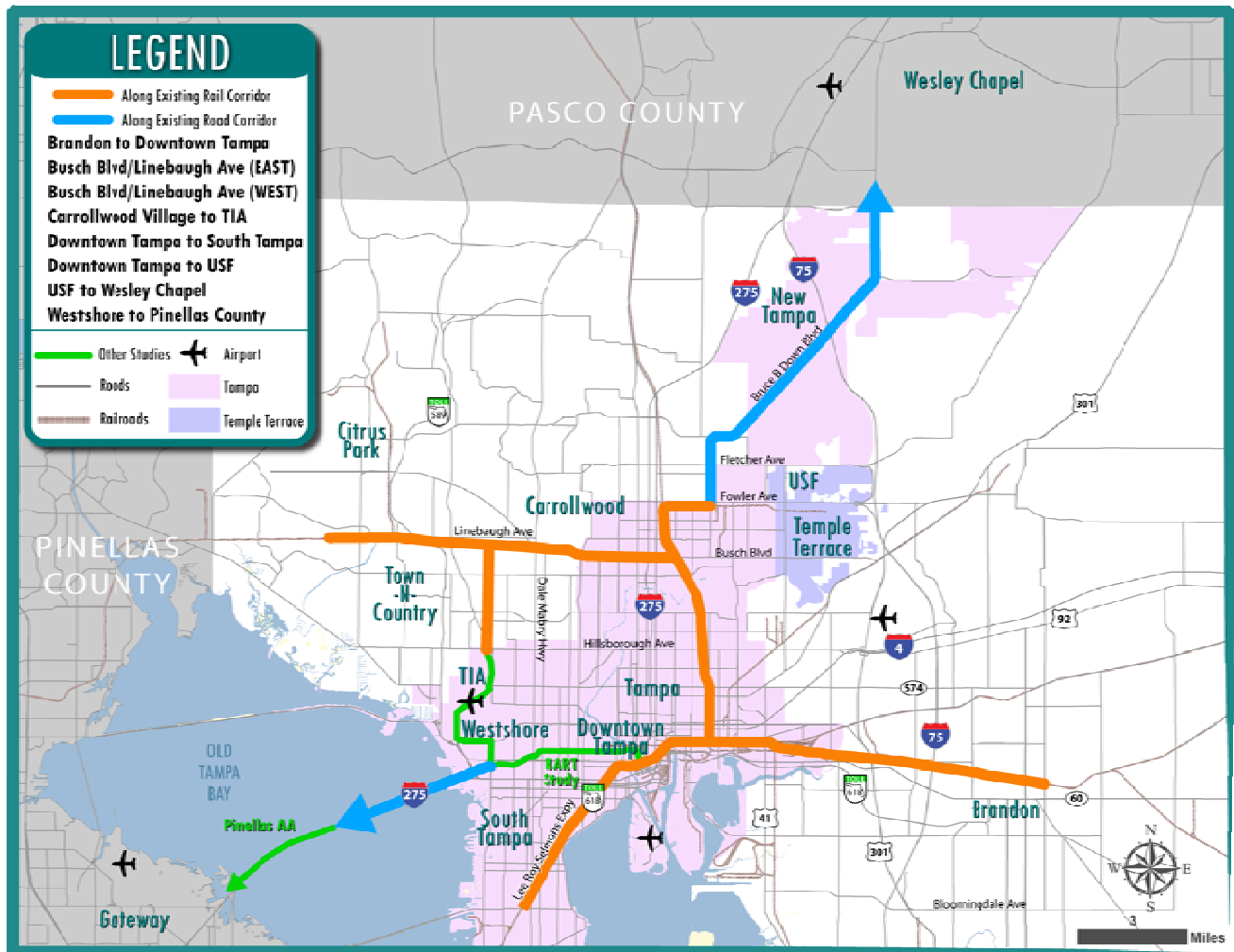
To review the cost and benefit trade-offs of serving Hillsborough's travel markets with alternative premium transit technologies, the MPO has requested a comparison of those options. This technical memorandum provides only preliminary analysis and data collection, with an order-of-magnitude cost comparison across a range of potential technologies in each corridor. This comparison was conducted for the following eight corridors:

- Brandon to Downtown Tampa
- Busch Boulevard/Linebaugh Avenue Corridor East
- Busch Boulevard/Linebaugh Avenue Corridor West
- Carrollwood Village to Tampa International Airport (TIA)
- Downtown Tampa to South Tampa
- Downtown Tampa to University of South Florida (USF)
- University of South Florida (USF) to Wesley Chapel
- Westshore Business District to Pinellas County

The 2035 LRTP identifies a comprehensive proposed transit network consisting of Light Rail, Streetcar, Bus Rapid Transit, and other bus service improvements. **Figure 1** illustrates the 2035 LRTP Transit Improvements for Light Rail corridors, but does not reflect Streetcar or bus service improvements, as this effort focuses on those corridors where Light Rail Transit is proposed.

Described above, each individual corridor is illustrated in **Figures 6** through **13**, at the end of this section. The corridor between Downtown Tampa, Westshore and Tampa International Airport (TIA) is not included in this analysis, as it is the subject of a HART demonstration line study.

Figure 1: MPO 2035 LRTP (Light Rail) Transit Improvements



Source: Hillsborough County MPO LRTP Cost Affordable Plan

The technical memorandum compares the following technologies:

- **Light Rail:** features electrically-propelled rail cars, operated singly or in short trains of up to four cars, using an overhead catenary as the power source; operates primarily in a semi-exclusive right-of-way, but may also run in mixed traffic, providing local and regional service.
- **Streetcar:** operates as a single-car rail or rubber-tire system with an overhead catenary as the power source; streetcars operate primarily in mixed traffic, providing local service.



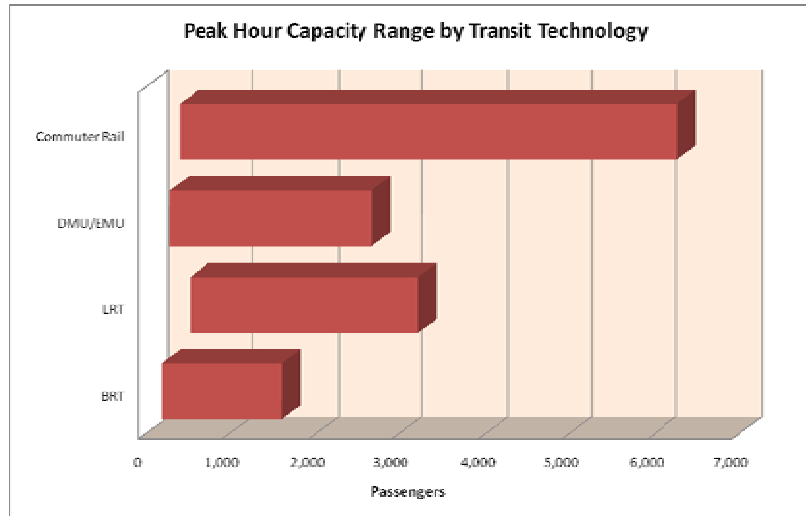
- **Bus Rapid Transit:** operates as rapid transportation that can provide the quality of rail transit with the flexibility of buses; BRT moves a large number of passengers on medium-distance trips, separated from traffic or in mixed traffic with priority treatment at traffic signals.
- **Commuter Rail:** Federal Rail Authority (FRA) compliant vehicle which could use the same track as freight rail operations; uses traditional push-pull locomotive pushing or pulling passenger cars; offers long-distance transit service due to large vehicle size and long stopping distance.
- **Diesel Multiple Units:** treated as a subtype of commuter rail, not light rail, DMU consists of one or two vehicles semi-permanently coupled including its engine/propulsion unit; assumes FRA compliance.



Some of the major factors that influence the cost to build, operate, and maintain these systems are:

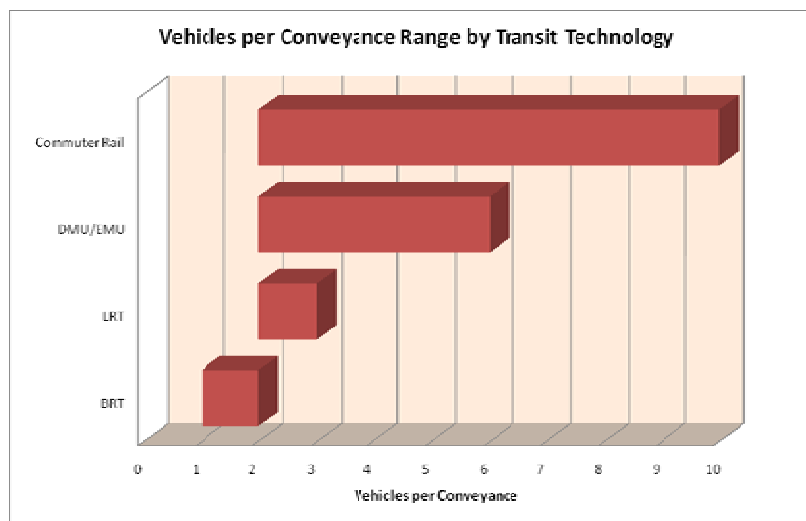
- Guideway type; either at-grade or elevated
- Separation from general purpose traffic; either separate guideway or in mixed traffic
- Local corridor characteristics; including engineering constraints
- Capacity of the vehicles and system; frequency of service, number of vehicles need to maintain frequency, station spacing, and characteristics of the service being provided. **Figures 2-5** highlight a few of these characteristics.

**Figure 2: Peak Hour Capacity by Technology**



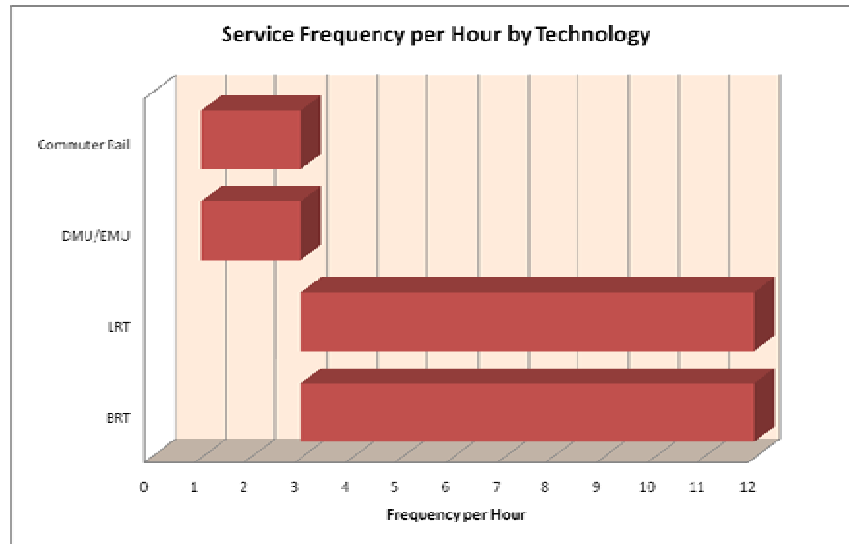
For comparison purposes, peak hour capacity ranges were based upon vehicle characteristics as well as typical operating characteristics of similar transit systems throughout the country. In this case, the minimized peak hour capacity represents 1 vehicle per conveyance for BRT and 2 vehicles per conveyance for commuter rail, LRT, and DMU respectively. Conversely, the maximized peak hour capacities assume the following vehicles per conveyance: 2 vehicles for BRT; 3 vehicles for LRT; 6 vehicles for DMU; and 10 vehicles for commuter rail. The range of vehicles per conveyance is depicted in **Figure 3**.

**Figure 3: Vehicles per Conveyance by Technology**



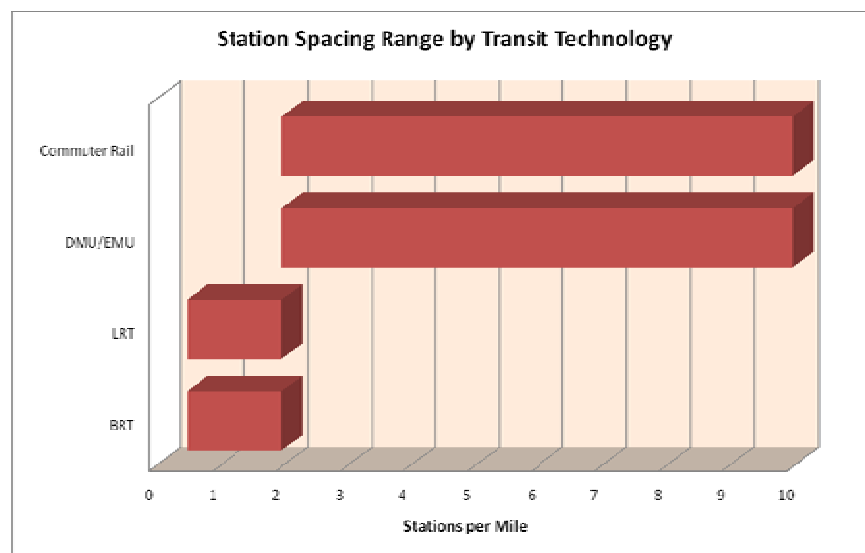
In addition, the peak hour capacities were determined based upon a range of service frequencies realistically associated with each technology. For example, BRT and LRT assumed a maximum and minimum frequency of 5 and 20 minutes. DMU and commuter rail assumes a range of service frequency from 20 to 60 minutes. The range of typical service frequencies is depicted in **Figure 4**.

**Figure 4: Service Frequency per Hour by Technology**



Another important characteristic to consider when evaluating transit technologies is the typical station spacing requirements. **Figure 5** below illustrates the station spacing generally attributed to each transit technology.

**Figure 5: Station Spacing by Technology**





Physical configuration for fixed guideways and right-of-way cost are both highly dependent on the specific design and corridor constraints. Options combined with physical configuration and the number of transit vehicles drive up capital cost and increase annual operating and maintenance expenses. **Table 1** highlights some of the differences between the technologies that affect both capital and operating costs.

**Table 1**  
**Mode Characteristics**

Parameter	Light Rail	Modern Streetcar	Bus Rapid Transit	Commuter Rail	DMU
What type of guideway elevation is used for most systems?	At-Grade	At-Grade	At-Grade	At-Grade	At-Grade
Integration/Separation with general traffic	Separated and Mixed	Separated and Mixed	Separated and Mixed	Separated	Separated and Mixed (in very limited applications-non-FRA)
Corridor Type	Roadway, Highway, Exclusive Corridor, Existing Rail Corridor with Separation from Freight	Roadway, Exclusive Corridor, Existing Freight Rail	Roadway, Highway, Exclusive Corridor	Rail Corridor, Exclusive Corridor	Existing Rail Corridor, Limited Application in Roadway, Exclusive Corridor
Range of units per traincar	2-6	1-2	2 (Articulated)	1-12 + Locomotive	1-10
Average operating speed range in urban environments*	15-35 Mph	10-20 Mph	15-35 Mph	30-50 Mph	30-50 Mph
Passenger Capacity**	Medium	Low	Medium	High	High
Lifespan of Vehicles	25 years	25 years	12 years	30 years	30 years

*\*Dependent on number of stations/station spacing and time, and distance required to slow vehicles as it approaches a station and accelerates leaving station.*

*\*\*Dependent on number of vehicles and frequency of service.*

*Source: Hillsborough County MPO LRTP Cost Affordable Plan, Tampa Bay Regional Transportation Authority, Broward County 2035 LRTP, and Portland North Commuter Rail Cost Model*



## 1.1 Design Considerations (Elevated and At-Grade Construction)

Elevated designs are on a raised structure. At-grade designs operate at street level. Elevated design solutions are frequently considered when significant engineering constraints, environmental considerations, high costs or operating requirements are encountered in a corridor. Otherwise, most mass transit systems are at-grade.

Factors that motivate the selection of an elevated system or sections of elevated transit are:

- High-cost right-of-way or limited right-of-way;
- Immitigable traffic impacts;
- Opportunity to integrate stations with other development (typically airports);
- Climate limitations (floodplains and storm surge, etc.);
- Varied topography; and
- Crossing of many waterways and/or other structures.

Trade-offs when considering elevated sections include:

- Requires elevated pedestrian circulation for all users and operators of the system, burdening costs and accessibility;
- Highly visible (could be a positive or negative depending on the context);
- Not easily expanded;
- Conserves corridor right-of-way;
- Emergency access and maintenance are difficult without specific support facilities;
- Maintenance needs are typically greater than for at-grade systems;
- An elevated system must usually be at-grade at some point to allow vehicle maintenance;

New systems in the United States are rarely elevated for many reasons. Capital and operating and maintenance costs for elevated systems are high, and they play a significant role in the selection of projects for federal funding. Thus, elevated projects tend to be at a disadvantage to traditional (at-grade) projects. A thorough public engagement period during the National Environmental Policy Act (NEPA) process also places a heavy negative value on detrimental visual impacts from an elevated design to existing neighborhoods. Advancements in communication, signaling, timing, and public acceptance have improved the ability to integrate fixed guideway transit improvements into existing at-grade configurations in developed environments.

Given these points and issues, at-grade solutions are recommended for a majority of the eight corridors. Elevated sections may be considered for select portions of each segment due to existing structures and engineering constraints.

## 1.2 Capital Costs

Capital costs were evaluated on a per mile basis for each technology, as shown in **Table 2**. No field work, corridor analyses, or feasibility analyses have been conducted on these corridors; thus, pre-planning level assumptions were used for this memorandum, based on the prior experience of peer cities. In an effort to incorporate both local consideration and national best practices, the Hillsborough County MPO LRTP, TBARTA Regional Master Plan, and national examples have been used as references. National examples for Commuter Rail and Diesel Multiple Unit costs are based on the North Commuter Rail Systems Plan in Portland Maine. National examples for Light Rail, Streetcar, and Bus Rapid Transit costs were developed using the Broward County (FL) MPO 2035 LRTP and data from the Denver FasTracks program.

All costs were escalated to present day 2011 dollars. A bottom-up cost model was utilized to develop these costs. Guideway costs assume double-track configurations, and disaggregate right-of-way and vehicle costs. The range of total capital cost for each segment is based on a range of cost factors. As an example, the MPO LRTP has assumed a planning contingency of 30% of total capital cost and the TBARTA Regional Master Plan cost estimates assume a 25% planning contingency for bus options and 50% for rail options. Commuter Rail implementation typically involves acquiring track and operating rights through a lease agreement with the freight corridor property owner. The low end of the Commuter Rail estimates do not include full right-of-way acquisition costs, but for the higher end of the capital cost range assumes a requirement for acquiring lease agreements and right-of-way acquisition for ancillary facilities. It has been assumed that collaboration with the proposed starter system identified by HART would provide an opportunity to co-locate maintenance facility needs. As a result, maintenance facility capital costs are not included in this comparison. Modern Streetcar is based on a similar cost model for Light Rail transit with more sections of mixed traffic operations, which illustrate traditional applications.



**Table 2**  
**Planning Level Capital Costs with Ranges**  
**(2011 dollars in millions)**

	Miles	Light Rail	Modern Streetcar	Bus Rapid Transit	Commuter Rail	DMU
Per Mile Capital Cost Ranges by Technologies		\$38 - \$96	\$36 -122	\$5 - \$15	\$16 - \$52	\$16 -96
<b>Capital Cost Ranges by Corridor</b>						
Brandon to Downtown Tampa	9.2	\$350 - \$883	\$331 - \$1122	\$46 - \$138	\$147 - \$478	\$147 - \$883
Busch Blvd/Linebaugh Ave Corridor East	5.3	\$201 - \$509	\$191 - \$647	\$27 - \$80	\$85 - \$276	\$85 - \$509
Busch Blvd/Linebaugh Ave Corridor West	2.5	\$95 - \$240	\$90 - \$305	\$13 - \$38	\$40 - \$130	\$40 - \$204
Carrollwood Village to Tampa International Airport*	5.2	\$198 - \$499	\$187 - \$634	\$26 - \$78	\$83 - \$270	\$83 - \$499
Downtown Tampa to South Tampa	3.8	\$144- \$365	\$137 - \$464	\$19 - \$57	\$61 - \$198	\$61 - \$365
Downtown Tampa to USF	13.8	\$524 - \$1325	\$497 - \$1684	\$69 - \$207	\$221 - \$718	\$221-\$1325
USF to Wesley Chapel	9.0	\$342 - \$864	\$324 - \$1098	\$45 - \$135	<b>Track not available in corridor.</b>	
Westshore Business District to Pinellas County	2.3	\$87 - \$221	\$83 - \$281	\$12 - \$35		

\*Corridor includes TIA; please see full description of the corridor located at the end of this section.

Note: Double-track fixed guideway assumed.

Source: Hillsborough County MPO LRTP Cost Affordable Plan, Tampa Bay Regional Transportation Authority, Broward County 2035 LRTP, and North Commuter Rail Systems Plan

Commuter Rail and Diesel Multiple Unit modes in **Table 2** do not show estimates for the corridors that do not contain existing freight rail infrastructure: USF to Wesley Chapel and Westshore Business District to Pinellas County. Light Rail, Modern Streetcar, and Bus Rapid Transit costs are shown for all corridors, including potential Commuter Rail corridors, with the assumption that parallel tracks would be constructed in the freight corridor; however more right-of-way may need to be acquired to provide ample space for safety requirements such as a separation crash barrier. Operating and Maintenance costs illustrate differences between technologies as discussed in **Section 1.3**.

The capital cost per mile is lower for Bus Rapid Transit, Commuter Rail, and Diesel Multiple Unit, as compared to Light Rail and Modern Streetcar. Bus Rapid Transit is the least expensive of all the modes because it operates on the existing street and/or uses an asphalt surface. Light Rail and Modern Streetcar have a similar Capital Cost per mile. Modern Streetcar is generally less expensive than Light Rail due in part to lighter weight of the vehicles and their ability to maneuver in a tighter turning radius, however source information used to develop Modern Streetcar estimates include the TECO Street Car

line in Downtown Tampa, this example expands the higher end of the cost range because it encountered significant engineering constraints due to its location in the Downtown Tampa CBD.

Costs for each corridor were calculated by multiplying the per mile estimate by the length of the corridor. A more extensive analysis is recommended using detailed corridor definitions, taking into account the travel market and system needs for each mode.

Capital costs also need to consider vehicle cost and life span of a vehicle to fully understand the potential investment. Life cycle costs analysis is also recommended in a subsequent analysis. Examples of local, state and national capital cost estimates are provided in [Appendix A](#).

### 1.3 Operating and Maintenance Costs

Operating and Maintenance (O&M) costs have also been compared across the range of technologies. A preliminary O&M cost model was developed for this effort, referencing operating scenarios developed for the LRTP.

Bus Rapid Transit Operating and Maintenance cost estimates were derived from existing bus costs experienced by HART (FY 2011 Budget) and Operating and Maintenance cost estimates for motor bus operations as a base cost condition. HART bus Operating and Maintenance costs were assigned to three driving variables – revenue bus hours, revenue bus miles, and peak vehicles, resulting in “rates” for each of these variables. Additionally, costs were assigned to two driving variables – stations and lane miles. Costs associated with station maintenance, including platform, shelter, and ticket vending machine maintenance were assigned to the station variable to determine additional costs associated with each station along a desired alignment. Lane-mile maintenance costs were assigned to each directional lane-mile for the desired alignment. Finally, additional costs were assigned per bus mile to account for additional maintenance and fuel costs associated with a larger (articulated) vehicle often used in Bus Rapid Transit operations. Collectively, Bus Rapid Transit Operating and Maintenance costs consist of existing HART Operating and Maintenance costs, station maintenance costs, lane maintenance costs and additional maintenance and fuel costs for Bus Rapid Transit vehicles.

The passenger capacity of the evaluated technologies varies. In an attempt to account for carrying capacity variables, train vehicles and the number of Bus Rapid Transit vehicles were adjusted to reflect similar total passenger carrying capacities. This assumption creates a straight line comparison with similar operating characteristics across each technology option. However, this type of comparison is unrealistic. The frequencies assumed for Commuter Rail and Diesel Multiple Unit are not practical and would need to be adjusted to be less frequent, potentially serving a different travel market. Station spacing assumed for Commuter Rail and Diesel Multiple Unit is also unrealistic. [Table 3](#) shows the results of this preliminary analysis and serve as a first cut comparison only, subject to the development of a more detailed operating plan defined to serve unique travel markets in each corridor.



**Table 3**  
**Planning Level Annual Operating & Maintenance Costs**  
**(2011 dollars in millions)**

	Miles	Light Rail	Modern Streetcar	Bus Rapid Transit	Commuter Rail	DMU
Brandon to Downtown Tampa	9.2	\$11 - \$16	\$10 - \$14	\$4 - \$7	\$34 - \$63*	\$27 - \$51*
Busch Blvd/Linebaugh Ave Corridor East	5.3	\$4 - \$6	\$4 - \$6	\$2 - \$3	\$15 - \$27*	\$12 - \$22*
Busch Blvd/Linebaugh Ave Corridor West	2.5	\$6 - \$8	\$5 - \$8	\$2 - \$4	\$18 - \$33*	\$15 - \$30*
Carrollwood Village to Tampa International Airport	5.2	\$4 - \$5	\$4 - \$5	\$2 - \$3	\$15 - \$30*	\$12 - \$22*
Downtown Tampa to South Tampa	3.8	\$6 - \$8	\$5 - \$8	\$3 - \$4	\$19 - \$36*	\$15 - \$29*
Downtown Tampa to USF	13.8	\$12 - \$17	\$11 - \$16	\$4 - \$8	\$37 - \$70*	\$29 - \$57*
USF to Wesley Chapel	9	\$6 - \$9	\$5 - \$8	\$2 - \$4	\$18 - \$34*	\$15 - \$27*
Westshore Business District to Pinellas County	2.3	\$3 - \$4	\$3 - \$4	\$1 - \$2	\$9 - \$16*	\$7 - \$13*

Source: HART (FY 2011 Budget, HART Operating and Maintenance costs, station maintenance costs, lane maintenance costs and fuel cost for Bus Rapid Transit vehicles.

\*Cost estimate for light rail equivalent service may be one and a half to three times the cost of a typical lower-frequency peak-hour focused commuter service.

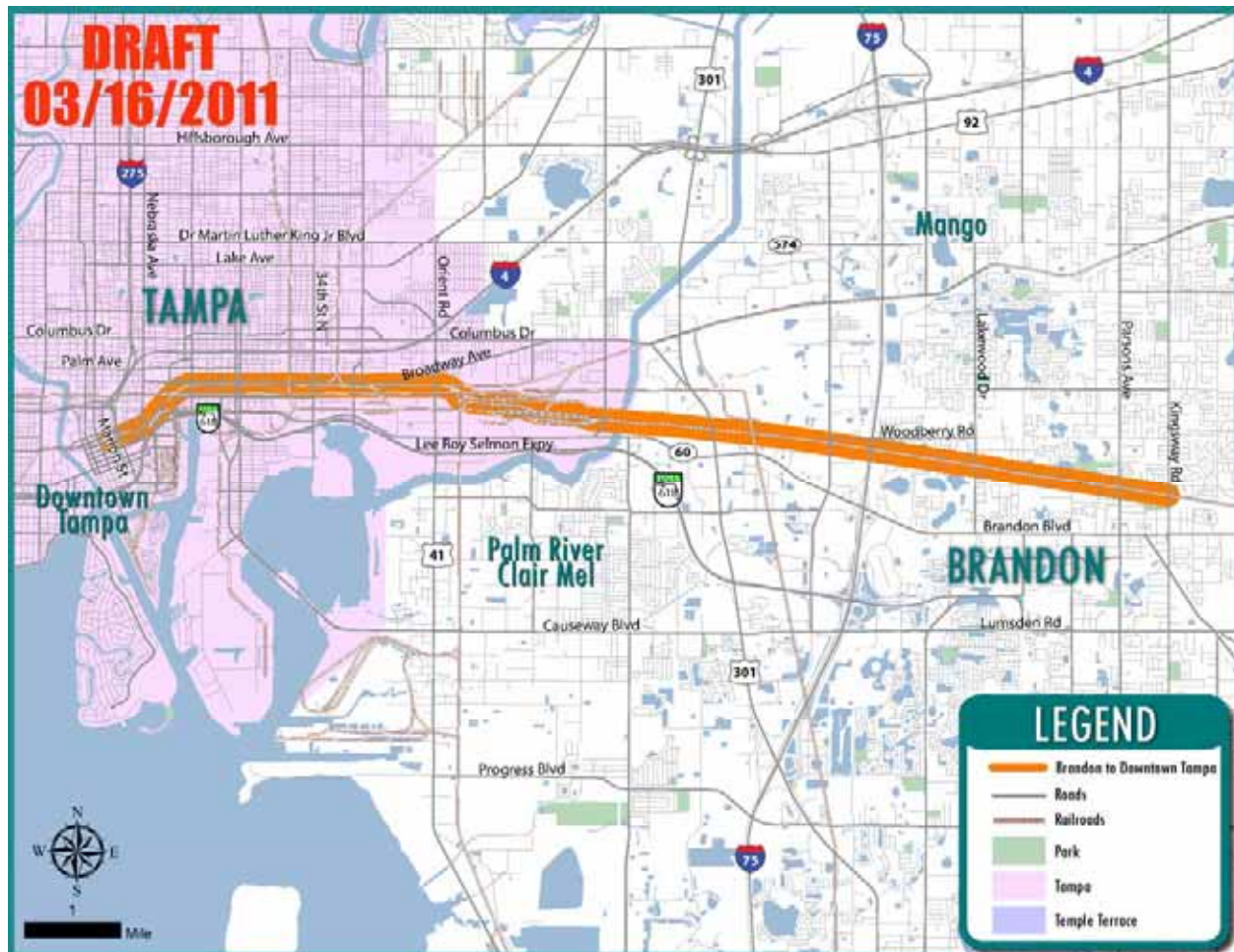
The above analysis of Operating and Maintenance costs show Bus Rapid Transit as the least costly mode. Modern Streetcar is the second least expensive mode to operate though only marginally less expensive than Light Rail. Diesel Multiple Unit and Commuter Rail are substantially more expensive if they are assumed to run as frequently and stop as often Light Rail. For Commuter Rail technology types, it is recommended that greater distances be assumed between stations, with less frequent service. In most cities, Commuter Rail operates differently than Bus Rapid Transit, Modern Streetcar, and Light Rail; running larger vehicles less often. This is a direct result of Commuter Rail technology's requirement for greater acceleration and deceleration times and distances entering and exiting stations. Insurance requirements for operating on an existing freight corridor are factored in for Commuter Rail and Diesel Multiple Unit that may not be associated with Light Rail or Modern Streetcar. In order to gain a clear understanding of how each mode compares, operating plans and parameters that are appropriate to each mode would be required. It is recommended that refined definitions be applied to each technology type in the next study phase.



## 1.4 Premium Transit Comparison by Corridor

The following figures and tables compare the range of technical options on a corridor by corridor basis.

**Figure 6: Brandon to Downtown Tampa**



**Table 4  
 Brandon to Downtown Tampa Technology Comparison**

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$350 - \$883	\$11 - \$16	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
Bus Rapid Transit	\$46 - \$138	\$4 - \$7	810	15-35 Mph	10 minutes	0.5 – 2 miles

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The Brandon to Downtown Tampa corridor runs east-west along the existing CSXT “S” Line rail corridor. The nearest parallel roadway is Brandon Boulevard/Adamo Drive (SR 60). Other parallel roadways, including Causeway Boulevard and the Lee Roy Selmon Crosstown Expressway (toll road), are very close to the rail tracks in Ybor City and near Downtown Tampa. The corridor connects to north-south roadways that provide connections to other areas within Hillsborough County and the rest of the region, including Interstate-75, US 301, 50<sup>th</sup> Street, 20<sup>th</sup> Street, Nebraska Avenue (SR 45) and Interstate-275. The corridor connects major centers of activity and is influenced by Brandon’s bedroom community character, generating significant transportation demand, especially during peak hours.

### Summary

The CSX corridor from Brandon to Downtown Tampa is heavily utilized by existing rail (freight) activity, which could pose potential conflicts to passenger rail service. However, BRT on the Lee Roy Selmon Expressway’s reversible lanes is the most feasible lower-cost strategy. By comparison, light rail in this corridor is estimated to have capital costs nearly \$750 million higher than BRT. In addition, the operation and maintenance costs for light rail would be more than double the cost of BRT annually.

Considering the costs of these two technologies and the similarity in operating characteristics, it is recommended that BRT be examined in this corridor. It should be noted that implementing a variable pricing toll strategy may be required in order to maintain acceptable levels of service; especially, in the future years. A comparison of the costs and operating characteristics of each feasible technology is provided in **Table 4**.

**Figure 7: Busch Boulevard/Linebaugh Avenue Corridor East**



**Table 5  
 Busch Boulevard/Linebaugh Corridor East Technology Comparison**

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$201 - \$509	\$4 - \$6	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
DMU	\$85 - \$509	\$12 - \$22	1,800	30-50 Mph	10 minutes	2 - 10 miles
Bus Rapid Transit	\$27 - \$80	\$2 - \$3	810	15-35 Mph	10 minutes	0.5 – 2 miles

The Busch Boulevard/Linebaugh Avenue corridor east runs east-west between Tampa International Airport (TIA) and the Carrollwood corridor to Downtown Tampa and the University of South Florida corridor just east of Interstate-275. For its entire length, the corridor is parallel to Linebaugh Avenue and Busch Boulevard, though it primarily runs adjacent to Busch Boulevard. In addition to these



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roadways, Waters Avenue is a major east-west roadway located just south of the existing rail line. The corridor is intersected by major north-south roadways, including Dale Mabry Highway, Himes Avenue, Armenia Avenue, North Boulevard, Florida Avenue, Interstate-275 and Nebraska Avenue. By 2035, almost all of these roadways will carry more vehicles than their intended design capacity.

Currently, CSX usage of the existing rail track is relatively light. Under those conditions, the sharing of track for both passenger and freight may be possible. However, the higher station spacing density in this heavily urbanized corridor may prohibit the use of heavier Commuter Rail vehicles that are slow to start and stop. The use of DMUs, which are more maneuverable, may be the best fixed guideway alternative to Light Rail in this corridor. Moreover, providing BRT along Busch Boulevard or Waters Avenue may also be a viable option, but right-of-way restrictions and traffic congestion are a concern. If accommodations are not made to allow for the bypassing of traffic queues, then BRT will be a less attractive transportation choice.

### Summary

Considering that DMU technology has the potential to be an estimated \$116 million dollars less expensive, it would also make use of the existing track, which minimizes right-of-way acquisition needs. Therefore, DMU is the preliminary recommended technology for this corridor. However, service provided by the DMU technology would need to be considered, reflecting a more appropriate commuter service further reducing annual operating expenses. A comparison of the costs and operating characteristics of each feasible technology is provided in [Table 5](#).

**Figure 8: Busch Boulevard/Linebaugh Avenue Corridor West**



**Table 6  
 Busch Boulevard/Linebaugh Avenue Corridor West Technology Comparison**

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$95 - \$240	\$6 - \$8	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
DMU	\$40 - \$204	\$15 - \$30	1,800	30-50 Mph	10 minutes	2 - 10 miles
Commuter Rail	\$40 - \$130	\$18 - \$33	2,520	30-50 Mph	10 minutes	2 - 10 miles
Bus Rapid Transit	\$13 - \$38	\$2 - \$4	810	15-35 Mph	10 minutes	0.5 – 2 miles

The Busch Boulevard/Linebaugh Avenue corridor west runs east-west between Tampa International Airport and the Carrollwood corridor to its intersection with SR 580 (Hillsborough Avenue/Tampa Road) in Oldsmar just past the Pinellas County line (Race Track Road). The corridor runs parallel to Linebaugh

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Avenue/Forest Lakes Boulevard (north of the rail line) and Waters Avenue/Tampa Road (south of the rail line), two major east-west connections in the region. By 2035, almost all of these roadways will carry more vehicles than their intended design capacity.

### Summary

Currently, CSX usage of the existing rail track is relatively light. Under those conditions, the sharing of track for both passenger and freight may be possible. In this corridor, Commuter Rail may be feasible due to the lower number of stations needed to serve anticipated land use densities. It is important to note that it is unlikely this corridor will be operated independently of other transit corridors. As a result, the selected technology should be compatible with the adjacent segment considering the preliminary recommended commuter service, specifically the West Linebaugh corridor. Right-of-way restrictions and traffic congestion are a concern when evaluating BRT. Given the relatively similar capital costs and, DMU is the recommended technology for this corridor. However, service provided by the DMU technology should be considered, reflecting a more appropriate commuter service further reducing annual operating expenses. A comparison of the costs and operating characteristics of each feasible technology is provided in [Table 6](#).

Figure 9: Carrollwood Village to Tampa International Airport

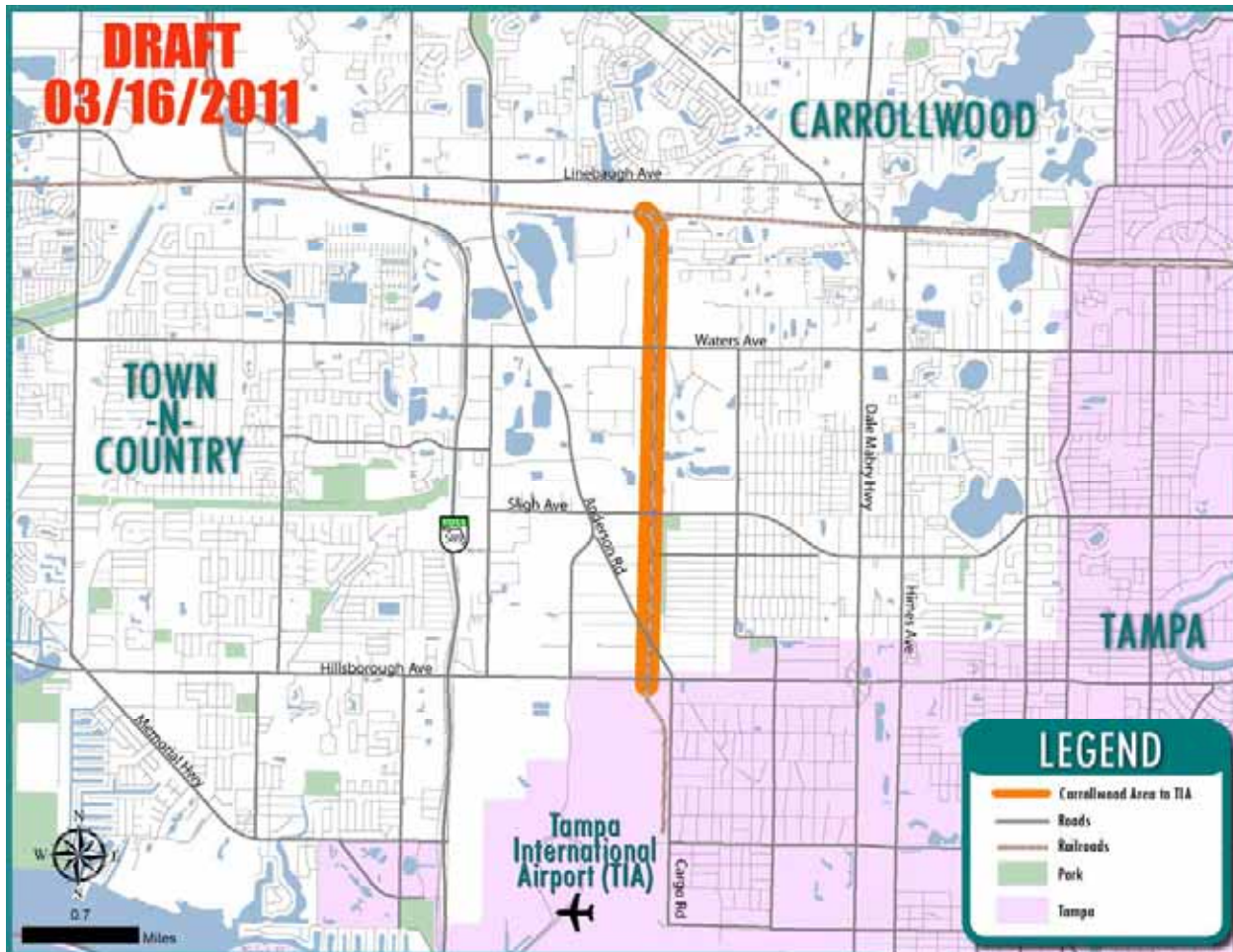


Table 7  
 Carrollwood Village to Tampa International Airport Technology Comparison

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$198 - \$499	\$4 - \$5	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
Bus Rapid Transit	\$26 - \$78	\$2 - \$3	810	15-35 Mph	10 minutes	0.5 – 2 miles

The Carrollwood Village to Tampa International Airport corridor runs north-south and exhibits significant congestion and opportunity for improved transit development. This corridor serves Tampa International Airport, Raymond James Stadium, George Steinbrenner Field and surrounding residential areas. Several vital roadways run through this corridor, including north-south roadways such as the Veterans Expressway, North Dale Mabry Highway and North Himes Avenue; east-west connections include Gunn

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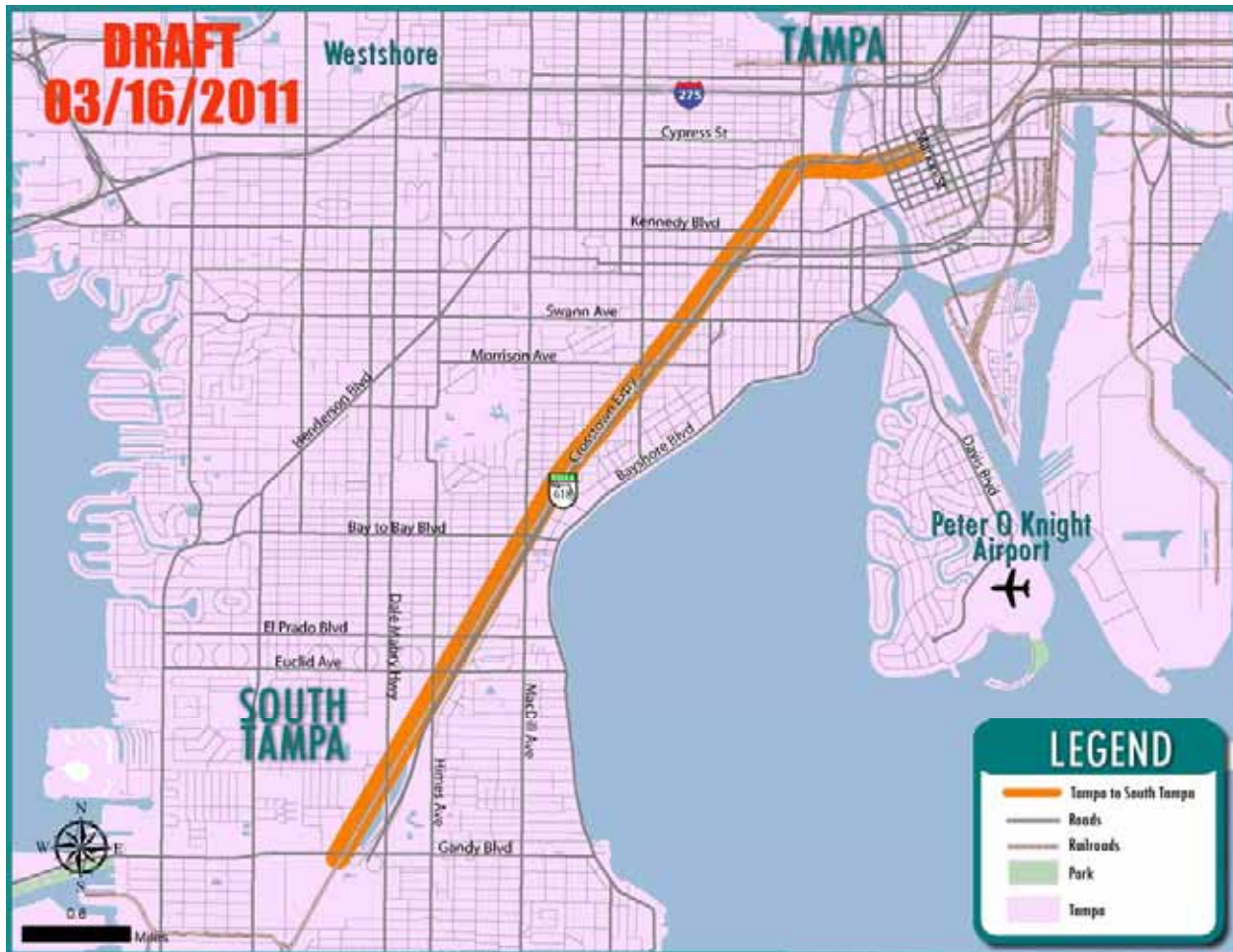
Highway, West Linebaugh Avenue, West Hillsborough Avenue, West Martin Luther King Jr. Boulevard and Spruce Street/Columbus Drive.

### Summary

Currently, CSX usage of the existing rail track is relatively light. Under those conditions, the sharing of track for both passenger and freight may be possible. However, the heavier commuter rail vehicles are less equipped to navigate the airport property's height limits, grades, and turn radii, which would require an airport terminus. In this case, BRT may be the next best alternative to Light Rail. Estimates show that BRT capital costs may potentially be over \$400 million less expensive compared to Light Rail and O&M will be half the cost annually. Furthermore, BRT technology is better equipped to accommodate the unique characteristics of the airport property. Based on the benefits of BRT in this corridor, it is the preliminary recommended technology. Route options through the airport could include Anderson Road or Dale Mabry Highway. A comparison of the costs and operating characteristics of each feasible technology is provided in **Table 7**.



Figure 10: Downtown Tampa to South Tampa



**Table 8**  
 Downtown Tampa to South Tampa Technology Comparison

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$144 - \$365	\$6 - \$8	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
Bus Rapid Transit	\$19 - \$57	\$3 - \$4	810	15-35 Mph	10 minutes	0.5 – 2 miles

The Downtown Tampa to South Tampa corridor is bounded by Downtown Tampa to the east, Gandy Boulevard to the south, Dale Mabry Highway to the west and I-275 to the north. The study area includes Downtown Tampa, the University of Tampa area and the Hyde Park area. By 2035, the roadways in this area will all carry more vehicles than their intended design capacity.

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### Summary

A lightly used CSX freight rail track runs adjacent to the Selmon Expressway making commuter rail or DMU technology a consideration. However, the Selmon Expressway is one of the least congested limited access facilities in Hillsborough County; thereby, enhancing the viability of BRT in this corridor. The urban character of this corridor suggests closer station spacing, which is also more appropriate for BRT. Furthermore, BRT could also provide a one-seat ride to Pinellas County, potentially across the Gandy Bridge. Based on the cost savings and the similarity of operating characteristics to Light Rail, BRT is a preliminary recommendation for this corridor. A comparison of the costs and operating characteristics of each feasible technology is provided in **Table 8**.

Figure 11: Downtown Tampa to University of South Florida



Table 9  
 Downtown Tampa to the University of South Florida Technology Comparison

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$524 - \$1325	\$12 - \$17	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
DMU	\$221 - \$1325	\$29 - \$57	1,800	30-50 Mph	10 minutes	2 - 10 miles

The Downtown Tampa to USF corridor is one of the most congested in Hillsborough County. The area where a potential rail line could be implemented is bounded by Bears Avenue to the north, 40<sup>th</sup> Street to the east, Downtown Tampa on the south, and Florida Avenue to the west with connections to Downtown Tampa, the USF area, and Ybor City. For 2035, most of the main north-south and east-west roadways in this corridor are classified as constrained, deficient or both. Additionally, even with existing



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plus committed improvements, these roadways will all carry more vehicles than their intended design capacity by 2035.

### Summary

Future year traffic forecasts for I-275 indicate the need for widening the existing interstate. The east-west portion of the CSX line through Ybor City is heavily utilized, and an agreement with CSX on the shared use of track between passenger and freight would require careful consideration and extensive coordination. The north-south portion of the rail line does not carry as much freight as the east-west portion, which makes it a better candidate for shared track. However, connecting Commuter Rail or DMU service on that segment to downtown Tampa would pose a challenge as a result of additional engineering of the heavier commuter transit technology. Providing BRT in this corridor faces many hurdles, from right-of-way restrictions to traffic congestion. The least costly strategy would be a joint effort between Hillsborough County and the Florida Department of Transportation, District 7 to provide BRT service on I-275. This service could run along new express lanes after the widening I-275, which is scheduled for 2035. The next low cost option is DMU. DMU service could utilize the north-south CSX track and a new track to downtown Tampa on a to-be-determined alignment.

DMU has the potential to be more than half the cost the cost of Light Rail, however would need to adjust the number of station and service frequencies to match appropriate commuter service. In addition, it will provide a premium fixed guideway transit choice to Hillsborough County that has the potential capacity to serve future demand. As a result, additional detailed analysis would need to be conducted for this corridor. A comparison of the costs and operating characteristics of each feasible technology is provided in [Table 9](#).

Figure 12: University of South Florida to Wesley Chapel

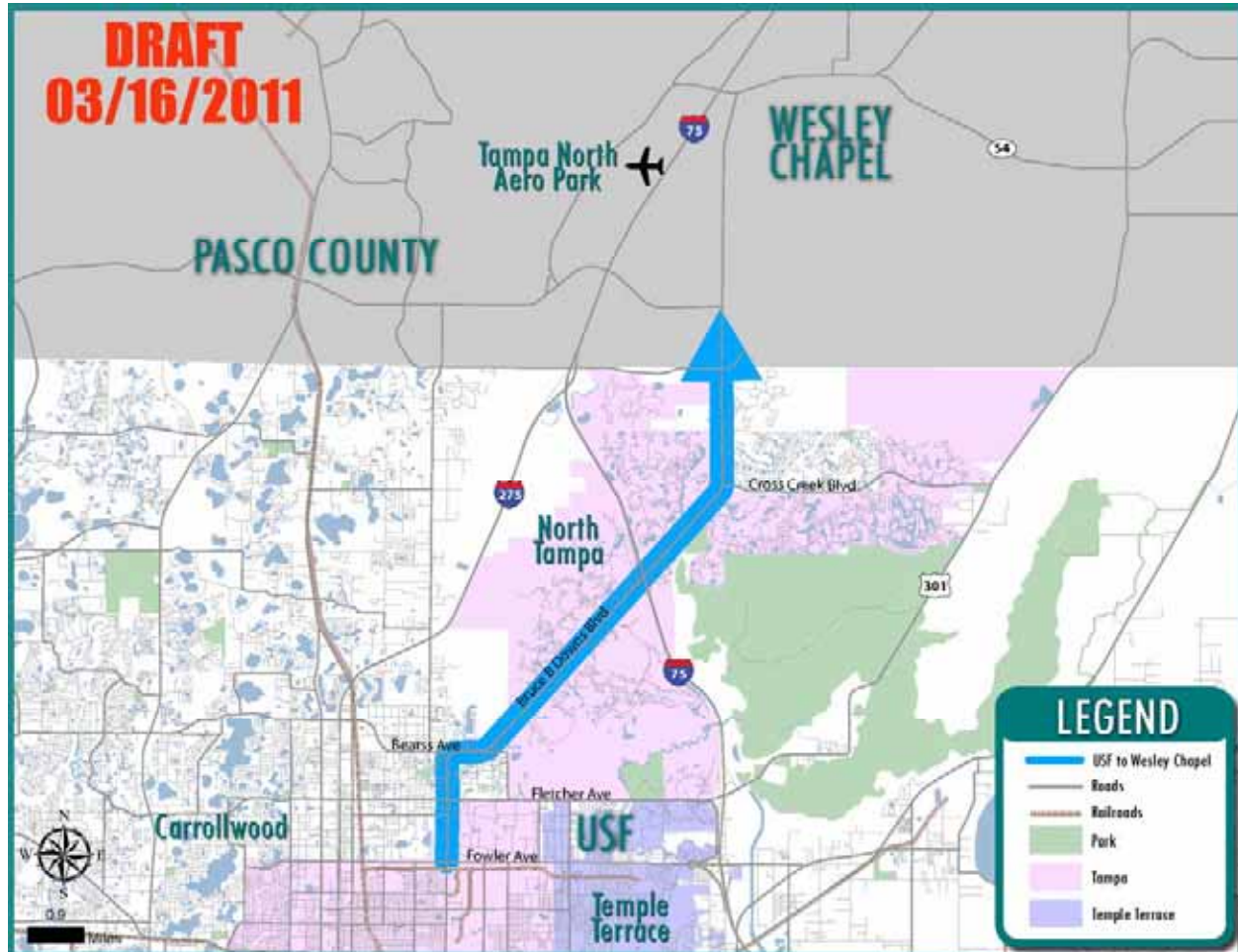


Table 10  
 University of South Florida to Wesley Chapel Technology Comparison

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$342 - \$864	\$6 - \$9	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
Bus Rapid Transit	\$45 - \$135	\$2 - \$4	810	15-35 Mph	10 minutes	0.5 – 2 miles

The USF to Wesley Chapel corridor runs from north Hillsborough County to south Pasco County along Bruce B. Downs Boulevard; parallel roads include Interstate-75 and Interstate-275. This corridor connects the USF area, the medical facilities along Bruce B. Downs Boulevard and residential areas in New Tampa and Pasco County. By 2035, these roadways will all carry more vehicles than their intended design capacity.

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Bruce B. Downs Boulevard, currently being widened from four lanes to eight lanes, south of Pebble Creek, and North of Pebble Creek funding is being sought to widen from four lanes to six lanes. A concept to identify one of the eight lanes as a HOV only during peak hours is to be studied by Hillsborough MO in Fiscal Year 2011/2012. In addition, TBARTA has begun a study of transit options in the corridor, including the feasibility of rail in the median or along the east side of Bruce B. Downs Boulevard.

### **Summary**

Given the at-grade roadway characteristics of this segment, BRT may be a more cost effective consideration. However, the travel demand anticipated in this corridor would need to be studied in detail to determine if BRT satisfies the ridership demand.

Figure 13: Westshore Area to Pinellas County



Table 11  
 Westshore Area to Pinellas County Technology Comparison

Technology	Capital Cost	O&M Cost	Peak Hour Capacity	Average Operating Speed	Peak Service Frequency	Station Spacing
Light Rail	\$87 - \$221	\$3 - \$4	1,080	15-35 Mph	10 minutes	0.5 – 2 miles
Bus Rapid Transit	\$12 - \$35	\$1 - \$2	810	15-35 Mph	10 minutes	0.5 – 2 miles

The Westshore Business District to Pinellas County corridor is separated by Old Tampa Bay. The corridor is bounded by SR 60 to the north, Dale Mabry Highway to the east, US 92 to the south, and Pinellas County to the west. The corridor is traversed east-west by three bridges - SR 60/Courtney Campbell Causeway, US 92/Gandy Boulevard and Interstate-275/Howard Frankland Bridge. By 2035, these roadways will all carry more vehicles than their intended design capacity.

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The corridor connects regional destinations such as the Westshore Business District and Tampa International Airport on the Hillsborough County side to St. Petersburg-Clearwater International Airport and the Gateway Area, a large employment center, in Pinellas County. Increased travel demand and limited road capacity will lead to high levels of congestion on these roads. TBARTA is studying the feasibility of a new rail connection to be built in conjunction with major work on the Howard Frankland Bridge. The Howard Frankland Bridge may also have wide enough shoulders to allow express buses to bypass traffic queues.

### **Summary**

BRT service connecting Hillsborough County and Pinellas County may be more cost-effective and is a preliminary recommendation. However, additional analysis needs to be conducted to determine if BRT can satisfy anticipated ridership demand and regional travel patterns. Additional coordination will need to be considered when connecting to current efforts being conducted by the Pinellas MPO, PSTA, TBARTA and FDOT to study transit options under the Pinellas AA.

## 2.0 Non-Transit Mobility Improvements

Additional roadway-focused mobility improvements were identified to develop a broad range of lower-cost solutions. The analysis consisted of:

- Defining characteristics of improvement
- Researching national examples
- Examining how best practices are applied in Hillsborough

The location where these strategies are most applicable will be addressed in the next phase of research. These corridors have been identified as the most congested travel markets, are identified for high cost roadway widening improvements, and will demonstrate significant benefit through incremental lower cost transportation improvements. There major traffic corridors include:

- Dale Mabry Highway
- Interstate 75 (Brandon to New Tampa)
- State Road 60
- Hillsborough Avenue
- US 41

This memorandum focuses on the strategies applicable to the most congested traffic corridors and will take into consideration Hillsborough County's top unfunded roadway improvement needs. The Level of Service map **Figure 14** below identifies the most congested county and state roadways and intersections, where this research will be focused in the next phase of this analysis.

The top twenty congested local roadways in Hillsborough County according to the Hillsborough County Development Services Department are as follows:

- Bruce B. Downs Boulevard (Bearss Avenue to Palm Springs Boulevard)
- Lutz Lake Fern Road (Suncoast Expressway to Dale Mabry Highway)
- Lithia Pinecrest Road (SR 60 to Bloomingdale Ave)
- Lithia Pinecrest Road (Lithia Ridge Blvd/Adelaide Ave to CR 39)
- Fletcher Avenue (30th Street to Morris Bridge Road)
- Van Dyke Road (Tobacco Road to Dale Mabry Highway)
- Linebaugh Avenue (Anderson Road to Gunn Highway)
- Linebaugh Avenue (Sheldon Road to Anderson Road)
- Progress Boulevard Overpass Over I-75
- Parsons Avenue (Lumsden to SR 60)
- Himes Avenue (Hillsborough Avenue to Busch Boulevard)
- Sheldon Road (Old Memorial Highway to Linebaugh Avenue)
- Benjamin Road (Hillsborough Avenue to Waters Avenue)
- Big Bend Road (Summer Brook Place to Balm Riverview Road)

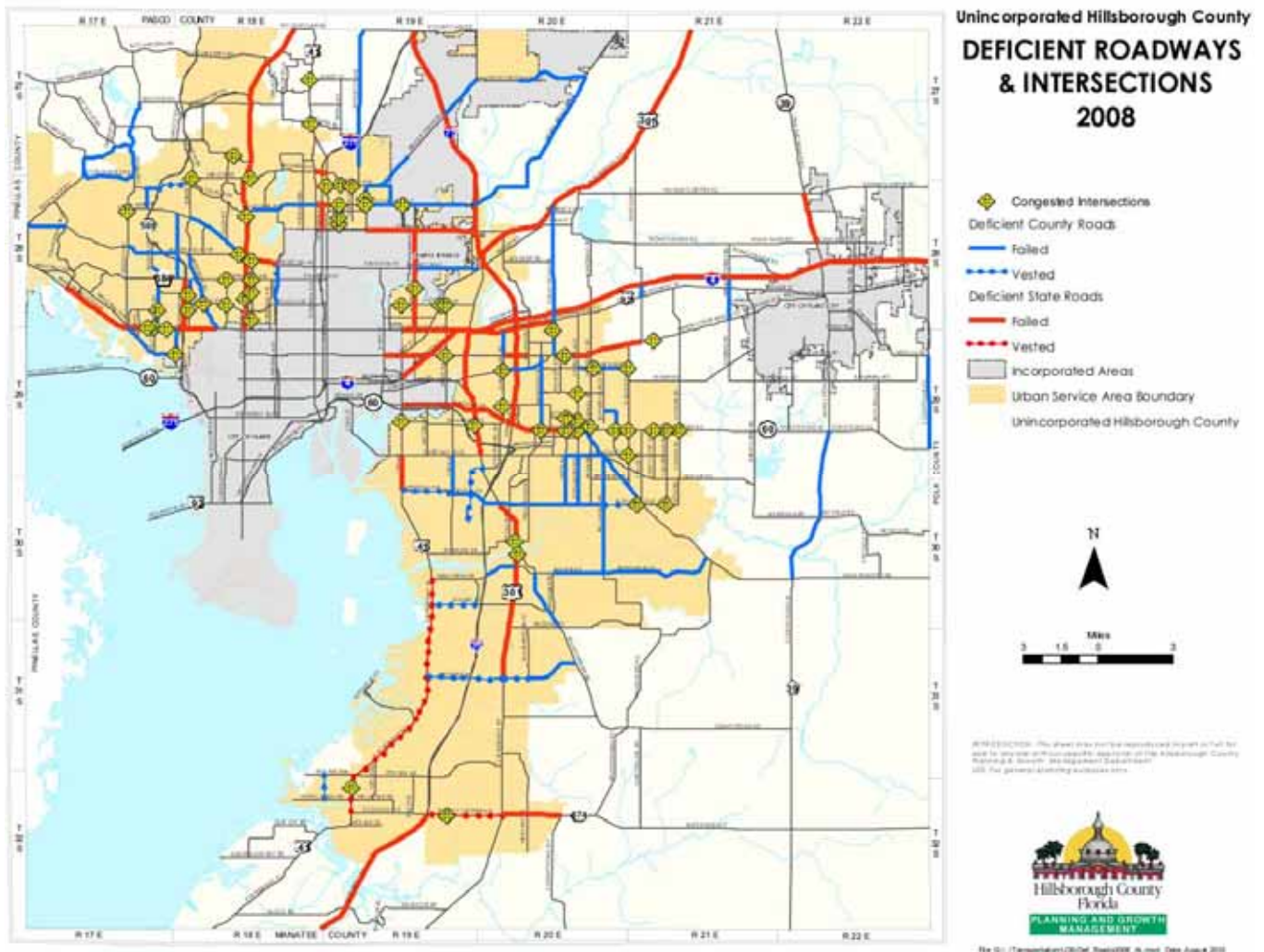
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- South Mobley Road (Gunn Highway to Race Track Road)
  - Sam Allen Road (Forbes Road to Alexander Street Extension)
  - CR 672 (CR 39 to US 301)
  - Gunn Highway (Pasco County Line to South Mobley Road)
  - Sligh Avenue (Benjamin Road to Manhattan Avenue)
  - John Moore Road (Bloomingdale Avenue to Lumsden Road)

These roadways are considered unfunded or partially funded priorities for inclusion in the Hillsborough County Capital Improvement Program (CIP). The most congested state roadway corridors include segments of:

- Interstate 275
- Interstate 4
- Interstate 75
- State Road 60
- US 301
- Dale Mabry Highway
- Hillsborough Avenue
- US 41



Figure 14: Hillsborough County 2008 Level of Service Map



Source: Hillsborough County Planning and Growth Management Department (2009)

The Hillsborough County MPO for their 2035 LRTP analysis identified traffic congestion on major corridors in Hillsborough County. According to MPO analysis the top twenty list of corridors are as followed:

- Bearss Avenue/Bruce B Downs Boulevard (30th Street to Cross Creek Boulevard)
- State Road 580 (Hillsborough Avenue from Pinellas/ Hillsborough County Line to Memorial Highway)
- Interstate 275 (Pinellas/Hillsborough County Line to Interstate-4)
- State Road 60 (Adamo Drive from US 301 to Interstate 75)
- State Road 60 (Courtney Campbell Causeway from Pinellas/Hillsborough County Line to Eisenhower Boulevard)
- State Road 580 (Hillsborough Avenue from Memorial Highway to Dale Mabry Highway)



- State Road 60 (Adamo Drive from 50th St to US 301)
- Bearss Avenue (Bruce B Downs Boulevard from Florida Avenue to 30th Street)
- US 41 (Bearss Avenue to Hillsborough/Pasco County Line)
- Dale Mabry Highway (Hillsborough Avenue to US 41)
- Gunn Hwy (Veterans Expressway to Hillsborough/Pasco County Line)
- Kennedy Boulevard (Interstate 275 to Dale Mabry Highway South)
- Interstate 275 (Interstate 4 to Bearss Avenue)
- Interstate 75 (Interstate 4 to Interstate 275)
- Dale Mabry Highway/US 92 (Kennedy Boulevard to Hillsborough Avenue)
- Fowler Ave (Interstate 275 to Interstate 75)
- US 301 (Fowler Avenue to Hillsborough/Pasco County Line)
- US 301 (Leroy Selmon Crosstown Expressway/State Road 618 to Interstate 4)
- State Road 60/Kennedy Boulevard/Memorial Highway (Westshore Boulevard to Courtney Campbell Causeway)
- State Road 60 (Interstate 75 to Turkey Creek Road)

The above list is based on a total daily vehicle hours of delay (2006 base year) and vehicle hours of delay per mile. The MPO analysis also prioritized transportation corridors for a 2035 Cost Affordable scenario and 2035 Needs based scenario.

## 2.1 Mobility Improvements

Several types of mobility improvements will be considered for the most congested corridors mentioned in [Section 2.0](#), these include *Special-Use Lanes* (HOV/HOT/dedicated bus lanes) to increase throughput on segments, and *Intersection Treatments* to reduce travel time delays at choke points. A discussion of possibilities for each type follows.

### Special-Use Lanes

- **High Occupancy Vehicle (HOV) lanes** offer improved throughput on multi-lane limited-access corridors. No HOV lanes are available in Hillsborough County currently. Time-exclusive HOV lanes have been used in South Florida (Interstate-95 in Broward, Miami-Dade, and Palm Beach Counties) restricted to use by 2+ persons per vehicle during peak hours. These lanes are marked with the diamond insignia and are signed, but are not separated from regular traffic. Dedicated, barrier-separated HOV lanes have been used in Atlanta and extensively in Houston, Texas. Success of HOV lanes is dependent upon heavy volumes in general traffic lanes and ease of access and egress to HOV lanes. The problem with barrier-separated HOV lanes is low utilization during off-peak hours, and some HOV lanes are being converted to HOT lanes for this reason.
- **High Occupancy Toll (HOT) lanes** are a managed-lane congestion pricing concept that was first introduced in Southern California. The 91 Express Lanes are a fully-automated, 10-mile, four-lane toll road built in the median of California's Riverside Freeway (SR 91). The primary variable pricing lanes are

separated from general traffic by reflective, flexible poles rather than barriers. Commuters report a 30-minute average reduction in drive time. Since opening in 1995, the congestion pricing technologies perfected through this pilot project have been exported around the world.

The goal of these facilities is generally two-fold: Increase throughput and provide a source of revenues from tolls to operate and maintain the system. HOV lanes in South Florida are currently being converted to HOT lanes in a phased implementation. The first phase, from Glades Road to Downtown Miami, was the first to be converted for northbound travel beginning in December 2008 with southbound converted in January 2010. The second phase in Broward County is currently under construction with a tentative completion date of late 2013 or early 2014. Florida Department of Transportation (FDOT) District 6 in Miami-Dade County manages and operates the system. Broward County Transit began express bus service on the lanes in January 2011. Although the first phases of the system are in the early years of operation, the program is proving successful in meeting project goals on increasing person throughput by 40%. Although it has not been quantified, the wider, separated HOT lanes also increase safety for users by reducing the need for frequent lane changes.

Houston is currently converting their 120+ mile HOV system to HOT lanes while maintaining the ability for carpools and vanpools to continue to use the lanes for free. Houston METRO has successfully converted the Katy HOV lanes (Interstate-10) maintained by the Harris County Toll Road Authority (HCTRA), and plans to convert HOV lanes to mixed HOV/HOT managed lanes on Interstate-45, US 59, and US 290.

There are some differences in the way operators incentivize HOV use on HOT lanes. In South Florida, you must register your carpool for three or more passengers. Discounts are also provided to qualified hybrid vehicles. In Houston, where 2+ and 3+ occupant vehicles are accustomed to HOV lane use, the additional revenues from tolls are used to improve law enforcement. Vehicles using HOV lanes are monitored upon entry by verification agents who monitor proper lane usage. HOV users may access HOT lanes during all operating hours. Vehicles paying a toll pass through designated toll lanes where they pay electronically without stopping. Police officers are notified of potential violators for enforcement. In Orange County, California, additional HOV lanes are provided in either direction for 3+ carpools. Another feature of the 91 Express lanes is variable use transponders based on how frequently users need to travel the corridor Minimal, Medium (standard and most popular), Frequent, and Special Access.

Transit vehicles typically use managed HOT lanes at no cost. In South Florida, 40% of the revenues generated from tolls on the 95 Express managed lanes are dedicated to the operations and maintenance of transit vehicles using those lanes. Most applications of managed lanes have been on multi-lane limited access corridors. These same principles could be applied to major thoroughfares with few intersections, or in combination with flyover ramps. Excess revenues are not anticipated over the long-term.

- **Bus Operations in Shoulders** Bus lanes can be implemented with the minimal cost of resurfacing shoulder lanes to provide exclusive lanes that improve travel time. Resurfacing of a shoulder can be accomplished at approximately \$200k per lane mile for existing asphalt, or \$450k per lane mile for a new concrete lane. The disadvantage of these systems is reduced available space for break-downs by general traffic. This strategy has been in use in the Twin Cities of Minneapolis and Saint Paul for over ten years, and more than 300 miles of bus shoulders are now in place.

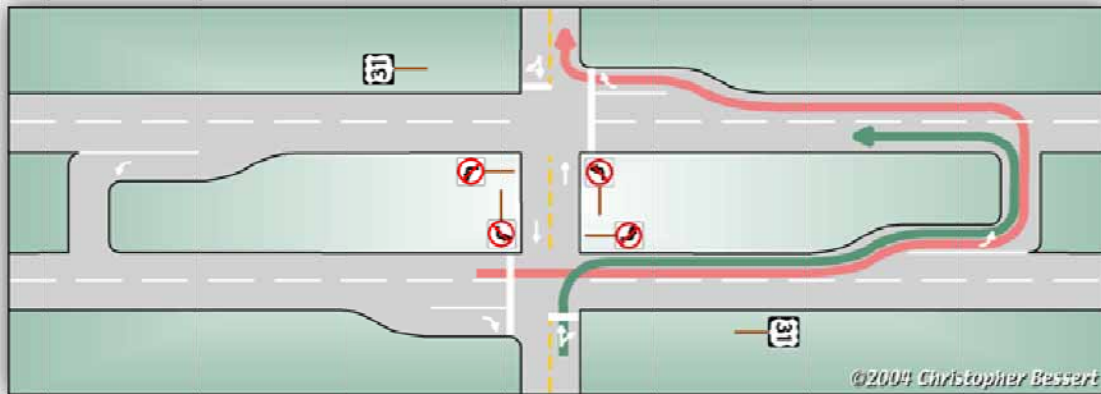


- **Reversible Lanes** The Reversible Express Lanes (REL) is a unique facility. The Crosstown Expressway was the first road to address urban congestion by combining the innovations of concrete segmental bridges, reversible express lanes and all electronic tolling. Like many urban areas, purchasing the additional land needed along this corridor for typical highway widening was neither physically nor financially feasible. To minimize the footprint of the expressway, most of the project was constructed as a concrete segmental bridge using only 6 feet of space within the existing median. The REL provides quality service with an aesthetically pleasing structure and reduced impacts to the community and the environment.

The REL was the first transportation project in Florida to employ totally cashless, all electronic toll collection. The REL video toll option ensures access to all users. The REL system employs an overhead gantry with 18 transponder readers and 24 high-speed cameras. Together, the transponder system and the video system provide 99% operational accuracy and reliability for transactions.

### Intersection Treatments

- **Michigan U Turns** Left turn movements take up both space and time at heavily traveled intersections. One approach to this problem is to restrict left turning movements at the intersection and force vehicles to go through the intersection, or turn right, and make a U-turn to go left. The diagram below illustrates how this is accomplished.



Source: MichiganHighways.org “The Michigan Left” article written by Christopher Bessert (2009)

These u-turns avoid multiple turn lanes and reduce signal phases to protect left turns. The process does however complicate turning movements for the driver and requires crossing multiple lanes, which decreases safety for merging vehicles and may increase travel delays at busy intersections. It also may result in traffic back-ups into the intersections should capacity not be available for high volumes of turning movements.

The presence of opposing left turn lanes in the center of major intersections present an engineering constraint for the addition of transit lanes in roadway medians. While left turn lanes add time to signal phasing, they effectively and safely provide for these directional movements; however, they take up space and increase crossing distances for pedestrians. They also require mixed use with dedicated transit lanes at those intersections. Transit signal priority may provide some remedy to clear turn lanes upon the approach of a transit vehicle. Another approach would be to eliminate the turn lanes and mix turning and through movements. Neither are elegant or ideal solutions.

### Interchanges

There are many different types of interchanges that promote safe turning movements while imposing fewer signal phases on an intersection. The New Jersey jughandle facilitates a left-turn movement by turning right, while these do take up additional right-of-way at the intersection, items such as water retention, landscaping, transit pull-in bays or stations have been accommodated within these limited areas.



- **Roundabouts** Another type of interchange currently being studied by the Tampa-Hillsborough County Expressway Authority (THEA) separates through lanes from access lanes. Roundabouts are another type of intersection treatment that allows for turning movements in a more free-flow manner without imposing long wait times at signals. Hillsborough County has installed a roundabout at Race Track Road and Boy Scout Road in the Westchase Area. While not initially popular, the new intersection configuration is now more widely accepted.



More are planned for implementation around the county. FDOT recommends use of roundabouts at intersections of two-lane roads, but they are also used on four-lane roads, as recently constructed by City of Tampa on 40<sup>th</sup> Street. Retrofit of existing intersections, particularly within urban developed areas may be problematic where right-of-way must be acquired.

- **Bus Queue Jumpers** Bus queue jumpers are a means of improving bus travel time by allowing the bus to go to the head of a right-turn lane and clear the intersection ahead of the other traffic. These improvements could be added at low cost through signal adjustments and possibly the addition of a bus through lane between the through and right-turn lane. Depending upon the configuration of the right-



turn lane, the bus may be able to simply use the right-turn lane and then proceed ahead of the through traffic directly from the right-turn lane.

## 2.2 Cost Considerations

Typical costs for general mobility strategies are shown in **Appendix B**. The best source for costs is the Long Range Estimating (LRE) System, which is updated on a regular basis. These estimates are for construction costs on a per mile basis and are generally increased for maintenance of traffic (MOT), mobilization, design, and construction management. The LRE costs would be used as a starting point for determining order of magnitude costs of types of improvements that may be considered for mobility strategies located on congested intersections or roadway segments.

Improvements at intersections have the potential to support incorporation of improved transit movements, pedestrian and bikeway access, and reduced vehicle delay. This combined process of improvements is sometimes referred to as “Smart Streets.” Most improvements could be accomplished within existing right-of-way. Site-specific conditions require assessment to determine feasibility of any given option or combination of options. Potentially costly engineering issues related to intersection improvements involve utility relocations and drainage reconfiguration and adjustments. The multitude of functions that must be accommodated within a transportation corridor all compete for priority within the same limited space.

Introduction of managed lanes on highly congested corridors and improvements at intersections can serve as stand-alone solutions, or as an integrated package of corridor improvements. The following recommendations for each type of transportation solution are proposed for further study.

**Managed Lanes:** A number of limited access north-south corridors would be ideal for managed lane projects: US 301, Interstate-75, Interstate-275, Dale Mabry Highway and Veterans Expressway. Other than the Crosstown Expressway, a recently completed reversible tollway, the only east-west limited access corridors are Interstate-275 and Interstate-4. With the exception of the Veterans Expressway, they also represent deficient roadways identified by Hillsborough County in 2008.

**Intersection Improvements:** Using the *Hillsborough County 2008 Level of Service Report* (illustrated in **Figure 9** in **Section 2.0**) and these mobility solutions as a starting point, the MPO should update the roadway priorities within the 2035 Cost Affordable LRTP. A re-examination of priority projects would include the following tasks:

- Identify roadway segments and intersections that represent the greatest need for improvement;
- Conduct a conceptual review of specific intersection treatments for priority intersections;
- Provide Order of Magnitude cost estimates of those improvements using FDOT’s Long Range Estimation (LRE) tool; and
- Prioritization of projects for funding consideration.

### 3.0 Next Steps

Fixed guideway starter systems can be initiated with either long haul commuter services or urban Light Rail. The key is to match the travel market with the technology that can most effectively serve that market, given the resources. Design decisions about single-track at-grade sections and inclusion of simple station amenities can help reduce capital costs. These technology decisions are guided by trade-offs between quality (speeds and amenities) and quantity (length of the system and frequencies).

It is recommended that Hillsborough County MPO first identifies where they would like to focus their efforts. Several strategies are available. Light Rail systems will likely provide the greatest benefits when considering Transit Oriented Development, job attraction, and quality of life improvements. Commuter Rail is likely to benefit a larger geographic area at a lower per mile cost. Bus Rapid Transit is a middle ground that can serve a variety of markets, but it is not always a catalyst for economic development and is not typically able to leverage as much public support as rail modes. Less costly, more localized general mobility improvements that serve local markets could be linked to livability and sustainability initiatives as well. To assist the Hillsborough County decision-making process, a planning framework should be established that narrows the analysis to specific travel markets and associated travel needs for long-versus short-distance connections, local circulator, or a combination.

As part of this report, additional steps are recommended to carry the examination of mode alternatives to the next level. An important piece of the puzzle will be to more clearly define each corridor in terms of the travel markets served and an overall operating plan.

#### Recommended Activities for the Next Study Phase

- Clearly define each corridor's travel market(s) served with a clearly defined County-wide system and operating plan.
- Review the Hillsborough County transit corridors in the context of the Regional Transportation Master Plan, developed by the Tampa Bay Area Regional Transportation Authority (TBARTA).
- Define and relate corridor travel markets to appropriate premium transit technologies and passenger-carrying capacities.
- Identify premium transit corridors that have the greatest potential to provide travel time savings and additional/alternate transportation capacities adjacent to congested roadway corridors.
- Identify opportunities to incorporate managed lanes within existing roadways.
- Identify critical intersections and roadway segments for priority "smart-street" and congestion management improvements (with reference to the MPO LRTP recommendations).
- Evaluate station placement strategies that reflect premium transit services and the travel market being served.
- Evaluate each premium transit option's ability to serve anticipated demand.
- Evaluate each premium transit option's conceptual engineering constraints.

- 
- Identifying lower cost non-transit roadway improvements on high priority segments and intersections;
  - Conduct a conceptual review of specific intersection treatments for priority intersections;
  - Provide Order of Magnitude cost estimates of those improvements using FDOT's Long Range Estimation (LRE) tool;
  - Prioritization of projects for funding consideration; and
  - Prioritization of revenue strategies for LRTP Cost Affordable Plan update.



**DRAFT 04/08/2011**

**2035 Plan Post Referendum Analysis**

**Cost Reduction Strategies: APPENDIX A**



**NATIONAL EXAMPLE: LRT**

Item Number	Cost Category	Unit Cost (2009 dollars)	Unit	# of units	Total
10	Guideway (including Track elements)				
10.1	Guideway: At-grade exclusive right-of-way (double ballasted track)	\$4,104,058	MI	0.4	\$1,641,623
10.3	Guideway: At-grade mostly exclusive (allows cross-traffic in certain locations) (embedded tracks-paved)	\$6,306,610	MI	0.4	\$2,522,644
10.4	Guideway: At-grade in mixed traffic (embedded tracks-paved)	\$5,607,961	MI	0.2	\$1,121,592
20	Stations				\$0
20.1	At-grade station	\$1,864,648	EA	1	\$1,864,648
20.3	Parking garage	\$15,862	per space	20	\$317,240
20.4	Surface parking	\$6,825	per space	20	\$136,496
30	Support Facilities: Maintenance Facility & Yards				\$0
30.1	Light Maintenance Facility	\$182,586	per vehicle	1	\$182,586
30.2	Storage or Maintenance of Way Building	\$200,297	per vehicle	1	\$200,297
30.3	Yard and Yard Track	\$236,758	per vehicle	1	\$236,758
40	Site Work & Special Conditions				\$0
40.01.01	Reconstruct Existing Roadway (2 lanes and parking)	\$795,726	MI	0.5	\$397,863
40.01.02	Reconstruct Existing Roadway (3 lanes)	\$875,298	MI	0.5	\$437,649
40.04	Grade Separations w/MSE - 2300 x 60 ft w/100 ft center spans	\$7,191,805	EA	0.25	\$1,797,951
50	Systems				\$0
50.01	Train control and signals	\$2,042,150	MI	2	\$4,084,300
50.02	Traffic signals and crossing protection	\$354,088	EA	3	\$1,062,265
50.03	Traction power supply: substations	\$710,273	EA	1	\$710,273
50.04	Traction power distribution: catenaries and third rail	\$1,866,895	MI	1	\$1,866,895
50.05	Communications	\$899,782	MI	1	\$899,782
50.06	Fare collection system and equipment	\$54,316	EA	1	\$54,316
50.07	Transit Signal Priority (TSP)	\$9,274	Xing	3	\$27,823
<b>A</b>	<b>Construction Sub-total</b>				<b>\$19,563,000</b>
A1	Drainage	5.0%	percentage of construction cost only (A)		\$978,149.99
A2	Utility Relocation	7.0%		\$1,369,409.99	
A3	Urban Design/Landscaping	1.5%		\$293,445.00	
A4	Noise and Vibration	1.0%		\$195,630.00	
A5	Signing and Striping	1.0%		\$195,630.00	
A6	Method of Handling Traffic	2.0%		\$391,260.00	
<b>B</b>	<b>Construction Total</b>				<b>\$22,986,524.87</b>
60	Right-of-Way (ROW)	-NA-	Acre		0



70	Vehicles				0
70.01	Light Rail (double articulated, 1 level 2 cabs)	\$3,950,000	EA		0
<b>C</b>	<b>Construction Total W/Vehicles</b>				<b>\$22,986,524.87</b>
80	Professional Services				
80.01	Preliminary Engineering	2.0%	percentage of construction cost only (B)		\$459,730.50
80.02	Final Design	10.0%			\$2,298,652.49
80.03	Project Management for Design and Construction	6.0%			\$1,379,191.49
80.04	Construction Administration & Management	15.0%			\$3,447,978.73
80.05	Insurance	1.5%			\$344,797.87
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	1.5%			\$344,797.87
<b>D</b>	<b>Construction Cost Total (including Professional Services)</b>				<b>\$31,261,673.82</b>
90	Unallocated Contingency				
90.1	Design Contingency - 30 %	30%	percentage of construction cost plus professional services (D)		\$9,378,502.15
90.2	Construction Contingency - 10 %	10%	percentage of construction cost only (D)		\$3,126,167.38
				TOTAL D:	\$43,766,343.35



**NATIONAL EXAMPLE: Modern Streetcar**

Item Number	Cost Category	Unit Cost (2009 dollars)	Unit	# of units	Total
10	Guideway (including Track elements)				
10.1	Guideway: At-grade exclusive right-of-way (double ballasted track)	\$4,104,058	MI	0.33	\$1,354,339
10.3	Guideway: At-grade mostly exclusive (allows cross-traffic in certain locations) (embedded tracks-paved)	\$6,306,610	MI	0.33	\$2,081,181
10.4	Guideway: At-grade in mixed traffic (embedded tracks-paved)	\$5,607,961	MI	0.33	\$1,850,627
20	Stations				\$0
20.1	At-grade station	\$1,864,648	EA	0.5	\$932,324
20.3	Parking garage	\$15,862	per space	10	\$158,620
20.4	Surface parking	\$6,825	per space	10	\$68,248
30	Support Facilities: Maintenance Facility & Yards				\$0
30.1	Light Maintenance Facility	\$182,586	per vehicle	1	\$182,586
30.2	Storage or Maintenance of Way Building	\$200,297	per vehicle	1	\$200,297
30.3	Yard and Yard Track	\$236,758	per vehicle	1	\$236,758
40	Site Work & Special Conditions				\$0
40.01.01	Reconstruct Existing Roadway (2 lanes and parking)	\$795,726	MI	0.25	\$198,931
40.01.02	Reconstruct Existing Roadway (3 lanes)	\$875,298	MI	0.25	\$218,825
40.04	Grade Separations w/MSE - 2300 x 60 ft w/100 ft center spans	\$7,191,805	EA	0.1	\$719,181
50	Systems				\$0
50.01	Train control and signals	\$2,042,150	MI	1	\$2,042,150
50.02	Traffic signals and crossing protection	\$354,088	EA	3	\$1,062,265
50.03	Traction power supply: substations	\$710,273	EA	1	\$710,273
50.04	Traction power distribution: catenaries and third rail	\$1,866,895	MI	1	\$1,866,895
50.05	Communications	\$899,782	MI	1	\$899,782



50.06	Fare collection system and equipment	\$54,316	EA	1	\$54,316
50.07	Transit Signal Priority (TSP)	\$9,274	Xing	3	\$27,823
<b>A Construction Sub-total</b>					<b>\$14,865,420</b>
A1	Drainage	5.0%	percentage of construction cost only (A)		\$743,270.98
A2	Utility Relocation	7.0%			\$1,040,579.37
A3	Urban Design/Landscaping	1.5%			\$222,981.29
A4	Noise and Vibration	1.0%			\$148,654.20
A5	Signing and Striping	1.0%			\$148,654.20
A6	Method of Handling Traffic	2.0%			\$297,308.39
<b>B Construction Total</b>					<b>\$17,466,867.94</b>
60	Right-of-Way (ROW)	-NA-	Acre		0
70	Vehicles				0
70.01	Streetcar	\$3,000,000	EA		0
<b>C Construction Total W/Vehicles</b>					<b>\$17,466,867.94</b>
80	Professional Services		percentage of construction cost only (B)		
80.01	Preliminary Engineering	2.0%			\$349,337.36
80.02	Final Design	10.0%			\$1,746,686.79
80.03	Project Management for Design and Construction	6.0%			\$1,048,012.08
80.04	Construction Administration & Management	15.0%			\$2,620,030.19
80.05	Insurance	1.5%			\$262,003.02
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	1.5%			\$262,003.02
<b>D Construction Cost Total (including Professional Services)</b>					<b>\$23,754,940.40</b>
90	Unallocated Contingency				
90.1	Design Contingency - 30 %	30%	percentage of construction cost plus professional services (D)		\$7,126,482.12
90.2	Construction Contingency - 10 %	10%	percentage of construction cost only (D)		\$2,375,494.04
				TOTAL D:	\$33,256,916.56





**NATIONAL EXAMPLE: Bus Rapid Transit**

Item Number	Cost Category	Unit Cost (2009 dollars)	Unit	# of units	Total
10	Guideway				
10.12	Double Guideway			0	\$0
.01	At Grade - Mixed Flow Busway (in mixed traffic)	\$882,643	MI	0	\$0
.02	At Grade - Dedicated Busway (semi-exclusive, allows cross-traffic)	\$2,647,930	MI	0	\$0
0.03	At Grade - Dedicated Busway in Median (semi-exclusive, allows cross-traffic)	\$3,656,666	MI	1	\$3,656,666
20	Stations, Stops, Terminals, Intermodal (number)				\$0
20.02	Double Guideway				\$0
.02	Low Volume Arterial (Double Guideway Station)	\$347,782	EA	1	\$347,782
.03	High Volume Arterial (Double Guideway Station)	\$985,383	EA	1	\$985,383
20.3	Parking garage	\$15,862	Per Space	20	\$317,240
20.4	Surface parking	\$6,825	Per Space	20	\$136,496
30	Support Facilities: Maintenance Facility & Yards			1	\$0
30.1	Maintenance Facility	\$163,909	per vehicle	1	\$163,909
30.2	Storage or Maintenance of Way Building	\$120,200	per vehicle	1	\$120,200
40	Sitework & Special Conditions				\$0
40.08	Grade Separations w/MSE - 2100 x60 ft w/100 ft center spans	\$2,670,406	EA	0.25	\$667,602
50	Systems				\$0
50.05.01	Traffic signals and intersection improvements (Double Guideway)	\$173,891	EA	2	\$347,782
50.05.02	Communications, Line (Double Guideway)	\$655,636	MI	3	\$1,966,909
50.06	Fare collection system and equipment	\$54,316	EA	1	\$54,316
50.07	Transit Signal Priority (TSP)	\$9,274	Xing	3	\$27,823
<b>A</b>	<b>Construction Sub-total</b>			<b>1</b>	<b>\$0</b>
A1	Drainage	5.0%	percentage of construction cost only (A)	1	\$0
A2	Utility Relocation	7.0%		2	\$0
A3	Urban Design/Landscaping	1.5%			\$8,792,107
A4	Noise and Vibration	1.0%			\$87,921.07
A5	Signing and Striping	1.0%			\$87,921.07
A6	Method of Handling Traffic	2.0%			\$175,842.13
<b>B</b>	<b>Construction Total</b>				<b>\$0.00</b>
60	Right-of-Way (ROW)	0	Acre		\$0.00
70	Vehicles				\$0.00
70.01	Articulated Bus	\$725,000	EA		\$9,143,791.00
<b>C</b>	<b>Construction Total W/Vehicles</b>				<b>0</b>



<b>80</b>	<b>Professional Services</b>				0
80.01	Preliminary Engineering	2.0%	percentage of construction cost only (B)		0
80.02	Final Design	10.0%			\$9,143,791.00
80.03	Project Management for Design and Construction	6.0%			
80.04	Construction Administration & Management	15.0%			\$1,371,568.65
80.05	Insurance	1.5%			\$137,156.86
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	1.5%			\$137,156.86
<b>D</b>	<b>Construction Cost Total (including Professional Services)</b>				<b>\$0.00</b>
90	Unallocated Contingency				\$0.00
90.1	Design Contingency - 30 %	30%	percentage of construction cost plus professional services (D)		\$2,743,137.30
90.2	Construction Contingency - 10 %	10%	percentage of construction cost only (D)		<b>\$13,532,810.68</b>

**NATIONAL EXAMPLE: Commuter Rail/DMU**

	Unit Costs		Qty	Cost
	Cost	Units		
<b>Trackwork and Infrastructure</b>				
Grade X-ing Upgrade for Single Track	\$ 88,657	Track Mile	0.00	\$ 0
Grade X-ing to Replace for Double Track	\$ 258,512	Track Mile	1.00	\$ 258,512
New Double Track	\$3,712,644	Track Mile	1.00	\$ 3,712,644
Signaling	\$ 1,034,048	Each	0.00	\$ 0
Terminal Stub Track	\$ 1,196,865	Each	0.20	\$ 239,373
Bumper	\$ 16,585	Each	2.00	\$ 33,170
Androscoggin Bridge	\$ 16,585	Each	0.00	\$ 0
Androscoggin Canal Bridge	\$ 16,585	Each	0.00	\$ 0
Support Trackwork	\$ -	Track Mile	1.00	\$ 0
Terminal Track	\$ 25,851	Each	2.00	\$ 51,702
Bridges				
New Back Cove Bridge	\$ 9,162,647	Each	0.33	\$ 3,023,673
Refurbished Bridge	\$ 9,182,346	Track Mile		\$ 0
<b>Total Track and Signal improvements</b>				<b>\$ 7,319,075</b>
<b>Positive Train Control</b>				
Stations	\$0	DMU	0.33	\$ 0
Platform	\$ 103,405	DMU	0.33	\$ 34,124
Parking Space	\$ 3,619	Track Mile	1.00	\$ 3,619
Site Development	\$ 517,024	Each	0.33	\$ 170,618
<b>PTC Subtotal</b>				<b>\$ 208,361</b>
<b>Stations</b>				
<b>Cost</b>				
Station	\$1,864,648	Each	0.33	\$ 615,334
Parking	\$ -	Each	0.00	\$ 0
MoE Facility	\$ 504,895	Station	0.33	\$ 166,615
Equipment	\$ -	Systemside	0.00	\$ 0
<b>Subtotal</b>				<b>\$ 781,949</b>
<b>Other</b>				
Maintenance Facility	\$ 434,460	Vehicle	1.00	\$ 434,460
<b>Subtotal</b>				<b>\$ 434,460</b>
<b>Vehicles</b>				
MoW Equipment	\$ -	Each	0.00	\$ 0
Buses	\$ 420,155	Each	0.00	\$ 0
<b>Subtotal</b>				<b>\$ 0</b>
<b>Infrastructure Subtotal</b>				<b>\$ 8,743,845</b>
Contingency (40%)	40%			\$ 3,497,538
Design (18%)	18%			\$ 1,573,892
Insurance & Legal (3%)	3%			\$ 262,315
Administration (3%)	3%			\$ 262,315
<b>Infrastructure Total</b>				<b>\$ 14,339,906</b>

**DRAFT 04/08/2011**

**2035 Plan Post Referendum Analysis**

**Cost Reduction Strategies: APPENDIX B**

**Appendix B (Amended 8/3/10); (Modified 9/1/10)**  
**Table B-2 - Cost Affordable Public Transportation Projects**  
 SHOWN IN YEAR OF EXPENDITURE (YOE) \$ MILLIONS

Project ID	Project Description	PROJECT COSTS										PROJECT FUNDING																			
		Construction Starts					Costs & Phasing					Local Revenues					Federal Revenues					State Revenues					Other Revenues				
		Construction Starts	Cap. Costs (incl. design, ROW, vehicles)	Operations Start	Op & Maint Costs Total Thru 2035	Total Cost Thru 2035	Annual Op & Maint Cost in 2035	Sales Tax	Ad Valorem	System Revenues	New Starts	Formula Based	STP (TMA)	State New Starts	State Transit Program	Other Arterials	TRIP	High Speed Rail	Transit Planning & Design	Transp. Disadvantaged Program											
<b>Operations Start 2009-2015</b>																															
T-1	High Speed Rail, Tampa to Orlando	2009-2015	n/a	2009-2015	n/a	TBD																									
T-23	Current Streetcar (10 Vehicles)	n/a	\$ 16.51	2009-2015	\$ 86.35	\$ 102.86	\$ 4.35	\$ 43.18	\$ 42.41	\$ 8.64		\$ 8.64	\$ 8.64																		
T-31	Current Bus Service (199 vehicles) with Non-Rew Vehicles and Modernize Maintenance Facility	2009-2015	\$ 255.59	2009-2015	\$ 2,006.11	\$ 2,261.70	\$ 100.98	\$ 1,355.11	\$ 1,060.28	\$ 355.12		\$ 355.12	\$ 68.31	\$ 68.31																	
T-64	Nebraska-Fletcher BRT	Committed	\$ -	2009-2015	\$ 84.71	\$ 84.71	\$ 4.40	\$ 50.82	\$ 16.94			\$ 16.94	\$ 16.94																		
T-65	East-West BRT	2009-2015	\$ 38.48	2009-2015	\$ 94.04	\$ 132.51	\$ 5.14	\$ 75.66	\$ 18.81			\$ 18.81	\$ 18.81	\$ 19.24	\$ 19.24																
T-67	Dale Mabry/Himes BRT	2009-2015	\$ 52.55	2009-2015	\$ 161.21	\$ 213.76	\$ 8.80	\$ 123.00	\$ 32.24			\$ 32.24	\$ 32.24																		
T-72	Current Paratransit for Local Bus ADA-Complementary Service	n/a	\$ 23.67	2009-2015	\$ 114.21	\$ 137.89	\$ 5.75	\$ 11.84	\$ 34.26			\$ 21.87	\$ 3.43	\$ 3.43																	
T-73	Expansion of Paratransit for Local Bus ADA-Complementary Service (80 vehicles)	n/a	\$ 5.93	2009-2015	\$ 185.65	\$ 191.58	\$ 12.78	\$ 114.35	\$ 38.91			\$ 25.32	\$ 13.00	\$ 13.00																	
T-75	Current Paratransit for Transportation Disadvantaged	n/a	\$ -	2009-2015	\$ 505.71	\$ 505.71	\$ 25.46		\$ 334.41			\$ 217.76	\$ 108.78						\$ 505.71												
T-33-35	EXPAND FREQUENCY AND HOURS, EXISTING ROUTES (Projects listed in Needs Assmt.)	n/a	\$ 78.66	2009-2015	\$ 1,554.07	\$ 1,632.73	\$ 89.77	\$ 971.77	\$ 334.41			\$ 217.76	\$ 108.78						\$ 505.71												
<b>Operations Start 2016-2020</b>																															
T-2	Short Distance Rail, Downtown Tampa to USF (including Downtown segment and ending at Fletcher Ave)	2009-2015	\$ 991.40	2016-2020	\$ 416.62	\$ 1,408.02	\$ 27.71	\$ 700.40	\$ 124.99	\$ 360.34	\$ 41.66	\$ 90.09	\$ 90.09						\$ 90.54												
T-4	Maintenance Facility Needed for Short Distance Rail	2009-2015	\$ 90.40	n/a	\$ -	\$ 90.40	\$ -	\$ 37.05	\$ 29.64			\$ 7.41	\$ 7.41					\$ 16.30													
T-20	Regional Bus on I-4 & I-275; Westshore to Lakeland (cost of service to county line)	Unfunded	\$ 5.31	2016-2020	\$ 41.63	\$ 46.95	\$ 5.54		\$ 12.49			\$ 4.16	\$ 4.16	\$ 2.66				\$ 2.66													
T-24	Streetcar Extension to Polk St with expanded service hours and frequency	2016-2020	\$ 47.05	2016-2020	\$ 110.84	\$ 157.89	\$ 7.37		\$ 27.71	\$ 119.10		\$ 11.08	\$ 24.98	\$ 2.66				\$ 2.66													
T-25	Public Outreach & Education, Regional Program	n/a	\$ -	2016-2020	\$ 7.68	\$ 7.68	\$ 0.46						\$ 7.68																		
T-28	Current Vanpools (80% to/from Hillsborough)	n/a	\$ 8.63	2016-2020	\$ 0.92	\$ 9.55	\$ 0.06					\$ 9.55																			
T-31	Current Transfer Center & P+R Improvements, Access Improvements, Replace Bus Stops/Shelters	2016-2020	\$ 30.02	n/a	\$ -	\$ 30.02	\$ -	\$ 15.01	\$ 15.01			\$ 15.01																			
T-36 thru T-40	NEW LOCAL ROUTES (Projects listed in Needs Assmt.)	n/a	\$ 17.08	2016-2020	\$ 539.70	\$ 556.78	\$ 35.90	\$ 332.36	\$ 113.06			\$ 73.58	\$ 37.78																		
T-45 thru T-46	NEW LOCAL ROUTES (Projects listed in Needs Assmt.)	n/a	\$ 11.39	2016-2020	\$ 175.83	\$ 187.21	\$ 11.70	\$ 111.19	\$ 38.58			\$ 25.13	\$ 12.31																		
T-47-57	NEW EXPRESS ROUTES (Projects listed in Needs Assmt.)	n/a	\$ 8.22	2016-2020	\$ 214.40	\$ 222.63	\$ 14.26	\$ 132.75	\$ 45.35			\$ 29.52	\$ 15.01																		
T-58-61	NEW CIRCULATOR & FLEX ROUTES (Projects listed in Needs Assmt.)	n/a	\$ 48.35	n/a	\$ -	\$ 48.35	\$ -	\$ 24.17	\$ 14.50			\$ 9.67	\$ -																		
T-62	2nd Bus Maintenance Facility	2016-2020	\$ 17.71	n/a	\$ -	\$ 17.71	\$ -	\$ 8.86	\$ 5.31			\$ 3.54	\$ -																		
T-63	New Transfer Centers and P+R Facilities (7)	2016-2020	\$ 6.33	n/a	\$ -	\$ 6.33	\$ -	\$ 3.16	\$ 1.90			\$ 1.27	\$ -																		
T-74	Maintenance Facility for Local Bus ADA Complementary Paratransit Service	2016-2020	\$ 462.68	2021-2025	\$ 151.47	\$ 614.15	\$ 13.33	\$ 302.78	\$ 45.44	\$ 169.51	\$ 15.15	\$ 42.38	\$ 42.38					\$ 38.90													
T-3	Short Distance Rail, Downtown Tampa to Airport (ending at Airport Transfer Ctr., Spruce St)	2021-2025	\$ 113.40	n/a	\$ -	\$ 113.40	\$ -	\$ 46.48	\$ 37.18			\$ 9.30	\$ 9.30					\$ 20.45													
T-6	Maintenance Facility Needed for Short Distance Rail	2016-2020	\$ 735.90	2021-2025	\$ 102.51	\$ 838.41	\$ 9.02	\$ 394.22	\$ 266.18	\$ 10.25		\$ 66.54	\$ 66.54					\$ 70.46													
T-7	Short Distance Rail, Airport to Carrollwood Area (Airport Transfer Center-Spruce St to Linebaugh Ave)	Unfunded	\$ 12.01	2021-2025	\$ 61.46	\$ 73.48	\$ 10.82		\$ 18.44			\$ 6.01	\$ 36.88	\$ 6.01				\$ 6.01													
T-19	Regional Bus on Suncoast Pkwy & Vet Bkwy; Westshore to Northern Counties (cost of service to county line)	Unfunded	\$ 19.73	2021-2025	\$ 98.55	\$ 118.28	\$ 17.35		\$ 29.56			\$ 9.87	\$ 59.13	\$ 9.87				\$ 9.87													
T-21	Regional Bus on I-75; Tampa (via I-4) to Brooksville & Tampa (via Selmon) to Bradenton/Sarasota (cost of service to county line)	2021-2025	\$ 45.20	2021-2025	\$ 83.34	\$ 128.54	\$ 7.34	\$ 72.60	\$ 16.67			\$ 16.67	\$ 16.67	\$ 22.60				\$ 16.67													
T-68	Gunn Hwy/Busch Blvd BRT	2021-2025	\$ 44.82	2021-2025	\$ 65.00	\$ 109.82	Ends with rail	\$ 61.41	\$ 13.00			\$ 13.00	\$ 13.00	\$ 22.41				\$ 13.00													
T-69	SR 60/Brandon BRT	2021-2025	\$ 44.82	2021-2025	\$ 65.00	\$ 109.82	Ends with rail	\$ 61.41	\$ 13.00			\$ 13.00	\$ 13.00	\$ 22.41				\$ 13.00													



**Appendix B (Amended 8/3/10); (Modified 9/1/10)**  
**Table B-2 - Cost Affordable Public Transportation Projects**  
 SHOWN IN YEAR OF EXPENDITURE (YOE) \$ MILLIONS

Project ID	Project Description	PROJECT COSTS						PROJECT FUNDING												
		Costs & Phasing			Local Revenues			Federal Revenues			State Revenues				Other Revenues					
		Construction Starts	Cap. Costs (Incl. design, ROW, vehicles)	Operations Start	Op & Maint Costs, Total Thru 2035	Total Cost Thru 2035	Annual Op & Maint Cost in 2035	Sales Tax	Ad Valorem	System Revenues	New Starts	Formula Based	STP (TMA)	State New Starts	State Transit Program	Other Arterials	TRIP	High Speed Rail	Transit Planning & Design	Transp. Disadvantaged Program
<b>Operations Start 2026-2030</b>																				
T-5	*Short Distance Rail: USF to Wesley Chapel (Fletcher Ave to county line)	2021-2025	\$ 653.13	2026-2030	\$ 117.98	\$ 771.11	\$ 17.44	\$ 368.00	\$ 35.39	\$ 237.77	\$ 11.80	\$ 59.44	\$ 9.30	\$ 58.72						
T-11	Maintenance Facility Needed for Short Distance Rail	2021-2025	\$ 111.04	n/a	\$ -	\$ 111.04	\$ -	\$ 46.48	\$ -	\$ 37.18	\$ -	\$ 9.30	\$ -	\$ 18.09						
T-8a	Short Distance Rail Busch/Linebaugh Corridor West (Airport-Enrollwood Rail Line to Montague St)	2021-2025	\$ 423.57	2026-2030	\$ 94.83	\$ 517.40	\$ 14.02	\$ 248.71	\$ 28.45	\$ 153.45	\$ 9.48	\$ 38.36	\$ -	\$ 36.95						
T-10	*Short Distance Rail: Westshore to Pinellas (center of Frankland Bridge to Westshore Blvd; service continues to Dn Ta)	2026-2030	\$ 427.74	2026-2030	\$ 117.73	\$ 545.47	\$ 17.40	\$ 268.09	\$ 35.32	\$ 157.96	\$ 11.77	\$ 39.49	\$ -	\$ 32.83						
T-32	SmartCard Implementation, Farebox Replacement, and Security Upgrades	2026-2030	\$ 30.13	n/a	\$ -	\$ 30.13	\$ -	\$ 15.06	\$ -	\$ -	\$ 15.06	\$ -	\$ -	\$ -						
T-41-44	NEW LOCAL ROUTE/LRT FEEDERS (Projects listed in Needs Asmt.)	n/a	\$ 13.35	2026-2030	\$ 150.88	\$ 164.22	\$ 20.94	\$ 97.20	\$ 34.18	\$ -	\$ 22.28	\$ -	\$ 10.56	\$ -						
<b>Operations Start 2031-2035</b>																				
T-12	Short Distance Rail: Downtown Tampa to South Tampa (ending at Britton Plaza)	2031-2035	\$ 569.25	2031-2035	\$ 17.79	\$ 587.04	\$ 17.79	\$ 273.23	\$ 5.34	\$ 210.04	\$ 1.78	\$ 52.51	\$ -	\$ 44.14						
T-13	Short Distance Rail: Downtown Tampa to Brandon (ending east of Kingsway)	2031-2035	\$ 1,013.70	2031-2035	\$ 20.39	\$ 1,034.10	\$ 20.39	\$ 478.02	\$ 6.12	\$ 372.62	\$ 2.04	\$ 93.16	\$ -	\$ 82.15						
T-14	Maintenance Facility Needed for Short Distance Rail	2026-2030	\$ 128.31	n/a	\$ -	\$ 128.31	\$ -	\$ 52.59	\$ -	\$ 42.07	\$ -	\$ 10.52	\$ -	\$ 23.14						
T-66	Florida Ave BRT	2031-2035	\$ 57.96	2031-2035	\$ 22.01	\$ 79.97	\$ 8.80	\$ 42.19	\$ 4.40	\$ -	\$ -	\$ 4.40	\$ -	\$ -						
<b>Totals (Without High Speed Rail)</b>																				
Capital			\$ 6,614.18	Op. & Maint.	\$ 7,403.64	\$ 14,017.82	\$ 535.06	\$ 5,614.94	\$ 1,199.55	\$ 2,073.94	\$ 928.87	\$ 84.43	\$ 518.49	\$ 508.54	\$ 93.22	\$ 18.53	\$ -	\$ 534.66	\$ 505.71	

**REVENUE FORECASTS**

Category	2025	2035	2050	2055	2060	2065	2070	2075	2080	2085	2090	2095	2100	2105	2110	2115	2120	2125	2130	2135
Rail Annual Op & Maint from Sales Tax, 2035	\$ 78.07																			
Bus Annual Op & Maint from Sales Tax, 2035	\$ 131.89																			
Total Annual Op & Maint from Sales Tax, 2035	\$ 209.96																			
Sales Tax Annual Allocation to Transit (75%), 2035	\$ 388.50																			
Remainder	\$ 128.53	\$ 4.3	\$ 1.7	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1
	40%	9%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
<b>Total Revenues thru 2035</b>	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8	\$ 368.8
Remainders, Net of Funded Projects	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Share of Total Transit Funding thru 2035	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

\*Identified as affordable contingent on funding agreements with adjacent county.  
 Transit & TDM projects funded in FDOT Work Program thru 2104 are not reflected in this table.



### Unit Costs for Master Plan Vision Networks

Mode Construction Costs (FTA Cat. 10,40,50)	R.O.W.			References
	Low (\$/mi)	High (\$/mi)	Width (ft)	
Managed Lanes - Interstates	\$15.6	\$17.6	88	FDOT D-7 Highway Construction Costs Jun 08 and LRE
Managed Lanes - Arterials	\$4.9	\$7.2	34	FDOT D-7 Highway Construction Costs Jun 08
Busway in existing CSX corridor	\$10.0	\$20.6	46	FDOT D-7 Highway Construction Costs Jun 08 and Jacobs Oct 08
Mixed Traffic BRT Corridor	\$2.5	\$5.0	0	Local Transportation Improvement Programs 08
At-Grade Short Distance Rail (Electrified, Ballasted/Street Running)	\$16.0	\$28.3	40	Hillsborough MPO Transit Study Dec 07, FTA cat. 10, 40, 50/Hudson Bergen Northern Branch
Short Distance Rail in existing CSX corridor (Diesel/Electrified with Crash Barrier)	\$11.6	\$38.9	60	Jacobs estimate Oct 08/Hudson Bergen Northern Branch 09
Long Distance Rail	\$8.5	\$15.0	40	Hillsborough MPO Transit Study Dec 07, FTA cat. 10, 40, 50
<b>Stations &amp; Facilities (FTA Cat. 20,30)</b>				
	Low (\$M)	High (\$M)		
At Grade Bus Station	\$0.3	\$2.0		SFRTA Oct 07
At Grade Light Rail or Busway Station	\$1.5	\$3.5		DART May 08, Hillsborough MPO Transit Study Dec 07
At Grade Commuter Rail Station	\$2.9	\$4.7		FasTracks APE Unit Rates 08
Local Bus Stops - Shelters & Amenities	\$0.020	\$0.080		Local Transit Development Plans 08
Local Bus Stops - Ped & Bike Access	\$0.080	\$0.300		Temple Terrace Multimodal District Improvement Program
Park & Ride - Structured	\$2.0	\$4.0		FasTracks APE Unit Rates 08
Park & Ride - At Grade	\$0.5	\$1.6		FasTracks APE Unit Rates 08, Broward County P&R Dec 08
Maintenance Facility - Bus	\$40.0	\$60.0		LeeTran Facility 2008
Maintenance Facility - Light Rail	\$30.0	\$100.0		SFRTA Oct 07/high estimate = Jacobs March 09 (Arch Street project)
Maintenance Facility - Commuter Rail	\$20.0	\$30.0		SFRTA Oct 07
Water Station Docks	\$0.7	\$2.0		<a href="http://www.virginiaodot.org/projects/studynova-ferrychap3.asp">http://www.virginiaodot.org/projects/studynova-ferrychap3.asp</a>
<b>Vehicles (FTA Cat. 70)</b>				
	Low (\$M)	High (\$M)		
Premium Bus/BRT	\$0.4	\$2.0		
Light Rail (2 per train)	\$2.9	\$4.0		FDOT Transit System Costs Sept 08
Commuter Rail Passenger Car (2 per train)	\$1.4	\$2.5		SFRTA Oct 07
Commuter Rail Locomotive	\$2.4	\$6.0		SFRTA Oct 07/high estimate = Jacobs 09 (Hudson Bergen Northern Branch)
Commuter Rail Self-Propelled	\$3.7	\$4.4		FasTracks APE Unit Rates 08
Waterborne	\$3.0	\$8.0		VADOT, Golden Gate Ferry,
Local Fixed Route Bus	\$0.3	\$0.8		FDOT Transit System Costs Sept 08
Vanpool Vehicle	\$0.0240	\$0.0300		Spacecoast VPSI Oct 08 procurement
<b>Structures (Elevated Sections &amp; Bridges)</b>				
	Low (\$/mi)	High (\$/mi)		
Bridges: Rail - single track	not used	not used		
Bridges: Rail - double track	\$42.2	\$65.5		FDOT D-7 Freight Study (low), FDOT Intercity Passenger Rail (high)
Bridges: Mgd Lanes-Interstate	\$69.7	\$92.9		FDOT D-7 Highway Construction Costs Jun 08
Bridges: Mgd Lanes-Arterials	\$26.9	\$35.9		FDOT D-7 Highway Construction Costs Jun 08
Bridges: Busway	\$36.4	\$48.6		FDOT D-7 Highway Construction Costs Jun 08
Howard Frankland Bridge	\$87.0	\$153.0		Jacobs Structures Estimate '09 using FDOT Existing Plans (Widening/New Construction)
Managed Lanes Bus Slip Ramps	\$17.0	\$22.0		FDOT D-7 Hillsborough PD&E Concept (Not Used), Using LRE Cost Estimates
<b>Right of Way (FTA Cat. 60)</b>				
	Low (\$)	High (\$)		
Fees, Per Parcel	\$75,000	\$100,000		FDOT D-7 ROW office, Jul 08
Land (sf) - Citrus, Hernando, Northern Pasco	\$6.35	\$19.99		Listings Oct 08, Loopnet.com
Land (sf) - Western Pasco	\$12.21	\$31.91		Listings Oct 08, Loopnet.com
Land (sf) - Eastern Pasco	\$11.05	\$23.01		Listings Oct 08, Loopnet.com
Land (sf) - Pinellas	\$19.73	\$56.55		Listings Oct 08, Loopnet.com
Land (sf) - Central Hillsborough	\$6.17	\$38.07		Listings Oct 08, Loopnet.com
Land (sf) - Eastern Hillsborough	\$6.67	\$23.72		Listings Oct 08, Loopnet.com
Land (sf) - Manatee	\$18.76	\$24.35		Listings Oct 08, Loopnet.com
Land (sf) - Northern Sarasota	\$24.36	\$71.95		Listings Oct 08, Loopnet.com
Land (sf) - Southern Sarasota	\$26.39	\$40.31		Listings Oct 08, Loopnet.com
CSX (\$/mi) - purchase with freight easem.*	\$2.44	\$7.40		Central Florida Rail Corridor CSX-FDOT Agreements Nov 07
<b>Contingencies &amp; Soft Costs (FTA Cat. 80)</b>				
Design	10%	of construction costs	FasTracks APE Unit Rates 08	
Construction Mgmt.	12%	of construction costs	FasTracks APE Unit Rates 08	
Contingency - Construction	50%	of construction costs		
Contingency - Land	200%	of ROW costs	FasTracks Aug 08	
<b>Mitigation &amp; Other Factors (FTA Cat. 90)</b>				
Drainage	5%	of construction costs	FasTracks APE Unit Rates 08	
Utility Relocation	4%	of construction costs	FasTracks APE Unit Rates 08	
	<b>9%</b>			
Noise Mitigation	2%	of construction costs	FasTracks APE Unit Rates 08	
Wetlands Mitigation	2%	of construction costs	FasTracks APE Unit Rates 08	
Hazardous Materials	2.5%	of construction costs	FasTracks APE Unit Rates 08	
	<b>6.5%</b>			
Signing & Striping	1%	of construction costs	FasTracks APE Unit Rates 08	
Urban Design/ Landscaping	1.5%	of construction costs	FasTracks APE Unit Rates 08	
Maintenance of Traffic	2%	of construction costs	FasTracks APE Unit Rates 08	
	<b>5%</b>			
	<b>7%</b>	of station costs	Sim. to 1/2-1 mi of sidewalk, FDOT D-7 Hwy. Constr. Costs Jun 08	
<b>Notes</b>				
*Liability insurance in CSX corridors is not included above.				
Last updated: 6/09				

Mid-Term Vision Network

Last updated 08/09

**COUNTY SUMMARY**

Managed Lanes with Express Bus Stations	Total		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FOOT	
	Count	Total (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)	Count	Low - High (\$M)
1471275 - Lakeland to Tampa CBD	297	\$ 463.3	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
ROW - Land (sf)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
ROW - Parcel Acquisition Costs (parcel)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Bridges for Interstate Managed Lanes (mi)	14	\$ 98.6	0.0	\$ -	0.0	\$ -	6.0	\$ 102.0	0.0	\$ -	0.0	\$ -	0.0	\$ -	2.0	\$ 34.0	0.0	\$ -	0.0	\$ -
Slip Ramps for Interstate Managed Lanes (mi)	0.0	\$ -	0.0	\$ -	0.0	\$ -	6	\$ 1.8	12.0	\$ 3.6	0.0	\$ -	0.0	\$ -	3	\$ 0.9	6.0	\$ 1.8	0.0	\$ -
Stations - Regional Bus	9.0	\$ 2.7	0.0	\$ -	0.0	\$ -	7	\$ 2.1	0.8	\$ 0.2	7	\$ 2.1	0.8	\$ 0.2	3	\$ 0.9	0.4	\$ 0.1	0.0	\$ -
Ped & Non-Motorized Access to Stations	7	\$ 0.2	7	\$ 0.2	7	\$ 0.2	6	\$ 1.8	0.8	\$ 0.2	7	\$ 2.1	0.8	\$ 0.2	3	\$ 0.9	0.4	\$ 0.1	0.0	\$ -
Park & Rides, All Grade	9.0	\$ 4.5	0.0	\$ -	0.0	\$ -	6	\$ 3.0	9.6	\$ 4.8	0.0	\$ -	0.0	\$ -	3	\$ 1.5	4.8	\$ 2.4	0.0	\$ -
Park & Rides, Structured	0.0	\$ -	0.0	\$ -	0.0	\$ -	0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0	\$ -	0.0	\$ -	0.0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9	20	\$ 113.9
Design, Engineering, & Construction Mgmt.	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2	20	\$ 152.2
Long Range Planning Contingency - ROW	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3	20	\$ 176.3
Long Range Planning Contingency - Construction	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7	25	\$ 1,150.7
<b>TOTAL</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>	<b>733</b>	<b>\$ 1,427.7</b>
<b>AVG. PER.MILE</b>																				
Managed Lanes on Interstate Hwy's (mi)	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7	733	\$ 1,427.7
ROW - Parcel Acquisition Costs (parcel)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Bridges for Interstate Managed Lanes (mi)	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2	3.5	\$ 246.2
Bus Slip Ramps for Interstate Managed Lanes (mi)	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0	10.0	\$ 170.0
Stations - Regional Bus	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0	10.0	\$ 3.0
Ped & Non-Motorized Access to Stations	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0	10.0	\$ 5.0
Park & Rides, Structured	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4	20	\$ 279.4
Design, Engineering, & Construction Mgmt.	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8	22	\$ 344.8
Long Range Planning Contingency - ROW	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3	20	\$ 945.3
Long Range Planning Contingency - Construction	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6	25	\$ 2,493.6
<b>TOTAL</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>	<b>733</b>	<b>\$ 3,477.7</b>
<b>AVG. PER.MILE</b>																				

Mid-Term Vision Network

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Project Name	Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
<b>McMillen Booth Seven Springs</b>																				
Managed Lanes on Arterials (mi)	259	\$ 404.0	455.8																	
ROW - Land (sf)	9894.0	\$ 0.2	0.6																	
Right-of-Way Acquisition Costs (parcels)	0	\$ 0.0	0.0																	
Bidder Bids for Arterial Managed Lanes (mi)	3.0	\$ 136.0	\$ 287.1																	
Bus Stop Ramps for Arterial Managed Lanes (mi)	0.0	\$ 0.0	0.0																	
Stations - Regional Bus	8.0	\$ 2.4	\$ 16.0																	
Ped & Non-Motorized Access to Stations	8.0	\$ 0.2	\$ 1.1																	
Park & Rides, All Grade	8.0	\$ 4.0	\$ 12.8																	
Drainage, Utilities, Mitigation, Landscape, MOT	20.0	\$ 125.2	\$ 154.6																	
Design, Engineering, & Construction Mgmt.	22.0	\$ 167.6	\$ 208.8																	
Long Range Planning Contingency - ROW	20.0%	\$ 0.5	\$ 1.3																	
Long Range Planning Contingency - Construction	25%	\$ 190.5	\$ 237.2																	
<b>TOTAL</b>		\$ 1,248.1	\$ 1,515.5																	
<b>AVG. PER MILE</b>		\$ 481.1	\$ 589.3																	
<b>SR 54/6R 56 - New Port Richey to BBD</b>																				
Managed Lanes on Arterials (mi)	253	\$ 395.3	\$ 446.0																	
ROW - Land (sf)	97170.0	\$ 1.1	\$ 2.7																	
Bus Stop Ramps for Interstate Managed Lanes (mi)	12.0	\$ 204.0	\$ 264.0																	
Bidder Bids for Arterial Managed Lanes (mi)	0.3	\$ 20.9	\$ 27.9																	
Stations - Regional Bus	7.0	\$ 0.3	\$ 1.7																	
Ped & Non-Motorized Access to Stations	12.0	\$ 6.0	\$ 19.2																	
Park & Rides, All Grade	0.0	\$ 0.0	\$ 0.0																	
Drainage, Utilities, Mitigation, Landscape, MOT	20.0	\$ 85.2	\$ 103.7																	
Design, Engineering, & Construction Mgmt.	22.0	\$ 116.6	\$ 172.4																	
Long Range Planning Contingency - ROW	20.0%	\$ 5.5	\$ 17.2																	
Long Range Planning Contingency - Construction	25%	\$ 157.5	\$ 198.7																	
<b>TOTAL</b>		\$ 1,019.3	\$ 1,288.3																	
<b>AVG. PER MILE</b>		\$ 402.2	\$ 501.1																	
<b>BRT - Dedicated Busway</b>																				
<b>Bradenton-Sarasota</b>																				
BRT - Busway/Freight Rail Cross Wall (mi)	1,932.0	\$ 115.6	\$ 237.3																	
ROW - Land (sf)	5940.0	\$ 0.1	\$ 0.4																	
Stations - BRT Dedicated Busway (mi)	2.0	\$ 0.15	\$ 0.2																	
Bridges for Dedicated Busway (mi)	0.0375	\$ 1.4	\$ 1.6																	
Stations - BRT Dedicated Busway	8.0	\$ 0.8	\$ 2.0																	
Ped & Non-Motorized Access to Stations	0.0	\$ 0.0	\$ 0.0																	
Park & Rides, Structured	0.0	\$ 0.0	\$ 0.0																	
Drainage, Utility Reloc, Mitigation, Landscape, MOT	20.0	\$ 26.56	\$ 55.68																	
Design, Engineering, & Construction Mgmt.	22.0	\$ 29.21	\$ 61.25																	
Long Range Planning Contingency - ROW	20.0%	\$ 0.58	\$ 1.24																	
Long Range Planning Contingency - Construction	50%	\$ 63.39	\$ 132.1																	
<b>TOTAL</b>		\$ 24.6	\$ 53.9																	
<b>AVG. PER MILE</b>		\$ 24.6	\$ 53.9																	
<b>BRT - Dedicated Busway</b>																				
<b>Bradenton-Sarasota</b>																				
BRT - Busway/Freight Rail Cross Wall (mi)	1,932.0	\$ 115.6	\$ 237.3																	
ROW - Land (sf)	5940.0	\$ 0.1	\$ 0.4																	
Stations - BRT Dedicated Busway (mi)	2.0	\$ 0.15	\$ 0.2																	
Bridges for Dedicated Busway (mi)	0.0375	\$ 1.4	\$ 1.6																	
Stations - BRT Dedicated Busway	8.0	\$ 0.8	\$ 2.0																	
Ped & Non-Motorized Access to Stations	0.0	\$ 0.0	\$ 0.0																	
Park & Rides, Structured	0.0	\$ 0.0	\$ 0.0																	
Drainage, Utility Reloc, Mitigation, Landscape, MOT	20.0	\$ 26.56	\$ 55.68																	
Design, Engineering, & Construction Mgmt.	22.0	\$ 29.21	\$ 61.25																	
Long Range Planning Contingency - ROW	20.0%	\$ 0.58	\$ 1.24																	
Long Range Planning Contingency - Construction	50%	\$ 63.39	\$ 132.1																	
<b>TOTAL</b>		\$ 24.6	\$ 53.9																	
<b>AVG. PER MILE</b>		\$ 24.6	\$ 53.9																	
<b>Short Distance Rail Service</b>																				
<b>St Petersburg-Wesley Chapel</b>																				
Short Distance Rail not in Freight Corridor (mi)	37.4	\$ 98.9	\$ 1,059.3																	
Short Distance Rail in Freight Corridor (mi)	12.1	\$ 104.4	\$ 470.2																	
Freight Corridor Acquisition (mi)	121.6	\$ 29.5	\$ 89.5																	
ROW - Land (sf)	25217.6	\$ 0.1	\$ 0.4																	
Bridges for Rail (mi)	243.0	\$ 18.2	\$ 24.3																	
Bridges for Rail (mi)	9.4	\$ 395.4	\$ 612.8																	
Howard Frankland Bridge for Rail (mi)	3.0	\$ 518.1	\$ 459.0																	
Stations - Short Distance Rail	42.0	\$ 63.0	\$ 147.0																	
Ped & Non-Motorized Access to Stations	10.0	\$ 6.4	\$ 30.3																	
Park & Rides, Structured	2.0	\$ 4.0	\$ 8.0																	
Drainage, Utilities, Mitigation, Landscape, MOT	20.0	\$ 243.1	\$ 559.4																	
Design, Engineering, & Construction Mgmt.	22.0	\$ 287.4	\$ 615.3																	
Long Range Planning Contingency - ROW	20.0%	\$ 71.3	\$ 243.7																	
Long Range Planning Contingency - Construction	50%	\$ 69.76	\$ 1,382.9																	
<b>TOTAL</b>		\$ 2,048.7	\$ 5,382.2																	
<b>AVG. PER MILE</b>		\$ 60.3	\$ 117.6																	



Option Cost Estimates

Mid-Term Vision Network

Last updated 03/09

Cleanwater-Gateway	Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT		
	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High
Short Distance Rail not in Freight Corridor (mi)	53	\$ 84.8	\$ 150.0																		
Short Distance Rail in Freight Corridor (mi)	46	\$ 53.4	\$ 178.8																		
Freight Corridor Acquisition (mi)	46	\$ 11.2	\$ 34.0																		
Freight Corridor Acquisition (mi)	11,680.0	\$ 21.2	\$ 41.2																		
ROW - Parcel Acquisition Costs (parcels)	187.0	\$ 12.5	\$ 18.7																		
Bridges for Rail (mi)	0.00	\$ -	\$ -																		
Stations - Short Distance Rail	9.0	\$ 13.5	\$ 31.5																		
Per & Non-Motorized Access to Stations	7%	\$ 0.9	\$ 2.2	7%	\$ 0.9	\$ 2.2															
Park & Rides, At Grade	6.0	\$ 3.0	\$ 9.6																		
At Grade	2.0	\$ 1.0	\$ 3.0																		
Design, Utilities, Mitigation, Landscape, MOT	20%	\$ 31.5	\$ 75.2	20%	\$ 31.5	\$ 75.2															
Design, Engineering, & Construction Mgmt.	22%	\$ 34.7	\$ 82.7	22%	\$ 34.7	\$ 82.7															
Long Range Planning Contingency - ROW	200%	\$ 71.2	\$ 80.2	200%	\$ 71.2	\$ 80.2															
Long Range Planning Contingency - Construction	50%	\$ 78.80	\$ 188.03	50%	\$ 78.80	\$ 188.03															
<b>TOTAL</b>		\$ 420.6	\$ 876.3		\$ 420.6	\$ 876.3															
<b>AVG. PER MILE</b>		\$ -	\$ 42.3		\$ -	\$ 42.3															



Last updated 08/09

Largo-St. Petersburg	Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT		
	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High
Short Distance Rail not in Freight Corridor (mi)	0.0	\$ -	\$ -																		
Freight Corridor Acquisition (mi)	127	\$ 147.3	\$ 483.5																		
ROW - Parcel Acquisition (mi)	0.0	\$ 31.0	\$ 94.0																		
ROW - Parcel Acquisition Costs (parcels)	0.0	\$ -	\$ -																		
Bridges for Rail (mi)	0.1	\$ 6.3	\$ 9.8																		
Stations - Short Distance Rail	5.0	\$ 7.5	\$ 17.5																		
Ped & Non-Motorized Access to Stations	7%	\$ 0.5	\$ 1.2																		
Park & Rides, At Grade	5.0	\$ 2.5	\$ 8.0																		
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 32.8	\$ 106.0																		
Design, Engineering, & Construction Mgmt.	22%	\$ 36.1	\$ 116.6																		
Long Range Planning Contingency - ROW	200%	\$ -	\$ 265.00																		
Long Range Planning Contingency - Construction	50%	\$ 82.07	\$ 1,111.6																		
<b>AVG. PER MILE</b>		\$ 361.3	\$ 1,111.6																		
<b>TOTAL</b>		\$ 496.1	\$ 1,584.3																		

**Short Distance Rail Service (Continued)**

Clearwater-Westshore (Including TIA)	Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT		
Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	
Short Distance Rail not in Freight Corridor (mi)	4.8	\$ 77.5	\$ 137.0																		
Freight Corridor Acquisition (mi)	239	\$ 276.9	\$ 927.6																		
ROW - Land (sf)	10800.0	\$ 0.21	\$ 0.61																		
ROW - Parcel Acquisition Costs (parcels)	5.9	\$ 27.5	\$ 38.6																		
Bridges for Rail (mi)	5.9	\$ 3.39	\$ 14.2																		
Tampa Airport Connection (Including Elevated LRT)	N/A	\$ 189.8	\$ 230.2																		
Stations - Short Distance Rail	17.0	\$ 25.5	\$ 59.5																		
Ped & Non-Motorized Access to Stations	7%	\$ 1.8	\$ 4.2																		
Park & Rides, At Grade	12.0	\$ 6.0	\$ 19.2																		
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 97.4	\$ 307.0																		
Design, Engineering, & Construction Mgmt.	22%	\$ 140.2	\$ 337.7																		
Long Range Planning Contingency - ROW	200%	\$ 0.6	\$ 1.4																		
Long Range Planning Contingency - Construction	50%	\$ 318.59	\$ 767.96																		
<b>AVG. PER MILE</b>		\$ 147.23	\$ 3,358.4																		
<b>TOTAL</b>		\$ 513.3	\$ 1,169.9																		

**Linebaugh-North Tampa**

Count	Low	High	Citrus County	Hernando County	Hillsborough County	Manatee County	Pasco County	Pinellas County	Polk County	Sarasota County	FDOT
Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High
Short Distance Rail not in Freight Corridor (mi)	0.0	\$ -	\$ -								
Freight Corridor Acquisition (mi)	8.7	\$ 100.9	\$ 338.1								
ROW - Land (sf)	0.0	\$ -	\$ -								
ROW - Parcel Acquisition Costs (parcels)	0.0	\$ -	\$ -								
Bridges for Rail (mi)	3.0	\$ 4.5	\$ 10.5								
Stations - Short Distance Rail	3.0	\$ 4.5	\$ 10.5								
Ped & Non-Motorized Access to Stations	7%	\$ 0.3	\$ 0.7								
Park & Rides, At Grade	3.0	\$ 1.5	\$ 4.8								
Park & Rides, Structured	0.0	\$ -	\$ -								
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 21.9	\$ 71.5								
Design, Engineering, & Construction Mgmt.	22%	\$ 41.1	\$ 129.9								
Long Range Planning Contingency - ROW	200%	\$ -	\$ -								
Long Range Planning Contingency - Construction	50%	\$ 54.67	\$ 178.70								
<b>AVG. PER MILE</b>		\$ 26.6	\$ 86.3								
<b>TOTAL</b>		\$ 266.6	\$ 863.3								

**Brandon-Tampa**

Count	Low	High	Citrus County	Hernando County	Hillsborough County	Manatee County	Pasco County	Pinellas County	Polk County	Sarasota County	FDOT
Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High
Short Distance Rail not in Freight Corridor (mi)	0.0	\$ -	\$ -								
Freight Corridor Acquisition (mi)	10.7	\$ 124.1	\$ 415.9								
ROW - Land (sf)	29024.0	\$ 0.18	\$ 1.10								
ROW - Parcel Acquisition Costs (parcels)	1.0	\$ 0.1	\$ 0.1								
Bridges for Rail (mi)	0.2	\$ 0.3	\$ 0.6								
Stations - Short Distance Rail	9.0	\$ 13.5	\$ 31.5								
Ped & Non-Motorized Access to Stations	7%	\$ 0.9	\$ 2.2								
Park & Rides, At Grade	8.0	\$ 4.0	\$ 12.6								
Park & Rides, Structured	0.0	\$ -	\$ -								
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 30.1	\$ 94.9								
Design, Engineering, & Construction Mgmt.	22%	\$ 53.5	\$ 164.4								
Long Range Planning Contingency - ROW	200%	\$ 1.5	\$ 2.4								
Long Range Planning Contingency - Construction	50%	\$ 216.0	\$ 894.3								
<b>AVG. PER MILE</b>		\$ 29.5	\$ 92.9								
<b>TOTAL</b>		\$ 316.0	\$ 994.3								

Last updated 10/09

Station - Regional Bus Ped & Non-Motorized Access to Stations Park & Rides, At Grade Park & Rides, Structured Drainage, Utilities, Mitigation, Landscape, MOT Design, Engineering, & Construction Mgmt. Long Range Planning Contingency - Construction	Count		Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT	
	Count	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Count	High
<b>Sunshine Skyway</b>	15.0	30.0	4.5	12.0	3	0.9	6.0	4	1.2	8.0	2	0.6	4.0	2	0.6	4.0	7%	7%	7%	7%	7%	7%
Stations - Regional Bus	6	12.0	1.8	2.0	3	0.9	6.0	4	1.2	8.0	2	0.6	4.0	2	0.6	4.0	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	7%	7%	0.1	0.4	7%	0.1	0.4	7%	0.1	0.4	7%	0.1	0.4	7%	0.1	0.4	7%	7%	7%	7%	7%	7%
Park & Rides, At Grade	6	3.0	3.0	9.6	3	1.5	4.8	1	0.5	1.6	1	0.5	1.6	2	1.0	3.2	7%	7%	7%	7%	7%	7%
Park & Rides, Structured	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Design, Engineering, & Construction Mgmt.	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%
Long Range Planning Contingency - Construction	103.1	103.1	9.5	43.1	50%	4.7	21.5	50%	2.2	11.3	50%	2.2	11.3	50%	2.2	11.3	50%	50%	50%	50%	50%	50%
<b>I-75 - Sarasota to North Port</b>	6.0	12.0	1.8	2.0	7%	0.9	6.0	7%	0.9	6.0	7%	0.9	6.0	7%	0.9	6.0	7%	7%	7%	7%	7%	7%
Stations - Regional Bus	7%	7%	0.1	0.4	7%	0.1	0.4	7%	0.1	0.4	7%	0.1	0.4	7%	0.1	0.4	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	2.0	3.2	0.7	1.0	7%	0.3	1.0	7%	0.3	1.0	7%	0.3	1.0	7%	0.3	1.0	7%	7%	7%	7%	7%	7%
Park & Rides, At Grade	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Park & Rides, Structured	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%
Design, Engineering, & Construction Mgmt.	103.1	103.1	9.5	43.1	50%	4.7	21.5	50%	2.2	11.3	50%	2.2	11.3	50%	2.2	11.3	50%	50%	50%	50%	50%	50%
Long Range Planning Contingency - Construction	<b>I-75 - Sarasota to Venice</b>	5.0	10.0	1.5	2.0	7%	0.7	5.0	7%	0.7	5.0	7%	0.7	5.0	7%	0.7	5.0	7%	7%	7%	7%	7%
Stations - Regional Bus	4.0	6.4	1.2	1.6	7%	0.6	2.4	7%	0.6	2.4	7%	0.6	2.4	7%	0.6	2.4	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	0.0	0.0	0.0	0.0	7%	0.0	0.0	7%	0.0	0.0	7%	0.0	0.0	7%	0.0	0.0	7%	7%	7%	7%	7%	
Park & Rides, At Grade	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Park & Rides, Structured	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%
Design, Engineering, & Construction Mgmt.	32.8	32.8	6.9	32.8	50%	3.4	16.4	50%	1.7	8.2	50%	1.7	8.2	50%	1.7	8.2	50%	50%	50%	50%	50%	50%
Long Range Planning Contingency - Construction	<b>Tamiami Trail - Sarasota to Venice</b>	3.0	6.0	0.9	1.8	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	7%	7%	7%	7%
Stations - Regional Bus	2.0	3.2	0.7	1.0	7%	0.3	1.0	7%	0.3	1.0	7%	0.3	1.0	7%	0.3	1.0	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	0.0	0.0	0.0	0.0	7%	0.0	0.0	7%	0.0	0.0	7%	0.0	0.0	7%	0.0	0.0	7%	7%	7%	7%	7%	
Park & Rides, At Grade	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Park & Rides, Structured	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%
Design, Engineering, & Construction Mgmt.	33.9	33.9	6.6	33.9	50%	3.3	16.9	50%	1.6	8.4	50%	1.6	8.4	50%	1.6	8.4	50%	50%	50%	50%	50%	50%
Long Range Planning Contingency - Construction	<b>US 19 - Port Richey to Gateway</b>	18.0	36.0	5.4	10.8	7%	2.7	13.5	7%	2.7	13.5	7%	2.7	13.5	7%	2.7	13.5	7%	7%	7%	7%	7%
Stations - Regional Bus	14.0	28.0	4.2	8.4	7%	2.1	10.5	7%	2.1	10.5	7%	2.1	10.5	7%	2.1	10.5	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	1.0	2.0	0.3	0.6	7%	0.15	0.3	7%	0.15	0.3	7%	0.15	0.3	7%	0.15	0.3	7%	7%	7%	7%	7%	
Park & Rides, At Grade	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Park & Rides, Structured	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%
Design, Engineering, & Construction Mgmt.	32.46	32.46	7.39	32.46	50%	3.69	16.23	50%	1.84	7.39	50%	1.84	7.39	50%	1.84	7.39	50%	50%	50%	50%	50%	50%
Long Range Planning Contingency - Construction	<b>I-75 - Brooksville to Wesley Chapel</b>	3.0	6.0	0.9	1.8	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	7%	7%	7%	7%
Stations - Regional Bus	3.0	6.0	0.9	1.8	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	3.0	6.0	0.9	1.8	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	0.4	3.0	7%	7%	7%	7%	7%	7%
Park & Rides, At Grade	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Park & Rides, Structured	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%
Design, Engineering, & Construction Mgmt.	12.46	12.46	2.84	12.46	50%	1.42	6.23	50%	0.71	3.12	50%	0.71	3.12	50%	0.71	3.12	50%	50%	50%	50%	50%	50%
Long Range Planning Contingency - Construction	<b>I-75 - Bee Ridge Rd</b>	5.0	10.0	1.5	3.0	7%	0.7	3.5	7%	0.7	3.5	7%	0.7	3.5	7%	0.7	3.5	7%	7%	7%	7%	7%
Stations - Regional Bus	4.0	8.0	1.2	2.4	7%	0.6	3.0	7%	0.6	3.0	7%	0.6	3.0	7%	0.6	3.0	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	6.0	12.0	1.8	3.6	7%	0.9	4.5	7%	0.9	4.5	7%	0.9	4.5	7%	0.9	4.5	7%	7%	7%	7%	7%	7%
Park & Rides, At Grade	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Park & Rides, Structured	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%
Design, Engineering, & Construction Mgmt.	38.9	38.9	8.2	38.9	50%	4.1	19.4	50%	2.0	9.7	50%	2.0	9.7	50%	2.0	9.7	50%	50%	50%	50%	50%	50%
Long Range Planning Contingency - Construction	<b>BRT - Mixed Traffic Service</b>	5.0	10.0	1.5	3.0	7%	0.7	3.5	7%	0.7	3.5	7%	0.7	3.5	7%	0.7	3.5	7%	7%	7%	7%	7%
Stations - Regional Bus	4.0	8.0	1.2	2.4	7%	0.6	3.0	7%	0.6	3.0	7%	0.6	3.0	7%	0.6	3.0	7%	7%	7%	7%	7%	7%
Ped & Non-Motorized Access to Stations	6.0	12.0	1.8	3.6	7%	0.9	4.5	7%	0.9	4.5	7%	0.9	4.5	7%	0.9	4.5	7%	7%	7%	7%	7%	7%
Park & Rides, At Grade	20%	20%	0.99	4.49	20%	0.49	2.24	20%	0.23	1.18	20%	0.23	1.18	20%	0.23	1.18	20%	20%	20%	20%	20%	20%
Park & Rides, Structured	22%	22%	0.89	4.94	20%	0.54	2.47	20%	0.25	1.29	20%	0.25	1.29	20%	0.25	1.29	20%	20%	20%	20%	20%	20%
Drainage, Utilities, Mitigation, Landscape, MOT	50%	50%	2.46	11.22	50%	1.23	5.61	50%	0.57	2.94	50%	0.57	2.94	50%	0.57	2.94	50%	50%	50%	50%	50%	50%

Last updated 08/09

Central Ave	Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT		
	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High
<b>BRT - Traffic Priority (mi)</b>	8.5	\$ 21.3	\$ 42.7																		
Stations - Regional Bus	6.0	\$ 1.8	\$ 12.0																		
Ped & Non-Motorized Access to Stations	7%	\$ 0.1	\$ 0.8																		
Park & Rides, Structured	0.0	\$ -	\$ -																		
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 4.75	\$ 11.42																		
Design, Engineering, & Construction Mgmt.	22%	\$ 5.23	\$ 12.57																		
Long Range Planning Contingency - Construction	50%	\$ 11.88	\$ 28.96																		
<b>TOTAL</b>		\$ 45.8	\$ 109.7																		
<b>Fruitville Rd - St. Armands</b>																					
BRT - Traffic Priority (mi)	8.6	\$ 21.4	\$ 42.9																		
Stations - Regional Bus	6.0	\$ 1.8	\$ 12.0																		
Ped & Non-Motorized Access to Stations	7%	\$ 0.1	\$ 0.8																		
Park & Rides, Structured	0.0	\$ -	\$ -																		
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 4.75	\$ 11.42																		
Design, Engineering, & Construction Mgmt.	22%	\$ 5.23	\$ 12.57																		
Long Range Planning Contingency - Construction	50%	\$ 11.88	\$ 28.96																		
<b>TOTAL</b>		\$ 45.8	\$ 109.7																		
<b>SR 64</b>																					
BRT - Traffic Priority (mi)	17.0	\$ 42.5	\$ 85.0																		
Stations - Regional Bus	9.0	\$ 2.7	\$ 18.0																		
Ped & Non-Motorized Access to Stations	7%	\$ 0.2	\$ 1.3																		
Park & Rides, AI Grade	6.0	\$ 3.0	\$ 9.6																		
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 9.88	\$ 22.78																		
Design, Engineering, & Construction Mgmt.	22%	\$ 10.65	\$ 25.05																		
Long Range Planning Contingency - Construction	50%	\$ 24.20	\$ 58.94																		
<b>TOTAL</b>		\$ 92.9	\$ 218.7																		
<b>Tamiami Trail Sarasota to Bee Ridge</b>																					
BRT - Traffic Priority (mi)	3.3	\$ 8.3	\$ 16.5																		
Stations - Regional Bus	2.0	\$ 0.6	\$ 4.0																		
Ped & Non-Motorized Access to Stations	7%	\$ 0.1	\$ 0.5																		
Park & Rides, AI Grade	1.0	\$ 0.5	\$ 1.6																		
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 1.88	\$ 4.48																		
Design, Engineering, & Construction Mgmt.	22%	\$ 2.07	\$ 4.92																		
Long Range Planning Contingency - Construction	50%	\$ 4.70	\$ 11.19																		
<b>TOTAL</b>		\$ 16.0	\$ 42.0																		

1. Structures are for proposed managed lanes and all lanes parallel to the existing structures in each corridor. New grade-separated crossings are not yet identified.  
 2. No acquisition of Right of Way included for Central Business Districts of Clearwater, Sarasota, St. Petersburg, Tampa or Westshore (I-275 to Airport), where fixed guideways may be able to be accommodated in existing roadways but require detailed analysis of impacts and alternatives.  
 3. Freight rail corridor acquisition cost is based on Central Florida Commuter Rail Agreement which provides a freight easement to CSX for continued operations, and does not include the cost of liability insurance.



Capital Costs - Fleet  
Mid-Term Vision Network

Service	Mode	TOTAL (\$M)			Citrus			Hernando			Hillsborough			Manatee			Pasco			Pinellas			Polk			Sarasota		
		Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High
Vehicles - St. Pete to Bradenton	Express Bus	8	\$32	\$16.0																								
Vehicles - Palmetto to Bee Ridge	BRT	10	\$45	\$20.0																								
Vehicles - Bradenton to North Port Via Sarasota	BRT	14	\$56	\$28.0																								
Vehicles - Sarasota to Venice via Tamiami Trail	BRT	7	\$28	\$14.0																								
Vehicles - Tampa to Bradenton via I-75 & SR-64	BRT	15	\$60	\$30.0																								
Vehicles - Tampa to Sarasota via I-75 & Fruitville Rd.	BRT	15	\$60	\$30.0																								
Vehicles - Lakeland	Express Bus	9	\$32	\$16.0																								
Vehicles - McMullen Booth	Express Bus	8	\$32	\$16.0																								
Vehicles - U.S. 19 Pasco to Gateway	Express Bus	14	\$56	\$28.0																								
Vehicles - Citrus to Westshore	Express Bus	6	\$24	\$12.0																								
Vehicles - Port Richey to Wesley Chapel Service	Express Bus	5	\$20	\$10.0	1.65	\$0.66	\$3.30																					
Vehicles - Port Richey to SR 56 & Bruce B. Downs	Express Bus	4	\$16	\$8.0																								
Vehicles - Port Richey to Tampa via Westshore	Express Bus	8	\$32	\$16.0																								
Vehicles - Wesley Chapel to Westshore	Express Bus	6	\$24	\$12.0																								
Vehicles - Crystal River to Tampa via Westshore	Express Bus	6	\$24	\$12.0	1.23	\$0.49	\$2.46																					
Vehicles - Brooksville to Tampa via I-75	Express Bus	16	\$64	\$32.0																								
Vehicles - Brooksville to Westshore via SR 589	Express Bus	8	\$32	\$16.0																								
<b>TOTAL (\$M)</b>		<b>159</b>	<b>\$63.6</b>	<b>\$318.0</b>																								

Service	TOTAL (\$M)			Citrus			Hernando			Hillsborough			Manatee			Pasco			Pinellas			Polk			Sarasota			
	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	
Vehicles - St Petersburg to Wesley Chapel Service	53	\$151.0	\$209.3																									
Vehicles - Clearwater to Tampa via Gateway Service	34	\$96.9	\$134.3																									
Vehicles - Brandon to Linebaugh (NW Tampa)	37	\$105.5	\$146.2																									
Vehicles - Clearwater to St. Pete	22	\$62.7	\$86.9																									
Vehicles - Clearwater to USF	32	\$91.2	\$126.4																									
Rail Maintenance Facilities	4,449	\$133.46	\$444,867.5	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	
<b>TOTAL (\$M)</b>	<b>178</b>	<b>\$640.8</b>	<b>\$1,148.0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	

Notes:  
Allocation of vehicles to counties is based on the share of vehicle miles of service within each county.  
Bus maintenance facilities are included in Supporting Network capital costs.



**Capital Costs - Fleet**  
**Supporting Network**

**Mid-Term Capital Costs**

Last updated 4/17/09

	TOTAL (\$M)		Citrus		Hernando		Hillsborough		Manatee		Pasco		Pinellas		Polk		Sarasota	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
Bus Fleet	1412.4	\$ 379.6	1,354.0	\$ 1,354.0	16.8	\$ 4.2	13.6	\$ 13.6	16.8	\$ 4.2	13.6	16.8	\$ 4.2	13.6	16.8	\$ 4.2	13.6	16.8
Local Bus	1083.2	\$ 273.3	885.5	\$ 885.5	16.80	\$ 4.2	13.6	\$ 13.6	16.80	\$ 4.2	13.6	16.80	\$ 4.2	13.6	16.80	\$ 4.2	13.6	16.80
Express Bus	142.8	\$ 35.7	115.7	\$ 115.7		\$ -		\$ -		\$ -			\$ -		\$ -		\$ -	
BRT Bus	176.4	\$ 70.6	352.8	\$ 352.8		\$ -		\$ -		\$ -			\$ -		\$ -		\$ -	
Flex Routes (HART ONLY)	22.8	\$ 5.7	18.5	\$ 18.5		\$ -		\$ -		\$ -			\$ -		\$ -		\$ -	
Water Transit/Fleet	15	\$ 45.0	120.0	\$ 120.0		\$ -		\$ -		\$ -			\$ -		\$ -		\$ -	
Vanpool/Fleet	297	\$ 15.1	89	\$ 89	80	\$ 1.6	6.4	\$ 6.4	80	\$ 1.6	6.4	80	\$ 1.6	6.4	80	\$ 1.6	6.4	80
Stops - Shelters & Amenities	7788	\$ 621.4	2,330.0	\$ 2,330.0	80	\$ 6.4	24.0	\$ 24.0	80	\$ 6.4	24.0	80	\$ 6.4	24.0	80	\$ 6.4	24.0	80
Stops - Shelter & Way Access	7788	\$ 621.4	2,330.0	\$ 2,330.0	80	\$ 6.4	24.0	\$ 24.0	80	\$ 6.4	24.0	80	\$ 6.4	24.0	80	\$ 6.4	24.0	80
Bus Maintenance Facilities	18.0	\$ 750.0	1,093.0	\$ 1,093.0	1	\$ 40.0	60.0	\$ 60.0	1	\$ 40.0	60.0	1	\$ 40.0	60.0	1	\$ 40.0	60.0	1
Long Range Planning Contingency - Construction	50%	\$ 360.00	540.00	\$ 540.00	50%	\$ 20.0	30.0	\$ 30.0	50%	\$ 20.0	30.0	50%	\$ 20.0	30.0	50%	\$ 20.0	30.0	50%
Total - Bus Maintenance Facilities		\$ 1,080.0	1,620.0	\$ 1,620.0		\$ 60.0	90.0	\$ 90.0		\$ 60.0	90.0		\$ 60.0	90.0		\$ 60.0	90.0	

Fleet size is based on peak hour demand and a 20% spare ratio  
 Existing vehicles and maintenance facilities are assumed to be replaced during the approximately 30-year planning horizon.







Option Cost Estimates

Long-Term Vision Network

COUNTY SUMMARY

Table with columns: County, ROW - Land (sq ft), ROW - Right of Way (sq ft), Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, FDOT, Low, High, Total. Rows include managed lanes with express bus stations and various roadway projects across Florida counties.

Managed Lanes with Express Bus Service

Table with columns: ROW - Land (sq ft), ROW - Right of Way (sq ft), Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, FDOT, Low, High, Total. Rows include managed lanes on interstate highways and various roadway projects across Florida counties.



**Option Cost Estimates**

Largo-St. Petersburg	Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
Short Distance Rail not in Freight Corridor (mi)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Short Distance Rail in Freight Corridor (mi)	12.7	\$ 147.3	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Freight Corridor Acquisition (mi)	12.7	\$ 31.0	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
ROW - Parcel Acquisition Costs (parcel)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Bridges for Rail (mi)	0.1	\$ 6.3	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Stations - Short Distance Rail	7.0	\$ 7.5	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Ped & Non-Motorized Access to Stations	5.0	\$ 0.5	7%	\$ 17.5	7%	\$ 17.5	7%	\$ 17.5	7%	\$ 17.5	7%	\$ 17.5	7%	\$ 17.5	7%	\$ 17.5	7%	\$ 17.5	7%	\$ 17.5
Park & Rides, At Grade	6.0	\$ 2.5	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 32.8	20%	\$ 106.0	20%	\$ 106.0	20%	\$ 106.0	20%	\$ 106.0	20%	\$ 106.0	20%	\$ 106.0	20%	\$ 106.0	20%	\$ 106.0	20%	\$ 106.0
Design, Engineering, & Construction Mgmt.	22%	\$ 36.1	22%	\$ 116.6	22%	\$ 116.6	22%	\$ 116.6	22%	\$ 116.6	22%	\$ 116.6	22%	\$ 116.6	22%	\$ 116.6	22%	\$ 116.6	22%	\$ 116.6
Long Range Planning Contingency - ROW	50%	\$ 82.07	50%	\$ 265.00	50%	\$ 265.00	50%	\$ 265.00	50%	\$ 265.00	50%	\$ 265.00	50%	\$ 265.00	50%	\$ 265.00	50%	\$ 265.00	50%	\$ 265.00
Long Range Planning Contingency - Construction	0	\$ 297.1	0	\$ 1,111.6	0	\$ 1,111.6	0	\$ 1,111.6	0	\$ 1,111.6	0	\$ 1,111.6	0	\$ 1,111.6	0	\$ 1,111.6	0	\$ 1,111.6	0	\$ 1,111.6
AVG. PER MILE	0	\$ 27.3	0	\$ 327.3	0	\$ 327.3	0	\$ 327.3	0	\$ 327.3	0	\$ 327.3	0	\$ 327.3	0	\$ 327.3	0	\$ 327.3	0	\$ 327.3

**Short Distance Rail Service (Continued)**

Cleanwater-Westshore (Including TIA)	Total (\$M)		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
Short Distance Rail not in Freight Corridor (mi)	4.8	\$ 77.5	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Short Distance Rail in Freight Corridor (mi)	23.9	\$ 276.9	10.85	\$ 125.9	421.6	\$ 80.3	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Freight Corridor Acquisition (mi)	23.9	\$ 58.2	10.85	\$ 26.5	80.3	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
ROW - Land (sf)	10860.0	\$ 0.21	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
ROW - Parcel Acquisition Costs (parcel)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Bridges for Rail (mi)	5.9	\$ 247.5	3.39	\$ 143.2	221.9	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Tampa Airport Connection (Including Elevated LRT and	N/A	\$ 189.8	N/A	\$ 230.2	230.2	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Stations - Short Distance Rail	17.0	\$ 25.5	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Ped & Non-Motorized Access to Stations	7%	\$ 1.8	7%	\$ 1.1	2.5	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Park & Rides, At Grade	12.0	\$ 6.0	7	\$ 3.5	11.2	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 127.4	20%	\$ 71.3	182.6	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Design, Engineering, & Construction Mgmt.	22%	\$ 140.2	22%	\$ 78.5	178.9	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Long Range Planning Contingency - ROW	200%	\$ 0.6	200%	\$ 1.4	200%	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Long Range Planning Contingency - Construction	50%	\$ 318.59	50%	\$ 767.56	486.85	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
TOTAL	0	\$ 1,472.3	0	\$ 1,371.6	0	\$ 1,371.6	0	\$ 1,371.6	0	\$ 1,371.6	0	\$ 1,371.6	0	\$ 1,371.6	0	\$ 1,371.6
AVG. PER MILE	0	\$ 51.3	0	\$ 116.9	0	\$ 116.9	0	\$ 116.9	0	\$ 116.9	0	\$ 116.9	0	\$ 116.9	0	\$ 116.9

**Linebaugh-North Tampa**

Linebaugh-North Tampa	Total (\$M)		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
Short Distance Rail not in Freight Corridor (mi)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Short Distance Rail in Freight Corridor (mi)	8.7	\$ 21.2	8.70	\$ 100.9	338.1	\$ 64.4	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Freight Corridor Acquisition (mi)	8.7	\$ 21.2	8.70	\$ 21.2	64.4	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
ROW - Land (sf)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
ROW - Parcel Acquisition Costs (parcel)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Bridges for Rail (mi)	3.0	\$ 2.1	3.0	\$ 2.1	3.3	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Stations - Short Distance Rail	3.0	\$ 4.5	3.0	\$ 4.5	10.5	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Ped & Non-Motorized Access to Stations	7%	\$ 0.3	7%	\$ 0.3	0.7	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Park & Rides, At Grade	3.0	\$ 1.5	4.8	\$ 1.5	4.8	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 21.9	20%	\$ 71.6	182.6	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Design, Engineering, & Construction Mgmt.	22%	\$ 24.1	22%	\$ 24.1	71.6	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Long Range Planning Contingency - ROW	200%	\$ 0.6	200%	\$ 1.4	200%	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Long Range Planning Contingency - Construction	50%	\$ 54.67	50%	\$ 178.70	750.6	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
TOTAL	0	\$ 231.2	0	\$ 750.6	86.3	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
AVG. PER MILE	0	\$ 26.6	0	\$ 86.3	0	\$ 86.3	0	\$ 86.3	0	\$ 86.3	0	\$ 86.3	0	\$ 86.3	0	\$ 86.3

**Tampa-South Tampa**

Tampa-South Tampa	Total (\$M)		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
Short Distance Rail not in Freight Corridor (mi)	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Short Distance Rail in Freight Corridor (mi)	5.0	\$ 104.3	5.00	\$ 104.3	37.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Freight Corridor Acquisition (mi)	5.0	\$ 104.3	5.00	\$ 104.3	37.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
ROW - Land (sf)	48564.0	\$ 0.30	48564.0	\$ 0.30	1.85	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
ROW - Parcel Acquisition Costs (parcel)	0.5	\$ 0.5	0.7	\$ 0.5	0.7	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Bridges for Rail (mi)	0.5	\$ 21.1	0.5	\$ 21.1	32.7	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Stations - Short Distance Rail	6.0	\$ 9.0	6.0	\$ 9.0	21.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -	0.0	\$ -
Ped & Non-Motorized Access to Stations	7%	\$ 1.0	7%	\$ 1.0	3.2	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Park & Rides, At Grade	2.0	\$ 2.0	4.0	\$ 2.0	4.0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 18.4	20%	\$ 51.3	128.3	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Design, Engineering, & Construction Mgmt.	22%	\$ 20.2	22%	\$ 56.5	143.3	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Long Range Planning Contingency - ROW	200%	\$ 0.6	200%	\$ 1.4	200%	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Long Range Planning Contingency - Construction	50%	\$ 45.8	50%	\$ 138.3	537.5	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
TOTAL	0	\$ 38.2	0	\$ 107.5	107.5	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
AVG. PER MILE	0	\$ 38.2	0	\$ 107.5	107.5	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -

**Option Cost Estimates**

Short Distance Rail not in Freight Corridor (mi) Short Distance Rail in Freight Corridor (mi) Freight Corridor Acquisition (mi) ROW - Parcel Acquisition Costs (parcel) Bridges for Rail (mi) Stations - Short Distance Rail Park & Rides, A/C Grade Drainage, Utilities, Mitigation, Landscape, MOT Design, Engineering, & Construction Mgmt. Long Range Planning Contingency - ROW Long Range Planning Contingency - Construction	Citus County	Hernando County	Hillsborough County	Manatee County	Pasco County	Pinellas County	Polk County	Sarasota County		FDOT
								Count	Total (\$M)	
Count	0.0	0.0	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High	0.0	0.0	124.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	79.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	0.0	0.0	28.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High	0.0	0.0	28.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Count	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High	0.0	0.0	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	31.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Count	0.0	0.0	0.9	7.7	0.0	0.0	0.0	0.0	0.0	0.0
High	0.0	0.0	4.0	12.8	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	0.0	0.0	30.1	20.0	20.0	20.0	20.0	20.0	20.0	20.0
High	0.0	0.0	84.9	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Low	0.0	0.0	104.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Count	0.0	0.0	75.30	237.37	50.0	50.0	50.0	50.0	50.0	50.0
High	0.0	0.0	316.0	237.37	237.37	237.37	237.37	237.37	237.37	237.37
Low	0.0	0.0	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3
Count	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	0.0	0.0	124.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVG. PER MILE	0.0	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	0.4	0.4	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
High	0.4	0.4	129.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Low	0.4	0.4	82.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Count	5940.0	0.14	0.42	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	9.0	13.5	31.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0
High	7.7	2.2	7.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	5.0	2.5	2.2	7.7	0.0	0.0	7.7	0.0	0.0	0.0
High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	2.0	14.0	42.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0
High	2.0	14.0	42.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	200%	0.8	1.2	200%	0.0	0.0	200%	0.0	0.0	0.0
High	200%	0.8	1.2	200%	0.0	0.0	200%	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	27.55	81.50	27.55	81.50	81.50	81.50	81.50	81.50	81.50	81.50
AVG. PER MILE	257.4	803.1	257.4	803.1	803.1	803.1	803.1	803.1	803.1	803.1
TOTAL	22.3	69.7	22.3	69.7	69.7	69.7	69.7	69.7	69.7	69.7
Count	2.5	110.9	338.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5
High	2.5	110.9	338.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	6.0	17.4	28.2	7.7	0.0	0.0	7.7	0.0	0.0	0.0
High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	4.0	1.2	2.0	4.0	0.0	0.0	4.0	0.0	0.0	0.0
High	4.0	1.2	2.0	4.0	0.0	0.0	4.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	20%	113.0	194.5	22%	0.0	0.0	20%	0.0	0.0	0.0
High	20%	113.0	194.5	22%	0.0	0.0	20%	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	59%	256.92	442.00	50%	0.0	0.0	50%	0.0	0.0	0.0
High	59%	256.92	442.00	50%	0.0	0.0	50%	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	1,097.4	2,033.6	1,097.4	2,033.6	2,033.6	2,033.6	2,033.6	2,033.6	2,033.6	2,033.6
AVG. PER MILE	124.1	44.7	124.1	44.7	44.7	44.7	44.7	44.7	44.7	44.7
Count	28.5	69.2	207.4	28.5	28.5	28.5	28.5	28.5	28.5	28.5
High	28.5	69.2	207.4	28.5	28.5	28.5	28.5	28.5	28.5	28.5
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	6.0	14.5	23.5	7.7	0.0	0.0	7.7	0.0	0.0	0.0
High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	4.0	2.0	6.4	4.0	0.0	0.0	4.0	0.0	0.0	0.0
High	4.0	2.0	6.4	4.0	0.0	0.0	4.0	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	20%	57.0	99.6	20%	0.0	0.0	20%	0.0	0.0	0.0
High	20%	57.0	99.6	22%	0.0	0.0	20%	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Count	59%	142.52	249.11	50%	0.0	0.0	50%	0.0	0.0	0.0
High	59%	142.52	249.11	50%	0.0	0.0	50%	0.0	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total (\$M)	616.8	1,167.4	616.8	1,167.4	1,167.4	1,167.4	1,167.4	1,167.4	1,167.4	1,167.4
AVG. PER MILE	216	41.0	216	41.0	41.0	41.0	41.0	41.0	41.0	41.0

Operation Cost Estimates  
Bradenton - Tampa

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).

Express Bus Service  
Suncoast Parkway (Crystal River)

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).

Brooksville to Inverness

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).

Sunshine Skyway

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).

Tamiami Trail - Sarasota to North Port

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).

US 19 - Port Richey to Gateway

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).

BRT - Mixed Traffic Service  
Bee Ridge Rd

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).

BRT - Traffic Priority (mi)

Table with columns for Corridor Name, Total (\$M), and 13 County Cost Breakdowns (Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota, Volusia).



**Central Cost Estimates**

Project Description	Total (\$M)		Citrus County		Hernando County		Hillsborough County		Manatee County		Pasco County		Pinellas County		Polk County		Sarasota County		FDOT	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
<b>Central Cost Estimates</b>																				
BRT - Traffic Priority (mi)	8.5	\$ 21.3	0	\$ 42.7	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Stations - Regional Bus	6.0	\$ 1.8	0	\$ 12.0	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Ped & Non-Motorized Access to Stations	7%	\$ 0.1	7%	\$ 0.8	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -
Park & Rides, Al Grade	0.0	\$ 0.3	0	\$ 0.8	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Park & Rides, Structured	0.0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 4.75	20%	\$ 11.42	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -
Design, Engineering, & Construction Mgmt.	22%	\$ 5.23	22%	\$ 12.57	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -
Long Range Planning Contingency - Construction	50%	\$ 11.88	50%	\$ 28.56	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -
<b>TOTAL</b>	<b>0</b>	<b>\$ 453.8</b>	<b>0</b>	<b>\$ 109.7</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>
<b>Fruitville Rd - St. Armands</b>																				
BRT - Traffic Priority (mi)	8.0	\$ 21.4	0	\$ 18.0	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Stations - Regional Bus	6.0	\$ 1.8	0	\$ 12.0	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Ped & Non-Motorized Access to Stations	7%	\$ 0.2	7%	\$ 1.3	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -
Park & Rides, Al Grade	5.0	\$ 2.5	0	\$ 8.0	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Park & Rides, Structured	1.0	\$ 2.0	0	\$ 4.0	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 5.77	20%	\$ 14.83	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -
Design, Engineering, & Construction Mgmt.	22%	\$ 14.4	22%	\$ 32.08	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -
Long Range Planning Contingency - Construction	50%	\$ 14.42	50%	\$ 37.08	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -
<b>TOTAL</b>	<b>0</b>	<b>\$ 55.4</b>	<b>0</b>	<b>\$ 142.4</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>
<b>SR 64</b>																				
BRT - Traffic Priority (mi)	17.0	\$ 42.5	0	\$ 85.0	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Stations - Regional Bus	6.0	\$ 2.7	0	\$ 18.0	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Ped & Non-Motorized Access to Stations	7%	\$ 0.2	7%	\$ 1.3	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -
Park & Rides, Al Grade	6.0	\$ 3.0	0	\$ 9.6	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Park & Rides, Structured	20%	\$ 9.68	20%	\$ 22.78	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	22%	\$ 10.65	22%	\$ 25.05	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -
Design, Engineering, & Construction Mgmt.	50%	\$ 24.20	50%	\$ 56.94	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -
Long Range Planning Contingency - Construction	0	\$ 92.9	0	\$ 218.7	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
<b>TOTAL</b>	<b>0</b>	<b>\$ 92.9</b>	<b>0</b>	<b>\$ 218.7</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>
<b>Tamiami Trail Sarasota to Bee Ridge</b>																				
BRT - Traffic Priority (mi)	8.3	\$ 8.3	0	\$ 16.5	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Stations - Regional Bus	3.3	\$ 0.0	0	\$ 0.3	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Ped & Non-Motorized Access to Stations	7%	\$ 0.0	7%	\$ 0.3	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -	7%	\$ -
Park & Rides, Al Grade	1.0	\$ 0.5	0	\$ 1.6	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Park & Rides, Structured	0.0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Drainage, Utilities, Mitigation, Landscape, MOT	20%	\$ 1.88	20%	\$ 4.48	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -	20%	\$ -
Design, Engineering, & Construction Mgmt.	22%	\$ 2.07	22%	\$ 4.92	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -	22%	\$ -
Long Range Planning Contingency - Construction	50%	\$ 18.0	50%	\$ 43.0	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -	50%	\$ -
<b>TOTAL</b>	<b>0</b>	<b>\$ 18.0</b>	<b>0</b>	<b>\$ 43.0</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>	<b>0</b>	<b>\$ -</b>

1. Structures are for proposed managed lanes and all lanes parallel to the existing structures in each corridor. New grade-separated crossings are not yet identified.  
2. No acquisition of Right of Way included for Central Business Districts of Clearwater, Sarasota, St. Petersburg, Tampa or Westshore (I-275 to Airport), where  
finned guideways may be able to be accommodated in existing roadways but require detailed analysis of impacts and alternatives.  
3. All values are based on Central Florida Commuter Rail Agreement which provides a freight easement to CSX for continued operations,  
and does not include the cost of liability insurance.



**Capital Costs - Fleet**  
**Long-Term Vision Network**

**Capital Costs - Fleet**

Service	Mode	Count	TOTAL (\$M)		Citrus		Hemando		Hillsborough		Manatee		Pasco		Pinellas		Polk		Sarasota		
			Low	High	Count	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High
Vehicles - St. Pete to Bradenton	Express Bus	8	\$3.2	\$16.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1.82	\$9.12	\$0.00	\$0.00	\$1.38	\$6.88	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Sarasota to Bee Ridge	BRT	5	\$2.0	\$10.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2.00	\$10.00	
Vehicles - Sarasota to North Port	BRT	10	\$4.0	\$20.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4.00	\$20.00	
Vehicles - Sarasota to North Port via Tamiami Trail	BRT	12	\$4.8	\$24.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4.80	\$24.00	
Vehicles - Tampa to Bradenton via I-75 & SR 64	BRT	15	\$6.0	\$30.0	\$0.00	\$0.00	\$0.00	\$0.00	8.01	\$3.20	\$16.02	\$13.98	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Tampa to Sarasota via I-75 & Fruitville Rd.	BRT	15	\$6.0	\$30.0	\$0.00	\$0.00	\$0.00	\$0.00	7.53	\$3.01	\$15.06	\$9.36	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Tampa to Lakeland	Express Bus	9	\$3.6	\$18.0	\$0.00	\$0.00	\$0.00	\$0.00	7.011	\$2.80	\$14.02	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1.12	\$5.58	
Vehicles - McMullen Booth	Express Bus	8	\$3.2	\$16.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - U.S. 19 Pasco to Gateway	Express Bus	14	\$5.6	\$28.0	\$0.00	\$0.00	\$0.00	\$0.00	1.446	\$0.58	\$2.89	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Citrus to Westshore	Express Bus	6	\$2.4	\$12.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Port Richey to Wesley Chapel Service	Express Bus	5	\$2.0	\$10.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Port Richey to Zephyrhills	Express Bus	8	\$3.2	\$16.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Wesley Chapel to Westshore	Express Bus	8	\$3.2	\$16.0	\$0.00	\$0.00	\$0.00	\$0.00	5.128	\$2.05	\$10.26	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Crystal River to Tampa via Westshore	Express Bus	6	\$2.4	\$12.0	\$0.00	\$0.00	\$0.00	\$0.00	3.252	\$1.30	\$6.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Inverness to Tampa via Westshore	Express Bus	4	\$1.6	\$8.0	\$0.00	\$0.00	\$0.00	\$0.00	1.866	\$0.75	\$3.73	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Brooksville to Tampa via I-75	Express Bus	16	\$6.4	\$32.0	\$0.00	\$0.00	\$0.00	\$0.00	7.136	\$2.85	\$14.27	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Brooksville to Westshore via SR 569	Express Bus	8	\$3.2	\$16.0	\$0.00	\$0.00	\$0.00	\$0.00	2.912	\$1.16	\$5.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Vehicles - Central Ave.	BRT	9	\$3.6	\$18.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
<b>TOTAL (\$M)</b>		<b>163</b>	<b>\$65.2</b>	<b>\$326.0</b>	<b>5,316</b>	<b>\$21.3</b>	<b>\$10.63</b>	<b>\$4.19</b>	<b>\$20.93</b>	<b>44,291</b>	<b>\$17.72</b>	<b>\$88.58</b>	<b>16,23</b>	<b>\$6.49</b>	<b>\$32.46</b>	<b>34,17</b>	<b>\$13.67</b>	<b>\$68.34</b>	<b>29,79</b>	<b>\$11.92</b>	<b>\$59.58</b>

**Short Distance Rail Fleet**

Service	Mode	Count	TOTAL (\$M)		Citrus		Hemando		Hillsborough		Manatee		Pasco		Pinellas		Polk		Sarasota	
			Low	High	Count	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low
Vehicles - Bradenton to Sarasota	Express Bus	20	\$7.0	\$79.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - St Petersburg to Wesley Chapel Service	Express Bus	53	\$151.0	\$209.3	\$0.00	\$0.00	\$0.00	\$0.00	30,316	\$6.4	\$119.7	\$55.2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Clearwater to Tampa via Gateway Service	Express Bus	34	\$96.9	\$134.3	\$0.00	\$0.00	\$0.00	\$0.00	11,798	\$33.6	\$46.6	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Brandon to Linebaugh (NW Tampa)	Express Bus	37	\$105.5	\$146.2	\$0.00	\$0.00	\$0.00	\$0.00	37	\$105.5	\$146.2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Tampa to South Tampa	Express Bus	12	\$34.2	\$47.4	\$0.00	\$0.00	\$0.00	\$0.00	12	\$34.2	\$47.4	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Clearwater to St. Pete	Express Bus	22	\$62.7	\$86.9	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Clearwater to USF	Express Bus	32	\$91.2	\$126.4	\$0.00	\$0.00	\$0.00	\$0.00	17,632	\$0.3	\$6.96	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Rail Maintenance Facilities		4,749	\$142.46	\$74.8675	0	\$0.00	0	\$0.00	2,7187	\$81.6	\$271.9	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<b>TOTAL (\$M)</b>		<b>190</b>	<b>\$684.0</b>	<b>\$1,225.4</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>106,75</b>	<b>\$259.7</b>	<b>\$359.9</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>\$0.00</b>

**Long Distance Rail Fleet**

Service	Mode	Count	TOTAL (\$M)		Citrus		Hemando		Hillsborough		Manatee		Pasco		Pinellas		Polk		Sarasota	
			Low	High	Count	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low	High	Count	Low
Vehicles - Tampa to Bradenton	Express Bus	20	\$75.4	\$170.0	\$0.00	\$0.00	\$0.00	\$0.00	14,64	\$5.2	\$24.4	\$45.6	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - SR 674 to Tampa	Express Bus	15	\$56.6	\$127.5	\$0.00	\$0.00	\$0.00	\$0.00	15	\$56.6	\$127.5	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Lakeland to Tampa	Express Bus	17	\$64.1	\$144.5	\$0.00	\$0.00	\$0.00	\$0.00	13,889	\$52.4	\$118.1	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Plant City to Tampa	Express Bus	12	\$45.2	\$102.0	\$0.00	\$0.00	\$0.00	\$0.00	12	\$45.2	\$102.0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - Brooksville to Tampa	Express Bus	22	\$82.9	\$187.0	\$0.00	\$0.00	\$0.00	\$0.00	10	\$36.2	\$81.7	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles - SR 54 to Tampa	Express Bus	14,06	\$53.0	\$119.5	\$0.00	\$0.00	\$0.00	\$0.00	12	\$45.5	\$102.5	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Rail Maintenance Facilities		2,001	\$60.0	\$200.1	0	\$0.00	0	\$0.00	0.063	\$2.8	\$9.3	\$0.107	\$3.2	\$10.7	\$0.58	\$19.5	\$0.0622	\$1.9	\$6.2	\$0.00
<b>TOTAL (\$M)</b>		<b>100.1</b>	<b>\$437.3</b>	<b>\$1,050.7</b>	<b>0</b>	<b>\$0.00</b>	<b>0</b>	<b>\$0.00</b>	<b>77,205</b>	<b>\$337.4</b>	<b>\$810.7</b>	<b>5.36</b>	<b>\$23.4</b>	<b>\$56.3</b>	<b>9,728</b>	<b>\$42.5</b>	<b>\$102.1</b>	<b>3,111</b>	<b>\$13.6</b>	<b>\$32.7</b>

Notes  
Allocation of vehicles to counties is based on the share of vehicle miles of service within each county.  
Bus maintenance facilities are included in Supporting Network capital costs.



**Capital Costs - Fleet**  
**Supporting Network**

Mid-Term Capital Costs

Last updated 1/28/09

	TOTAL (\$M)		Citrus		Hernando		Hillsborough		Manatee		Pasco		Pinellas		Polk		Sarasota	
	Count	Low	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High	Count	High
Bus Fleet	1906.8	\$ 510.0	\$ 1,808.7															
Local Bus	1500	\$ 375.0	\$ 1,215.0	20.4	\$ 5.1	\$ 16.5	44.4	\$ 11.1	\$ 36.0	103.2	\$ 25.8	\$ 83.6	194.4	\$ 48.6	\$ 157.5	576	\$ 169.4	\$ 667.9
Express Bus	184.8	\$ 46.2	\$ 149.7				44.4	\$ 11.1	\$ 36.0	98.4	\$ 24.6	\$ 79.7	194.4	\$ 48.6	\$ 157.5	381.6	\$ 95.4	\$ 305.1
BRT Bus	222	\$ 88.8	\$ 444.0							4.80	\$ 1.2	\$ 3.9				25.2	\$ 6.3	\$ 20.4
Flex Routes (HART ONLY)	22.8	\$ 5.7	\$ 18.5													168.2	\$ 67.7	\$ 338.4
Water Transit/Fleet	12	\$ 36.0	\$ 96.0							2	\$ 6.0	\$ 16.0				5	\$ 15.0	\$ 40.0
Vanpools/Fleet	400	\$ 19.6	\$ 62.0															
Stops - Shelters & Amenities	7768	\$ 621.4	\$ 2,330.4	80	\$ 1.6	\$ 6.4	604	\$ 12.1	\$ 48.3	368	\$ 7.4	\$ 29.4	413	\$ 8.3	\$ 33.0	2987	\$ 53.7	\$ 215.0
Stops - Shelter & Way Access	7768	\$ 621.4	\$ 2,330.4	80	\$ 6.4	\$ 24.0	604	\$ 48.3	\$ 189.2	368	\$ 29.4	\$ 110.4	413	\$ 33.0	\$ 123.9	2987	\$ 215.0	\$ 805.1
Bus Maintenance Facilities	20	\$ 800.0	\$ 1,200.0	1	\$ 40.0	\$ 60.0	1	\$ 20.0	\$ 30.0	4.0	\$ 80.0	\$ 120.0	2	\$ 80.0	\$ 120.0	4	\$ 160.0	\$ 240.0
Long Range Planning Contingency - Construction	50%	\$ 400.0	\$ 600.0	50%	\$ 20.0	\$ 30.0	50%	\$ 20.0	\$ 30.0	50%	\$ 60.0	\$ 90.0	50%	\$ 40.0	\$ 60.0	50%	\$ 80.0	\$ 120.0
Total - Bus Maintenance Facilities		\$ 1,200.0	\$ 1,800.0		\$ 60.0	\$ 90.0		\$ 60.0	\$ 90.0		\$ 180.0	\$ 270.0		\$ 120.0	\$ 180.0		\$ 240.0	\$ 360.0

Fleet size is based on peak hour demand and a 20% spare ratio  
 Existing vehicles and maintenance facilities are assumed to be replaced during the approximately 30-year planning horizon.



Long-Term Vision: Summary of Capital Cost Estimates

Mode Element (FTA Cost Category)	County						Hillsborough	Manatee	Pasco	Pinellas	Polk	Sarasota	FOOT
	Combined Total	Low (\$M)	High (\$M)	Low (\$M)	High (\$M)	Low (\$M)							
<b>Express Buses on Managed Lanes</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Short Distance Rail</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Long Distance Rail</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Express Buses in Mixed Traffic</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>BRT in Mixed Traffic</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Vehicle Costs (70)</b>													
Express Bus/BRT Vehicles (Not Incl. Maintenance Facilities)													
Short Distance Rail (Incl. Maintenance Facilities)													
Long Distance Rail (Incl. Maintenance Facilities)													
<b>Total (\$M)</b>													
<b>Regional Network Capital Cost Estimate (\$M)</b>													
<b>Supporting Network</b>													
Vehicle Cost (70)													
Stations & Construction Costs (20.30)													
Maintenance Facilities Costs													
<b>Total (\$M)</b>													
<b>Combined Regional &amp; Supporting Network Capital Cost Estimate (\$M)</b>													

NOTE: 1) Liability insurance in CSX corridors not included  
 2) Mode Construction Costs includes: 1) Drainage, Utilities, Mitigation, Landscape, MOT contingencies, 2) Design, Engineering, & Construction (Mgmt. soft costs), 3) Freight Corridor Acquisition, & 4) Long Range Planning Contingencies  
 3) Stations & Facilities Cost includes: Ped & Non-Motorized Access and Parking Facility soft costs  
 4) Right-of-Way Costs include Parcel Acquisition Costs & Long Range Planning Contingencies  
 5) Express Buses Operating in Mixed Traffic were assumed not have any associated mode/structures costs or ROW costs other than those associated with providing traffic priority and station placement  
 6) BRT in Mixed Traffic were assumed not have any associated ROW costs other than those associated with providing traffic priority and station placement

Long-Term Vision: Summary of Annual Operation & Maintenance Cost Estimates

Mode Element (FTA Cost Category)	County						Hillsborough	Manatee	Pasco	Pinellas	Polk	Sarasota	FOOT
	Total	Low (\$M)	High (\$M)	Low (\$M)	High (\$M)	Low (\$M)							
<b>Express Bus/Buses</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Short Distance Rail</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Long Distance Rail</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Express Buses in Mixed Traffic</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>BRT in Mixed Traffic</b>													
Mode Construction Costs (10.40.50)													
Stations & Facilities Cost (20.30)													
Structures Cost													
Right-of-Way Cost (60)													
<b>Total (\$M)</b>													
<b>Vehicle Costs (70)</b>													
Express Bus/BRT Vehicles (Not Incl. Maintenance Facilities)													
Short Distance Rail (Incl. Maintenance Facilities)													
Long Distance Rail (Incl. Maintenance Facilities)													
<b>Total (\$M)</b>													
<b>Regional Network Operation &amp; Maintenance Cost Estimate (\$M)</b>													
<b>Supporting Network</b>													
Vehicle Cost (70)													
Stations & Construction Costs (20.30)													
Maintenance Facilities Costs													
<b>Total (\$M)</b>													
<b>Combined Regional &amp; Supporting Network Operation &amp; Maintenance Cost Estimate (\$M)</b>													



**Sample Types of Improvements Using Long Range Estimating Cost**  
**Cost in thousands of dollars per mile (FDOT 2/1/11)**

Type of Improvement	Construction	Design (15%)	CEI (15%)	Total Cost
<b>RURAL</b>				
New Construction Extra Cost for 1 Single Additional Lane on Rural Interstate	\$565.8	\$84.9	\$84.9	\$735.5
Mill + Resurface 1 Additional Lane Rural Interstate	\$286.3	\$42.9	\$42.9	\$372.2
<b>SUBURBAN</b>				
New construction 4-lane roadway with paved shoulder outside and curb median	\$3,737.3	\$560.6	\$560.6	\$4,858.5
Widen existing rural facility to median with addition of closed drainage system and median barrier wall	\$2,845.8	\$426.9	\$426.9	\$3,699.5
Widen 4-lane roadway to 6-lane with 5 foot paved shoulder, Bike Lanes, curb and gutter	\$2,386.9	\$358.0	\$358.0	\$3,103.0
<b>URBAN</b>				
New construction 2-lane undivided arterial with 4' Bike Lanes	\$4,255.3	\$638.3	\$638.3	\$5,531.9
New Construction 2-lane Urban Road with 22' Median and 4' Bike Lanes	\$6,118.8	\$917.8	\$917.8	\$7,954.5
Mill + Resurface 2-lane Urban Road with 4' Bike Lanes	\$593.8	\$89.1	\$89.1	\$771.9
Mill + Resurface 1 Additional Lane Urban Arterial	\$239.7	\$35.9	\$35.9	\$311.6
<b>BICYCLE AND PEDESTRIAN (per mile)</b>				
5' Sidewalks on one side	\$164.8	\$24.7	\$24.7	\$214.2
6' Sidewalks on one side	\$197.8	\$29.7	\$29.7	\$257.1
12' Multi-use Trail on one side	\$225.6	\$33.8	\$33.8	\$293.3
<b>TRAFFIC SIGNALS (per intersection)</b>				
2-lane roadway intersecting 2-lane roadway	\$222.1	\$33.3	\$33.3	\$288.8
4-lane roadway intersecting 4-lane roadway	\$248.9	\$37.3	\$37.3	\$323.6
6-lane roadway intersecting 6-lane roadway	\$313.2	\$47.0	\$47.0	\$407.1
<b>STORMWATER RETENTION (per 1-acre pond)</b>				
1-acre pond site (6' depth)	\$593.0	\$89.0	\$89.0	\$770.9

\*A 15% MOT factor used for traffic signals, median retrofit, cross street improvements; 10% for roadways; 5% all others.

Source: Florida Department of Transportation