

MOBILITY ASSESSMENT

ABOUT THE SPACE COAST TPO

The 2035 Long Range Transportation Plan (LRTP) will guide the Space Coast Transportation Planning Organization (TPO) in implementing its transportation project priorities over the next 20 years. The Cost Feasible Element of the plan represents major updates to the 2025 Long Range Transportation Plan adopted on November 10th, 2005.

TPO Mission Statement

The mission statement for the Space Coast TPO, which guides the development of all plans, projects, and investment decisions, reads as follows:

To provide Space Coast local governments, agencies and citizens a forum for cooperative intermodal transportation decision making to assure excellence in mobility and safety.

ABOUT THE LRTP

In accordance with federal regulations, the Space Coast Transportation Planning Organization (TPO) updates its long-range transportation plan every five years. The LRTP provides a long range analysis of transportation system performance issues, anticipated resources, and a range of realistic, cost feasible strategies to address identified needs.

The LRTP includes a list of key transportation investments that the TPO intends to support within the constraints of anticipated funds, which is called the “**Cost Feasible**” (or “financially constrained”) Plan. The LRTP also includes a list of projects that may be needed but that cannot be supported within the constraints of anticipated resources, known as the “**Needs Plan.**” If additional resources become available, the TPO will evaluate the possibility of adding a Needs Plan project to the adopted Cost Feasible Plan.

L RTP PLANNING FACTORS

The LRTP is required by Federal regulations (SAFETEA-LU) to reflect consideration of the following eight planning areas:

- Support the economic vitality of the region by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operations; and
- Emphasize preservation of the existing transportation system.

GOALS, OBJECTIVES, PERFORMANCE MEASURES AND TARGETS (GOMTs)

The overarching mission for the Space Coast TPO is as follows: Develop and maintain a balanced multimodal transportation system in Brevard County that promotes economic development through mobility and accessibility for all users, enhances the safety and security of the system with a greater emphasis on the management and operations of transportation system.

The LRTP goals, objectives, performance measures and targets (GOMTs) provide the framework that guides the TPO in the process of achieving its mission through plans, programs, and project prioritization.

Goals describe future desired outcomes. Objectives define the actions necessary to move the TPO closer to achieving its goals. The objectives include clearly articulated measures and quantifiable targets (also called thresholds or benchmarks) that define the standards by which progress toward the goals will be evaluated.

The GOMTs are reviewed and refined during each update of the LRTP. They evolve over time to reflect changes in socio-economic conditions, policies, directives, growth patterns, and technology at local, regional, state and federal levels. They reflect the TPO's ongoing coordination with local, regional and statewide planning priorities as identified in local plans and State priorities such as the Strategic Intermodal System (SIS), and Highway Safety Plan. For example, recent and current planning initiatives, including the 2035 LRTP, reflect

the changing focus of the Space Coast TPO to place a greater emphasis on the efficiency and accessibility of the entire transportation system (not just roads) and on congestion solutions that rely less heavily on costly capacity expansions.

For the 2035 LRTP, the TPO has developed performance-based measures and targets to evaluate progress not only during each five-year LRTP update cycle, but every year as part of the ongoing congestion management process. The GOMTs developed for the long-range plan are closely linked to one of the Space Coast TPO's primary planning efforts, the Annual State of the System (SOS) Report. The SOS provides the critical data necessary to track trends and measure progress toward many of the LRTP goals and objectives.



By establishing a relationship between the LRTP goals, objectives and performance measures and the annual State of the System report, the TPO has a means by which to check on progress toward LRTP goals every year. On a related note, this linkage also helps the TPO meet federal requirements for an ongoing Congestions Management Process (CMP).

2035 LRTP Goals and Objectives

The following list presents the overall goals and objectives for the 2035 LRTP. The measures and targets associated with the goals and objectives are summarized in the individual elements of the plan as described in the 2035 Transportation Plan section.

Goal 1 - Improve economic vitality through better access and intermodal connectivity for people and goods

- 1.1 Enhance accessibility to regional economic generators and SIS / Emerging SIS hubs (seaport, airport and spaceport)
- 1.2 Improve extent and continuity of modal networks
- 1.3 Increase number of transportation choices
- 1.4 Maintain the connectivity of intermodal hubs (seaport, airport, spaceport, transit and rail stations)

Goal 2 - Improve the safety and security of the transportation system;

- 2.1 Reduce crashes and fatalities by 10 percent for each priority crash type by 2035;
- 2.2 Improve crash response and clearance times by 10 percent for each priority crash type;
- 2.3 Increase the number of roadway miles under surveillance by 50 percent;
- 2.4 Increase the number of pedestrian and bicycle events held annually;
- 2.5 Increase the percentage of surveyed parents who believe their child is safe walking or biking to school;

- 2.6 Improve the safety and security of the transit system;
- 2.7 Improve the ability to evacuate during an emergency event by reducing clearance times and increased capacity during evacuations;

Goal 3 - Improve mobility through effective management and operations of the transportation system;

- 3.1 Reduce system wide delay for cars, truck and transit;
- 3.2 Reduce corridor delay for cars, trucks and transit with real time traffic management;
- 3.3 Improve reliability and predictability of travel;
- 3.4 Improve real time transit management;
- 3.5 Improve real time traffic and transit information;

Goal 4 - Improve sustainability and livability;

- 4.1 Reduce greenhouse gas emissions;
- 4.2 Improve street livability by providing more than one modal option; and
- 4.3 Minimize adverse environment and community impacts.

The **Table 7** illustrates how each goal statement addresses the SAFETEA-LU Planning factors and other considerations:

Table 6: LRTP Goals and Federally Required Planning Factors

| Planning Factors | Goal 1.0 | Goal 2.0 | Goal 3.0 | Goal 4.0 |
|---------------------------|----------|----------|----------|----------|
| Support Economic vitality | | | | |
| Increase safety | | | | |
| Increase security | | | | |
| Increase accessibility | | | | |
| Protect environment | | | | |
| Save energy | | | | |
| Improve quality of life | | | | |
| Enhance connectivity | | | | |
| Promote efficient M&O | | | | |
| Preserve existing system | | | | |

Addressed
 Partially Addressed
 Not Addressed

COMMUNITY ENGAGEMENT

A team of TPO staff and consultants developed the 2035 plan in coordination with a technical advisory committee of staff from local, regional and state agencies; citizen advisors; the general public; and local decision-makers. Working together, the study team and the community developed and assessed anticipated transportation needs, weighed alternative transportation improvement strategies, and identified transportation investment priorities. The public's ideas and input provided direction to the team in developing plan goals, objectives, and investment priorities.

The team organized the community engagement process around the goal of bringing the plan out to the public, instead of requiring people to make special trips and take time out of their schedules in order to share their ideas and concerns. For example, TPO staff and the consultant team displayed maps and administered surveys at public libraries, senior centers, farmers markets and the Mall (during Christmas).

In addition, two rounds of community workshops were conducted at key phases of the Long Range Planning process: Needs Development and Project Priorities. The Needs Plan workshops were held early in the planning process at the following locations:

- Workshop 1 – Dec 2, 2009, Cocoa Library
- Workshop 2 – Dec 5, 2009, Merritt Square Mall
- Workshop 3 – Jan 6, 2010, Titusville Library
- Workshop 4 – Jan 12, 2010, Palm Bay Library

The objective of the Needs Plan workshops was to elicit general ideas and opinions about what the future transportation network in Brevard County should look like and how it should function. For these workshops, the study team developed maps and information about congested roadways in 2035 and summaries of key projects in the previous Long Range Plan. At the open-house style meetings, members of the public wrote and drew their ideas on the maps and comment sheets.



Public outreach at Merritt Square Mall (December 5th, 2009).

Most of the public comments were focused on desired improvements for specific corridors and facilities that they felt should be considered in the LRTP process. In addition to providing the study team with specific ideas and information, the workshops also revealed some general shifts in public opinion. In

previous planning processes, the citizens of Brevard County tended to focus heavily on the need to reduce congestion by widening various roads. During the 2009 meetings, however, the team observed a growing number of comments and suggestions about lower-impact operational strategies and multi-modal networks improvements such as intersection improvements, expansion of transit opportunities to Orlando and completing regional greenways and trails.

The second series of workshops was held in the late spring of 2010 at the following locations:

- Workshop 1 – June 3, 2010 Palm Bay Senior Center
- Workshop 2 – June 3, 2010 Brevard Farmers Market
- Workshop 3 – June 7, 2010 Titusville Library

These “Project Priorities” workshops elicited public preferences and priorities for allocating transportation funds. Through interactive exercises and conversations, the study team asked workshop participants about the types and locations of transportation improvements they would like to see funded with the limited amount of available money.

When asked how the TPO should allocate funds to general types of

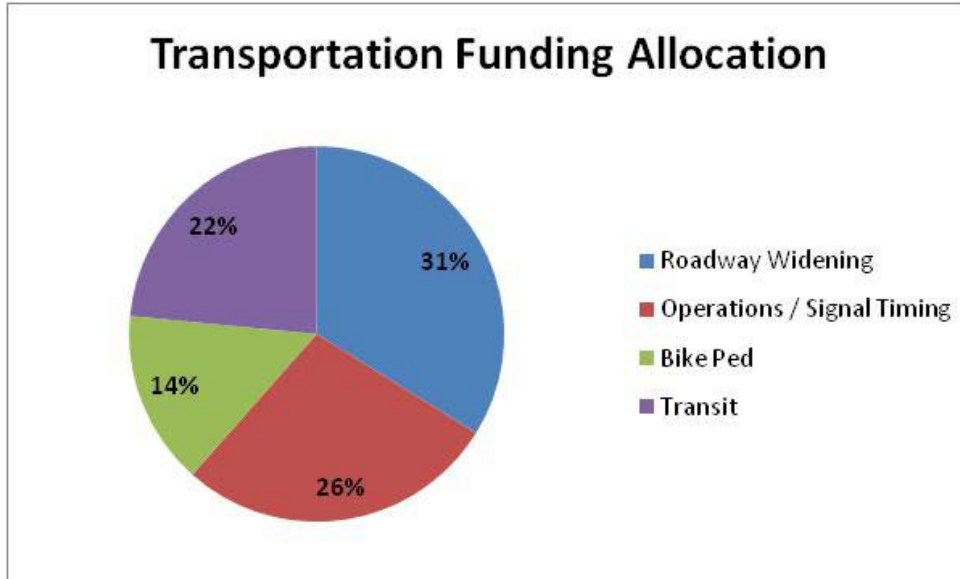
projects (Roadway Widening, Operations / Signal Timing, Transit, and Bicycle / Pedestrian), workshop

attendees expressed a collective opinion that about a third of the funds should go toward roadway expansion. They felt that transit investments should be allocated about a quarter of all transportation funds, followed by operational improvements and bicycle /pedestrian projects. Again, the study team took note of the general increase, compared to previous planning processes, in public preferences for multi-modal and operational investments.



Public workshop at Wickham Park Farmers Market on June 3rd, 2010.

Figure 5: Public Opinions on Transportation Funding Priorities



When asked about priorities for specific improvements, workshop participants focused on the following key projects.

Roadway Priorities:

- St. Johns Heritage Parkway
- Garden Street
- North Courtenay

Operation / ITS Priorities

- SR 405
- Courtenay

Transit Priorities

- Grissom Road
- SR 50 Express

Bike / Pedestrian Priorities

- Showcase Trails
- Bicycle and Sidewalk Gaps



SOCIO-ECONOMIC CONDITIONS AND TRENDS

The Florida Department of Transportation developed 2005 and 2035 socio-economic data for use in the travel demand model. The development of this data can be found in the Technical Appendix - FDOT Model Validation Report and FLUAM LRTP SE data documentation. The FLUAM (Future Land Use Allocation Model) uses the future land use elements from adopted Comprehensive Plans from the County and each municipality to allocate the population projections developed by the state. Population and employment projections by Traffic Analysis Zone (TAZ) were reviewed by the advisory committees and adjusted in Titusville and Palm Bay to reflect current planning efforts.

In addition, the Space Coast TPO has been tracking socio-economic trends in Brevard County against transportation conditions for the past decade as part of the State of the System report. The information from these reports, summarized below, provides a deeper level of insight into the relationship between socio-economic and travel demand issues.

Key issues from this analysis include the following points:

- Congestion is an important issue, but it is generally limited to peak hour periods along a few major corridors as opposed to occurring throughout the entire region at all times. An assessment of current conditions indicates that a little more than six percent of the total network is heavily congested at some point every day. About twelve percent of the total vehicle hours traveled on the network is spent on corridors with delayed conditions, most of which are concentrated on a few of the SIS and regional facilities.
- There is very little diversity of travel modes within the region. Almost everyone drives for most or all of their trips in the Space Coast region. Less than one percent of all trips made are by transit, walking or bicycling.
- Despite the current economic slowdown, the region is expected to continue growing during the coming decades, especially in southern Brevard County. With a growth rate of about 7,000 people per year, some 220,000 additional people are expected to be living in the region by the year 2035. This 40% increase will bring the total population to more than 770,000.
- Similarly, the region is expected to add 100,000 jobs by the year 2035, at a rate of more than 4,000 jobs per year. This 26% increase will bring the total number of jobs to almost 386,000.

Population Trends

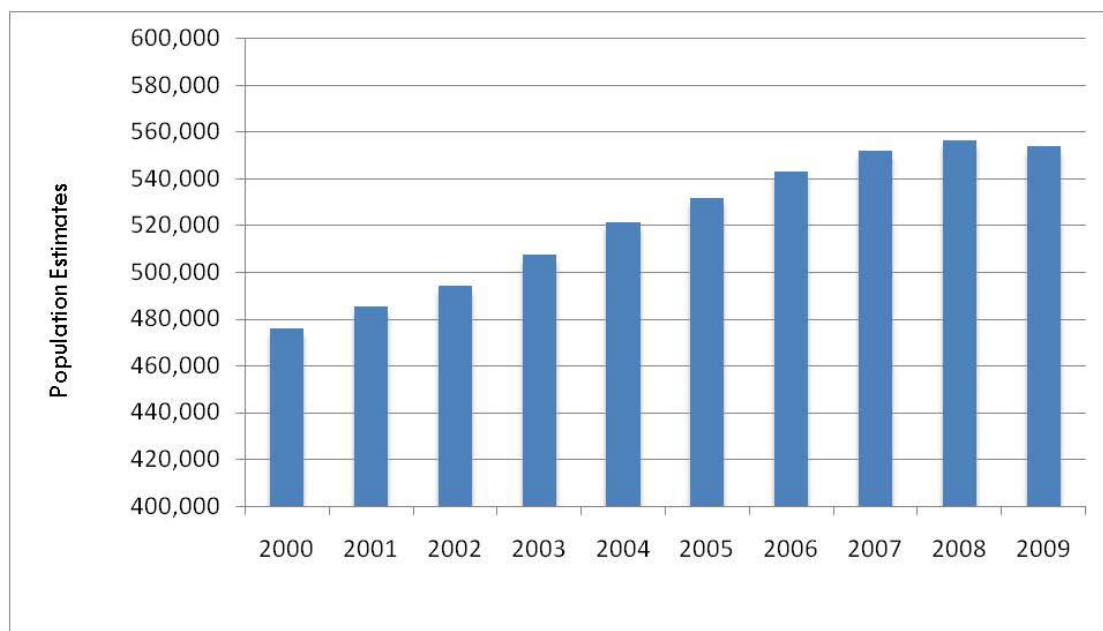
Brevard County and its municipalities experienced a strong growth rate between 2000 and 2007 with an increase of over 75,000 people during that time frame. However, with the downturn in the economy, as seen in **Figure 6** growth slowed in 2008 and the County lost population between 2008 and 2009.

However, even with the current slowdown in the economy, the Bureau of Economic and Business Research (BEBR) at the University of Florida projects that Brevard County will grow more than 40% during the next 25 years to reach a total population of some 770,000 people (**Table 7**), but the Space Coast TPO has proposed a slower growth rate in the interim years than the State projected through the Bureau of Economic and Business Research.

Highlights of past and future population trends are as follows:

- Between 2000 and 2007 the County added 75,000 people at a rate of about 10,000-11,000 people per year;
- Between 2007 and 2009 growth slowed dramatically, to an increase of less than 1,000 people per year;
- From 2010 to 2035 the County is expected to increase by 216,000 people at a rate of about 7,000 people per year; and
- More than 50% of the population growth is expected to occur in the southern part of the County.

Figure 6: Historic Population Estimates



Source: 2009 Bureau of Economic and Business Research (BEBR) Statistical Abstract

Table 7: Projected Population

| | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|--|---------|---------|---------|---------|---------|---------|---------|
| Space Coast TPO Projections | 526,920 | 554,900 | 570,000 | 594,500 | 630,000 | 685,400 | 771,991 |
| State of Florida Projections (BEBR 2008) | 526,920 | 556,700 | 587,900 | 625,200 | 661,100 | 694,100 | 771,991 |

Source: FDOT / FLUAM with 2008 Bureau of Economic and Business Research (BEBR) Statistical Abstract – mid range population projections with adjustments to reflect local comprehensive plans.

Employment Trends

Employment trends in Brevard County have mirrored population trends. The number of jobs in the County increased by 24,000 during the 2000 – 2007 time frame, but has since lost nearly the same amount of jobs (**Figure 7**). The global economic downturn affected the construction and tourism industries in Brevard County. In addition, the pending retirement of the Space Shuttle program has forced NASA and supporting industries into a series of layoffs.

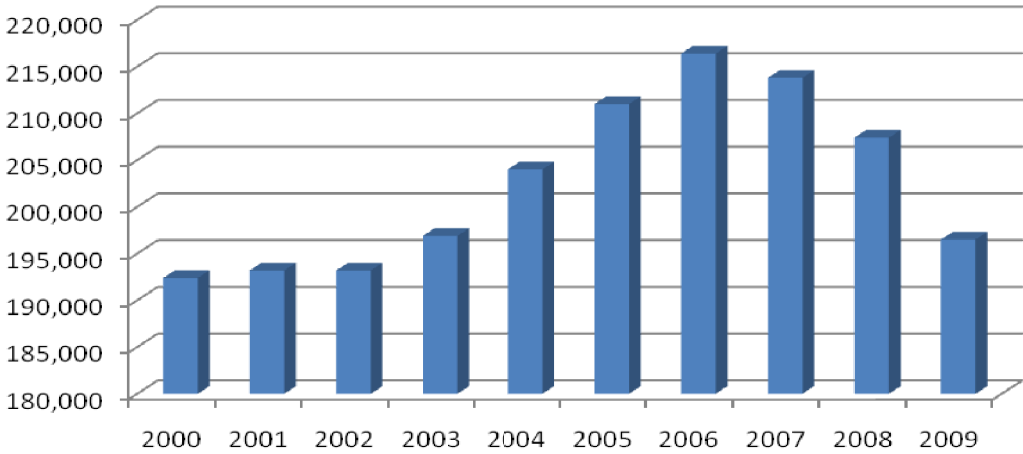
However, County employment forecasts prepared by FDOTs land use modeling consultant, Data Transfer Solutions (land use report found in appendix), indicate a turnaround of recent losses, with more than 90,000 additional jobs expected between 2010 and 2035. Though the Space Center has made layoffs because of the Space Shuttle retirement, future plans and economic development activities include more research facilities and commercial space activities. In addition, the City of Palm Bay is planning for more intense employment nodes within the city and adjacent to a new interchange located on I-95 in the South County.

Though the linear geography of the County creates longer trip lengths on average than the region, almost 95 percent of the population lives within 20 minutes of an employment hub in the County.

Highlights of employment trends include the following points:

- Between 2000 and 2006 the County’s employment increased by 24,000, a rate of about 4,000 jobs per year;
- From 2007 to 2009 the County lost nearly 20,000 jobs, a rate of some 6,000 jobs per year;
- From 2010 to 2035 the County is expected to add more than 90,000 jobs, returning to the rate of about 4,000 additional jobs per year; and
- More than 50% of the job growth is expected to occur in the southern part of the County.

Figure 7: Historic Employment Trends



Source: 2009 Bureau of Economic and Business Research (BEBR) Statistical Abstract

Table 8: Projected Employment

| | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Space Coast TPO Projections | 277,298 | 288,548 | 290,700 | 297,250 | 308,700 | 329,992 | 362,922 |
| State of Florida Projections | 277,298 | 290,500 | 307,000 | 320,567 | 334,120 | 347,628 | 362,922 |

Source: FDOT / FLUAM Model with adjustments from local governments– employment increase relative to population.

EXISTING AND PROJECTED TRANSPORTATION SYSTEM PERFORMANCE

The Space Coast TPO has monitored system trends and conditions annually through its State of the System (SOS) report for over a decade. The report provides the TPO a strong foundation for assessing mobility in the County under current and future transportation conditions to help establish transportation priorities in the near term.

Current Roadway Network Conditions and Trends

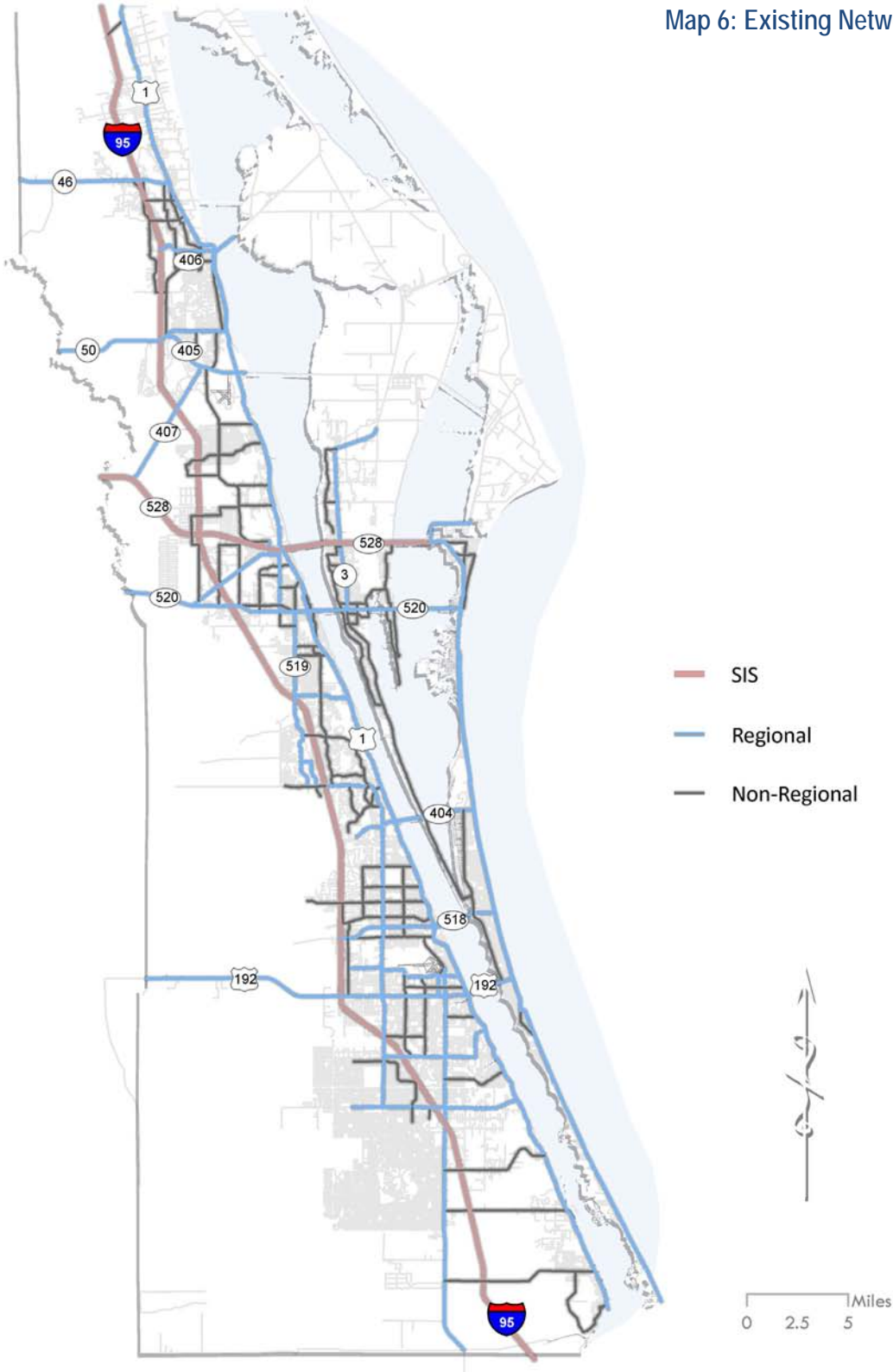
The performance evaluation of the roadway network is focused upon the following variables:

- Total daily vehicle trips and the number of trips per person;
- Vehicle Miles of Travel (VMT) and the miles of travel per trip;
- Vehicle Hours of Travel (VHT) and the hours of travel per trip;
- Vehicle Hours of Delay (VHD) and the delay per trip; and,
- The percentage of congested lane miles.

Map 6 presents the functionally classified roadway network as it existed in 2005, the base year for this Plan Update. The roadway network is organized into three major categories:

- State Strategic Intermodal System (SIS) – The SIS is a statewide network of high-priority transportation facilities defined by the FDOT. A large portion of federal and state funding sources are set-aside by FDOT to improve SIS facilities.
- Regionally Significant Roadway Network – The major arterial roadway network, defined by the TPO, provides inter-county access and connectivity between subareas. The TPO prioritizes the non-SIS federal and state funds for improvements to this network.
- Non-Regional Roads – The remaining functionally classified arterials and collectors providing access to and within a subarea. Improvements to these roads are primarily funded by local sources.

Map 6: Existing Network



Highlights of 2005 roadway conditions are as follows:

- There were more than 2 million trips made in the County on an average weekday, or nearly 4 trips per person.
- The average weekday VMT was nearly 6.4 million (12 miles per person), and the average length per trip was 3.2 miles.
- The average weekday VHT was over 735,000 (45 minutes per person), and the average trip time was 11 minutes.
- Nearly 92,000 of the 735,000 hours traveled (12.5 percent) were spent in delayed conditions due to congestion. People spent an average of five minutes per day sitting in traffic.
- Even though 12.5 percent of the total hours traveled were congested, only 6.1 percent of the network was congested, with nearly all the congestion occurring on the SIS and Regional Network.

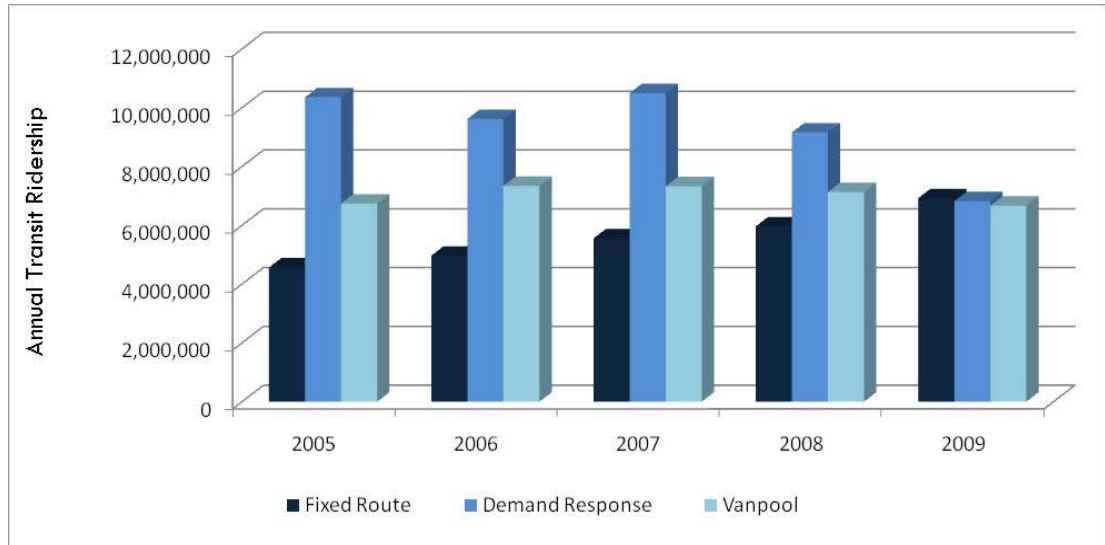
Current Transit Conditions and Trends

Space Coast Area Transit (SCAT) maintains and operates public transit service in Brevard County. As documented in annual State of the System reports, SCAT ridership has increased significantly over the past 10 years. SCAT has also successfully shifted much of its ridership from costly demand response ridership to fixed route service over the past 10 years. However, even with increased ridership, SCAT is facing serious revenue shortfalls and is working hard to continue operating the current transit system at current levels.

Highlights of current transit conditions are as follows:

- Annual transit ridership has more than doubled over the past 10 years;
- Fixed route ridership has increased by more than 300 percent since the year 2000, with a majority of that ridership shifting from demand response service; and
- Despite the impressive increase in ridership, weekday daily transit passenger miles amount to 400,000, less than one percent of the total weekday Countywide vehicle miles traveled.

Figure 8: Annual Transit Passenger Miles



Source: Space Coast Area Transit (SCAT) and the 2009 Space Coast TPO State of the System Report.

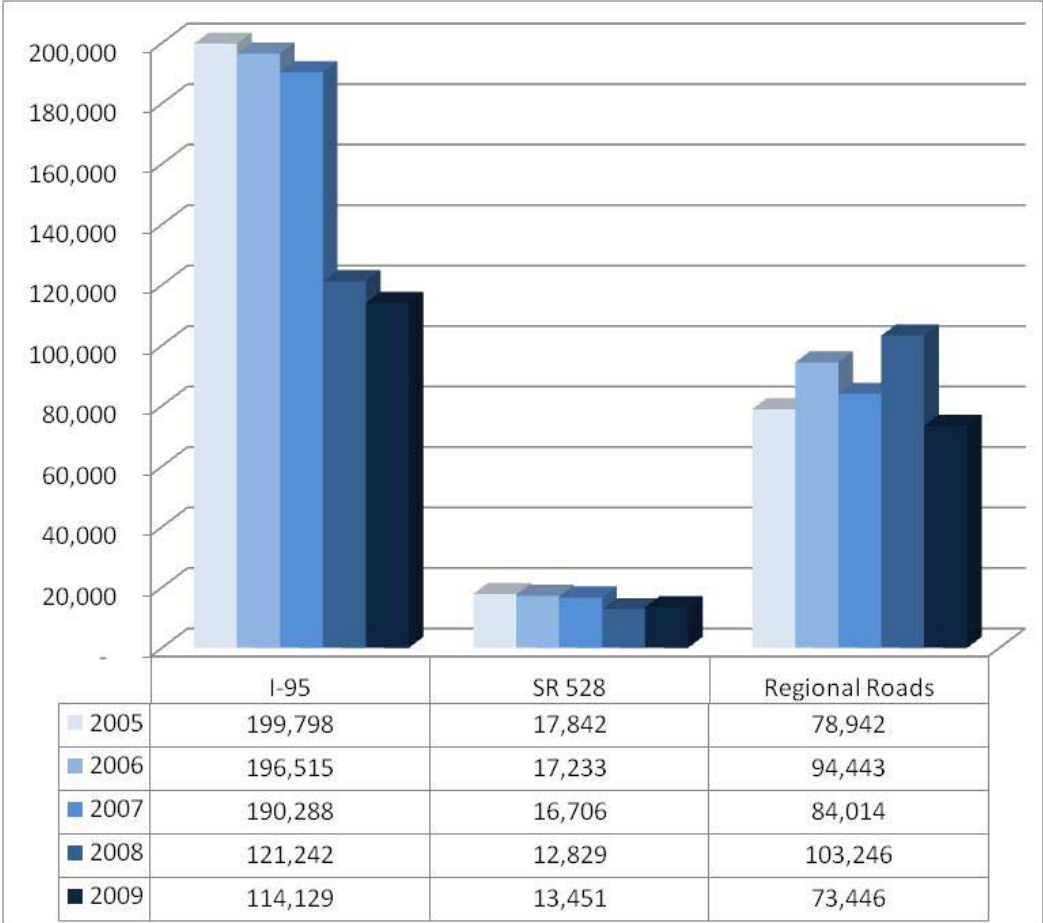
Freight and Goods

The free flow of freight and goods is essential to the County's economic vitality, particularly during the current economic downturn and the uncertainty over NASA's future in the County.

The County's primary freight hubs are Port Canaveral, the Florida East Coast (FEC) rail yard in Cocoa and the Melbourne International Airport. Each is located adjacent to a SIS facility. Freight movement occurs primarily on the SIS and the Regionally Significant Roadway Network. Shippers also use the Class II FEC rail line for products such as rock and stone aggregate, piggybacked intermodal services (United Parcel Service and commercial trailers), and automobiles.

Congestion levels on the Freight and Goods Movement Corridors are relatively minor with the network only six percent congested. Truck traffic has decreased over the past 5 years on the SIS network with the widening of I-95 to six lanes over the past 3 years.

Figure 9: Truck Traffic on SIS and Regional Roads



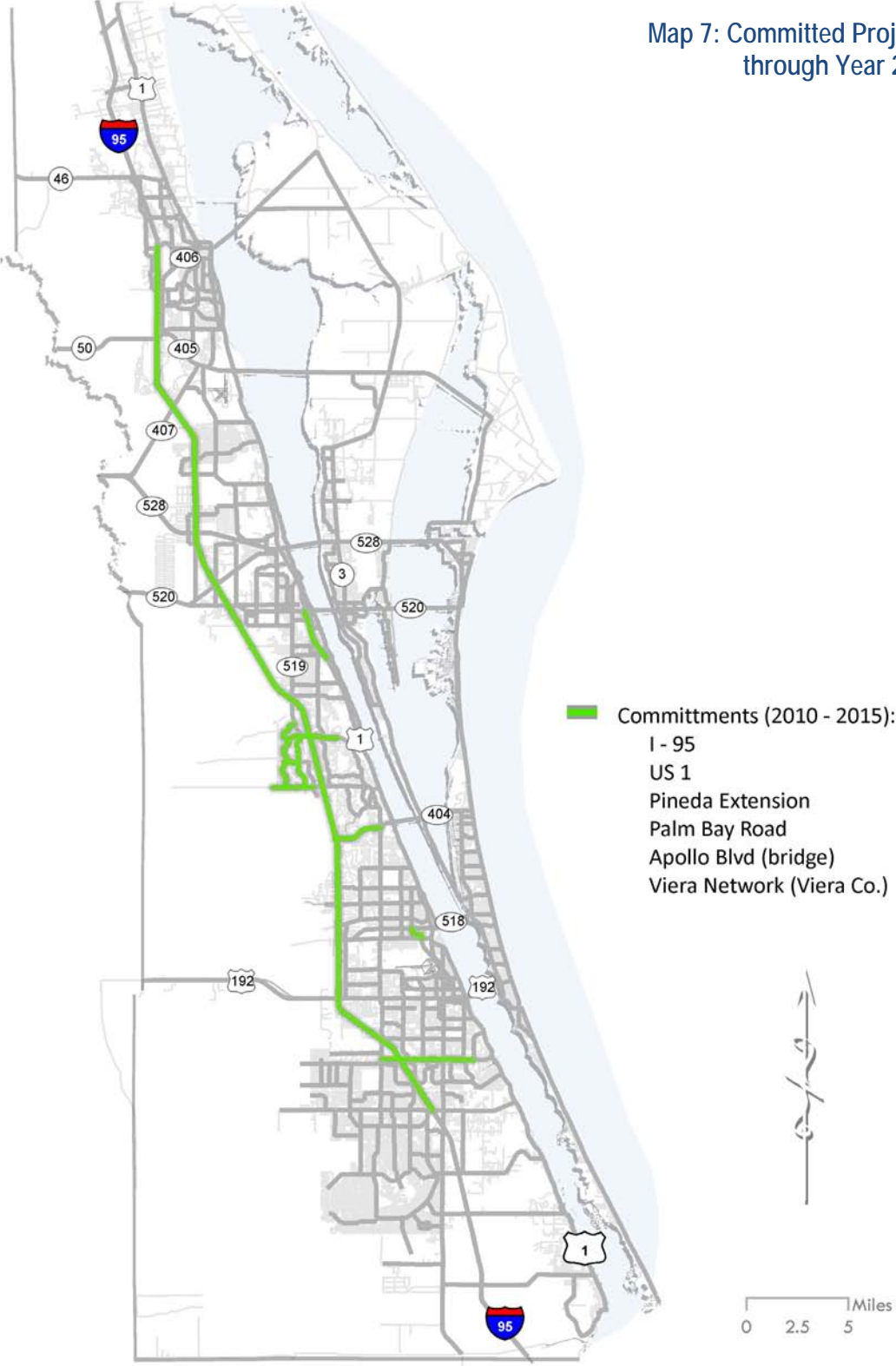
Source: 2009 Space Coast TPO State of the System Report.

Assessing Future Year System Performance

TPO Commitments

As documented in the Transportation Improvement Program, the TPO has committed funds through the year 2015 to certain projects. These projects, shown in **Map 7**, were incorporated into the “base case” transportation network for the purposes of modeling anticipated Year 2035 congestion levels and alternative congestion reduction strategies.

Map 7: Committed Projects through Year 2015



Anticipated Future Congestion Levels

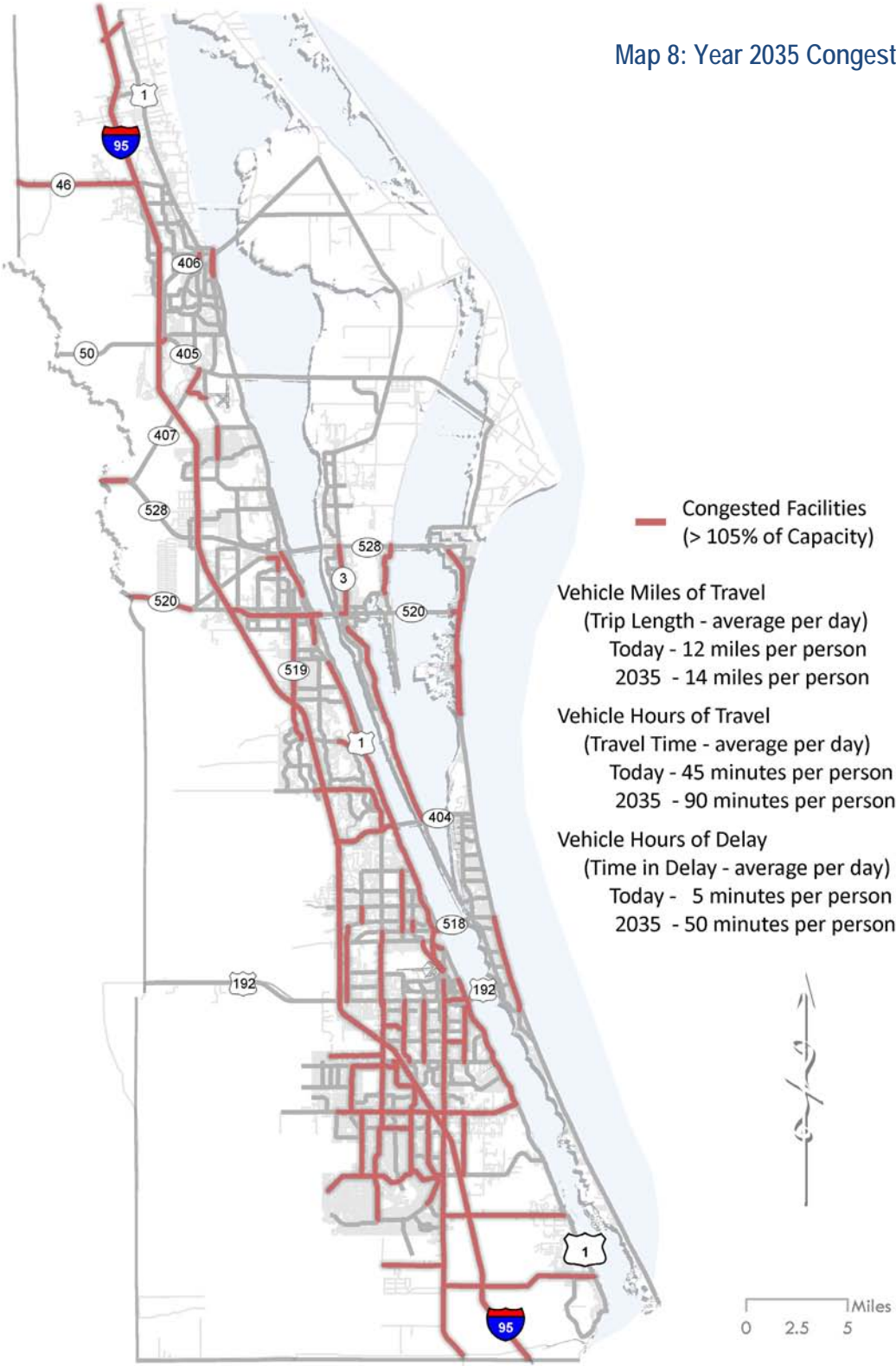
The following maps and statistics describe the levels of traffic congestion projected to occur by the year 2035. The results of the analysis assume the completion of short-range transportation improvement projects to which funding has been committed through the year 2015, as identified in the TPO's Transportation Improvement Program.

As shown in the maps, increased traffic congestion is anticipated along several major facilities, particularly in once-rural southern areas of the County that are attracting increasingly high levels of suburban development. The analysis reveals several important anticipated changes in regional mobility conditions between now and the year 2035, including the following:

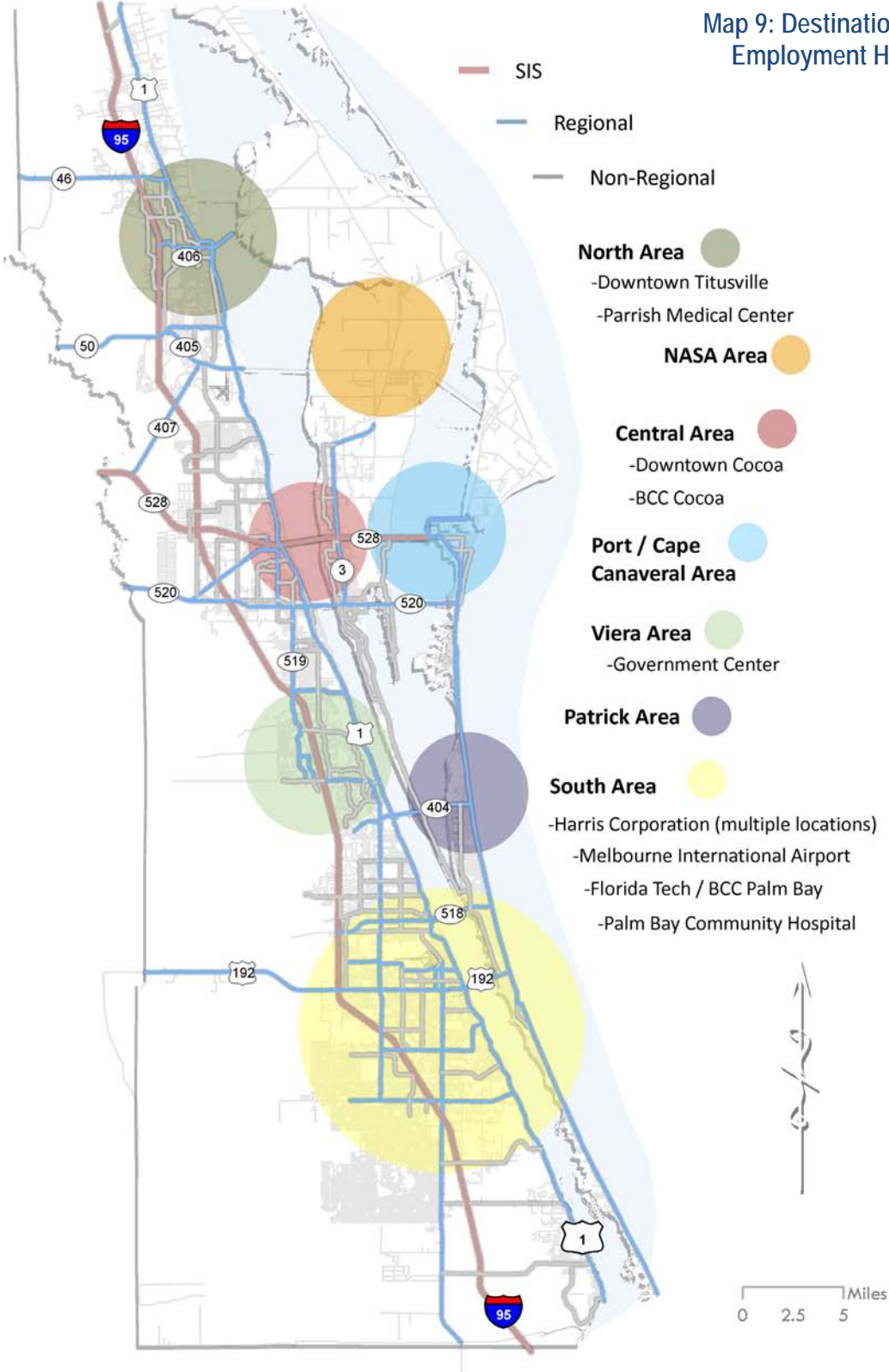
- An increase in overall Vehicle Miles of Travel (VMT) from 12 miles per person to 14 miles per person;
- An increase in total Vehicle Hours of Travel (VHT) from 45 minutes per person to almost 90 minutes; and
- An increase in County-wide Vehicle Hours of Delay (VHD) from 5 minutes per person to more than 50 minutes per person.

Map 10 illustrates existing and future accessibility to the County's employment hubs. Currently, nearly 96% of County residents have moderate to high access to those hubs, but that percentage drops to 81% in 2035 assuming only committed projects are completed by then. The percentage of residents with high access to employment hubs drops from 65% to 18%.

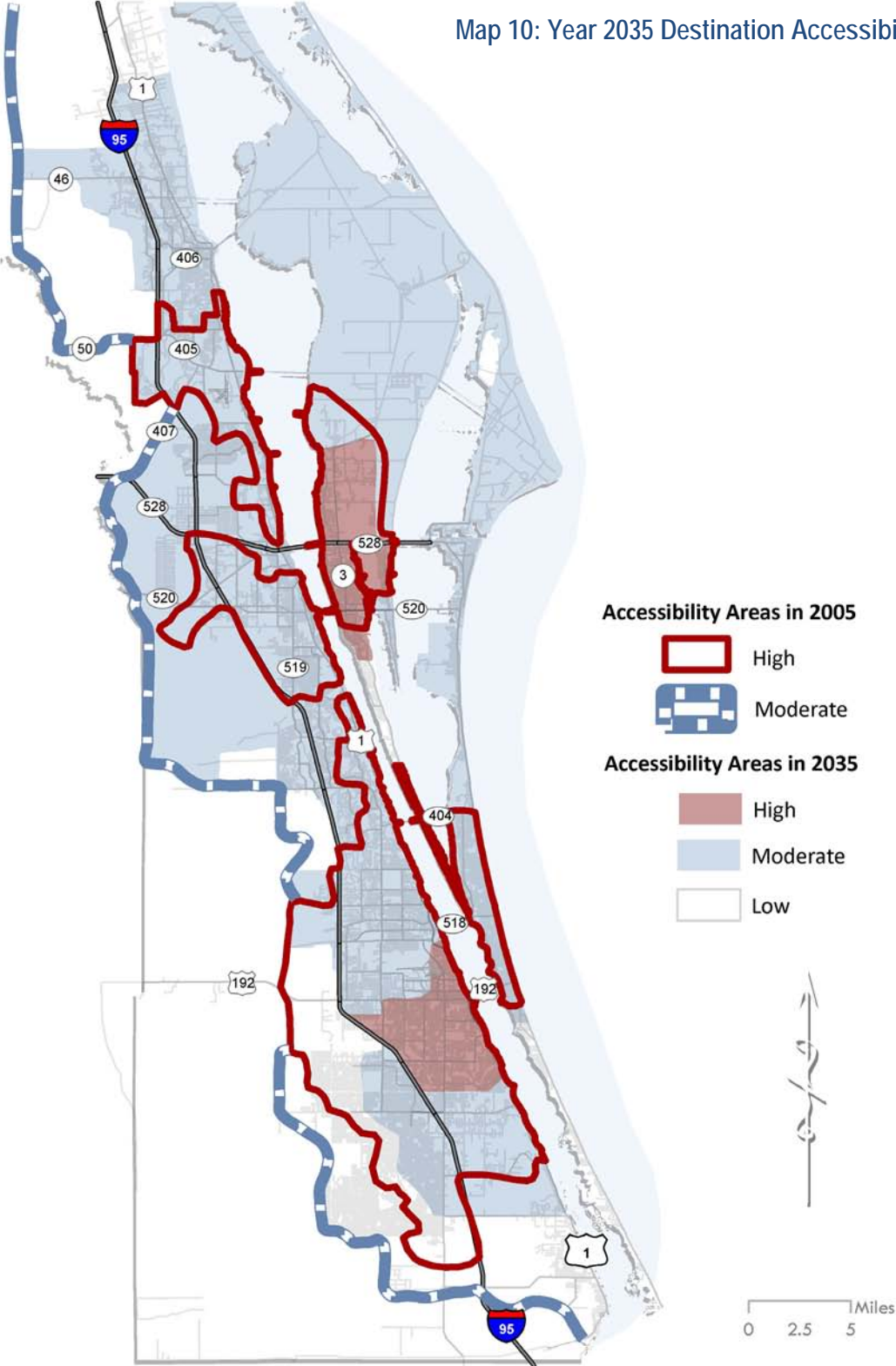
Map 8: Year 2035 Congestion



Map 9: Destinations / Employment Hubs



Map 10: Year 2035 Destination Accessibility



TESTING ALTERNATIVE 1 CONGESTION REDUCTION STRATEGIES

The study team tested different concepts for reducing anticipated future congestion and achieving other key goals and objectives of the 2035 LRTP. Alternative 1, the TPO Priority Reliever scenario, included several high priority regional connections from the previous (2025) LRTP, including the St. Johns Heritage Parkway & Washingtonian Extension. It also included increased transit service frequencies on popular routes.

As shown in the **Table 9** below, the Alternative 1 scenario performs much better than the “base case” scenario in which no improvements are made other than the 2015 committed projects. Per capita VMT would remain about the same, but the anticipated 45 minute increase in VHT would be reduced to an 11 minute increase, and the projected per capita Vehicle Hours of Delay would increase by 10 minutes to 15 minutes as opposed to 50 minutes.

Table 9: Alternative 1 Performance Measures

| | EXISTING NETWORK (2005) | COMMITTED NETWORK (2010 – 2015) | 2025 LONG RANGE PLAN (2015 – 2025) |
|--|-------------------------|---------------------------------|------------------------------------|
| Vehicle Miles of Travel (VMT) – per person | 12.0 miles | 14.4 miles | 13.9 miles |
| Vehicle Hours of Travel (VHT) – per person | 45 minutes | 90 minutes | 56 minutes |
| Vehicle Hours of Delay (VHD) – per person | 5 minutes | 50 minutes | 15 minutes |

Figure 10: Alternative 1 VMT per person

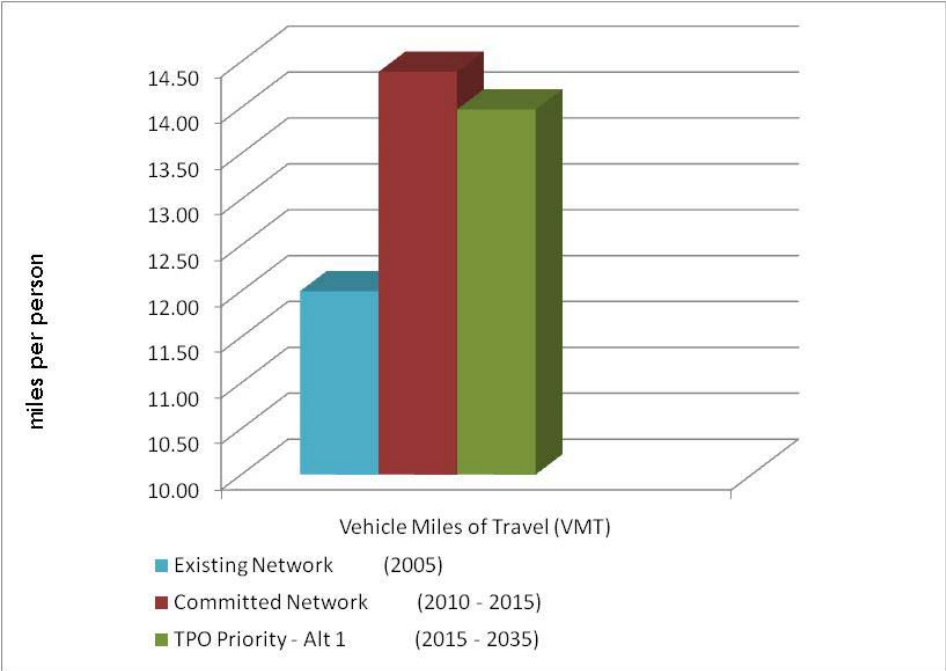
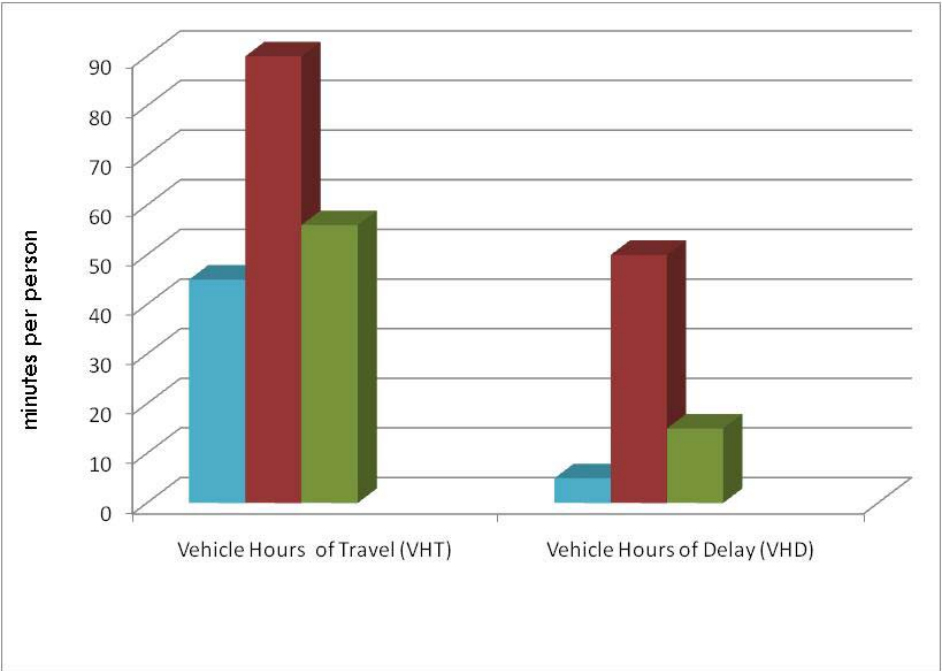
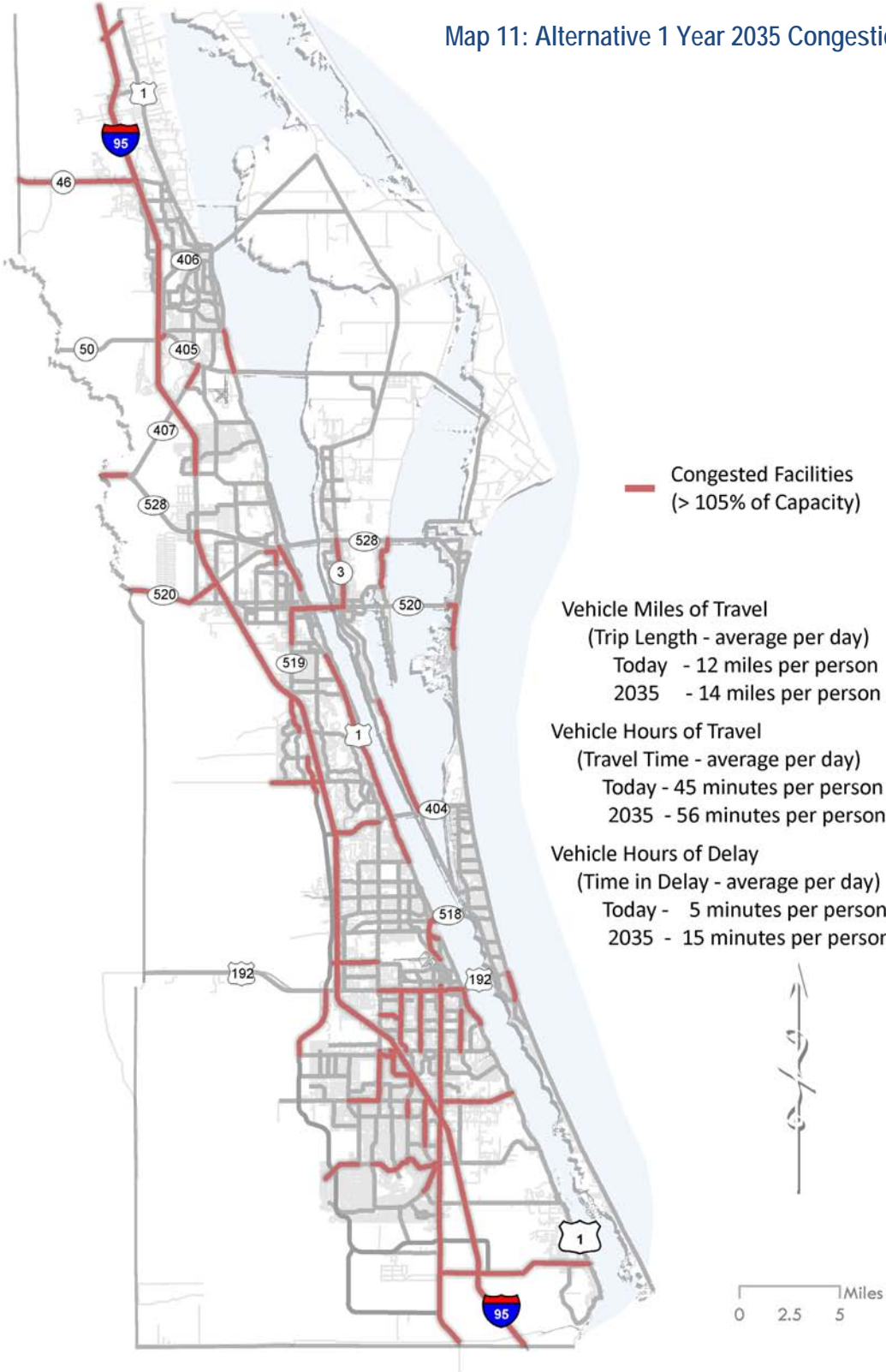


Figure 11: Alternative 1 VHT & VHD per person



Map 11: Alternative 1 Year 2035 Congestion



2035 TRANSPORTATION NEEDS PLAN

The study team made some adjustments to the Alternative 1 scenario in order to further improve system performance, drawn from TPO and local priorities as well as input from the public. The resulting package of transportation investments, summarized in figures and maps below, became the basis for the 2035 Needs Plan.

Roadway investments in the Needs Plan are focused upon projects such as the following:

- strategic widening projects, such as the 6-lane expansion of I-95;
- new regional and local network connections, including the St. Johns Heritage Parkway;
- optimization of the existing network through traffic operations and Intelligent Transportation System (ITS) strategies; and
- “Complete Streets” improvements to make corridors safely accessible for all travel modes, including pedestrian, bicycle and motorized vehicles.

Transit investments in the 2035 Needs Plan include the following:

- increased frequencies on existing high-performing routes;
- new routes in traditionally underserved areas and high growth areas;
- new regional express-route connections to key areas such as Orlando International Airport, Downtown Orlando, Vero Beach, and along I-95;
- the State High Speed Rail Corridor (I-95); and
- the Regional Passenger Rail Corridor (FEC).

As shown in **Table 10**, transportation system performance under the 2035 Needs Plan scenario is similar to the Alternative 1 performance in regard to VMT and VHT, but provides for a higher reduction in Vehicle Hours of Delay.

Table 10: Needs Plan Performance Measures

| | EXISTING NETWORK (2005) | COMMITTED NETWORK (2010 – 2015) | 2025 LONG RANGE PLAN (2015 – 2025) | 2035 NEEDS PLAN (2015 – 2035) |
|--|-------------------------|---------------------------------|------------------------------------|-------------------------------|
| Vehicle Miles of Travel (VMT) – per person | 12.0 miles | 14.4 miles | 13.9 miles | 13.9 miles |
| Vehicle Hours of Travel (VHT) – per person | 45 minutes | 90 minutes | 56 minutes | 45 minutes |
| Vehicle Hours of Delay (VHD) – per person | 5 minutes | 50 minutes | 15 minutes | 8 minutes |

Figure 12: Needs plan VMT per person

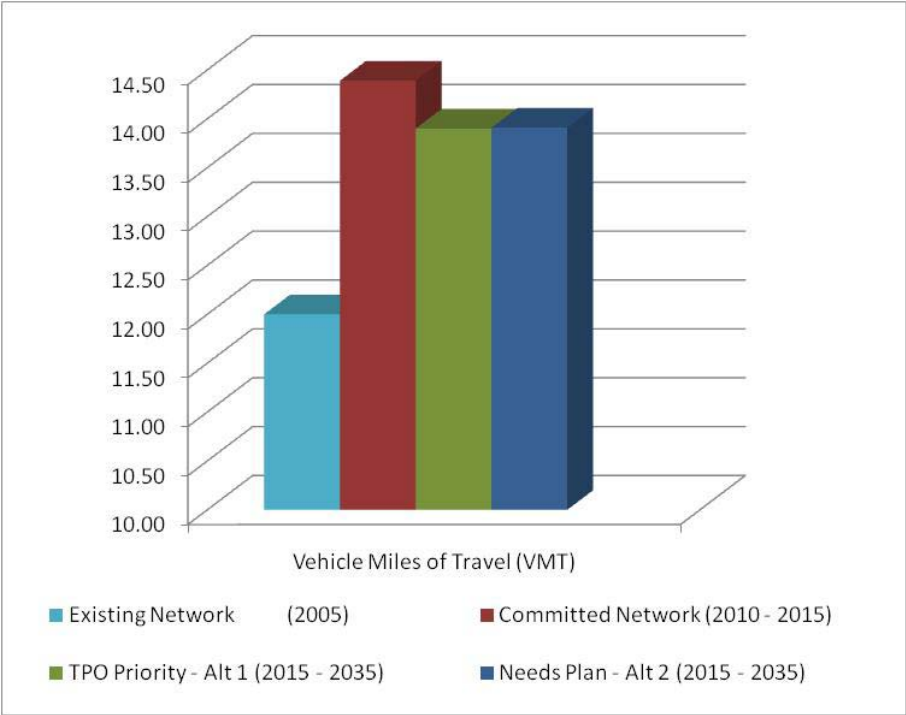
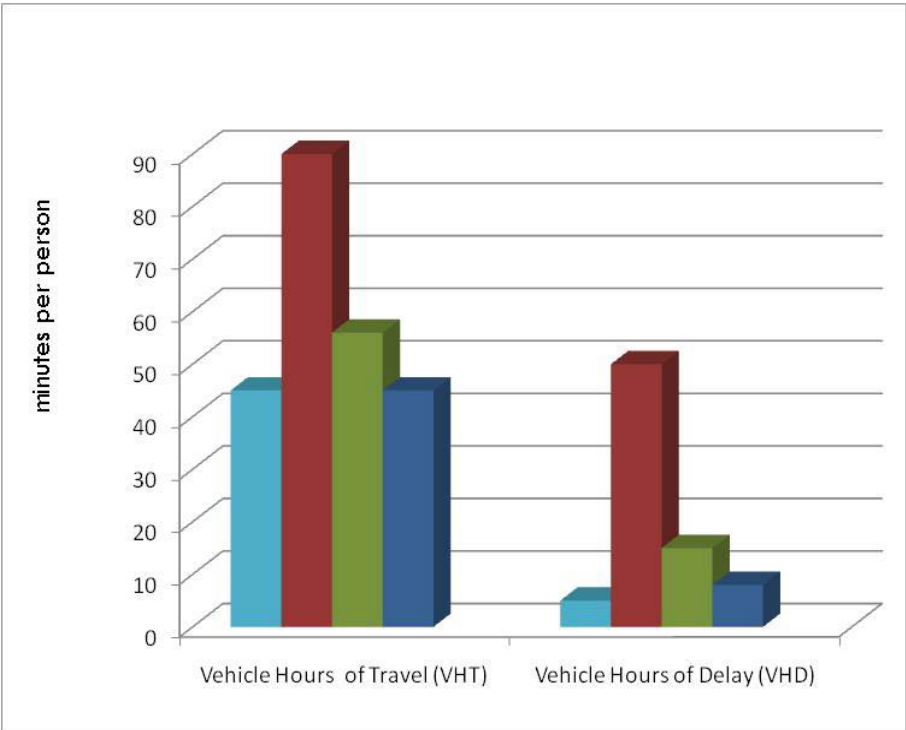
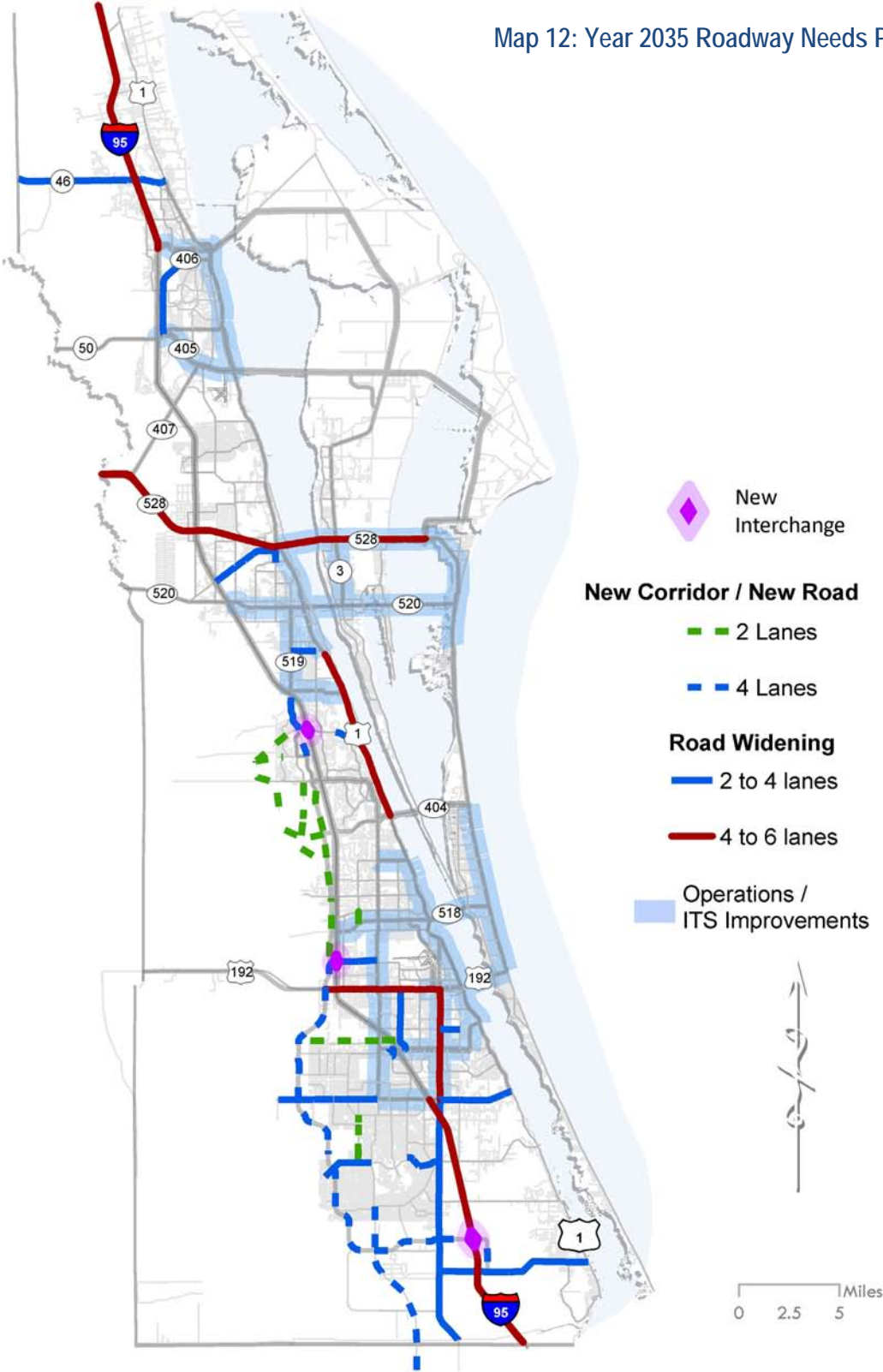


Figure 13: Needs plan VHT & VHD per person



Map 12: Year 2035 Roadway Needs Plan



Map 13: Year 2035 Transit Needs Plan

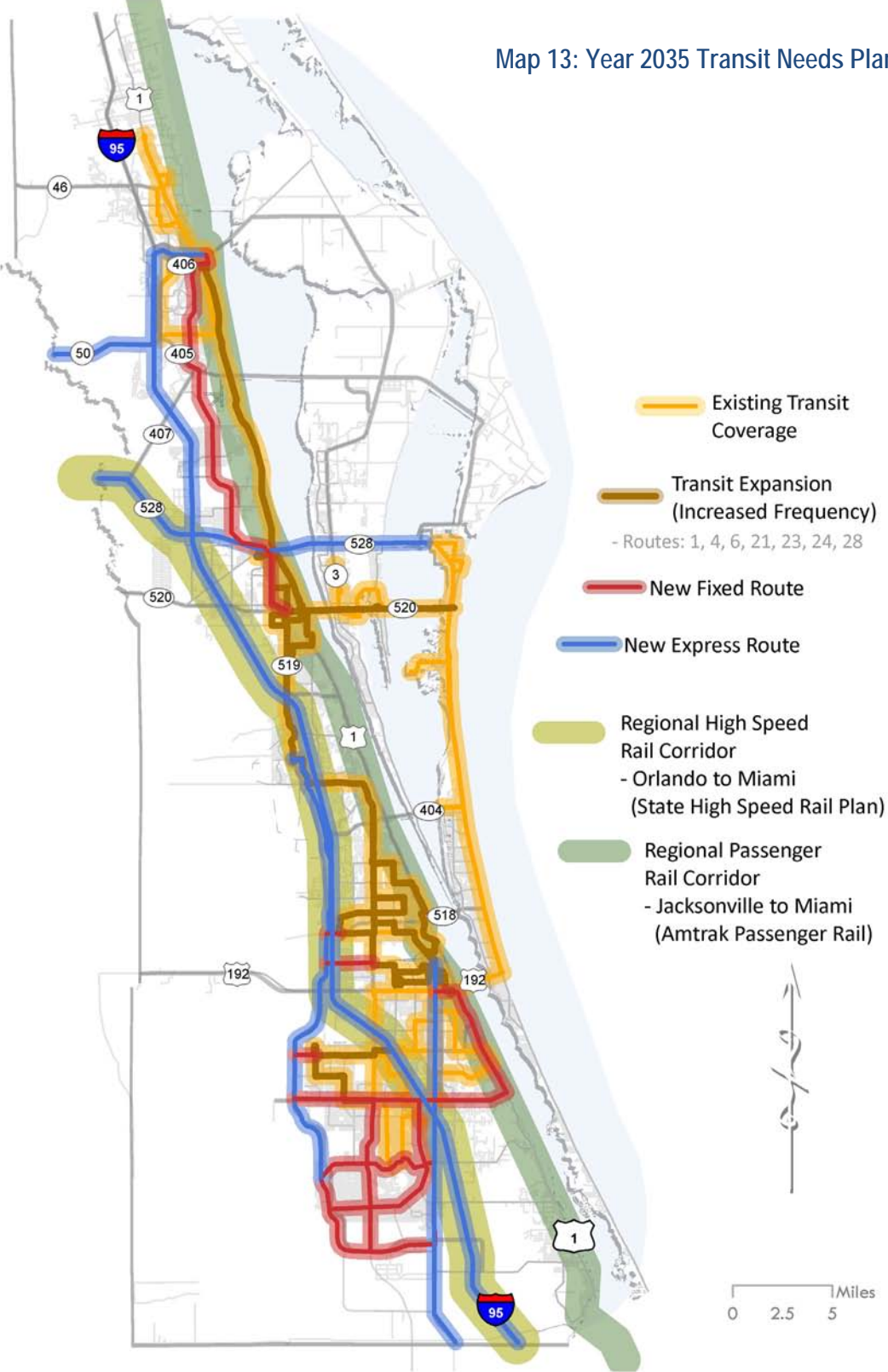


Table 11: Needs Plan Projects

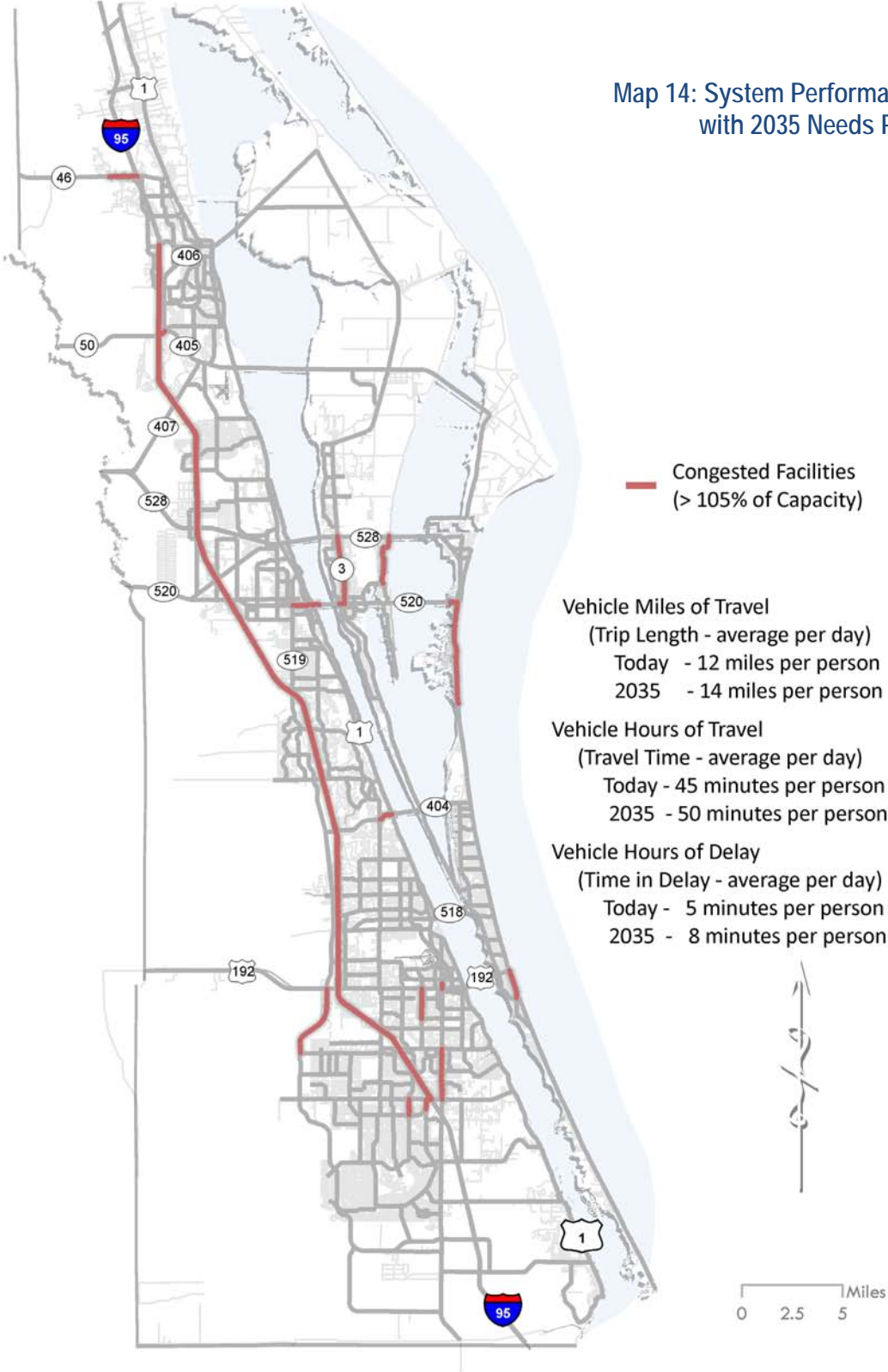
| STRATEGIC INTERMODAL SYSTEM (SIS) CAPACITY NEEDS | FROM / TO | PROJECT |
|---|--|------------------------------|
| I-95 | Volusia County to SR 406 | Widen Freeway (4 to 6 lanes) |
| I-95 | Malabar Rd to SR 406 | Widen Freeway (6 to 8 lanes) |
| I-95 | Malabar Rd to Indian River County | Widen Freeway (4 to 6 lanes) |
| State Road 528 | Orange County to A1A | Widen Freeway (4 to 6 lanes) |
| REGIONALLY SIGNIFICANT CAPACITY NEEDS | FROM / TO | PROJECT |
| Babcock Street | US 192 to Malabar Rd | Widen Road (4 to 6 lanes) |
| Babcock Street | Malabar Rd to Foundation Park | Widen Road (2 to 4 Lanes) |
| Babcock Street | Foundation Park to New Parkway Interchange | Widen Road (2 to 4 Lanes) |
| Babcock Street | New Parkway Interchange to Indian River County | Widen Road (2 to 4 Lanes) |
| Ellis Road | John Rodes Blvd to Wickham Rd | Widen Road (2 to 4 Lanes) |
| Malabar Road | Babcock St to US 1 | Widen Road (2 to 4 Lanes) |
| Malabar Road | Minton Rd to St. Johns Heritage Parkway | Widen Road (2 to 4 Lanes) |
| South Street (SR 405) | Existing 4 lane section to State Road 50 | Widen Road (2 to 4 Lanes) |
| SR 524 | I-95 Interchange (South) to Industry Rd | Widen Road (2 to 4 Lanes) |
| St. Johns Heritage Parkway | John Rodes Blvd to US 192 | New 4 Lane Road |
| St. Johns Heritage Parkway | US 192 to Malabar Rd | New 4 Lane Road |
| St. Johns Heritage Parkway | Babcock St to I-95 Interchange (South) | New 4 Lane Road |
| St. Johns Heritage Parkway | I-95 Interchange (South) to Micco Rd | New 4 Lane Road |
| St. Johns Heritage Parkway Interchange (North) | at I-95 / Ellis Rd | New Interchange (urban) |
| St. Johns Heritage Parkway Interchange (South) | at I-95 (north of Micco Rd) | New Interchange (Mainline) |
| US 1 | Eyster Blvd to Pineda Causeway | Widen Road (4 to 6 lanes) |
| US 192 | St Johns Heritage Parkway to Wickham Rd | Widen Road (4 to 6 lanes) |
| US 192 | Wickham Rd to Dairy Road | Widen Road (4 to 6 lanes) |
| US 192 | Dairy Road to Babcock St. | Widen Road (4 to 6 lanes) |

| OTHER CORRIDOR CAPACITY NEEDS | FROM / TO | PROJECT |
|-------------------------------|---|--------------------------------------|
| Bombardier Blvd. | St Johns Heritage Parkway to Degroodt Rd | Widen Road (2 to 4 Lanes) |
| Clearlake Road | Michigan to Industry | Widen Road (2 to 4 Lanes) |
| Culver Drive | Emerson Dr to Palm Bay Rd | Widen Road (2 to 4 Lanes) |
| Eyster Road | Murell Rd to Fiske Blvd | Widen Road (2 to 4 Lanes) |
| Fellsmere Connector | San Filippo Dr. to SR 512 (Indian River County) | New 4 Lane Road |
| Garvey Road | Garbelmann Rd to Bombardier Rd | Widen from 2 to 3 Lanes / New 3 Lane |
| Hollywood Blvd. | US 192 to Palm Bay Rd | Widen Road (2 to 4 Lanes) |
| Micco Rd | St. Johns Heritage Parkway to US 1 | |
| Pirate Lane | Babcock St to Lipscomb St | Widen Road (2 to 4 Lanes) |
| Powerline Road | St Johns Heritage Parkway to Minton Rd | New 2 Lane Road |
| Powerline Road | Minton Rd to Hollywood Dr. | New 2 Lane Road |
| St. Johns Heritage Parkway | Malabar Rd to Bombardier Rd | New 4 Lane Road |
| St. Johns Heritage Parkway | Bombardier Rd to Babcock St | New 4 Lane Road |
| St. Andrews | Judge Fran Jamison to Stadium Pkwy | New 4 Lane Road |
| Stadium Parkway | Fiske Blvd to Viera Blvd | Widen Road (2 to 4 Lanes) |
| Turtlemound Rd Extension | Aurora Rd to Eau Gallie Blvd | New 2 Lane Road |
| Viera Blvd. | Hérons Landing to Schenck Rd | Widen Road (2 to 4 Lanes) |
| Viera Blvd. Interchange | at- I-95 / Viera Blvd | New Interchange (urban) |
| Washingtonian Extension | Wickham Rd to St. Johns Heritage Parkway | New 2 Lane Road (ROW for 4 Lanes) |

| OPERATIONS / ITS / MULTIMODAL NEEDS | FROM / TO | PROJECT |
|-------------------------------------|-------------------------------------|------------------------------|
| Babcock Street | US 192 to Malabar Rd | Multimodal Emphasis (w/ ITS) |
| Barnes Blvd. | Fiske Blvd to US 1 | Operations / ITS |
| Columbia Blvd (SR 405) | I-95 to US 1 | Operations / ITS |
| Dixon Blvd. | Clearlake to US 1 | Multimodal Emphasis (w/ ITS) |
| Eau Gallie Blvd. | I-95 to Bridge | Operations / ITS |
| Eau Gallie Blvd. | Bridge to SR A1A | Operations / ITS |
| Fiske Blvd. | SR 520 to Barnes Blvd | Multimodal Emphasis (w/ ITS) |
| Fiske Blvd. | Barnes Blvd to Stadium Parkway | Multimodal Emphasis (w/ ITS) |
| Garden St (SR 406) | I-95 to US 1 | Operations / ITS |
| Hickory Road | NASA Blvd to Hibiscus Blvd | Multimodal Emphasis (w/ ITS) |
| Malabar Road | Minton Rd to Babcock St | Operations / ITS |
| Minton Road | US 192 to Palm Bay Rd | Multimodal Emphasis (w/ ITS) |
| N. Babcock Street | US 1 to US 192 | Multimodal Emphasis (w/ ITS) |
| N. Courtenay Parkway | SR 528 to SR 520 | Multimodal Emphasis (w/ ITS) |
| Palm Bay Road | Minton Rd to RJ Conlan | Operations / ITS |
| Post Road | Wickham Rd to US 1 | Operations / ITS |
| Sheridan Road | Wickham Rd to John Rodes Blvd | Multimodal Emphasis (w/ ITS) |
| SR 520 | I-95 to Hubert Humphrey Bridge | Operations / ITS |
| SR 520 | Hubert Humphrey Bridge to SR A1A | Operations / ITS |
| SR 520 | US 1 to Hubert Humphrey Bridge | Multimodal Emphasis (w/ ITS) |
| SR 528 | N. Courtenay Pkwy to Port Canaveral | Operations / ITS |
| SR A1A | Port Interchange to One way split | Multimodal Emphasis (w/ ITS) |
| SR A1A | One way split to Pineda Causeway | Multimodal Emphasis (w/ ITS) |
| SR A1A | Pineda Causeway to US 192 | Multimodal Emphasis (w/ ITS) |
| US 1 | Garden St to Columbia Blvd (SR 407) | Operations / ITS |
| US 1 | SR 528 to Eyster Blvd | Operations / ITS |
| US 1 | Post Rd to RJ Conlan | Operations / ITS |

| OPERATIONS / ITS / MULTIMODAL NEEDS | FROM / TO | PROJECT |
|--|--|------------------------------|
| US 1 | Garden St. to Harrison | Multimodal Emphasis (w/ ITS) |
| US 1 | RJ Conlan to Malabar Rd | Multimodal Emphasis (w/ ITS) |
| US 192 | Bridge to SR A1A | Operations / ITS |
| US 192 | St. Johns Heritage Parkway to Bridge | Multimodal Emphasis (w/ ITS) |
| Walden Blvd / Wyoming Drive | Emerson Dr to Babcock St | Multimodal Emphasis (w/ ITS) |
| Wickham Road | Parkway Dr. to Sarno Road | Multimodal Emphasis (w/ ITS) |
| Wickham Rd / Minton Road | Sarno Rd to Malabar Rd | Operations / ITS |
| TRANSIT NEEDS | FROM / TO | PROJECT |
| Route - 1 | | Increase Frequency |
| Route - 4 | | Increase Frequency |
| Route - 6 | Cocoa / Rockledge | Increase Frequency |
| Route - 21 | Melbourne | Increase Frequency |
| Route - 23 | West Palm Bay | Increase Frequency |
| Route - 28 | North Melbourne | Increase Frequency |
| New Route - Grissom Corridor | Titusville / Cocoa | New Route |
| New Route - State Road 50 Express | Titusville / Waterford Lakes (Orange County) | New Express Route |
| New Route - Orlando Express | Melbourne / Orlando | New Express Route |
| New Route - Indian River Express | Melbourne / Indian River County | New Express Route |
| New Route - St. Johns Heritage Express | Palm Bay / Melbourne | New Express Route |
| New Route - Wasingtonia Express | Melbourne / Viera | New Express Route |
| New Route - I 95 Express | Indian River County / Titusville | New Express Route |
| New Regional High Speed Rail | Orlando / Miami (I-95 Corridor) | High Speed Rail |
| New Regional Passenger Rail | Jacksonville / Miami (FEC Rail Corridor) | New Rail Service |

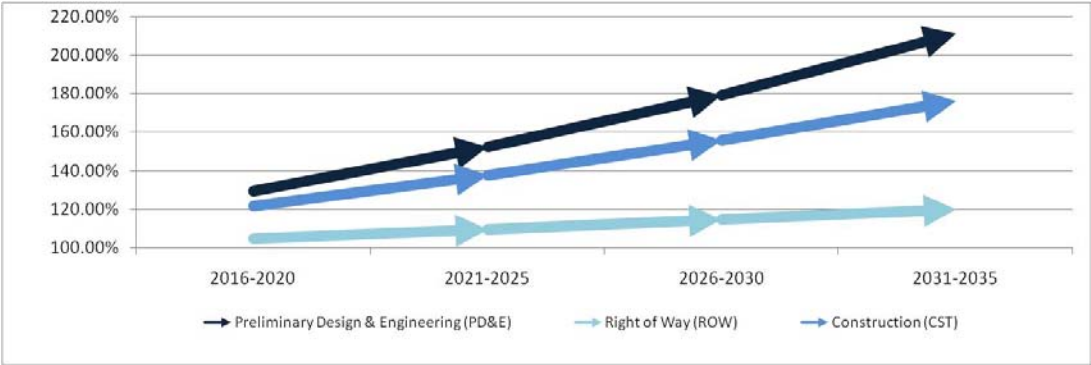
Map 14: System Performance with 2035 Needs Plan



2035 NEEDS PLAN COST ESTIMATES

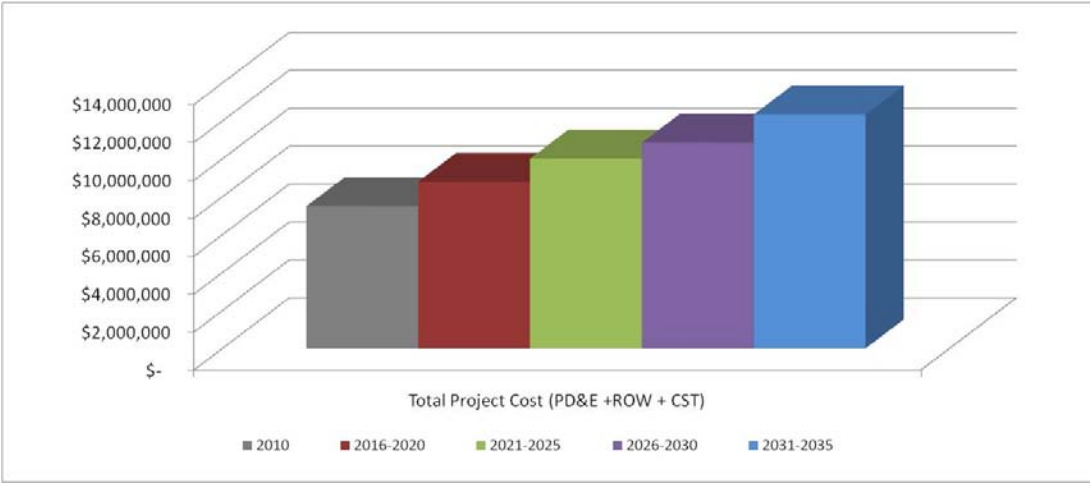
The total estimated cost for projects in the 2035 Needs Plan is \$1.84 billion. The estimates were developed with techniques that reflect anticipated inflation rates over time. This was a two-step process. The study team first developed cost estimates in current (Year 2010) dollars. As shown in the **Figure 14** below, the team then multiplied the estimated costs by anticipated inflation factors developed by the Florida Department of Transportation (FDOT).

Figure 14: Inflation Rates 2016-2035



The resulting estimates indicate the TPO should anticipate project costs to increase by as much as 70% due to inflation. Projects that are scheduled to take many years, particularly if they are begun in the outer years of the plan, will cost more than projects that can be completed sooner. As shown in the **Figure 15** below, the cost of a \$6.5 million project could grow to a total of \$11 million over the years it will take to plan, design, and construct.

Figure 15: Example Project Cost Inflation Over Time



ANTICIPATED FINANCIAL RESOURCES

In order to determine the limits of financial feasibility for evaluating the potential inclusion of Needs Plan projects in the Cost Feasible Plan, the project team developed projections of financial resources and revenues that are anticipated to be available by the Year of Expenditure (YOE).

The revenue projections, which account for the effects of inflation over time, reflect committed and uncommitted transportation revenues expected to be generated at local and state levels, including funding sources dedicated to specific categories such as the Strategic Intermodal System (SIS) and maintenance/ operations activities.

Total Available Revenues

Total revenues for transportation improvements in the Space Coast TPO region are projected to be \$4.3 billion for the years 2016 through 2035. As shown in the **Figure 16** below, the remaining amount is expected to be allocated to specific projects or investment categories, such as the following:

- Over \$2.3 billion, or roughly half of the total, is dedicated for Port Canaveral and Melbourne International Airport, both of which are expected to experience increased travel demand over the coming years.
- Because of the importance of the SIS to the State, FDOT is expected to program the bulk of its SIS and Federal Highway System (FHHS) funds in Brevard County to I-95 improvements.
- Several other categories of Federal and State funds are reserved for specific purposes such as the Transportation Enhancement grant program, which provides funding primarily for bicycle and pedestrian projects, and the Transit program.
- For local revenue sources in Brevard County, significant portions of future Local Option Gas Taxes (LOGT) are bonded through 2020 and 2037, and if not committed for debt, these revenues are policy committed by local governments for maintenance and operations purposes. These commitments effectively remove LOGT revenues from consideration for capacity improvement projects in the 2035 Cost Feasible plan.
- On a related note, the projections reflect the fact that local impact fees and other contributions toward transportation improvements are currently down due to economic conditions, but are likely to rebound over the long term.

Table 12: Revenue Estimates

| | 2016 - 2020 | 2021 - 2025 | 2026 - 2030 | 2031 - 2035 | TOTAL (20 YEARS) |
|--|-------------|-------------|-------------|-------------|------------------|
| State Strategic Intermodal System (SIS) | \$89 | \$- | \$133 | \$- | \$223 |
| State / Federal (Other Arterial & TMA) | \$121 | \$133 | \$141 | \$150 | \$545 |
| Local Funds (Transportation Impact Fees) | \$74 | \$75 | \$76 | \$78 | \$304 |
| Transit Funds | \$44 | \$49 | \$55 | \$60 | \$209 |
| Enhancement Funds | \$7 | \$8 | \$8 | \$8 | \$31 |
| Total | \$335 | \$265 | \$414 | \$297 | \$1,312 |

Transportation Needs Versus Available Funds

After accounting for revenues allocated to specific projects or programs, \$1.28 billion is expected to be available for new projects in the 2035 LRTP. However, as stated earlier, the estimated total cost of projects in the 2035 Needs Plan is \$1.84 billion, a \$561 million deficit.

Table 13: Transportation Needs vs Available Funds

| | TRANSPORTATION NEEDS | TRANSPORTATION FUNDS | SURPLUS / (DEFICIT) |
|---|----------------------|----------------------|---------------------|
| State Strategic Intermodal System (SIS) | \$382 | \$223 | \$(159) |
| Regional Roads | \$656 | \$520 | \$(136) |
| Other Corridors | \$292 | \$264 | \$(28) |
| Multimodal / ITS / Operations | \$62 | \$70 | \$8 |
| Transit | \$448 | \$209 | \$(239) |
| Total | \$1,839 | \$1,286 | \$(554) |

Figure 16: 2035 Transportation Needs vs. Transportation Funds

