VOLUSIA TPO
TRANSPORTATION PLANNING ORGANIZATION
VISION - PLAN - IMPLEMENT

# 2035 LONG RANGE TRANSPORTATION PLAN


*A look into the future*

**Updated: April 24, 2012**

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**THIS REPORT WAS FINANCED, IN PART, BY THE U. S. DEPARTMENT OF TRANSPORTATION, THE FLORIDA DEPARTMENT OF TRANSPORTATION, AND THE LOCAL PARTICIPATING GOVERNMENTS.**

*We know the next 25 years will bring very real challenges for our communities, including an aging population, increasing concerns over urban sprawl, and a significantly less predictable energy, environmental and economic picture. By developing a long-range transportation plan, the Volusia Transportation Planning Organization and its members strive to identify the unmet needs in our area and work together to develop a strategic approach to planning for the future.*

## Volusia Transportation Planning Organization

The Volusia Transportation Planning Organization (TPO) consists of a 19 member Board (voting positions) of elected officials from Volusia County and its municipalities, as well as Flagler Beach and Beverly Beach in Flagler County. The Volusia TPO meets on a monthly basis to review and direct the development of the area's transportation system. The TPO Board is advised by the Technical Coordinating Committee, the Citizens' Advisory Committee, the Bicycle and Pedestrian Advisory Committee, and the Transportation Disadvantaged Local Coordinating Board. These committees are composed of technical staff from local government organizations, citizen representatives appointed by elected officials and community organizations created to advocate on behalf of disadvantaged citizens. Advisory committees meet on a regularly scheduled basis, and all meetings are open to the public.

## 2035 Long Range Transportation Plan

The United States Department of Transportation (USDOT), the Florida Department of Transportation (FDOT), the Volusia TPO, and local governments in Volusia County, as well as Flagler Beach and Beverly Beach in Flagler County participate in a continuous, cooperative, and comprehensive transportation planning process. One element of this process includes the development of a long-range transportation plan (LRTP). Once the plan is adopted by the TPO it becomes the urbanized area's official guide for programming federal transportation funds. If a capacity enhancing transportation project (i.e., roadway widening, extension, or the construction of a completely new road) is not part of the LRTP adopted by the TPO, then that project is not eligible for federal transportation funding.

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# Chapter 1 Introduction

The Volusia Transportation Planning Organization (TPO) is the primary agency responsible for determining the expenditure of state and federal funds available for transportation improvements within Volusia County and the cities of Flagler Beach and Beverly Beach in Flagler County. As a requirement for receiving these transportation dollars, the Volusia TPO is responsible for developing and maintaining the area's long-range transportation plan (LRTP). The LRTP is the guiding document that identifies the transportation projects that may be pursued in the TPO area over the next 25 years. An effective LRTP includes a diverse set of transportation options (often known as a multi-modal approach) that addresses the broad transportation needs of local communities. Additionally, federal law requires every LRTP to be **"cost-feasible"**. In other words, the TPO must identify the financial resources anticipated to cover the costs of the proposed projects identified in the LRTP. ***For this LRTP update, the Volusia TPO has assumed revenues will include a ½ cent general sales tax for transportation, approved by local voter referendum, beginning in year 2016 and extending throughout the planning horizon of the year 2035.*** The revenues generated by the proposed Transportation Surtax will primarily be used to support the expansion of the publicly provided mass transportation system - buses, rail service, trolleys, etc.

The transportation projects specifically identified in the *Volusia TPO 2035 Long Range Transportation Plan (LRTP)* are those projects that enhance the capacity of the existing transportation system either through the construction of new roads, adding lanes to existing roads, or increasing transit service. Although the project lists include many road building projects, the Volusia TPO has continued to take the actions necessary to support the development of other travel options. Since 2005, the Volusia TPO has had a policy of setting aside all of its Extra Urban Attributable (XU) funds each year to support and promote specific forms of transportation system improvements. Forty percent (40%) of the XU funds are set aside to support traffic operations, intelligent transportation systems (ITS), and safety related projects; thirty percent (30%) are set aside for capital purchases by Votran, the county's public transportation provider; and thirty percent (30%) are set aside for bicycle and pedestrian projects. Through the adoption of the *2035 Long Range Transportation Plan* and the continuation of a policy for the distribution of XU funds, the Volusia TPO has reaffirmed its commitment to identifying a broad range of transportation solutions as an essential means to achieving a well-balanced transportation system.

Engaging the public as a means to inform, educate, and receive input in the transportation decision-making process that impacts our community is also valued by the Volusia TPO. By involving the public in the planning process early and often, transportation planners are better able to ensure that plans and programs are developed in a way that reflects the preferences of the local community and benefits all segments of the population. The Volusia TPO developed a public involvement strategy that used a variety of activities to reach out to our citizens including "*Make Your Mark in 2035*" planning sessions (an updated version of the very successful Strings and Ribbons activity used during the previous LRTP update). This interactive planning activity allows citizen groups to create a "Public Transportation Alternative" for the 2035 LRTP.

A parallel activity to develop a "Technical Transportation Alternative" for the 2035 LRTP was also pursued with the involvement of the appointed representatives who participate in the TPO's standing committees: the Technical Coordinating Committee (TCC), the Citizens' Advisory Committee (CAC), the Bicycle and Pedestrian Advisory Committee (BPAC), and the Transportation Disadvantaged Local Coordinating Board (TDLCB). Members from each of these groups formed a 2035 Long Range Transportation Plan Subcommittee. After an initial *Make Your Mark* session was held, the LRTP Subcommittee worked to refine the transportation project listing. This subcommittee met on a regular basis throughout the development of the LRTP to review technical and non-technical issues, as well as input received from the public. Recommendations of the subcommittee were provided periodically to the standing committees for review and to the Volusia TPO Board for review and approval. The Volusia TPO Board also provided direction to TPO staff and working groups to guide the development of the LRTP.

During the development of the LRTP, a workshop was held to specifically address the issues surrounding public transit and to discuss the complexities of developing this portion of the plan including planning, financing, land use changes, population growth, and overall system development. It was at this workshop and the subsequent TPO Board meeting that direction was provided to develop a long-range plan using the assumption of a sales tax to support a more comprehensive public transit component.

***The Volusia Transportation Planning Organization adopted the 2035 Long Range Transportation Plan on September 28, 2010.***

## Report Overview

This report provides a more detailed documentation of the activities pursued in order to develop the transportation financing and projects comprising the *Volusia TPO 2035 Long Range Transportation Plan*. The report is divided into eight chapters, and is supported by supplemental information included in the appendices.

**Chapter 1:** **Introduction:** This chapter provides an overview of the LRTP report.

**Chapter 2:** **Vision, Goals, and Objectives:** This chapter outlines the vision, goals, and objectives of the *2035 Long Range Transportation Plan* and shows how these items address the planning factors required by SAFETEA-LU.

**Chapter 3:** **Data Analysis: Land Use and Network Modeling:** This chapter describes the regional approach used for this effort, as well as the model validation process for the base year model scenario. The chapter also documents the development of existing and future year socioeconomic (land use) data, which were used as the inputs for the transportation modeling analyses. Several companion reports are included in Appendix A.

**Chapter 4:** **The Financial Plan:** This chapter identifies local, state, and federal transportation funding sources available in the Volusia TPO planning area throughout the *2035 Long Range Transportation Plan*. Included are local revenues anticipated from a ½ cent transportation

surtax. The financial plan also outlines the methods used to determine project costs and compliance with year-of-expenditure planning requirements. Guidance regarding the development of state and federal estimates, as well as details regarding locally developed financial data are included in Appendix B.

**Chapter 5:** **Public Involvement:** This chapter identifies the public involvement strategies and activities that were undertaken as part of the development of the *2035 Long Range Transportation Plan*. Samples of the surveys along with screen captures of the project website are included in Appendix C.

**Chapter 6:** **Transportation Program Options:** This chapter describes the major transportation programs supported by the Volusia TPO including highways, public transit, and bicycle and pedestrian modes of travel. Information is presented regarding current program activities and existing conditions in the Volusia TPO planning area, as well as future trends in growth and development and the various programs and strategies being pursued to respond to anticipated transportation needs. Pertinent supporting documents are included in Appendix D.

**Chapter 7:** **Project Development and Screening Programs:** This chapter details the programs used to identify and evaluate projects considered for the 2035 LRTP. This section describes the existing plus committed network modeling as well as the two capacity-enhancing alternatives tested for the *2035 Long Range Transportation Plan*. It also describes the screening tools utilized, including congestion management, environmental justice, safety, and other criteria. Pertinent supporting documents are included in Appendix E.

**Chapter 8:** **The 2035 Long Range Transportation Plan:** This chapter details the projects comprising the adopted *2035 Long Range Transportation Plan*. It is divided into two main elements that address the capacity-enhancing transportation system improvements including highway (road and bridge) projects and public transit (bus and rail) projects. The plan includes both a cost-feasible section and a listing of needs that are unfunded within the specified time horizon. The cost-feasible portion of the *2035 Long Range Transportation Plan* is phased in five-year increments for projected implementation.

**Chapter 9:** **LRTP Amendment Procedure:** This chapter describes the process by which local governments can request an amendment to the *2035 Long Range Transportation Plan*.

# Chapter 2 Vision, Goals, and Objectives

Transportation has a significant impact on the daily lives of area residents and businesses alike. The functioning of our transportation system affects our economy and commercial interests, our environment, and our quality of life. With this in mind, the long-range transportation plan (LRTP) should reflect the values of the residents and the projects and programs identified should address the concerns most prevalent in the planning area. The vision statement, goals, and objectives identified in the LRTP provide guidance for the planning process and define the means by which specific projects will be assessed.

## What are Goals and Objectives?

A goal is derived from societal values and is intended to state an aspirational end result or achievement. An objective is derived from a goal and is intended to be more specific. Objectives identify short-term, measurable steps within a designated period of time and help us move towards achieving the long-term goals we have identified.

> *"We do make a difference – one way or the other. We are responsible for the impact of our lives. Whatever we do with whatever we have, we leave behind us a legacy for those who follow."*
>
> *Stephen Covey*

For example, "emphasize the preservation of the existing transportation system" may be a *societal value*. From this value, a *goal*—"The LRTP will protect the public investment in transportation facilities"—can be derived. The *objective*— "The LRTP will support FDOT and local governments in the adoption of access management standards"—is more specific and measurable. In this case, the *criterion* to be used to evaluate achievement could be "the number of center-line miles of roadway subject to access management" or "the number of municipalities in the study area that implement access management standards." In addition to this, a *standard* could be set: for example, "median openings allowing left turns onto four-lane divided roadways should not be closer than one mile."

Goals and objectives should be clear and understandable to everyone involved: policymakers, transportation professionals, and citizens. They should be developed independently and goals should not be mode-specific. The Volusia Transportation Planning Organization (TPO) adopted the following vision, and goals to guide the development of the *2035 Long Range Transportation Plan*.

### Vision Statement for the 2035 LRTP

***Our transportation system will provide a safe and accessible range of options that enhances existing urban areas while providing mobility in a fiscally responsible, energy efficient, and environmentally compatible manner. This integrated system will support economic development, allowing for the effective movement of people, goods, and services necessary to maintain and enhance our quality of life.***

## Goals and Objectives for the 2035 LRTP

The goals established for the *Volusia TPO 2035 Long Range Transportation Plan,* along with the objectives established to measure success include:

**Goal 1: Ensure that our transportation network considers the mobility needs of all user groups equally and is developed and managed in ways that foster safety and security.**

**Objective 1.1** – The Volusia TPO 2035 LRTP will reflect a comprehensive system of transportation improvements that considers the demographics, socioeconomic status, and environmental interests of our community.

**Objective 1.2** – The LRTP seeks to develop a transportation system that supports all members of the community including seniors, persons with disabilities, youth, and the economically disadvantaged.

**Objective 1.3** – The Volusia TPO will allocate planning funds for studies to evaluate and promote the successful implementation of safe, alternative transportation including transit-oriented development (TOD), multi-modal feasibility studies, safety studies, bicycle and pedestrian master planning, etc.

**Objective 1.4** – The evaluation of projects to be considered for inclusion in the 2035 LRTP and the annual prioritization of projects will utilize safety measures as part of the criteria so that projects that minimize crash frequency and severity are given priority.

**Objective 1.5** – A comprehensive public involvement strategy will be used to ensure the plan considers the needs and desires of a broad range of citizens.

**Objective 1.6** – The evaluation of projects to be considered for inclusion in the 2035 LRTP and the annual prioritization of projects will include an environmental justice assessment as part of the criteria.

**Goal 2: Develop transportation systems that contribute to the economic vitality of the region and ensure that they are designed, located, and constructed in an environmentally sustainable manner.**

**Objective 2.1 –** Consideration shall be given to transportation improvements that support the economic aspirations of the TPO planning area.

**Objective 2.2 –** The Volusia TPO will place an emphasis on sustainable transportation system improvements following the six livability principles identified by the Department of Housing and Urban Development (HUD), USDOT and the Environmental Protection Agency (EPA) and will seek alternative solutions for projects that appear to have a detrimental impact on the natural environment.

**Objective 2.3 –** The Volusia TPO will consider the environmental benefits of decisions such as the reduction of greenhouse gas emissions, responsible storm water management, and eliminating impacts to protected species.

**Objective 2.4 –** The transportation network will consider improvements that support the safe, appropriate, and efficient movement of freight via highway, airport, and rail systems.

**Goal 3: Consider the timing and location of transportation improvements to preserve and enhance existing urban areas and to recognize the development of our future.**

**Objective 3.1 –** Each component of the transportation network shall be planned and designed in coordination with other components, as well as with regards to the surrounding community to enhance existing urban areas and to promote convenience and efficiency.

**Objective 3.2 –** The Volusia TPO will develop a LRTP that is consistent with local government comprehensive plans to the maximum extent feasible.

**Objective 3.3 –** Projects considered for the LRTP will be evaluated based on existing and planned development to ensure support of economic development plans and initiatives.

**Objective 3.4 –** The LRTP shall include projects that compliment future development activities which minimize travel times and trip distances.

**Objective 3.5 –** The LRTP will give priority to projects that support and promote Transit-Oriented Development and Smart Growth principals and will identify these elements in the criteria ranking for bicycle and pedestrian projects.

**Goal 4: Develop an efficient transportation system that promotes a wide range of transportation options and integrates these options cohesively with the surrounding community.**

**Objective 4.1 –** Priority shall be given to intermodal facilities and transportation projects that provide improved connectivity between modes, serve more than one mode of transportation, or that facilitate the transfer from one mode to another.

**Objective 4.2 –** Transportation projects shall be evaluated on their ability to support mode choice and not simply on relieving traffic congestion.

**Objective 4.3 –** The LRTP shall recognize and respond to anticipated changes in land use planning by developing a public transit element to support greater development densities.

**Objective 4.4 –** The Volusia TPO will recognize and prioritize projects that appropriately support Transit-Oriented Development, Transportation Concurrency Exception Areas (TCEA), and other efforts to create sustainable communities.

**Goal 5: Develop a transportation system that most effectively utilizes the financial resources available and improves the quality of life for residents.**

**Objective 5.1 –** Congestion management strategies such as Transportation System Management (TSM), Transportation Demand Management (TDM), and Intelligent Transportation System (ITS) improvements will be used to create efficiencies in the existing infrastructure.

**Objective 5.2 –** The Volusia TPO will utilize the Efficient Transportation Decision Making (ETDM) process to screen all required projects being considered for inclusion in the LRTP.

**Objective 5.3 –** The Volusia TPO will provide early and ongoing opportunities for the public to learn about long-range planning efforts and to provide meaningful input to the plans developed for their community.

**Objective 5.4 –** The LRTP will consider community and cultural impacts of all projects and seek to develop projects that minimize negative impacts.

**Objective 5.5 –** Where possible, the Volusia TPO will consider all reasonable funding sources, including private and public resources, as well as new and innovative funding options that may be available to support future transportation system development across modes.

After completing the public outreach and prior to placing the draft plan out for public review, the Volusia TPO Board and each of the advisory committees reviewed the vision and goals once again to ensure they reflected the public sentiment and to ensure the draft transportation plan was consistent with local government comprehensive plans.

## Six Livability Principles

On June 16, 2009, U.S. Secretary of Transportation Ray LaHood, U.S. Secretary of Housing and Urban Development Shaun Donovan, and U.S. Environmental Protection Agency Administrator Lisa P. Jackson announced an interagency Partnership for Sustainable Communities to help improve access to affordable housing, provide more transportation options, and lower transportation costs while protecting the environment in communities nationwide. In that announcement, Secretary LaHood said, "Creating livable communities will result in improved quality of life for all Americans and create a more efficient and more accessible transportation network that serves the needs of individual communities. Fostering the concept of livability in transportation projects and programs will help America's neighborhoods become safer, healthier, and more vibrant."

The Partnership for Sustainable Communities established six livability principles that will act as a foundation for interagency coordination:

1. **Provide more transportation choices.** Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

2. **Promote equitable, affordable housing.** Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.

3. **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services, and other basic needs of workers, as well as expanded business access to markets.

4. **Support existing communities.** Target federal funding toward existing communities – through such strategies as transit-oriented, mixed-use development and land recycling – to increase community revitalization, improve the efficiency of public works investments, and safeguard rural landscapes.

5. **Coordinate policies and leverage investment.** Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

6. **Value communities and neighborhoods.** Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods – rural, urban, or suburban.

These locally developed goals and objectives and the *Volusia TPO 2035 Long Range Transportation Plan* support the livability principles established for creating sustainable communities.

## SAFETEA-LU Planning Factors

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) outlined a set of planning factors that are intended to be considered during the development of a long-range transportation plan. The Volusia TPO's 2035 LRTP has incorporated the SAFETEA-LU planning factors into the goals established for the plan as well as in various activities and sections of the final report.

| SAFETEA-LU Planning Factors | LRTP References |
|---|---|
| 1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency | Goals 2, 4 and Ch.'s 6 Transportation Program Options and 8 The 2035 Long Range Transportation Plan |
| 2. Increase the safety of the transportation system for motorized and non-motorized users | Goal 1 and Ch.'s 6 Transportation Program Options and 7 Project Development and Screening Programs |
| 3. Increase the security of the transportation system for motorized and non-motorized users | Goal 1 and Ch.'s 6 Transportation Program Options and 7 Project Development and Screening Programs |
| 4. Increase the accessibility and mobility of people and freight | Goal 1, 2 and Ch.'s 6 Transportation Program Options and 8 The 2035 Long Range Transportation Plan |
| 5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns | Goal 1, 2, 3, 4, 5 and Ch.'s 3 Data Analysis: Land Use and Network Modeling, 6 Transportation Program Options and 8 The 2035 Long Range Transportation Plan |
| 6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight | Goal 1, 2 and Ch.'s 3 Data Analysis: Land Use and Network Modeling, 6 Transportation Program Options and 8 The 2035 Long Range Transportation Plan |
| 7. Promote efficient system management and operation | Goal 3 and Ch.'s 6 Transportation Program Options and 7 Project Development and Screening Programs |
| 8. Emphasize the preservation of the existing transportation system | Goal 3, 4, 5 and Ch.'s 3 Data Analysis: Land Use and Network Modeling, 6 Transportation Program Options and 8 The 2035 Long Range Transportation Plan |

# Chapter 3 Data Analysis: Land Use and Network Modeling

## Introduction

Travel demand is predominantly a "derived" demand that results from the types and locations of various land uses in and around the Volusia Transportation Planning Organization's (TPO) planning area. Sophisticated transportation modeling software has been developed to assist in forecasting future transportation demand using a variety of socioeconomic data variables that are derived from these land uses. This chapter documents the project approach used by the Volusia TPO in developing the socioeconomic data needed to validate the base year transportation model and the development of future year land use and socioeconomic data projections used to forecast transportation demand in the year 2035. These forecasts increase our understanding of the future travel demands in our community and help in assessing the efficacy of various transportation solutions being considered to deal with these demands.

> *"Land use decisions affect the transportation system and transportation investment decisions affect land use. Complications arise because land use decisions are usually made at the local level and decisions about major investments in transportation take place at the regional or state level. The challenge facing many areas today is finding ways to coordinate land use and transportation decisions that will preserve or improve the quality of life in their communities."*
>
> *FHWA Resource Center website*

## Project Approach

As part of the process for updating the long-range transportation plan, the Volusia TPO worked in cooperation with the Florida Department of Transportation (FDOT) and other Central Florida partners to undertake the validation of a regional transportation model. The regional model, called the Central Florida Regional Planning Model, version 5.0 (CFRPM 5.0), was used by the following TPOs/MPOs in FDOT District Five to update their respective plans: Space Coast TPO, Lake-Sumter MPO, Ocala/Marion TPO, and the Volusia TPO. Flagler County, though not part of an MPO, also participated in the process. Additionally, METROPLAN Orlando was an active participant in the validation process, working cooperatively to incorporate their independent model data into the CFRPM 5.0. Data from the year 2005 was used to calibrate the model to ensure it replicated the existing conditions recorded for that year. Once the 2005 model was calibrated and validated, it served as the base for future year models including the Existing Plus Committed (E+C), the Public and Technical Alternatives ,and the 2035 Cost-Feasible Model.

Significant changes occurred during this effort as the regional model was converted from TranPlan to Cube Voyager. In addition to the conversion process, two new strategies were considered for developing and assigning future year population and employment data. One strategy utilized the Future Land Use Allocation Model or FLUAM. FLUAM is a trend based approach that uses Generalized Future Land Use files and the FLUAM methodology developed by METROPLAN Orlando to distribute forecasted data to the Traffic Analysis Zones (TAZs). The alternate strategy considered was the Land Use Conflict Identification Strategy, or LUCIS, developed by researchers with the University of Florida. The LUCIS modeling technique analyzes historical development patterns and their relationship to how suitable the

land is for certain uses such as agriculture, conservation, and urban development. LUCIS also screens out lands unsuitable for certain kinds of development based on factors such as location, transportation choices, proximity to employment and shopping. The LUCIS model was run based on the current trend of existing policy and development patterns as well as with results of the "How Shall We Grow - 4C's Regional Vision." The LUCIS composite map displayed areas of conflict between these two potential futures.

The How Shall We Grow vision-based strategy was intended to encourage local partners to consider developing a plan that responded to the future vision and direction of their communities rather than simply repeating previous trends. In the end, the Volusia TPO agreed to use an accommodated model that was primarily based upon the FLUAM trend based assignments with land uses and associated data adjusted for a few areas based on the vision.

## Model Validation

Key to utilizing technical evaluation tools is the validation process that ensures those tools are reliable. For this effort, the planning partners utilized a multi-layered approach to develop a reliable transportation forecasting tool. This included converting to, and calibrating a base year 2005 Central Florida Regional Planning Model, version 5.0 (CFRPM 5.0) using the Florida Standard Urban Transportation Model Structure (FSUTMS) with the Cube Voyager software, version 5.0.2. This section will present a brief discussion of the model.

As part of the CFRPM 5.0 development process, the Florida Department of Transportation (FDOT) District Five undertook a two-phase conversion of the previous TranPlan version of the model (CFRPM v4.1). Phase 1 of the process converted the CFRPM v4.1 (base year 2000) from TranPlan to Cube Voyager. The end product was a new CFRPM v4.5 with the same base year as the previous v4.1 model, but was built using Cube Voyager scripting software. Phase 1 of the conversion process included: conversion of current TranPlan structure; review of model validation data used in TranPlan validation; and re-validation of the Voyager version of the model using the TranPlan version (CFRPM v4.1) as a target. Phase 2 of the conversion (version 5.0) included more significant structural revisions of the model based on the updated structure of the Orlando Urban Area Transportation Study (OUATS) Voyager model. It also featured an updated validation year (2005) for use in the development of long-range transportation plan updates to be adopted by area MPOs/TPOs. Additional information pertaining to the model is included in the "CFRPM 5.0 Model Calibration and Validation Results" report included in Appendix A-1.

The 2005 model validation served as a base for future year models such as the Existing Plus Committed (E+C) and the 2035 Cost-Feasible model. In addition to a conversion, the validation involved updating the socioeconomic data, including information on the classification and number of households, population, employment, and school enrollment by Traffic Analysis Zone (TAZ); the highway network to include roadway improvements such as adding lanes and the construction of new roadways; and the transit network to ensure service and routes were current. Traffic Analysis Zones were modified to include revisions from recent studies, plus changes that were recommended by the Volusia TPO.

The development of a single model for both future FDOT and TPO/MPO use required changing the context of the validation summaries. Generating summaries at the TPO/MPO or county level was necessary to ensure that the CFRPM 5.0 was appropriately validated to local conditions and any limitations of the travel demand model could be identified. Models from previous studies were referenced and data was acquired to develop the network in order to represent the 2005 base year roadway conditions.

There are four basic steps to the process of travel demand forecasting, which include:

**Trip Generation:** The first step in the process determines the total number of trips that will be made, called productions, each day for each trip purpose in specific geographic areas which are usually referred to as Traffic Analysis Zones (TAZs or zones). The Trip Generation step also determines the number of opportunities, called attractions, available in each geographic area which can satisfy the production trip ends. The Volusia TPO uses a lifestyles methodology to determine trip generation. This is explained in further detail below.

**Trip Distribution:** Once the number of trips to be generated in each geographic area is calculated, the distribution of those trips must be determined. The application of a gravity model simulates the destination choices with respect to the distance from those destinations.

**Mode Choice:** This step of the model determines how trips will occur or what mode of travel will be used; choices include automobile or transit. For highway trips, the Mode Choice step also determines whether the trip maker will drive alone or share a ride with someone else. For transit trips, it will consider the type of transit that will be used (local bus, express bus, or fixed guide-way transit), as well as whether the trip maker can walk to a transit stop or will have to drive to a park and ride location.

**Trip Assignment:** The Trip Assignment step is used to determine which routes the highway and transit trips follow. There are many routes that can be taken to travel between a given origin and destination. This step involves selecting the path that an actual traveler would most likely select, which is generally the shortest and/or fastest route between two locations.

For Volusia County, the trip generation information was converted to a "Lifestyle" data format for modeling purposes. The Lifestyles methodology attempts to distinguish the trip making characteristics of working and non-working households with and without children, as well as permanent and seasonal residents. This information is available for Volusia County as the result of a household travel survey completed in 2000. Under the Lifestyles trip generation methodology, trip productions are based on the following variables:

- Households with Children (HHWC),
- Households with No Children (HHNC),

- Vehicles in HHWC,
- Vehicles in HHNC,
- Workers in HHWC,
- Workers in HHNC,
- Persons in HHWC,
- Persons in HHNC, and
- Occupied Hotel Rooms.

The Lifestyles trip generation methodology generates trips based on the following seven ***trip purposes***:

- Home-Based Work (HBW),
- Home-Based Shopping (HBSH),
- Home-Based Social Recreational (HBSR),
- Home-Based Other (HBO),
- Home-Based School (HBSch),
- Non-Home-Based Work (NHB-W), and
- Non-Home-Based Other (NHB-O).

Two computer files house the land use data used to model base year and future traffic on the area network (both highway and transit). These two files are called ZDATA 1 and ZDATA 2.

**ZDATA 1 – Trip Production Variables:** Trip production variables consist of the following:

- Population classified by Single Family and Multi-Family;
- Dwelling Units (DU) classified by Single Family and Multi-Family;
- Percent of Vacant and Seasonal Dwelling Units; and
- Hotel/Motel classified by Population and Units.

**ZDATA 2 – Trip Attraction Variables:** Trip attraction variables, in this file consist of the following:

- Employment classified by Commercial, Service, and Industrial; and
- School Enrollment for kindergarten to 12$^{th}$ grade and college.

The next section provides an overview of the development of this data and includes information for Volusia County as well as for the region.

## Base Year Socioeconomic Data (2005)

The base year 2005 socioeconomic data was developed using 2006/2007 county parcel-level Geographic Information System (GIS) files that were aggregated and summarized into ZDATA categories based on the Property Appraisers' Department of Revenue (DOR) Use Codes for: single family, multi-family, mobile home (considered single family), hotel/motel/timeshare, commercial, service, industrial, institutional, agricultural, and conservation. Additional data sources were utilized to determine the number of apartments, mobile homes, recreational vehicle spaces, hotel/motel/timeshare units, employees, and school locations and enrollment totals.

The Future Land Use Allocation Model (FLUAM) methodology was used to distribute the socioeconomic data to individual TAZs. The FLUAM process used population control totals for each county for 2005 that came from the Bureau of Economic and Business Research (BEBR), Florida Population Studies, Volume 39, Bulletin 144 report from 2007 (estimate as of April 1, 2005). The input data sources used to develop the 2005 socioeconomic data included the following:

- U.S. Census Bureau (www.census.gov) – Year 2000 files 56, 57 and 58 from the Census Bureau Summary File 3 (SF-3);
- Bureau of Economic and Business Research (www.bebr.ufl.edu) – 2007 report (Florida Population Studies, Volume 39, Bulletin 144);
- Woods & Poole Economics (www.woodsandpoole.com) – 2006 Florida State Profile (State and County Projections to 2030 Employment data);
- InfoUSA (www.infousa.com) – January 2007 employment data for the entire state of Florida – geocoded by Cambridge Systematics with TeleAtlas street base data;
- Florida Department of Business and Professional Regulation, Division of Hotels and Restaurants(www.myflorida.com/dbpr/hr/index.html) – hotel, motel, timeshare, apartment unit counts (2006);
- Department of Health (www.doh.state.fl.us) – Mobile Home Parks, RV Parks;
- East Central Florida Regional Planning Council (www.ecfrpc.org) – supplied Future Land Use and Parcel GIS files for 2006 and 2007;
- Florida Department of Education (www.fldoe.org) – supplied 2005 school enrollment totals for each county; and
- Florida Department of Corrections (www.dc.state.fl.us) for federal prison counts; and county correction department websites for county prison counts.

Trip production variables included in the CFRPM 5.0 ZDATA 1 file consist of: population classified by single family and multi-family; dwelling units (DU) classified by single family and multi-family; percent of vacant and seasonal dwelling units; and hotel/motel classified by population and units. As shown in Table 3.1, the growth in total population for Volusia County was approximately 11.5% between 2000 and 2005. Important to note is that growth was very strong in the single family measures while Volusia

County actually saw decreases in multi-family measures. This trend is not consistent with stated desires to limit sprawl and increase population densities.

The CFRPM 5.0 ZDATA 2 file includes three types of employment: industrial, commercial, and service. In Volusia County, employment grew approximately 11.75% between 2000 and 2005. This growth was roughly at pace with the growth in population. Most of this growth occurred in the service sector which is consistent with the tourist-based economy that has been a key segment of the local economy.

**Table 3.1 Socioeconomic Data Summary Comparison from Previous to Current Base Years**

| Category | 2000 | 2005 | % Difference |
|---|---|---|---|
| **Population** | | | |
| Single Family Population | 330,617 | 395,039 | 19.49% |
| Multi-Family Population | 112,958 | 99,592 | -11.83% |
| Total Population | 443,575 | 494,631 | 11.51% |
| **Dwelling Units** | | | |
| Single Family Dwelling Units | 133,054 | 175,001 | 31.53% |
| Multi-Family Dwelling Units | 78,884 | 59,910 | -24.05% |
| Total Dwelling Units | 211,938 | 234,911 | 10.84% |
| **Permanently Occupied Dwelling Units** | | | |
| Single Family 0 Auto | 6,717 | 7,667 | 14.14% |
| Single Family 1 Auto | 52,145 | 62,693 | 20.23% |
| Single Family 2+ Auto | 64,509 | 90,311 | 40.00% |
| Multiple Family 0 Auto | 5,549 | 6,611 | 19.14% |
| Multiple Family 1 Auto | 24,086 | 23,257 | -3.44% |
| Multiple Family 2+ Auto | 31,683 | 17,175 | -45.79% |
| Total Permanently Occupied Dwelling Units | 184,689 | 207,714 | 12.47% |
| **Employment & School Enrollment** | | | |
| Industrial Employees | 30,184 | 30,772 | 1.95% |
| Commercial Employees | 44,546 | 47,268 | 6.11% |
| Service Employees | 101,335 | 118,746 | 17.18% |
| Total Employees | 176,065 | 196,786 | 11.75% |
| School Enrollment | 82,623 | 95,702 | 15.83% |
| **Ratio Statistics** | | | |
| Permanent Population / Occupied DU | 2.40 | 2.38 | -1% |
| Total Population / Occupied DU | 2.09 | 2.11 | -1.7% |
| Industrial Employment / Total Employment | 0.17 | 0.16 | -6.7% |
| Commercial Employment / Total Employment | 0.25 | 0.24 | -5.1% |
| Service Employment / Total Employment | 0.58 | 0.60 | 4.3% |

## Future Year Socioeconomic Data (2035)

Two models were considered for developing and assigning future year population and employment data. One was the Future Land Use Allocation Model or FLUAM, which is a trend based approach using

land uses identified in local government comprehensive plans. The alternative was the Land Use Conflict Identification Strategy or LUCIS. The LUCIS modeling technique analyzes historical development patterns and attempts to determine how suitable or unsuitable the land is for certain uses. In addition, the LUCIS model was used to explore a trend based scenario as well as one incorporating the How Shall We Grow vision.

Forecasted population control totals were developed for each of the counties based on data from the Bureau of Economic and Business Research (BEBR). BEBR medium population projection numbers were used as the default, except where specific counties were using a modified control total for their methodology. The population controls were used for each of the allocations considered. Further discussion regarding the unique approaches of each strategy is described below.

**FLUAM**

FLUAM is a trend based model developed by Data Transfer Solutions, Inc. (DTS), under contract to the Florida DOT. It uses generalized future land use files developed by the East Central Florida Regional Planning Council (ECFRPC) and the FLUAM methodology developed by METROPLAN Orlando to distribute forecasted data to the Traffic Analysis Zones (TAZs). A complete report titled *Socioeconomic Data Production for FDOT 2035 Long Range Transportation Plan* outlines this work and is included in Appendix A-2.

Population growth was considered at five-year increments, including 2015, 2020, 2025, 2030, and 2035 utilizing the latest available parcel data for each county. Parcels that were classified as being vacant were selected and overlaid with the generalized future land use layer and assigned the corresponding land use values. The ECFRPC generalized future land use designations developed parcels were then extrapolated out to the year 2035 by using an averaging algorithm which included the previous five years in its analysis. This showed how many parcels would develop based on the historical growth trend in that TAZ. These average factors were then applied to the vacant platted parcels with a residential future land use designation. This ensured that development was assigned to TAZs where there was already growth occurring and vacant platted parcels were available to be developed. The data also included known project information that was supplied by the metropolitan planning organizations, counties or cities, as well as any Developments of Regional Impacts (DRIs) that were located in the county. FLUAM was then used to distribute the population forecasts to vacant parcels based on historical development trends, future land use designations, and the parcel's unique relationship to recently developed parcels.

Employment data was determined using forecasts by Woods & Poole. The employment information available at the county level included a breakdown of employment by industry for each year. Employment data by industry for 2015, 2020, 2025, and 2030 was aggregated at the county level to the three FSUTMS (Florida Standard Urban Transportation Modeling Structure) categories – industrial, commercial, and service. To develop the 2035 control totals at the county level, the percentage change for each five-year period between 2015 and 2030 (i.e., 2015-2020, 2020-2025, and 2025-2030) was calculated separately for industrial employment, commercial employment, and total employment. The appropriate percentage changes were then applied to the 2030 projections to develop the 2035

projections. Following the establishment of population and employment control totals for each county, these control totals were then allocated to submarkets prior to running FLUAM. Planning districts were used as the basis for these submarkets. The datasets were reviewed by the respective metropolitan planning organizations, the Florida Department of Transportation, and other involved agencies providing a variety of regional and local outlooks. The resulting sets of numbers were then used as inputs to the Future Land Use Allocation Model to develop employment datasets for future years.

**LUCIS**

Professors at the University of Florida GeoPlan Center developed a land use modeling technique known as LUCIS, the Land Use Conflict Identification Strategy. LUCIS is a goal driven geographic information system (GIS) model that produces a spatial representation of probable patterns of future land use. The LUCIS modeling technique analyzes historical development patterns and their relationship to:

- How suitable the land is for certain uses such as agriculture, conservation and urban development (conversely, LUCIS will screen out unsuitable lands for certain kinds of development potential);
- Location, access, transportation choices, proximity to employment, and shopping;
- Environmental sensitivity, threatened and endangered species habitat; and
- Land values for urban development, agriculture, and conservation.

The LUCIS model then produces a suitability surface (GIS raster) that illustrates the "relative degree to which a specific geographic area is fit for a specific purpose". A preference surface is then developed for each land use type that integrates community input and values. "Preference" is a measure of the degree to which a land use category (agriculture, conservation, or urban) is preferred for any given land unit. The preference surfaces for the three lands uses are then "combined" to create a conflict surface. A conflict surface is a single GIS raster that compares the preference derived for each land use category with others for a specific spatial area. The LUCIS model then indicates areas highly preferred for future urban development and population is allocated into these areas.

Using REMI Policy Insight (REMI), the East Central Florida Regional Planning Council (ECFRPC) calculated employment projections for 2015, 2020, 2025, 2030, and 2035 for each county. To facilitate the comparison of outcomes from the LUCIS and FLUAM models, employment data was generalized into categories consistent with FLUAM, including commercial/office, industrial, and service.

Using the steps described above, University of Florida researchers created two future land use scenarios for a ten-county region in Central Florida illustrating potential growth patterns in 2015, 2020, 2025, 2030, and 2035. The first scenario was based on a trend illustrating the future land use patterns if existing policy and development patterns continue. The second scenario was a composite illustrating future land use patterns using values and assumptions gained from the "*How Shall We Grow - 4C's Regional Vision*", a regional visioning effort in East Central Florida completed in 2007. The composite also integrated a sensitive natural resource plan, additional mass transit options in Lake County, and

utilized development "bubbles" to guide population allocation and concentrate urban development in areas identified by mayors around the region. A detailed report titled "*2035 Long Range Transportation Plan*" describes the LUCIS modeling effort and is included in Appendix A-3.

## Accommodated Land Use

The Volusia TPO held a workshop on October 15, 2008 to introduce the TPO Board and committee members to the LUCIS and FLUAM data forecasting programs. By informing and involving members early in the process as the models were being considered, the TPO staff attempted to increase the understanding of key decision-makers and encourage support for a more innovative approach to planning for the future. A workshop was also held on June 22, 2009 with technical representatives from each of the local governments to review the FLUAM land use maps and LUCIS composite maps to ensure they provided a reasonable representation of each jurisdiction and to consider alternate land use development in the future. The results of their input were presented in a series of TPO advisory committee and Board meetings and an accommodated future land use scenario was developed.

The accommodated land use adopted by the Volusia TPO Board was used to evaluate and adjust the socioeconomic data reflected in the model TAZs for Volusia County. The data sets for each local area were distributed to the TCC representatives for review. The data review included a series of workshops, one-on-one meetings, and presentations that examined and adjusted the data for many of the TAZs. The TPO staff engaged local representatives in a series of very detailed one-on-one discussions and received varying levels of feedback regarding the assignment of various socioeconomic data. The TPO staff also contacted a number of institutions and businesses to try and obtain specific information regarding future year estimates. This phase of the process was completed in November 2009. Table 3.2 includes a summary of the key data sets used in the updated 2005 base year and the 2035 planning year.

**Table 3.2 Socioeconomic Data Summary Comparison of the Base and Future Year**

| Category | 2005 | 2035 | % Difference |
|---|---|---|---|
| **Population** | | | |
| Single Family Population | 395,039 | 542,441 | 37.3% |
| Multi-Family Population | 99,592 | 150,322 | 50.9% |
| **Total Population** | **494,631** | **692,763** | **40.1%** |
| **Dwelling Units** | | | |
| Single Family Dwelling Units | 175,001 | 228,344 | 30.5% |
| Multi-Family Dwelling Units | 59,910 | 94,774 | 58.2% |
| **Total Dwelling Units** | **234,911** | **323,118** | **37.6%** |
| **Permanently Occupied Dwelling Units** | | | |
| Single Family 0 Auto | 7,667 | 9,731 | 26.9% |
| Single Family 1 Auto | 62,693 | 79,242 | 26.4% |
| **Permanently Occupied Dwelling Units** | | | |
| Single Family 2+ Auto | 90,311 | 120,214 | 33.1% |
| Multiple Family 0 Auto | 6,611 | 10,737 | 62.4% |

**Table 3.2 Socioeconomic Data Summary Comparison of the Base and Future Year *(continued)***

| Category | 2005 | 2035 | % Difference |
|---|---|---|---|
| Multiple Family 1 Auto | 23,257 | 33,211 | 42.8% |
| Multiple Family 2+ Auto | 17,175 | 27,967 | 62.8% |
| **Total Permanently Occupied Dwelling Units** | **207,714** | **281,101** | **35.3%** |
| **Employment & School Enrollment** | | | |
| Industrial Employees | 30,772 | 43,338 | 40.8% |
| Commercial Employees | 47,268 | 66,288 | 40.2% |
| Service Employees | 118,746 | 156,443 | 31.7% |
| **Total Employees** | **196,786** | **266,069** | **35.2%** |
| School Enrollment | 95,702 | 135,902 | 42.0% |
| **Ratio Statistics** | | | |
| Permanent Population / Occupied DU | 2.40 | 2.38 | -1% |
| Total Population / Occupied DU | 2.09 | 2.11 | -1.7% |
| Industrial Employment / Total Employment | 0.17 | 0.16 | -6.7% |
| Commercial Employment / Total Employment | 0.25 | 0.24 | -5.1% |
| Service Employment / Total Employment | 0.58 | 0.60 | 4.3% |

As shown in Table 3.2, the rate of growth in the multi-family population and dwelling units categories is greater than the corresponding single-family increases. This reflects increasing population densities in urban areas as included in the How Shall We Grow visioning effort. The table also shows that the population in Volusia County is predicted to grow at a rate above the predicted growth in employment. This may reflect changing demographics that will result from a retiring baby-boom population. However, it may also indicate a growth in commuters seeking work in neighboring counties.

# Chapter 4 The Financial Plan

## Introduction

Federal guidance requires all long-range transportation plans to be "cost-feasible." In other words, the planning organization must identify the anticipated federal, state, and local financial resources that will cover the estimated costs of the projects identified in the plan. The determination of cost feasibility requires planning agencies to develop reasonable and reliable ***revenue estimates*** as well as transportation ***project cost estimates***.

A preliminary revenue estimate for the planning horizon was developed in September 2009 to assist the Volusia TPO in conducting the *Make Your Mark in 2035* public outreach planning sessions and to facilitate the LRTP Subcommittee activities needed to develop transportation plan alternatives. The financial estimates spanned the long-range planning horizon from 2014 to 2035. A preliminary set of project cost estimates (i.e. generalized costs for adding a lane mile of road or a bus route) were also developed for use in the outreach sessions prior to identifying specific projects and project limits. As the transportation network alternatives were developed and combined to form the draft Volusia TPO 2035 LRTP, the revenue estimates and project costs were refined and a fiscally balanced plan was created. Projects and their associated costs for the period of time from 2010 (the year of LRTP adoption) through 2013 (the year preceding the long-range estimates) were already programmed in the Volusia TPO Transportation Improvement Program (TIP) and FDOT Work Program. As such, the information was used to provide a base for the long-range planning effort; however, the project details were not subject to change as a result of this planning process.

Consistent with the requirements identified in the Transportation Equity Act for the 21st Century (TEA-21) and carried over into the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), this chapter summarizes the sources of revenue available for the 2035 LRTP. As required, the revenue estimates and project costs have been provided in "year-of-expenditure" values, separated into five-year time frames over the planning horizon. Table 4.1 outlines the overall revenue used to develop the cost-feasible LRTP.

Additional details of the revenue estimates used to support the *Volusia TPO 2035 Long Range Transportation Plan* are included in the following sections of this chapter and associated appendices.

## Short-Range Revenue

The Volusia TPO works closely with local partners and with the Florida Department of Transportation (FDOT) to coordinate a five-year plan of transportation projects. The TPO's plan is known as the Transportation Improvement Program (TIP) and the FDOT plan is called the Work Program. When transportation projects are included (or programmed) in these documents, the various phases of development (i.e. acquiring equipment, right-of-way, or completing the project design) are expected to be pursued until the project is complete. A continued commitment to projects in the near term reduces wasteful spending and creates stability in the development of our transportation systems.

When the TPO began developing the 2035 LRTP in 2008, a project schedule was established to ensure key activities such as modeling and revenue forecasting could be accomplished without overlap or gaps. Transportation projects and associated financial information for the period covering 2009 through 2013 were established through the adopted TIP and Work Program. The TIP is subject to public review and is required by law to be fiscally balanced; therefore, a review of the financial resources identified to support these short-range projects was not completed as part of the long-range planning effort. Projects in the TIP and Work Program were also used to create the "Existing Plus Committed" (E+C) transportation alternative modeling and a complete listing of the major capacity projects comprising the E+C is included Chapter 6. These transportation projects (including a new commuter rail line) were presented on the base transportation maps as part of the *Make Your Mark in 2035* outreach sessions.

**Table 4.1 Summary of Volusia TPO 2035 LRTP Revenue Estimates** *(in millions)*

| Category | Time Period (by fiscal year) | | | | | Total |
|---|---|---|---|---|---|---|
| | 2014-15 | 2016-20 | 2021-25 | 2026-30 | 2031-35 | |
| **Road Construction** | | | | | | |
| State & Federal | 14.4 | 97.2 | 107.3 | 114.2 | 122.2 | 455 |
| Local Surtax [1] | | 15.6 | 16.5 | 17.7 | 19.1 | 69 |
| **Total** | | | | | | **$524** |
| **Transit** | | | | | | |
| State & Federal | | 5.5 | 6.1 | 6.7 | 7.1 | 26 |
| Local Surtax [1] | | 140.5 | 148.8 | 159.5 | 171.8 | 620 |
| **Total** | | | | | | **$646** |
| Volusia County Roads | | 150.6 | 159.0 | 167.9 | 177.5 | **$655** |

[1] *The surtax is estimated to generate approximately $30 million annually in 2016.*

## Long-Range Revenue Estimates

The approach used to develop the estimates of revenues available for the *Volusia TPO 2035 Long Range Transportation Plan (LRTP)* includes federal and state program estimates that were derived from the "***2035 Revenue Forecast Handbook"*** issued by the Florida Department of Transportation (FDOT) in May 2008 along with additional supplemental material and errata sheets provided by the FDOT. The estimates were prepared by FDOT district staff for the Volusia TPO, based on a statewide estimate of revenues that fund the state transportation system and are consistent with the "*Financial Guidelines for MPO Long-Range Plans"* adopted by the Metropolitan Planning Organization Advisory Council (MPOAC) in October 2007. Copies of these guiding documents are included in Appendices B-1 through B-6.

In addition to traditional revenue sources, the Volusia TPO 2035 LRTP considers the use of a Charter County and Regional Transportation System Surtax (as outlined in *Chapter 212.055 F.S.*). The estimates developed for this plan consider the surtax will include proceeds generated by a ½ cent tax per dollar of retail sales. These funds are primarily intended to support the enhancement of existing public transit service; however, a portion of the revenue is also used to support road projects. The Volusia TPO recognizes that this is a planning effort and that details regarding the actual structure and

implementation of a sales tax are not intended to be determined in this plan. A specific policy statement regarding this decision was adopted by the TPO Board and is included later in the chapter.

Revenue estimates developed by Volusia County government staff in support of the local road program, as well as those used to support Votran (the local area public transit service provider) and SunRail (a commuter rail service), are also included in this plan.

**Federal and State Funding Sources**

The federal government imposes taxes on gasoline, diesel fuel, special fuels, compressed natural gas, gasohol, tires, truck and trailer sales, and heavy vehicle use. Revenues from these federal taxes are deposited into either the Highway Account or the Mass Transit Account of the Federal Highway Trust Fund. The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) then distribute funds in these accounts to each state through a system of formula grants and discretionary allocations. The State of Florida, in spite of updated legislation, continues to be a "donor" state with regards to the receipt of funds from the Federal Highway Trust Fund. This means that Florida contributes a greater amount of taxes to the Federal Highway Trust Fund than the allocation it receives in return to fund transportation projects. State highway fuel sales taxes are shared between the State of Florida Department of Transportation (FDOT) and Florida's county governments.

The Volusia TPO has taken several policy positions regarding the funding of transportation on the state and federal level and will continue to pursue proactive approaches to develop a stable supporting mechanism to ensure we can meet future needs.

**Local Funding Sources**

The primary sources of local funding for roadway infrastructure projects are the Local Option Gas Tax and Impact Fees. The county of Volusia also provides operating support for Votran. Funding for transit is allocated from the General Fund of the county budget which is supported by Ad Valorem collections (property taxes). In addition, private sector funding is sometimes contributed to help implement transportation projects. This typically occurs in conjunction with major development. Volusia County staff provided the financial revenue estimates that support the local road program included in this transportation planning effort. A letter of support verifying these estimates was provided by the Technical Coordinating Committee member assigned to represent Volusia County government.

Volusia County has also made a commitment for expanding mass transit service by approving an Interlocal Agreement with FDOT and other project sponsors to support the development of SunRail. This type of project is consistent with desires expressed by the public, local government representatives, and the Volusia TPO Board during the development of the 2035 LRTP which indicated a need to enhance public transportation options as part of the plan; however, budget constraints along with the lack of a dedicated revenue stream for mass transit, limit the ability to plan for additional expansion of service in the future. In an effort to respond to the direction communicated to TPO staff, a locally generated sales tax estimate was developed as part of a possible Charter County and Regional Transportation System Surtax (as outlined in *F.S. 212.055*). Information needed to fully consider the future of our

transportation system and the role of mass transit, along with the challenges of developing a comprehensive system was presented in a workshop held on May 10, 2010.

At a subsequent meeting held on May 25, 2010, the Volusia TPO Board adopted the following approach for considering transit enhancements as part of the long-range plan:

> "The Volusia Transportation Planning Organization (VTPO) supports a referendum so that Volusia residents can determine whether or not to pursue a locally generated revenue source as the financial basis for the implementation of enhanced transit service in Volusia County. Based upon public input, recent planning activities by local governments and public/private initiatives, the VTPO Board recognizes that there is a significant benefit to developing enhanced transit services. Such services, however, will require additional funding that is not currently available. In addition, the Board further recognizes that the citizenry of Volusia County will, through referendum, make the final determination as to whether this initiative will be implemented.
>
> The referendum details included in the ultimate financial decision will NOT be made at this VTPO planning level. The federal government requires the long-range transportation plan (LRTP) to be financially feasible. As such, it is contemplated that a local sales tax would be used as the dedicated revenue source to fund transportation projects; transit as well as road projects. For the purposes of developing the 2035 VTPO LRTP, the VTPO Board agrees that the revenues generated by such a funding source will be allocated towards supporting existing mass transit commitments and developing an enhanced transit system. If a future dedicated revenue source is approved by the public, the VTPO Board acknowledges that the actual distribution of revenue will be determined by the most appropriate government arrangement."

The Volusia County School District currently collects proceeds from a ½ cent sales tax in Volusia County and data is available regarding the annual revenues collected. Details regarding this program can be found in a report of the Volusia School District's Project Oversight Committee issued in June 2009 (see Appendix B-7). This information was used to develop the following estimate shown in Table 4.2. The estimates were developed conservatively to reflect the current economic slowdown being experienced in Volusia County and around the nation.

A summary table has also been developed to provide additional detail regarding the distribution of available revenue by program category and revenue available by year-of-expenditure in five-year increments. This detailed information is included in Appendix B-8

**Table 4.2 Revenue Generated by ½ Cent Sales Tax**

| Forecast Assumptions | Year | Annual Revenue (in millions) | Revenue Per Period |
|---|---|---|---|
| 1/2 cent retail sales tax collections reported by Volusia County Schools | 2004 | $34.1 | |
| | 2005 | $34.8 | |
| | 2006 | $37.8 | |
| | 2007 | $35.9 | |
| | 2008 | $33.9 | |
| | 2009 | $30.3 | |
| Presume no increase in revenue collections until 2016 | 2010 | $30.3 | |
| | 2011 | $30.3 | |
| | 2012 | $30.3 | |
| | 2013 | $30.3 | |
| | 2014 | $30.3 | |
| | 2015 | $30.3 | |
| Presume 1% increase in revenue collections from surtax | 2016 | $30.6 | |
| | 2017 | $30.9 | |
| | 2018 | $31.2 | |
| | 2019 | $31.5 | |
| | 2020 | $31.8 | $156.1 |
| Presume 1.25% increase in revenue collections from surtax | 2021 | $32.2 | |
| | 2022 | $32.6 | |
| | 2023 | $33.1 | |
| | 2024 | $33.5 | |
| | 2025 | $33.9 | $165.3 |
| Presume 1.5% increase in revenue collections from surtax | 2026 | $34.4 | |
| | 2027 | $34.9 | |
| | 2028 | $35.4 | |
| | 2029 | $36.0 | |
| | 2030 | $36.5 | $177.2 |
| Presume 1.5% increase in revenue collections from surtax | 2031 | $37.1 | |
| | 2032 | $37.6 | |
| | 2033 | $38.2 | |
| | 2034 | $38.7 | |
| | 2035 | $39.3 | $190.9 |
| **Total Revenue for 2035 LRTP** | | | **$689.5** |

## Project Costs

Project cost estimates are typically developed in present day values using information from actual projects and project phases as well as from current analyses, for example, a Project Development and Environmental (PD&E) study. However, since the revenue estimates developed for this long-range plan are in year-of-expenditure values, the project costs must also be inflated as we consider how the project

phases may develop throughout the planning horizon. For this effort, cost estimates were derived from a variety of sources including engineering estimates, program plans, and transportation studies. The project listing, costs, timing and phases included for the Strategic Intermodal System (SIS) were provided by the FDOT. Project cost estimates for Other Arterials (Non-SIS) listing were developed by Volusia TPO and consultant staffs and the Local Road estimates were developed by Volusia County construction engineering staff. Transit program estimates utilized available information from the Transit Corridor Feasibility Study and the Transit Development Plan as well as input from Votran management. Details of the project cost estimates used to support the *2035 Long Range Transportation Plan* are included in Appendices B-9 through B-12.

**Cost Estimates Developed by the Volusia TPO**

For this effort, the long-range planning decisions pertaining to the Strategic Intermodal System (SIS) have been made by the FDOT. A cost-feasible SIS Plan was provided to the Volusia TPO and subsequently incorporated into the 2035 LRTP. The project listing, costs, timing and phases for Other Arterials (Non-SIS) listing were developed by Volusia TPO and consultant staffs using the Florida Department of Transportation (FDOT) Long-Range Estimate (LRE) data and engineering and construction expertise.

Guidance provided to MPOs/TPOs for the development of project cost estimates as part of the long-range planning effort were to use a base year of 2009 and to consider approximately 20% of the project costs for Project Development and Environmental (PD&E). The Revenue Forecasting Handbook also stated that for projects funded with the revenue estimates for Other Arterials and Transportation Management Area (TMA) funds "MPOs can assume that 20% of those estimated funds will be available from the Statewide Product Support estimates for PD&E and Engineering Design."

The construction estimates developed initially for the Volusia TPO's highway projects were provided in 2010 values and each included a 25% contingency for project unknowns. A 10% set-aside was also identified for projects with potential right-of-way needs. Subsequent review by the LRTP Subcommittee included refining several of the contingency set-asides by modest amounts. Given these variables and assumptions, the "present day cost" estimates developed for the Volusia TPO 2035 LRTP highway projects are quite reasonable. These figures were then distributed over the planning horizon using a spreadsheet provided through the MPO Advisory Council. The spreadsheet uses inflation factors for each of the future year planning increments and supports the development of a phased set of transportation improvements. The spreadsheet showing the road and bridge projects, costs and phasing is included in Appendix B-9.

Project costs for the transit element relied upon a variety of sources including the *Transit Corridor Feasibility Analysis Study* developed for the Volusia TPO by TranSystems Corporation in March 2009, Votran's Transit Development Plan (TDP), and consultation with Votran planning and management. The transit program required developing both capital and operating costs in a present day value and then inflating those to year-of-expenditure. In addition, the operating costs for each project are the accumulated and inflated values for each year until the end of the planning horizon year of 2035.

Guidance provided to MPOs/TPOs for the development of transit project estimates were included in an October 31, 2008 Errata to the Revenue Forecasting Handbook. The errata provided inflation factors for each year throughout the planning horizon specific to transit. Appendix B-11 shows the 2035 LRTP transit projects and details for developing year-of-expenditure cost estimates for operating and capital costs. Appendix B-12 includes a summary of the total transit program expenditures expected to be funded by the sales tax throughout the planning horizon.


## Project Planning and Programming

The cost-feasible component of the *Volusia TPO 2035 Long Range Transportation Plan (LRTP)* contains a phased listing of the transportation system capacity improvements to be implemented over a twenty-year planning horizon. It contains infrastructure projects on local roads and state highways as well as mass transit system improvements. Projects in the cost-feasible plan were identified through a combined process of coordination and review with transportation professionals, technical modeling of transportation alternatives, local government coordination, project screening, and public input and review.

In the State of Florida, all federal and state transportation funding is channeled through the Florida Department of Transportation (FDOT). Annually, FDOT requests lists of prioritized projects and required phases to be funded. Major capacity projects included on the lists must be identified in the adopted long-range transportation plan and in the appropriate local government comprehensive plan(s). Each year, the Volusia TPO issues a "call for projects" to develop the priority ranking for the FDOT. The TPO convenes a Transportation Improvement Program (TIP) Subcommittee to oversee the activity, and to develop and recommend the ranked priority lists to the TPO advisory committees and Board. Once complete, FDOT uses the priority lists to allocate available funding to projects and they program these expenditures in the Florida Department of Transportation Five Year Work Program.

Projects on local roadways that will be funded with local revenues are programmed for implementation in the *Volusia County Five-Year Capital Improvements Program (CIP)*. This is a responsibility of Volusia County government. Every year, the county coordinates with the municipalities in each of its impact fee zone areas to identify and prioritize the projects included in the five-year plan. A series of public

meetings are then scheduled to review the draft CIP. The final plan is then presented to the Volusia County Council for adoption.

Transit plans and projects are identified in the Transit Development Plan (TDP). The TDP is required by the Florida DOT for transit agencies that receive block grant funding. Much like this LRTP, the TDP identifies transit system needs and estimates the future revenue streams available. Operational funding is primarily provided by Volusia County using ad valorem tax proceeds and system improvements are determined by the Volusia County Council.

## Funding Challenges

As we look to the future, we know there will be significant challenges regarding the funding of our transportation system. This section briefly explores issues that should be monitored over time.

### Fuel Taxes

The principal source of funding for transportation infrastructure has traditionally been fuel taxes. Revenues generated by fuel taxes have grown consistently over time since gas taxes were first imposed in 1921. Although the tax rate has risen from time to time, the tax proceeds from fuel taxes have risen at a faster rate. This is due to a steady increase in overall consumption which is likely the result of an increase in the number of gasoline-powered vehicles along with an increase in vehicle miles traveled. However, in recent years gas tax collections, which are based on a fixed rate per gallon of fuel sold and not on the selling price, have not increased at a rate consistent with historical trends. This change is due to higher fuel costs per gallon, which have resulted in decreased consumption and a subsequent decrease in revenue collections. Additionally, vehicles that are more fuel-efficient and those powered by alternative fuels are more widely used. These factors along with several others make it reasonable to believe that fuel taxes will not remain a consistent or stable source of revenue in the mid- or long-term.

### Changing Policy

Traditional transportation programming policy provided for a somewhat even division of federal and state transportation funds between projects on the Florida Intrastate Highway System (FIHS) and other arterial roadways (i.e., other roadways not on the FIHS). In the summer of 2004, FDOT completed work to develop the state's Strategic Intermodal System (SIS), a transportation network including the FIHS as well as other high priority facilities identified within the state.

In an effort to place emphasis on the SIS and to implement needed improvements, the FDOT initiated formal programming policy changes in fiscal year 2009/2010 requiring that 75% of all available federal and state capacity funds are allocated to improvements to the SIS. The remaining 25% of the capacity funds are allocated to other arterial improvement projects that are identified by the state as "regionally significant." FDOT designates the facilities that are included in the SIS and "emerging" SIS. In addition, FDOT has identified regionally significant roadways throughout the state. In the Volusia TPO planning area, only a small portion of roadways are part of the state's Strategic Intermodal System and the resulting impact on local transportation planning and project funding has been significant.

There continues to be a shift in thinking that encourages sustainable development in all aspects of our communities including transportation. The success of implementing smart growth principles that discourage urban sprawl and seek to preserve our environment rely upon a changing approach to mobility. There is also increasing attention towards reducing greenhouse gas emissions which also influences the decisions regarding our future mobility. In the past, our growth and development centered around accommodating private automobile use and over-the-road freight. However, future growth and development will require increasing emphasis on mass transit and freight rail. This LRTP has attempted to respond to these issues by asking the public to consider future development possibilities, by identifying land use changes that might be desirable, and by developing an enhanced transit program to support these changes.

It will be critical for the Volusia TPO to monitor policy changes on the national, state, and local level and to identify funding needs required to support these shifts.

# Chapter 5 Public Involvement

## Introduction

> *Effective scenario planning will actively involve the public and elected officials on a broad scale, educating them about growth trends and tradeoffs, incorporating their values and feedback into future plans.*
>
> *FHWA Resource Center website*

The Volusia Transportation Planning Organization's planning area includes a diverse population of almost 500,000 residents. With five institutions of higher education, there is an engaged and youthful population as well as a significant number of senior citizens. There is also an active group of disabled advocates that seek to maintain independence for persons with disabilities. The TPO planning area covers rural communities and urbanized areas and includes an employment base consisting of agriculture, tourism, and manufacturing. A successful outreach program includes efforts to reach and involve representatives from all walks of our community. During the development of the *2035 Long Range Transportation Plan (LRTP)*, the Volusia TPO developed a public involvement strategy to fully engage the public so that they were informed of transportation issues facing our community and had ample opportunity to provide input on the planning solutions being considered.

The importance of public outreach as a means to inform, educate, and involve citizens in the transportation decision-making processes that impact their daily lives cannot be underestimated. By involving the public in ways that are meaningful and measurable, transportation planners are better able to ensure that the plans and programs developed reflect community values and benefit all segments of the population equally.

As part of the 2035 LRTP, the Volusia TPO dedicated its existing staff resources to conduct the public involvement activities scheduled throughout the development of the plan. This ensured that all activities involved personnel knowledgeable in the planning process and that the efforts were completed in a very cost-effective manner. The Volusia TPO used four primary activities to meet the planning requirements outlined in Metropolitan Planning Rule (§450.316 and §450.322). These included: 1) creating a project website; 2) conducting a series of interactive planning sessions and meetings; 3) conducting surveys, both in print and online; and 4) utilizing the Volusia TPO advisory committees. Each of these activities is described in greater detail below. In addition, the TPO capitalized on other opportunities including press releases, direct mail lists, news media coverage and partner support to promote long-range plan activities to the public.

## Long Range Transportation Plan (LRTP) Website

The Internet is a major forum for the dissemination and exchange of information. The advantages of creating a project website are plentiful: it's relatively inexpensive to set up and maintain; it is simple to keep the information current; it can be entertaining to use; it can be accessed at any time; it provides an opportunity for people to offer input as well as become informed; and it can be updated and accessed routinely so that people can stay involved and informed throughout the development process.

The primary limitation of a project website is that the internet serves only those with access to it. This means that groups with lower utilization rates such as the elderly or low income may be less likely to access the planning process using this resource.

The website **www.vcmpo2035lrtp.com** was established in March 2010, and was updated regularly throughout the long-range planning process. The nature and extent of the information included on the website included the following general information:


- A welcome message from the Executive Director explaining the challenges faced by our community and encouraging people to become involved in shaping our plan for the future;
- An overview of the long-range transportation planning process and an explanation of the approaches used by the Volusia TPO to develop a plan;
- Information about the geographical area included in the plan and the cities that lie within its jurisdiction;
- Links to the Volusia TPO organizational website, to the surveys used to collect public input, to various local government sites within the TPO planning area, and relevant Florida Department of Transportation sites;
- A project schedule and calendar of events showing key activities, public meetings, and Volusia TPO committee meetings; and
- Various documents and transportation projects being considered and LRTP Subcommittee meeting agendas and summaries.

In addition to exposure from the Volusia TPO and LRTP project websites, the development of the 2035 LRTP was promoted and linked from a variety of our municipal websites throughout the planning area. This is seen as an advantage because, while many citizens may be unaware of the TPO, they may regularly visit their municipal site seeking information on current activities. Unfortunately, the dynamic nature does not allow the TPO to easily document this type promotion or judge its efficacy.

Between March 2010 and February 2011, the Volusia TPO 2035 LRTP website recorded 8,471 visits. Screen captures showing the website pages are included in Appendix C-1.

## Make Your Mark in 2035 Interactive Planning Sessions

A series of interactive planning sessions called "***Make Your Mark in 2035"*** were used to educate and inform members of the community about long-range transportation issues and to collect information regarding their concerns and desires for the future. The *Make Your Mark* concept originated in Punta Gorda, Florida as an interactive planning game called "Strings and Ribbons." The activity was created by Lisa Beever, PhD, AICP, who sought to design a fun and interesting way to explain the transportation improvement program and planning processes to the public. During development of the 2025 LRTP, the Volusia TPO modified the strategy to represent the long-range transportation planning activities undertaken by the organization. The Volusia TPO Strings and Ribbons effort was recognized nationally as a "best practice" for public involvement and was recently included in the "*FHWA Best Practices in Metropolitan Transportation Planning Report*" developed by the U.S. Department of Transportation Volpe National Transportation Center.

Volusia TPO staff modified the activity for the development of the 2035 LRTP and re-named it "*Make Your Mark in 2035*." Modifications included a switch to materials that were easier for participants to use. The update also added an exercise designed to emphasize the connection between population growth, land use, and transportation by asking participants to assign future population growth.

Each of the planning sessions began with an overview of the Volusia TPO, the requirements for developing a long-range transportation plan, and general information about the planning area. The details of the *Make Your Mark* exercise were then explained and the materials were reviewed.

During each session, participants were grouped into teams of 6-8 members, with ample support provided by TPO staff. Each team was given a map representing the transportation system planning area. The maps included the boundaries for each municipality, known or anticipated Developments of Regional Impacts (DRI's), and the Map A environmental overlay as approved for Volusia County. Maps also included the existing transit routes and roadways by number of lanes, as well as any roadway projects fully funded for construction. Teams were provided with an amount of money equal to the preliminary revenue estimate for the 20-year planning horizon, divided equally among the participants at each table. Other useful information was provided, including a summary of the 2025 LRTP, a list of generalized project costs (i.e. the cost of adding a transit route or mile of roadway), a summary of the Votran Transit Development Plan (TDP), colored markers, and other materials needed to complete the planning exercise.

In the first ten minutes of the planning session, teams were asked to assign a population of roughly 200,000 new residents throughout Volusia County (the estimated growth between the current year and 2035). Staff clarified that the population should be placed where the participants believe growth should

be encouraged (or indicate where it should be discouraged), not where they think future development has already been planned. The intention behind this effort was to help participants consider the impacts of urban sprawl verses infill development and to make a connection between developing a transportation network that would support expected growth and development. This proved to be much more challenging than anticipated and sent a clear message to many about the difficulties of managing future population growth.

Participants were then asked to begin identifying needed transportation improvements and estimating the costs for such improvements. As the project cost sheets were explained, participants were informed that, consistent with actual restrictions on funding, they would not be able to program any expansions to mass transit (bus or rail) unless they identified a funding source to support the expansion. In Volusia County, the primary resource available to support mass transit is the Transportation Surtax (explained in more detail in Chapter 4, The Financial Plan). Each team had to vote on whether to implement the tax and at which level: ½ cent or 1 cent. Of the 33 teams participating in *Make Your Mark* activities, 17 teams (51.5%) elected to use the surtax to expand mass transit in Volusia County.

Participants were encouraged to fund projects that represented their vision for the future. Some gave a preference to highway capacity projects, recognizing that congestion on our roads will continue to increase, while others favored bus and rail transit projects to deal with mobility. Staff explained to teams that mass transit could only be supported or justified if there were increased population densities and teams were encouraged to review the placement of future populations to create transit supportive areas if desired. Many participants recognized the need for added pedestrian and bicycle facilities and selected landscaping projects as well to improve the aesthetics of their community. In some cases, participants identified specific projects such as a trail or area in need of sidewalks, but in other cases participants simply identified geographical areas or corridors where they believed there was a need for improvements.

The *Make Your Mark in 2035* exercise has several advantages over more traditional public involvement. First, participants make a conscious decision as to which types of transportation are the most important to receive funding. Second, each participant in the game experiences the constraints of budgeting as they begin to realize there are more needs than available funding. Third, people are confronted with the reality of dealing with population growth and land use development. Fourth, there are no specific skills, education, or experience needed for participants to convey their opinions about transportation options and planning in their community. The small groupings and interactive nature of the exercise also encourages and empowers individuals to have a voice and offer ideas and opinions that would not typically occur in a traditional public forum. And finally, the activity produces outcomes that serve as an influential driver of the plan's direction and project development.

The Volusia TPO completed 13 *Make Your Mark in 2035* planning sessions and the results were compiled and used to develop Transportation Alternative #2 – the Public Alternative. A summary listing of the planning sessions is shown in Table 5.1 and the completed Public Alternative is included in Chapter 7, Transportation Alternatives. A sample notice is also provided in Appendix C-2.

**Table 5.1 Make Your Mark in 2035 Interactive Planning Sessions Summary**

| Location | Participants | Tables | Tables Passing Sales Tax | Date | Location | Target Audience |
|---|---|---|---|---|---|---|
| Daytona Beach | | | | December 8, 2009 | Daytona Beach International Airport | TPO Committee Members |
| Ormond Beach | 19 | 3 | 3 | January 11, 2010 | Ormond Beach Performing Arts | General Public |
| South Daytona | 13 | 3 | 3 | January 13, 2010 | Votran (Mobility Mgmt. Center) | Disabled Advocates |
| Daytona Beach | 18 | 3 | 0 | January 20, 2010 | Daytona Beach International Airport | TPO Board /Business Leaders |
| Daytona Beach | 17 | 2 | 1 | February 2, 2010 | Council On Aging | Senior Citizens |
| New Smyrna Beach | 23 | 4 | 0 | February 4, 2010 | Brannon Center | General Public |
| City of Edgewater | 16 | 3 | 0 | February 9, 2010 | City Council Chambers | General Public |
| Port Orange | 1 | 0 | 0 | February 17, 2010 | Port Orange Adult Activity Center | General Public |
| Deltona | 17 | 3 | 1 | February 19, 2010 | City Council Chambers | FPZA & VCARD |
| Deltona | 4 | 1 | 0 | February 23, 2010 | City Council Chambers | General Public |
| Daytona Area | 10 | 2 | 2 | February 24, 2010 | Daytona Beach International Airport | Halifax Chamber, YPG |
| Orange City | 29 | 4 | 3 | March 6, 2010 | City Council Chambers | General Public |
| Daytona Beach | 25 | 4 | 3 | March 18, 2010 | Braille & Talking Book Library | General Public |
| DeLand | 9 | 1 | 1 | March 24, 2010 | TCK Administrative Center | General Public |
| **TOTALS** [1] | **201** | **33** | **17** | | | |

[1] *Note: Totals do not include the first Make Your Mark planning session that involved TPO committee members. Results from this activity supported development of the Technical Alternative.*

## Public Input Surveys

The Volusia TPO recognizes that not all people or groups have the interest or ability to devote the time needed to complete a *Make Your Mark in 2035* exercise. That does not mean, however, that their input is less valuable. In an effort to capture input from people who may not choose to attend a public event or who may not have the time available to do so, the Volusia TPO developed two surveys to collect additional thoughts from the community. Although the exchange of information is more limited, the opportunity to reach a greater number of people is very beneficial. The electronic format is also easy to tabulate and results can provide direction that assists in decision-making.

Of course, there are some drawbacks to this approach; surveys must generally be brief in order to encourage participants to complete them and the need for brevity makes this tool less informative for participants and less interactive than other strategies. In addition, the expense of a professionally developed and tabulated survey is considerable. In this case, the surveys were developed and analyzed by TPO staff and reviewed and approved by our committees and board. As such, they do not carry statistical validity and this should be recognized when reviewing the results. It should be noted, however, that the survey responses augment other outreach efforts and reasonable conclusions can be drawn where responses are clear.

**Survey #1**

A ten question survey regarding transportation issues was launched on November 24, 2009. The survey was available in English and Spanish language and was distributed online and in print form. The TPO collected and tabulated input from surveys submitted through April 16, 2010. A total of 344 surveys were logged for analysis. Demographic information collected from respondents showed a broad representation across age groups as well as representation from all areas of Volusia County. Though residents weighed in from a broad range of locations, the number of comments received from east Volusia totaled 224 and west Volusia responses totaled 89. This is generally not proportionate to the overall distribution of population in the county and appears to indicate that west Volusia may be under-represented in the results.

The first couple of questions asked respondents if they believed traffic congestion is a problem in our community now, or will be in 10 years or 20 years. Results showed that roughly half think congestion is not a problem today, but 88% believe it will be a problem in the future.

Another question asked if the existing transportation system meets the needs of people in our community and surprisingly, 66% responded that it did not. The most common reasons cited for this were a lack of public transit (57%) and lack of bicycle and pedestrian options (15%), while the need for more or better roads was entered as a reason in only 5% of the responses.

Responses to the remaining questions seemed to be consistent in showing that there is a recognized need for increased travel choices in the local area with improvements to public transit as the leading suggestion along with improving the efficiency of the existing system.

When asked what responders appreciated the most about our existing transportation system, the predominant response pertained to the overall functionality and efficiency of our existing roads as well as the design and maintenance. This is consistent with the overall level of satisfaction shown in previous surveys completed by other organizations.

When asked to express their greatest concern about the existing transportation system, the predominant response pertained to limitations in the span of daily operations and service frequency of the current public transit system. Ranked second were concerns over the design, safety, and linkages for bicycle paths and sidewalks.

A complete summary of the questions asked in the ***Volusia TPO Year 2035 LRTP Survey #1,*** along with a summary of the data collected, is included in Appendices C-3 through C-5.

**Survey #2**

A second survey was launched on April 28, 2010 as a web-based survey. The TPO collected and tabulated input from completed surveys submitted through September 28, 2010. A total of 589 logins were recorded. While questions in the first survey were broad-based, the follow-up survey was intended to provide greater specificity regarding the strengths and weaknesses of transportation in our community and to begin prioritizing projects being considered for the long-range transportation plan and how they might be funded.

Consistent with the first survey, the responses seemed to indicate a desire to develop more travel options along with the recognition that there must be land use and funding changes to support these choices. Two questions asked responders to weigh in specifically on funding considerations for the long-range transportation plan. The first funding question (Survey 2, Question 4) asked if responders supported a dedicated funding source for bus and rail transit, and if so, what type of funding source they preferred. A series of options was provided, but the majority of respondents (40.6%) stated that they would need more information before making a choice. Only 26.3% said they would not support consideration of a dedicated funding source for transit. The second question asked specifically whether the responder would support a sales tax as a funding source for the long-range plan with recognition it could only be enacted through a voter referendum. In this case, 56% of the responses favored the sales tax while 44% responded with a no.

Responders were also asked to review a list of roadway projects and a list of transit projects and rank the top five preferred projects from each of the lists. In both cases, projects associated with the implementation of SunRail, the commuter rail line planned between Volusia County and the Orlando metropolitan area, received the highest rankings.

The final question asked respondents to select from a series of seven land use choices the “two best ways to manage future growth and development.” The leading choices by a significant count included changes to “Increase Mixed-use Development Activity” and efforts to “Protect Open Spaces.” These indicate a desire to limit urban sprawl and make changes that limit dependency on the personal

automobile. The next most frequent choice was to "Create Transit Corridors" an option that further emphasizes the desire for changes in our community.

A complete summary of the questions asked in the ***Volusia TPO Year 2035 LRTP Survey #2*** and the data collected are included in Appendices C-6 and C-7.

## Public Meetings

As the development of the Volusia TPO 2035 LRTP reached draft form, a series of public meetings were scheduled throughout the planning area to inform citizens of the plan and to take final comment on the transportation projects identified for the future. Display maps showing all of the projects were prepared for review along with a summary document explaining the process for developing a long-range transportation plan for our area. The handout explained the requirement for developing a transportation plan, the financial resources available, the development of transit as well as roadways and the involvement of citizens to determine the plans for the future. The Draft *Volusia TPO 2035 LRTP Summary* is included in Appendix C-8.

Notifications for each of the meetings included a press release, notice on the LRTP project website as well as the Volusia TPO website, e-mail notice to the Volusia TPO Board and advisory committee members, along with a request that they post notice on their local jurisdiction website. The following is a list of the public meetings held:

*New Smyrna Beach:*

*Tuesday, August 31, 2010 - 5:00 p.m.*
*Brannon Center*
*105 S. Riverside Dr.*
*New Smyrna Beach, FL 32168*

*Daytona Beach:*

*Tuesday, September 7, 2010 - 4:00 p.m.*
*Volusia TPO Conference Room*
*2570 W. Int'l Speedway Blvd, Suite 100*
*Daytona Beach, FL 32114*

*DeLand:*

*Wednesday, September 1, 2010 - 4:00 p.m.*
*Volusia County Administration Center*
*123 W. Indiana Ave*
*DeLand, FL 32720*

*Deltona:*

*Thursday, September 9, 2010 - 6:00 p.m.*
*Deltona City Hall*
*2345 Providence Blvd*
*Deltona, FL 32725*

In addition, a public hearing was scheduled as part of the Volusia TPO Board meeting held on Tuesday, September 28, 2010. This was when the TPO Board adopted the Volusia Transportation Planning Organization's *2035 Long Range Transportation Plan*. Only one comment was received as a result of this final effort. The comment was provided in writing by a member of the Volusia Schools Oversight Committee and recommended that the Volusia TPO communicate and coordinate any future activities involving transportation surtax.

## Volusia TPO Board and Committees

A significant amount of public notice, representation, and review for the development of the 2035 LRTP also occurred as part of the regular meetings of the Volusia TPO Board, standing committees and the LRTP Subcommittee. These groups include citizen representatives, elected officials, local government staff and special interest advocates representing all portions of the planning area. In addition, public notice is provided for each of the meetings in accordance with Florida Statutes and the adopted bylaws of the organization.

### Volusia TPO Board

The Volusia TPO Board membership consists of elected officials representing all local governments in the planning area, including municipal and county entities. As outlined in Florida Statutes, the Volusia TPO Board is comprised of 19 voting members. In addition, there are five non-voting members that represent the Technical Coordinating Committee (TCC), Citizens Advisory Committee (CAC), Bicycle and Pedestrian Advisory Committee (BPAC), Transportation Disadvantaged Local Coordinating Board (TDLCB), Florida Department of Transportation (FDOT) District Five Office and the Volusia County School Board. These members are appointed primarily to provide information and recommendations to the Volusia TPO Board.


The Volusia TPO Board meets on the fourth Tuesday of every month at 8:00 a.m. and all meetings are properly noticed and open to the public. An agenda is developed in advance of the meetings, and in accordance with the adopted bylaws of the TPO, each meeting agenda includes an opportunity for "citizens to comment or be heard on any matter pertinent to the urban transportation planning process." With respect to the 2035 LRTP, each agenda described the activities being considered or presented and provided an opportunity for citizens to address the Volusia TPO Board regarding any of these activities. Between August 2009 and the plan adoption in September 2010, the TPO Board held 12 meetings. Matters pertaining to the development and approval of the 2035 LRTP were included on all 12 agendas, including 5 presentations and 7 items presented for review and action.

**Technical Coordinating Committee**

The Technical Coordinating Committee (TCC) membership consists of professional transportation planning and engineering staff as appointed by each of the TPO Board members. The TCC uses their professional education and experience to review transportation related studies and information and provide recommendations, as a committee, to the TPO Board.

The TCC meets on the third Tuesday of every month at 3:00 p.m. and all meetings are properly noticed and open to the public. As with the TPO Board, an agenda is developed in advance of each meeting and there is an opportunity for citizens to provide comment or be heard on any matter pertinent to the business of the organization. With respect to the development of the 2035 LRTP, each agenda described the activities being considered or presented and provided an opportunity for citizens to address the committee regarding these activities. Between April 2009 and September 2010, the TCC held 15 meetings and matters pertaining to the development and approval of the 2035 LRTP were included on all 15 agendas, including 11 discussion items and 8 action items. Presentations, discussions, and actions taken by the TCC covered a broad range of items including the development of socioeconomic data for the traffic model, input and review of the public involvement plan and surveys, review of the vision and goals, and review and recommendations regarding the financial estimates and projects considered for the plan.

**Citizens' Advisory Committee**

The Citizens' Advisory Committee (CAC) membership consists of representatives from the general public as appointed by each of the TPO Board members. The CAC use their knowledge of the local community, special interests, and experiences to review transportation related studies and information and provide citizen based recommendations, as a committee, to the TPO Board.

The CAC meets on the third Tuesday of every month at 1:30 p.m. and all meetings are properly noticed and open to the public. As with the TPO Board, an agenda is developed in advance of each meeting and there is an opportunity for other citizens to provide comment or be heard on any matter pertinent to the business of the organization. With respect to the development of the 2035 LRTP, each agenda described the activities being considered or presented and provided an opportunity for citizens to address the committee regarding these activities. Between March 2009 and February 2011, the CAC held 15 meetings and matters pertaining to the development and approval of the 2035 LRTP were included on 14 agendas, including 10 presentation items and 6 action items. Presentations, discussions, and actions taken by the CAC covered a broad range of topics including input and review of the public involvement plan and surveys, review of the vision and goals, and review and recommendations regarding the financial estimates and projects considered for the plan.

**Bicycle and Pedestrian Advisory Committee**

The Bicycle and Pedestrian Advisory Committee (BPAC) membership consists of representatives from the public who serve as advocates for walking, cycling, and other non-motorized activities. Members of the BPAC are appointed by each of the TPO Board members and use their knowledge of the local

community, special interests, and experiences to review transportation related studies and information and provide recommendations, as a committee, to the TPO Board.

The BPAC meets on the second Wednesday of every month at 3:00 p.m. and all meetings are properly noticed and open to the public. As with the TPO Board, an agenda is developed in advance of each meeting and there is an opportunity for other citizens to provide comment or be heard on any matter pertinent to the business of the organization. With respect to the development of the 2035 LRTP, each agenda described the activities being considered or presented and provided an opportunity for citizens to address the committee regarding these activities. Between August 2009 and February 2011, the BPAC held 12 meetings and matters pertaining to the development and approval of the 2035 LRTP were included on 6 agendas, including 3 presentations, 1 information item and 2 action items.

**Transportation Disadvantaged Local Coordinating Board**

The Transportation Disadvantaged Local Coordinating Board (TDLCB) membership is outlined in Chapter 427, F.S. and Chapter 41-2.012, F.A.C. Generally speaking, the TDLCB consists of representatives able to advocate for the transportation disadvantaged population of the local planning area. The TDLCB members use their professional education and experience to review transportation related studies and services, and provides recommendations, as a committee, to the TPO Board.

The TDLCB meets on the second Wednesday of every other month at 11:00 a.m. and all meetings are properly noticed and open to the public. As with the TPO Board, an agenda is developed in advance of each meeting and there is an opportunity for advocates and citizens to provide comment and be heard on any matter pertinent to the business of the organization. With respect to the development of the 2035 LRTP, each agenda described the activities being considered or presented and provided an opportunity for citizens to address the committee regarding these activities. Between July 2009 and September 2010, the TDLCB held 8 meetings and information pertaining to the development and approval of the 2035 LRTP were included on 7 agendas. Most of the agendas included summary information from LRTP Subcommittee meetings. Two action items and a *Make Your Mark in 2035* planning session were also provided to engage the TDLCB members in the planning process.

**LRTP Subcommittee**

At the beginning of the LRTP planning process, a subcommittee was established to pursue the activities needed to develop the transportation plan. Membership for the LRTP Subcommittee was comprised of representatives from the TCC, CAC, BPAC, and TDLCB. Diverse representation helped to ensure that each aspect of the plan was developed with regard for a broad cross-section of the community.

Activities of the LRTP Subcommittee included establishing a project schedule, developing a vision and goals for the plan, reviewing technical documents and data, etc. The subcommittee was established in August 2009, and their initial meeting was held on September 18, 2009. The LRTP Subcommittee typically met on the third Wednesday of every month at 2:00 p.m. and all meetings were properly noticed and open to the public. As with other TPO committees, an agenda was always developed in advance of each meeting and there was an opportunity for citizens to provide comment or be heard on

any matter pertinent to the business of the subcommittee. The LRTP Subcommittee disbanded on January 19, 2011 after 16 meetings.

## Miscellaneous Promotional Efforts

In addition to the efforts described on the preceding pages, there were several news media articles that helped promote the long-range planning efforts of the Volusia TPO. The following is a list of the news stories catalogued:

- Hometown News – January 8, 2010 – *"Public input needed for long-range plan"* - print article in Ormond Beach providing notice of the Mark Your Mark in 2035
- Hometown News – January 22, 2010 - *"Public input sought on transportation plans"* - print article in Ormond Beach covering the Mark Your Mark in 2035
- City of New Smyrna Beach web site – February 2010 - notice of Volusia TPO *Make Your Mark in 2035* planning session and link to online survey
- Daytona Beach News-Journal – February 8, 2010 – *"Public invited to transportation plan meeting"* - print article providing notice of the City of Edgewater Mark Your Mark in 2035
- Florida Planning and Zoning Association (FPZA) Surfcoast Chapter – message to e-mail list, February 9, 2010 providing information on LRTP development
- The Observer – February 11, 2010 - "Mapping Out Tomorrow" – print article covering the City of Edgewater Mark Your Mark in 2035
- Television – May 25, 2010 – Central Florida News 13 – interview with Executive Director at TPO Board meeting regarding the LRTP and Charter County Surtax
- Volusia County Association for Responsible Development (VCARD) Newsletter – December 2009 and June 2010 issues – providing notice of LRTP development, *Make Your Mark in 2035* planning sessions and the online survey
- Press Releases – The Volusia TPO staff issued a press release and sent notice to advisory committee members and the TPO Board prior to each *Make Your Mark in 2035* planning activity and prior to the round of public meetings that reviewed the draft 2035 LRTP
- DeLand Beacon – December 22, 2010 – *"Sales-tax Hike in Volusia County Won't Come Soon"* – print article covering the Volusia TPO use of a sales tax for the 2035 LRTP
- WNDB 1350 AM – Truth Radio Talk Show interview – discussion of miscellaneous LRTP activities

# Chapter 6 Transportation Program Options

## Introduction

The Volusia TPO recognizes that meeting the needs of our community in the long term requires a comprehensive set of transportation solutions that includes all major programs and integrates these into a coordinated system that functions together. The TPO also recognizes that the transportation solutions identified must be responsive to, and supportive of future approaches to land use development and to the visions being pursued by each of our member communities. A disconnect between land use planning and transportation planning is likely to result in an inefficient use of resources and mobility limitations that negatively impact the community. As an example, planning and developing mass transit solutions for an area that is not creating urban densities and transit-oriented development results in an under-utilized and less efficient transit system. Likewise, adding through lanes and turn lanes to a road in a core urbanized area that has a high volume of pedestrians reduces the level of safety and convenience for those who walk. The Volusia TPO has used a variety of strategies during the development of this LRTP to identify future land uses and to select context sensitive mobility solutions. The following sections of this chapter discuss specific programs considered in the development of the 2035 LRTP including:

- Roads and Bridges (automobile and freight)
- Public Transit (bus and rail)
- Bicycle, Pedestrian, and Enhancement Projects

During the development of the 2035 LRTP, the Florida Department of Transportation (FDOT) has taken the lead in identifying planned projects and programs in the following categories: Strategic Intermodal System (SIS), Aviation, Rail, Seaport Development, and Intermodal Access. The SIS cost-feasible program was made available for this report and is included in the information that follows. However, other statewide capacity elements were not provided and are not included in this report.

The FDOT has requested that the MPOs/TPOs take the lead in identifying planned projects and programs funded by federal and state dollars other than the SIS. The construction and right-of-way (ROW) for "Other Arterials" and transit programs are included. In addition, the *Volusia TPO 2035 LRTP* considers "off-system" improvements (those that are locally funded) as well in an effort to present a more complete picture of the future transportation system being planned.

## Roads and Bridges

The overwhelming majority of trips in and through the Volusia TPO planning area use the roadway network. Whether we are considering freight and commercial delivery, public transit or the personal automobile, a well-designed network of roadways and bridges is important for a thriving community. Additionally, concepts such as "complete streets" incorporate bicycle and pedestrian elements into the planning and design of roadways so that they act as multi-modal transportation corridors accommodating all users. Historically, the Volusia TPO's long-range transportation plans have focused

on forecasting vehicle trip activity and identifying the road and bridge improvements needed to avoid congestion and improve traffic safety. Similar principles were used for this plan, however, accommodating sprawled growth and development and an insatiable need to widen roads had less emphasis during this update. The focus has turned instead towards developing mobility options that contribute to a more livable community. Figure 6-1 provides an illustration of traffic congestion during the 2005 base year of this study.

**Automobile Traffic**

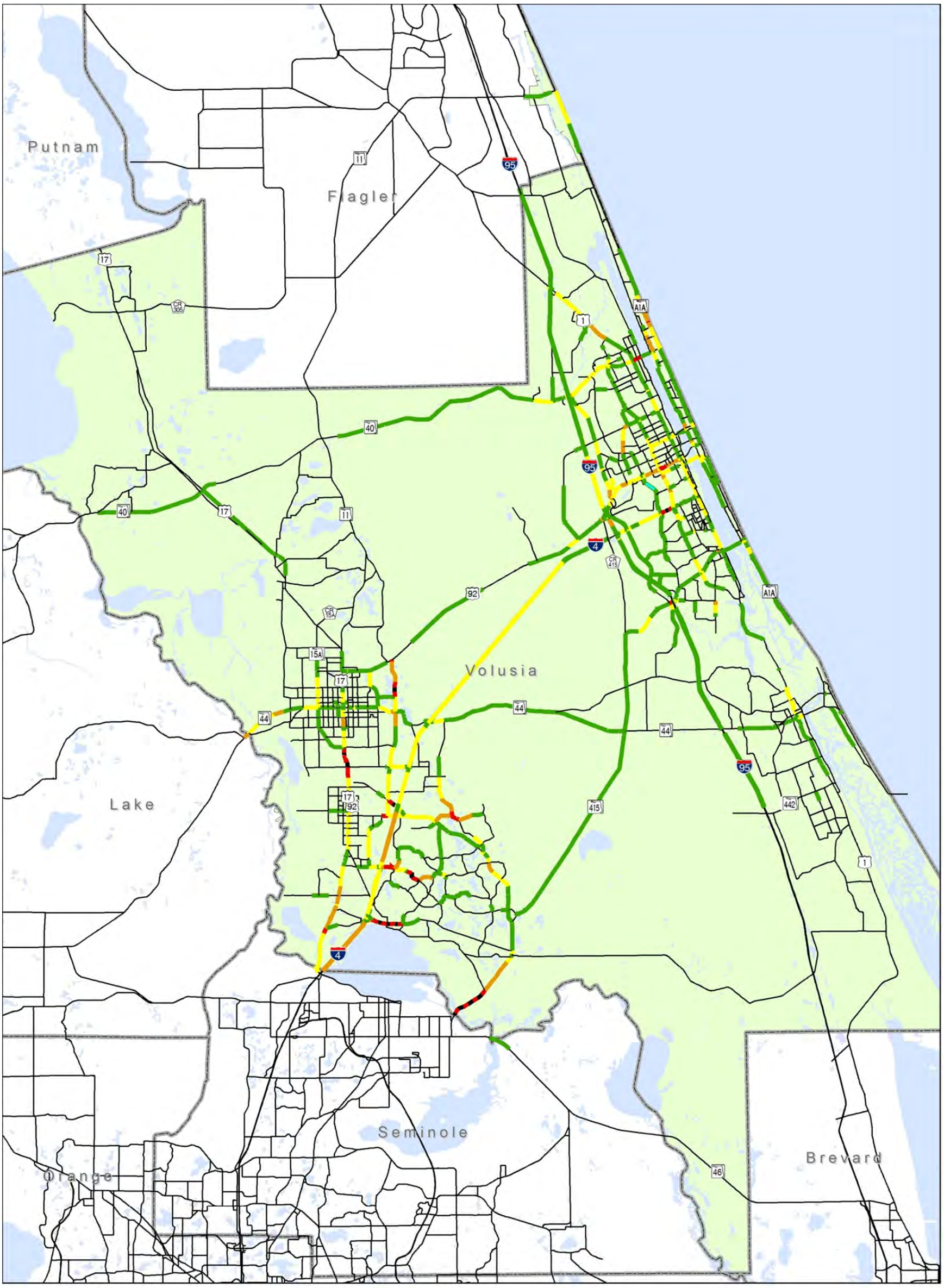
The predominant mode of transportation used for trips in and through the Volusia TPO planning area is the personal automobile. Consumer choice, development patterns, cost, and convenience continue to make this the preferred way for most people to travel. Census information has indicated that less than three percent of all trips made are by transit, walking, or bicycling at present. Existing development patterns, inadequate infrastructure, and limited transportation alternatives have created an environment that will require a continued dependency on automobiles for quite some time, even if consumer preferences change.

Traffic congestion is recognized as an important issue by members of our local community. Excessive time delays and added pollution are just a few of the negative impacts of congestion. However, in the Volusia TPO planning area, congestion is generally limited to peak hour periods along a few major corridors as opposed to occurring throughout the entire region at all times. As shown in Figure 6-1, indicating congestion on the roads in the base year, conditions are generally favorable within the planning area. This corresponds to the survey responses collected during this update that indicate less than half of the respondents believe traffic congestion is a problem in our community today.

However, despite the current economic slowdown, the region is expected to continue growing during the coming decades. With an average population growth rate of 1.13% per year, some 200,000 additional people are expected to be living in the area by the year 2035. This increase may bring the total population to more than 600,000. Similarly, the region is expected to add almost 70,000 jobs by the year 2035. This increase will bring the total number of jobs to just over 266,000. School enrollment including public schools as well as our local colleges and universities will also grow significantly in the future. The future year traffic congestion that may result from this growth is discussed in greater detail in Chapter 7.

Each year, the Volusia TPO receives Surface Transportation Program Extra-Urban (XU/SU) funds that it may allocate at its discretion to fund needed transportation improvements within the planning area (some program limitations exist for the use of these funds). Volusia TPO policy allocates 40% of the funds for Intelligent Transportation System improvements, Traffic Operations projects and Safety related improvements. Projects are generally limited in scope and cost and are intended to improve the functioning of existing roadways. The projects include adding turn lanes, re-aligning a curve, installing advanced traffic signalization systems, etc. In utilizing the XU funds in this manner, the Volusia TPO supports a variety of sustainability principles and SAFETEA-LU planning factors, including safety and the preservation of existing systems.

**Figure 6-1  2005 Traffic on Existing Roadway Network**



**Freight Mobility**

The efficient movement of freight goods is critically important to maintaining a healthy and growing economy. Transportation costs represent a significant part of the total cost of producing goods and moving them to market and corporate decision-makers consider these costs when locating production and distribution facilities. Thus, an area with high transportation costs may find that it can't compete successfully for businesses seeking new sites. Moreover, the cost of transporting goods is reflected in the final price paid by consumers. Clearly, we all benefit when transportation costs are minimized.

Florida's geographic location makes it strategically positioned to benefit from anticipated growth in international shipping activity from the South American and Caribbean markets. However, the degree to which the state benefits depends on the efficiency of freight movement through and between our seaports, airports and rail freight terminals. While it may once have been sufficient to move freight entirely by sea, competition has made it increasingly important to improve transportation efficiency. Shippers have responded by moving from using single mode transportation to multi-modal operations. We are now seeing freight transferred from sea to road, rail, or air in order to benefit from a particular advantage that each mode may offer.

The economy of the Volusia TPO planning area is primarily oriented towards the tourist industry and there is no substantial degree of heavy industry existing in Volusia or Flagler counties. Therefore, the movement of goods is focused primarily on trucking and dry goods for local retail sales and in support of the agricultural economy. Some industries rely on rail for receiving materials, such as aggregates, newsprint, coal, and brewing materials. The two private rail companies providing freight rail service to Volusia County, CSX, and the Florida East Coast (FEC) Railroad, via direct spur lines and sidings serve these industries. A concrete fabricating plant occasionally uses barges and the Intracoastal Waterway to transport pre-fabricated structural members.

Despite significant increases in ocean and rail shipping, trucking still accounts for the biggest share of freight movement. The majority of this activity utilizes the Strategic Intermodal System (SIS). The SIS is a statewide network of transportation facilities identified as having particular strategic importance. In the case of roadways, the system is designed for high speed and high volume traffic, and is made up of intrastate highways, Florida's Turnpike, expressways, and selected arterial highways.

In 2009, the County of Volusia contracted with a consultant to complete a freight movements study for the area. The goal of the study was to develop a truck route plan and sample ordinance to better control the flow of freight activity in and through the area. The *Volusia County Freight Movements and Goods Study* was completed in December 2009. The study acknowledged that "the potential conflict of competing for capacity, mobility, and accessibility within a finite transportation network must be balanced so that the growing volume of commuter and freight movement within the region can be accommodated in a sustainable manner."

Much of the information contained in the plan pertained to operational issues such as signage and weight restrictions and design issues, such as turning radii and lane width. Nonetheless, there are a few points that have relevance to the considerations in this long-range transportation plan. The study identified the following locations as having safety and/or infrastructure concerns:

- SR 472 at Minnesota
- SR 44 and Kepler Rd
- I-95 Interchange at US 1
- I-4 and I-95 Interchange
- Kepler Rd south of SR 44
- CR 415 from Seminole County to SR 40
- US 1 in Daytona Beach and Holly Hill
- SR 415 (various locations)

Actual crash statistics were reviewed in the study, but only included truck crashes. Overall crash data will be considered as part of the project screening and will include all vehicle types.

**Security and Emergency Preparedness**

The Volusia TPO planning area is host to several large scale events each year including the Daytona 500 and Bike-Week, a well-known event for motorcycle enthusiasts. These events draw thousands of participants and require substantial inter-agency coordination to manage safely, securely, and efficiently. In addition, the planning area has experienced threats from a number of natural events including large scale wildfires, flooding, and hurricanes. Planning and preparation for these activities includes coordinated efforts between traffic management agencies, law enforcement, emergency management professionals, mass transit providers and others. Although a national emphasis has increased efforts in recent years, the Volusia TPO planning area has a long history of engaging in incident and event management.

The Volusia County Emergency Operations Center (CEOC) is the central command center for emergency response in Volusia County. Key disaster response officials convene in this specially-designed facility to make the strategic decisions necessary to protect the public during emergencies. The bunker facility is situated west of Daytona Beach and was constructed to be capable of operating during almost any type of disaster. Working space is provided for all designated Emergency Support Functions (including transportation and public works stations). The facility also includes state of the art communications equipment to ensure the center maintains communications with other response agencies and the public. Generator back-up systems are in place to ensure uninterrupted power is available and a video link to the Daytona Area Smart Highways (DASH) system provides video surveillance of local area transportation corridors.

In its role as a planning agency, the Volusia TPO supports emergency response and preparedness in a variety of ways. One such way is through communication and coordination in the planning phases. Representatives from the Emergency Operations Center, Volusia County Schools and Votran have voting positions on the Technical Coordinating Committee (TCC). In addition, many TCC members represent traffic engineering and public works departments and are able to represent their jurisdictions with regards to disaster preparedness needs. Acting as technical advisors, these representatives ensure that planning decisions are consistent with, and support current disaster preparedness and event management plans.

The Volusia TPO has also developed a project prioritization review criteria for traffic operations, safety, and intelligent transportation system (ITS) projects that includes factors related to safety and emergency preparedness/hurricane evacuation. The TPO recognizes the importance of supporting improvements to critical routes as well as ensuring that other projects programmed do not adversely affect these corridors.

The Volusia TPO also supports and monitors studies such as the Statewide Regional Evacuation Study Program. This project, developed by the Florida Department of Emergency Management, allowed the eleven regional planning councils to update their Regional Evacuation Studies with the best available data and technology. The studies include updated Sea, Lake and Overland Surges from Hurricanes (SLOSH) model runs, updated county and regional clearance times, an end-user transportation model and updated Storm Surge Atlas.

## Public Transit

The Volusia TPO has long been committed to public transportation as an essential form of mobility for those who do not have access to private transportation. In addition, the TPO has more recently recognized that a comprehensive public transportation system provides an efficient and more sustainable alternative to the private automobile, helping to relieve pressure in congested corridors. As Volusia County faces increasing travel demands, the TPO and Votran (Volusia County's public transit system) have become close partners in the intermodal transportation planning process. This commitment was evidenced in the TPO's 2005 decision to revise the set aside to 30% of its Surface Transportation Program (STP) Extra Urban (XU) funding to support transit. The commitment is also clearly evidenced by the inclusion of a transportation surtax as part of this plan specifically to fund mass transit. For the first time, the Volusia TPO LRTP includes a plan to fund transit on par with roadway improvements. The County of Volusia has also continued to show a commitment to expanding mass transit service by committing funds to implement a new commuter rail service – SunRail.

### Overview of Existing Services

Votran operates a fixed route bus transportation system, paratransit service and a vanpool service. The system has grown over time and the services provided have evolved in an effort to meet the needs of the community. In its current configuration, the Votran fixed route system operates 24 transit routes serving Daytona Beach, Holly Hill, Ormond Beach, Ormond-by-the-Sea, South Daytona, Daytona Beach Shores, Port Orange, Ponce Inlet, New Smyrna Beach, Oak Hill, Edgewater, DeLand, Orange City, DeBary, Deltona, Seville, and Pierson. The frequency of most routes is one hour, however the system is structured so that portions of several routes overlay each other in core urban areas providing ½ hour service in some cases.

### Fixed Route Service

Service is provided seven days per week, with the exceptions of Thanksgiving Day, Christmas Day, and New Year's Day. Weekday and Saturday service operate primarily between 6:00 a.m. and 7:00 p.m. Sunday service is limited geographically to the core area of east Volusia County and operates primarily

between 7:00 a.m. and 6:30 p.m. Night service mirrors Votran's Sunday routes in the greater Daytona Beach area and operates until midnight. Votran also serves as the Community Transportation Coordinator (CTC) of Volusia County coordinating transit and paratransit services for the transportation disadvantaged community. Table 6.1 and Figure 6-3 provide some detail regarding the current level of service provided.

**Table 6.1 Description of Votran Services in Volusia County**

| Fixed Route Service | Notes | # Routes | Vehicle Peak | FY 2009 Passengers | FY 2010 Passengers |
|---|---|---|---|---|---|
| Eastside Fixed Route | Routes 1 – 60 excluding Sunday & Trolleys | 20 | 40 | 2,371,418 | 2,504,341 |
| Eastside Sunday | | 6 | 6 | 99,489 | 86,597 |
| Eastside Night Service | | 6 | 6 | 165,958 | 173,408 |
| Eastside Trolley | January to September only | 1 | 2 | 42,713 | 42,611 |
| **Total Eastside Fixed Routes** | | | | **2,679,578** | **2,806,957** |
| Westside Fixed Route | Routes 20 – 24, 61, excluding Rt. 200 | 5 | 6 | 391,917 | 431,046 |
| Route 200 | | 1 | Lynx contract | 21,926 | 17,077 |
| **Total Westside Fixed Routes** | | | | **414,843** | **448,123** |
| Paratransit Services county-wide | | | | | |
| ADA | | NA | NA | 192,057 | 191,789 |
| TD | | NA | NA | 33,999 | 32,727 |
| Other Paratransit | | NA | NA | 17,451 | 17,534 |
| Section 5311 | | NA | NA | 1,896 | 1,720 |
| **Total Paratransit Service** | | | | **245,403** | **243,770** |
| Commuter Services county-wide | | | | | |
| Commuter Vans | | NA | 27 | 112,958 | 93,465 |
| **TOTAL** | | | | **3,451,782** | **3,592,315** |

A fixed route analysis for the years 2005 through 2009 was conducted to follow the performance of Votran's directly-operated motorbus service over a five-year time period. Data used in this analysis came from Votran's Monthly Fixed Route Statistical Report reports.

**Performance Indicators**

Ridership increased over the period even as revenue mile decreased. This means that Votran provided more trips each year even though the amount of service available decreased. A decrease in transit

service is also evidenced by a decrease in employees and vehicles operated and available. Unfortunately, however, maintenance and operating expenses during the period increased significantly. These are primarily the result of increased fuel costs and other maintenance related expenses. Table 6.2 provides details concerning performance indicators.

**Table 6.2 Ridership and Performance Indicators**

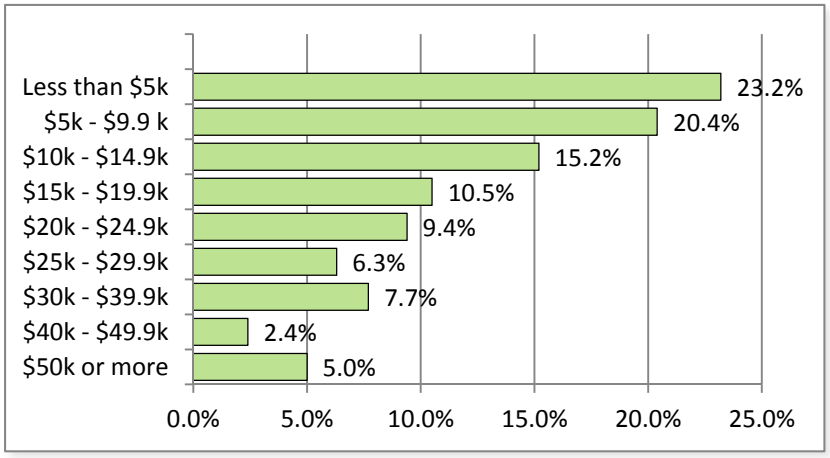
| Performance Indicators | 2005 | 2006 | 2007 | 2008 | 2009 | % Change 2005-2009 |
|---|---|---|---|---|---|---|
| Annual Ridership | 2,897,088 | 3,013,245 | 2,942,342 | 2,992,019 | 3,095,421 | 6.8% |
| Revenue Miles | 2,619,566 | 2,636,071 | 2,555,333 | 2,480,335 | 2,467,382 | -5.8% |
| Total Operating Expense | $9,171,705 | $10,360,626 | $10,357,545 | $11,482,950 | $11,093,509 | 21.0% |
| Total Maintenance Expense | $1,811,435 | $2,319,748 | $2,122,562 | $2,097,135 | $2,178,921 | 20.3% |
| Operating Revenue | $9,171,705 | $10,360,626 | $10,357,545 | $11,482,950 | $11,093,509 | 21.0% |
| Total Employees | 107 | 107 | 107 | 107 | 100 | -6.5% |
| Vehicles Available for Maximum Service | 56 | 56 | 53 | 53 | 53 | -5.4% |
| Vehicles Operated in Maximum Service | 48 | 48 | 46 | 46 | 46 | -4.2% |

*Source: National Transit Database Reports for Votran*

**Votran Customer Profile**

Demographic information of Votran customers was collected as part of Votran's *2007-2016 Transit Development Plan (TDP)*. At that time, 75% of Votran's customers did not have a vehicle in their household. For these individuals, public transportation is not an option, it's a necessity. Furthermore, nearly 60% of those surveyed live in households with an annual income of less than $15,000 which is an increase of nearly 8% over those reported in the previous TDP for 2001. Figure 6-2 shows the income distribution overall.

**Figure 6-2 Range of Household Income in 2005**




*Source: Votran Transit Development Plan (2007-2016)*

As the 2006 on-board transit customer survey indicated, the majority of Votran's riders use the service out of necessity rather than as a means to avoid congested corridors. Although fixed route bus service continues to be a social responsibility within Volusia County, the future of public transit envisioned in this long-range plan transitions from a service for the transit dependent to a service that offers a true choice for people moving about the community. This transition requires a change in the way transit is provided as well as the way it is funded. Likewise, land use patterns and development must change to create transit supportive communities.

While the population of Volusia County continues to increase, it is also changing demographically. In order to respond to changing conditions in the county, and to ensure the most efficient and effective transit service is provided, it is necessary to routinely assess existing service and explore areas in need of new service. A Comprehensive Operations Analysis (COA) for the west side of Volusia County, the Westside Transit Plan, was completed in the Spring of 2007. Findings of the study resulted in the reconfiguration of routes and the preliminary service plan for SunRail. The COA for east Volusia County, the Eastside Transit Study, was completed in the Spring of 2009. Findings of the study resulted in defining priorities for service development. Votran also maintains a Transit Development Plan (TDP), which is a ten-year planning document developed to ensure that the provision of public transportation service is consistent with the travel needs of the community. The TDP is updated once every five years and an update is currently underway.

Votran has continued to regularly review services to identify system improvements. A map illustrating the service coverage is provided in Figure 6-3. Other recent changes to service include:

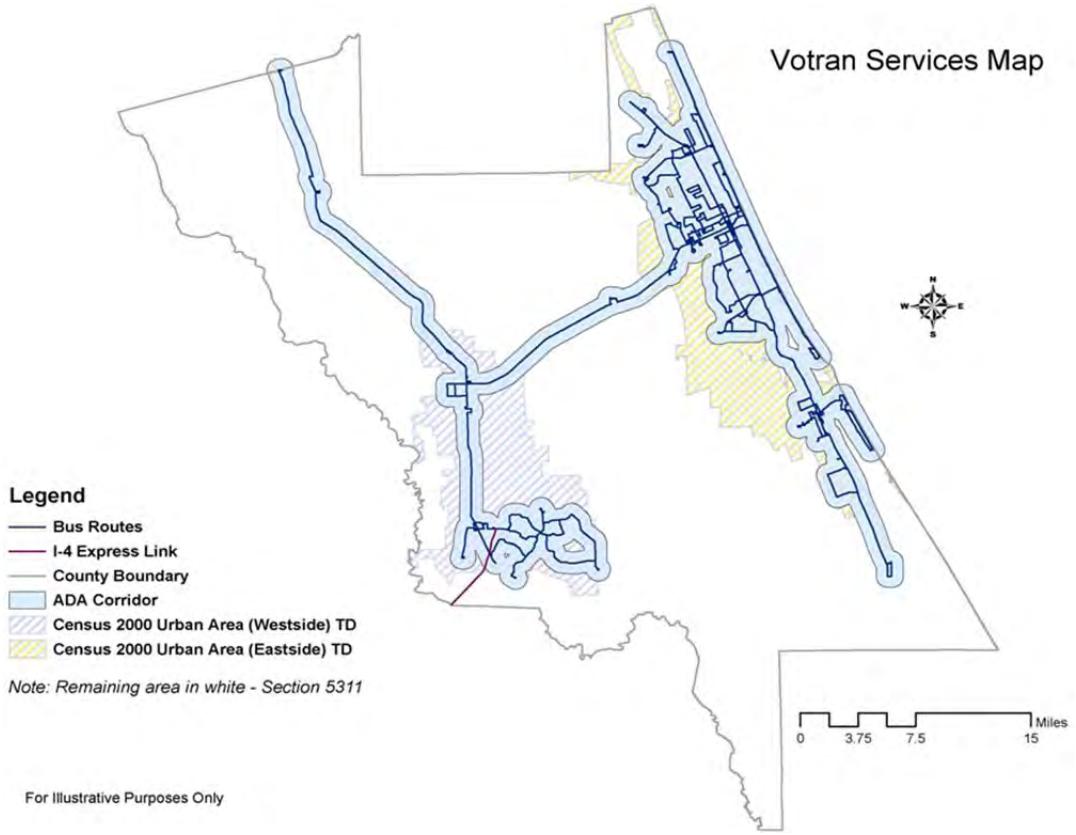
**Route Restructuring in Northeast -** A significant reconfiguration of routes serving Ormond Beach and Daytona Beach in January 2010 created Routes 18/19, serving the new Memorial Hospital.

**Northwest Volusia County Service –** Service to the rural agricultural communities of Pierson, Seville, Barberville, and DeLeon Springs was reduced in January 2008 to four trips per day due to low ridership.

**Upgraded Fare Collection System and Fare Increase -** To help offset substantially higher operating costs, Votran fares were increased in January 2007. Concurrently, an upgraded fare collection system (including automated fare boxes) was installed.

**New Smyrna Beach Flex Service -** In October 2010, it was determined that the southeast Volusia could be served more efficiently by replacing fixed route service in the New Smyrna Beach area with a flex route, curb-to-curb type of demand-responsive service. The Flex route vehicle travels within one of two designated areas: Flex 42 and Flex 43 with an opportunity to transfer between areas and to the broader fixed route system.

**Figure 6-3 Votran Service**




**Paratransit Service**

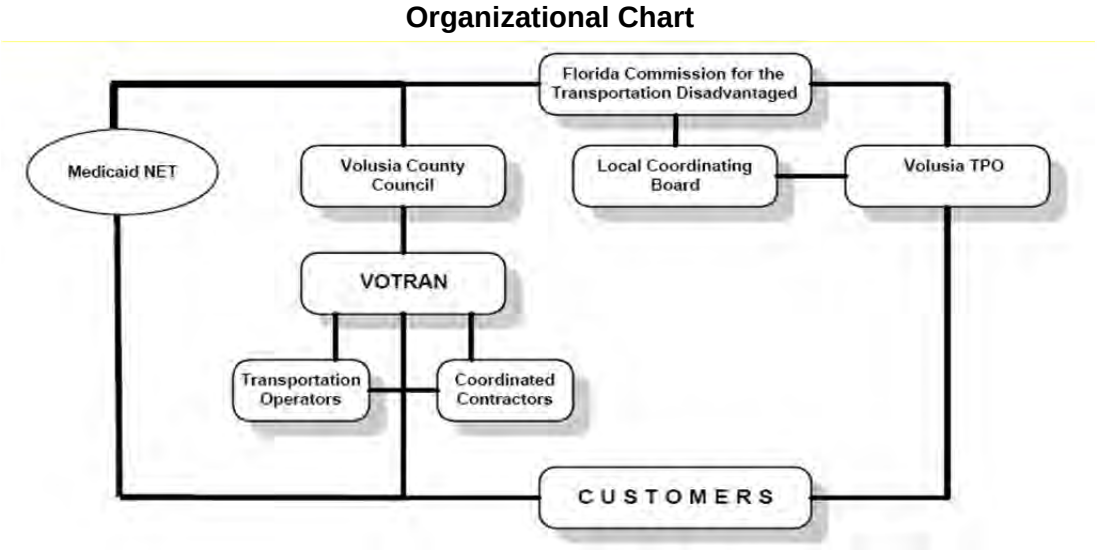
On November 1, 1993, Votran was designated as the Community Transportation Coordinator (CTC) of Volusia County as a means to increase the coordination of county-wide services, maximize use of the existing transit services, and minimize the duplication of services provided in Volusia County. Currently, Votran coordinates paratransit trips and provides services for the Transportation Disadvantaged (TD) program, and as a complement to fixed route service as required under the Americans with Disabilities Act (ADA). Due to funding cuts by the Agency for Health Care Administration (AHCA), however, Votran ceased providing Medicaid Non-Emergency Transportation in February 2008. Medicaid funded transportation is currently provided by a contractor selected by the Commission for the Transportation Disadvantaged. Votran provides paratransit services as a partial broker system meaning that Votran

provides a portion of the service directly and contracts a portion of the service to a variety of small, locally owned, private service providers.

The Americans with Disabilities Act (ADA) requires public transit agencies to provide reasonable access and accommodations to fixed route public transit service and to offer a complementary paratransit service to individuals who live within ¾-mile of fixed route bus service and are unable to use the fixed route due to their disability. A person must be certified as eligible for complementary paratransit services through a screening process developed by Votran. ADA service requires an advanced reservation and is a customer assisted, door-to-door transportation service.

Individuals with disabilities or disadvantages who live outside the ¾-mile ADA corridor may qualify for service as part of the Transportation Disadvantaged program subsidized by the State of Florida Transportation Disadvantaged Trust Fund. Figure 6-4 shows the current Transportation Disadvantaged program organizational chart. Additionally, persons who live outside of the ¾-mile corridor and outside of an urbanized area receive general purpose trips subsidized by the Federal Transit Administration (FTA) Section 18 funds.

**Figure 6-4 Volusia County Transportation Disadvantaged Program**




There are two categories of the transportation disadvantaged population. TD Category I is the "potential TD population" which includes the disabled, elderly, low-income persons, and children who are “at-risk.” These citizens are eligible to receive governmental and social service subsidies for program trips. TD Category II is actually a subset of TD Category I and includes those people who are transportation disadvantaged according to eligibility requirements of the program. These citizens are unable to transport themselves or purchase transportation.

For 2010, the TD Category I population forecast in Volusia County was 242,185 or nearly 48% of the county's total projected population. The TD Category II, population in Volusia County was 57,051, representing slightly more than 11% of the total projected county population.

Votran continues to encourage paratransit customers to use the fixed route bus service when possible to preserve independence and maximize cost effectiveness. Votran has been able to contain increases in paratransit demand over this period. This is due in part to Votran's implementation of an eligibility assessment process for people seeking paratransit services. This enabled Votran to properly place people on the more cost effective fixed route system where possible, and to provide paratransit service when no other options were available. Table 6.3 depicts the total number of paratransit trips broken down by service type.

**Table 6.3 Total Number of Paratransit Trips by Service Area**

| Service Type | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | % Change 2005-2010 |
|---|---|---|---|---|---|---|---|
| ADA | 165,194 | 193,687 | 203,645 | 194,713 | 192,057 | 191,789 | 16% |
| TD | 27,272 | 31,362 | 34,123 | 34,561 | 33,999 | 32,727 | 20% |
| Rural | 4,807 | 4,107 | 3,151 | 2,942 | 1,896 | 1,720 | -64% |
| Medicaid | 89,856 | 67,730 | 54,373 | 17,163 | [1] | [1] | N/A |
| Agency | 32,070 | 22,732 | 20,891 | 16,115 | 14,317 | 14,769 | -54% |
| Misc. | 6,985 | 6,858 | 6,939 | 6,964 | 3,134 | 2,765 | -60% |
| **Total** | **326,184** | **326,476** | **323,122** | **272,458** | **245,403** | **243,770** | **-25%** |

[1] *Medicaid NET no longer provided by CTC beginning February 1, 2008*

The significant 64% decrease for rural service from 2005 to 2010 can be attributed to an increase in urbanized area with a resulting decrease in rural area that would qualify for funding. Furthermore, major cuts in funding available for agency and miscellaneous trips can be attributed to the 54% and 60% decreases, respectively.

**Transportation Disadvantaged Local Coordinating Board**

The Transportation Disadvantaged Local Coordinating Board (TDLCB) is comprised of various community groups as outlined in Florida Statutes and committee representatives are appointed by the TPO Board. The purpose of the coordinating board is to develop local service needs and to provide information, advice, and direction to the TPO and Votran on the coordination of services to be provided to the transportation disadvantaged. The TDLCB provides a forum for the needs of the transportation disadvantaged to be heard and for strategies to emerge that will improve transportation services. The TDLCB meets every other month and performs the following functions:

- Review and approval of Votran's Transportation Disadvantaged Service Plan;
- Evaluation of services provided in meeting the approved plan;
- Review the coordination strategies for service provision to the transportation disadvantaged in the designated service area;
- In cooperation with Votran, review and provide recommendations to the Florida State Transportation Disadvantaged Commission on funding applications affecting the transportation disadvantaged;
- Evaluation of multi-county or regional transportation opportunities; and

- Work cooperatively with regional workforce boards to provide assistance in the development of innovative transportation services for participants in the welfare transition program.

In 2005, The Volusia TPO TDLCB Chairman received the Legislative Advocate of the Year award from the Commission for the Transportation Disadvantaged (CTD) and in June 2006, the Volusia TPO TDLCB was recognized by the CTD as the Outstanding Local Coordinating Board of the Year. In 2008, the Volusia Transportation Planning Organization (then known as the Volusia County MPO) received the Outstanding Designated Planning Agency of the Year award and in July 2010, the "Citizens Advocate" TDLCB member received the Outstanding Volunteer of the Year" award.

**Commuter Assistance Program (CAP)**

Votran has historically managed a variety of commuter services designed to reduce peak hour congestion on our roads. With the launch of the FDOT District Five *reThink* program in July 2010, changes occurred within the Votran Commuter Assistance Program (CAP) including a transfer of the rideshare matching and emergency ride home programs from Votran to *reThink*. A brief description of continuing services include:

*Express Bus Service* - The Volusia to Orlando I-4 Express is a commuter service provided through a joint agreement between the Florida DOT, LYNX, and Votran. The service is provided Monday through Friday, between the Saxon Boulevard Park and Ride lot in Orange City and downtown Orlando. It was estimated that the "I-4 Link" has enabled each commuter to eliminate 14,400 vehicle miles annually on his/her personal vehicle.

**Table 6.4 I-4 Express Passenger Boarding**

| | 2006-2007 | | 2007-2008 | | 2008-2009 | | 2009- 2010 | |
|---|---|---|---|---|---|---|---|---|
| Month | Monthly | Average Daily | Monthly | Average Daily | Monthly | Average Daily | Monthly | Average Daily |
| October | 1,390 | 63 | 1,659 | 72 | 2,251 | 98 | 1,462 | 66 |
| November | 1,185 | 56 | 1,377 | 66 | 1,185 | 62 | 1,264 | 63 |
| December | 916 | 46 | 1,506 | 75 | 2,000 [1] | 91 | 1,320 | 60 |
| January | 1,125 | 51 | 1,595 | 73 | 2,000 [1] | 95 | 1,349 | 67 |
| February | 963 | 48 | 1,637 | 78 | 2,000 [1] | 100 | 1,264 | 63 |
| March | 1,057 | 48 | 1,811 | 86 | 1,330 | 60 | 1,513 | 66 |
| April | 1,153 | 55 | 1,818 | 83 | 1,445 | 66 | 1,390 | 63 |
| May | 1,317 | 60 | 1,964 | 94 | 1,400 [1] | 67 | 1,366 | 65 |
| June | 1,316 | 63 | 2,005 | 95 | 2,000 [1] | 91 | 1,474 | 67 |
| July | 1,244 | 59 | 2,433 | 105 | 2,000 | 87 | 1,422 | 65 |
| August | 1,542 | 67 | 2,154 | 103 | 1,396 | 66 | 1,500 | 68 |
| September | 1,368 | 72 | 2,000 [1] | 91 | 1,500 [1] | 68 | 1,517 | 69 |
| **Average** | | **57** | | **85** | | **79** | | **65** |

[1] *Values are estimates*
*Source: Votran Monthly Fixed Route Statistical Report*

According to 2000 Census data, approximately 19.4% of Volusia County residents, roughly 86,000 residents, commute daily to jobs outside Volusia County. This indicates a potential demand for commuter bus and rideshare options. However, history has shown that these commuters are sensitive to fuel prices and tend to utilize services when there are spikes in fuel costs. Table 6.4 shows that by the end of fiscal year 2008, the average number of daily boardings rose to 85 persons per day, showing an increase from the prior year's average of 57. This may be attributed to downward economic conditions, the high cost of fuel, and the addition of a stop in Lake Mary.

*Vanpool Program* - In keeping with Votran's mission as mobility managers, a vanpool service program was initiated in fiscal year 1999, with two demonstration vans provided by the Florida Department of Transportation. As demand increased, the program continued to grow and by fiscal year 2010, there were 29 vans in the fleet. Table 6.5 details the benefits and effectiveness of the program.

**Table 6.5 Vanpool Performance Indicators**

| Vanpool Performance Indicators | 2006 | 2007 | 2008 | 2009 | 2010 | % Change 2005-2010 |
|---|---|---|---|---|---|---|
| No. of Vanpools | 25 | 25 | 27 | 24 | 25 | 4% |
| Boarding's | 103,906 | 84,350 | 87,141 | 112,958 | 93,465 | -8% |
| Travel Cost Savings | $2,103,859 | $1,651,398 | $1,796,157 | $2,206,153 | $1,738,674 | 1% |
| Gallons of Gas Saved | 175,322 | 137,616 | 143,825 | 160,447 | 139,064 | -23% |
| Estimated Vehicle Miles | 549,151 | 500,972 | 521,885 | 530,517 | 542,794 | -5% |

*Source: Votran Commuter Assistance Program Office*

*Park and Ride Lots* - There are currently two Park and Ride lots in Volusia County located at the intersections of Saxon Boulevard and I-4, and Dirksen Drive and I-4. The Park and Ride lots are not only for carpoolers and vanpool users but also for I-4 Express Service riders. Votran monitors the use of these lots by performing daily counts.

*Emergency Ride Home Program* – The Emergency Ride Home Program is available to Volusia County commuters that use an alternative mode of transportation. Once registered, commuters can request reimbursement for the expense of getting home in case of a qualifying emergency. Commuters can request up to four times per year and up to $150 per occurrence. Although the program is available to all registered commuters, it is currently being managed through the *reThink* program.

**Water Taxi Service**

The City of New Smyrna Beach water taxi service was intitiated in September 2006 to provide two hour service between the City of New Smyrna Beach and Ponce Inlet. Votran provided connections to the water taxi at both New Smyrna Beach, with its Route 42, and at Ponce Inlet with its Route 17A. The water taxi service was funded through a $750,000 federal grant which ended in late summer. Service was discontinued on August 31, 2010.

**Associated Amenities and Infrastructure**

**Bike Racks on Buses** – Votran has bike racks installed on its entire fleet of fixed route vehicles and FLEX service vehicles. The program continues to increase in popularity and during the fiscal year ending in September 2010, Votran transported approximately 8,000 bikes per month.

**Benches and Shelters** – Votran is responsible for providing amenities at the bus stop locations in unincorporated portions of Volusia County where transit service is provided. The individual municipalities are responsible for amenities within each of their respective jurisdictions. Of the sixteen municipalities within the county, seven contract with an advertising vendor to provide bus benches with advertising signs and six municipalities in the county fund their own benches and shelters. Votran is currently developing a comprehensive program for the installation of passenger amenities which will encourage collaboration with the cities to establish priority projects.

**Intermodal Facility and Transfer Stations** – Votran maintains its primary transfer facility along Mary McLeod Bethune Boulevard in downtown Daytona Beach. This facility serves as the hub for service in east Volusia County providing customer service and pass sales. Site features include departure information displayed electronically on overhead signs, audible route information, and Braille signage for persons with disabilities. The Votran transfer plaza accommodates more than 3,700 passengers per day.

**Volusia County Intermodal Transportation Facility (ITF)** – Located in the heart of Daytona's tourist center, the facility provides improved access to local area businesses, beaches, hotels, convention facilities, and other attractions in the area. Transit activity occurs on the ground floor of a multi-level structure, which includes a parking garage and a pedestrian plaza and bridge. Pedestrian walkways stretch the entire length of the east and west sides of the transit terminal plan and serve as the loading/drop-off platforms for transit riders. Elevators and stairs allow for pedestrian access to and from a pedestrian bridge crossing Atlantic Avenue which is also known as A1A. The first floor of the ITF structure provides accommodations for fixed route Votran buses and trolley services.

**Secondary Transfer Points** – Future facilities planning includes developing several "super stops" to accommodate transfers between multiple routes that converge at locations other than the main transfer facilities. Votran recently developed a temporary super stop in the City of Port Orange in September 2010, with long-term plans to construct a transfer site in the Countryside Shopping Center. A transfer point was developed Thompson Creek Road in partnership with the City of Ormond Beach. The DeLand ITF, located near Melching Field at Conrad Park (home of Stetson University Baseball), has made progress and the planning stage is expected to be complete by the end of 2010. This site is anticipated to include staging areas for Votran, Greyhound Lines, and taxis. Other sites are being considered.

**Regional Transit Training Center** – In partnership with the Florida DOT, Votran developed a regional training center that provides training for Votran maintenance and operations personnel, contractor personnel, and other public transportation agencies in the northeast Florida region. The facility offers classroom space for training, an assortment of mechanical training aides (such as air brake boards), and features a driver simulator unit.

**Maintenance Facilities** – Votran continues to maintain and re-invest in its infrastructure and facilities. This includes temporarily locating its west side service facility while planning the design and construction of a permanent facility. Efforts are also being made to maintain and upgrade its existing administrative, operations, and maintenance facility on Big Tree Road in South Daytona to incorporate "green" building features. Concurrently, Votran is monitoring the need for future expansion of the Big Tree facility and is preparing to take appropriate actions for land acquisition if necessary.

**Advanced Public Transportation Systems (APTS)** – Votran has been a leader in implementing new technologies in transit operations known as Advanced Public Transportation Systems (APTS). APTS programs aim to increase efficiency of service delivery, thereby saving money and improving the quality of service. Technologies include systems that track vehicle locations, coordinate transfers between routes, facilitate faster, more efficient paratransit reservations and service delivery, collects real-time service and operational information, and provides data to help both customers and management.

Specific APTS components included in this effort include: electronic fare boxes that will permit the use of a variety of fare media and allow the introduction of daily and weekly passes; mobile data terminals, automatic passenger counters, automatic vehicle locators, automatic stop announcers, improved telephone system, and web-based customer information. In the near future, Votran is planning on upgrades to its Avail and Trapeze technologies.

**Planning Activities**

**Comprehensive Operations Analysis (COA) of Service** – As discussed previously, a Comprehensive Operations Analysis (COA) has been completed in recent years for transit service in east and west Volusia County.

**Bus Stop/Route Inventory** – Votran currently has approximately 2,200 bus stops throughout its service area. A bus stop and bus route inventory has been developed to catalog the location and characteristics of each bus stop and to identify the route alignments. The bus stop location data supports the APTS.

**Transit Alternate Funding Options Study** – This study was completed in May 2011 to identify and evaluate alternative funding approaches that could be utilized to meet Votran's on-going operations and state of good repair needs, as well as provide for proposed service expansion. While Votran can seek additional resources from its exisiting funding sources, competing demands on and constraints facing the county General Fund, the State Transportation Trust Fund (STTF), and the Federal Mass Transit Account necessitated the need to identify one or more new funding sources.

**Transit Development Design Guidelines** – This document includes a comprehensive set of development design standards to provide for the integration of transit service into developing and redeveloping areas. The transit-oriented design standards use "Smart Growth" and "Livable Communities" principles and are intended to guide the public, elected officials, planners, developers, engineers, architects, and others involved in the planning, design, review, and approval of land development projects.

**Transit Development Plan** – The Transit Development Plan (TDP), a ten-year strategic plan, is required by the Florida Department of Transportation (FDOT) for all transit operators that receive Transit Block

Grant funding to ensure that the provision of public transportation service is consistent with the travel needs and mobility goals of the local communities. The most recent plan was completed in 2006. However, Votran is currently in the process of undertaking the major update of this document which is anticipated to be completed by the end of 2011.

**Transportation Disadavantaged Service Plan** – The current Transportation Disadavantaged Service Plan (TDSP), a five-year plan, was completed in the 2006. The TDSP is developed by Votran, the Community Transportation Coordinator (CTC), and the Volusia TPO, which is designated as the official planning agency by the Commission for the Transportation Disadvantaged (CTD). The TDSP is developed under the guidance and approval of the Transportation Disadvantaged Local Coordinating Board (TDLCB). The TDSP is a tactical plan with components of development, service delivery, and quality assurance. Votran and the Volusia TPO are currently in the process of undertaking the major update of this document which is anticipated to be completed by the end of 2011.

**Transportation Alternatives for an Aging Population Study** – The purpose of this study, completed in 2006, was to investigate the socioeconomic and demographic characteristics of persons born during the post World War II period from 1946 through 1964 (aka Baby Boomers) who will reach age 65 beginning in 2011. The study provided an estimate of the percentage of the population that may cease to drive, reviewed transportation and land use options, and provided recommendations on resources and strategies to meet the mobility needs of an aging population.

**Transit Corridor Feasibility Analysis Study** – In March 2009, the Florida Department of Transportation (FDOT), in collaboration with the Volusia TPO, completed a study that assessed the feasibility of potential transit corridors within Volusia County. The study provided sufficient technical documentation to apply for Federal Transit Administration (FTA) funding for a more detailed alternatives analysis.

**International Speedway Boulevard Corridor Master Plan** – Volusia's International Speedway Boulevard (ISB) Coalition was formed by private sector interests to address the need for sustainable development along the corridor from I-95 to Beachside in the City of Daytona Beach. The coalition defines sustainable development as having three facets: environmental (protection, mitigation, and enhancement where possible), economic enhancement/development (embracing livable community concepts that address multi-purpose land uses), and transportation (providing context sensitive mobility options that contribute to quality of life). International Speedway Boulevard (US 92) is a key east-west regional arterial linking I-95 to major tourist destinations, other transportation modes, educational and health care facilities, and local businesses and residential areas. FDOT is currently funding a transportation study in support of the Coalition.

**Corridor Improvement Program** – In an effort to maximize the effectiveness of existing corridors and recognize changing local conditions, the Volusia TPO is conducting a series of corridor improvement studies that will provide an assessment of some of our primary transportation corridors. The corridor improvement plan is intended to utilize readily accessible information as a means to identify projects that may be potentially pursued within the next few years. The studies will consider all modes of travel

and will include the review and documentation of existing conditions and issues that impact mobility and livability along the corridor.

**Transitioning to a "Choice Rider" System** – A study is planned to assist Votran in preparing effectively for a transition to a choice rider system and to identify a full range of types of actions, intitiatives, or special projects that offer the potential to create increased ridership, including commuter rail feeder service. This study will look to define the characteristics of the "choice rider" and their particular needs and provide data and analysis that would assist in determining transit system designs that would encourage continued use by the "choice rider".

**Future Considerations**

**Central Florida Commuter Rail -** In August 2006, Florida Governor Jeb Bush announced an agreement in principle with CSX Transportation to buy 61.5 miles of freight track through Central Florida to use in the development of a commuter rail service. The project, later named SunRail, is planned to include 12 stations and will provide a transportation alternative to congested roads in Central Florida, as well as enhance freight mobility throughout the state as its population grows. The project is currently being managed by FDOT, with input from the Central Florida Commuter Rail Commission Governing Board. This commission was established to assist FDOT with policy direction through the first seven years of operation. Subsequently, the commission will take control of the operations and maintenance of SunRail.


At this time, Phase I of the project includes development of a 31-mile segment between DeBary and Sand Lake Road in Orange County, which would be operational by 2013. Phase II would extend service in 2015, south to the Poinciana Industrial Park in Osceola County and north to the DeLand Amtrak station.

**Public Transit Funding**

Votran's capital and operating needs are funded within the context of Volusia County's annual budget as well as the Volusia TPO Transportation Improvment Program (TIP). As a result, policy decisions governing the provision of transit service are made as part of a comprehensive strategy to deliver a broad range of public protection, community, and transportation services provided by the county. The county's contributions to Votran's operating budget are derived from the General Fund and currently represent 5.8% of total property tax revenues. Reflecting the severe effects of the recession, the county imposed a nearly 20% increase in the property tax to offset reduced revenues from declining property values. Volusia County's fiscal year 2010 budget notes, that despite this increase, total General Fund revenues for fiscal year 2010 are projected to be 4% less than fiscal year 2009. As a result, Votran's ability to sustain even current service levels is challenged given the county's General Fund constraints.

Additional funding challenges exist as a high priority, and commitment has been given to the SunRail partnership. As Table 6.6 illustrates, if the existing level of service provided by Votran is held constant,

by the year 2020, the SunRail investment will represent almost one-third of the mass transit budget with total operating expenses growing to approximately $13.5 million per year.

The Volusia TPO planning horizon extends further out to 2035, and input from citizens, committee members, and the TPO Board expressed a desire to make significant investments in expanding public transit. The list of transit projects is included in Chapter 8, the Transportation Plan. These transportation options anticipate a local revenue source that includes a ½ cent transportation surtax, beginning in the year 2016. The Volusia TPO Board recognizes that a sales tax has to be passed by voter referendum.

**Table 6.6 Volusia County's Ad Valorem Commitment to the Public Transit Budget**

| Fiscal Year | Estimated Votran Operating Expenses | Estimated Commuter Rail Financial Commitment | Total Public Transit Financial Commitment |
|---|---|---|---|
| FY 2010 | $8,365,000 | $0 | $8,365,000 |
| FY 2011 | $7,110,000 | $0 | $7,110,000 |
| FY 2012 | $7,324,000 | $1,200,000 | $8,524,000 |
| FY 2013 | $7,543,000 | $1,415,000 | $8,959,000 |
| FY 2014 | $7,770,000 | $3,347,000 | $11,117,000 |
| FY 2015 | $8,003,000 | $3,738,000 | $11,741,000 |
| FY 2016 | $8,243,000 | $3,785,000 | $12,028,000 |
| FY 2017 | $8,490,000 | $3,835,000 | $12,325,000 |
| FY 2018 | $8,745,000 | $3,876,000 | $12,620,000 |
| FY 2019 | $9,007,000 | $3,867,000 | $12,874,000 |
| FY 2020 | $9,277,000 | $4,283,000 | $13,561,000 |

The following statement was read into the record at the May 25, 2010 meeting of the TPO Board:

> "The Volusia Transportation Planning Organization (VTPO) supports the pursuit of a locally generated revenue source as the financial basis for the implementation of enhanced transit service in Volusia County. Based upon public input, recent planning activities by local governments and public/private initiatives, the VTPO Board recognizes that there is a significant benefit to developing enhanced transit services. Such services, however, will require additional funding that is not currently available. In addition, the Board further recognizes that the citizenry of Volusia County will, through referendum, make the final determination as to whether this initiative will be implemented.
>
> The referendum details included in the ultimate financial decision will NOT be made at this VPTO planning level. The federal government requires the long-range transportation plan (LRTP) to be financially feasible. As such, it is contemplated that a local sales tax would be used as the dedicated revenue source to fund transportation projects; transit as well as road projects. For the purposes of developing the 2035 VTPO LRTP, the VTPO Board agrees that the

> revenues generated by such a funding source will be allocated towards supporting existing mass transit commitments and developing an enhanced transit system. If a future dedicated revenue source is approved by the public, the VTPO Board acknowledges that the actual distribution of revenue will be determined by the most appropriate government arrangement."

Demographics, survey results, community input in various forms, and peer and trend analyses have all been used by Votran and the Volusia TPO to assess the current and future demand for transit service within Volusia County. However, the existing constrained financial environment necessisitates a change to the existing funding structure if we are to implement the goals outlined in this plan.

## Bicycle and Pedestrian

The Volusia Transportation Planning Organization (TPO) recognizes the importance of walking and bicycling as transportation modes that foster safer, more livable, family-friendly communities, promote physical activity and health, and reduce vehicle emissions and fuel use. The establishment of well-connected walking and bicycling facilities and networks are important components of livable communities, and their design should be a part of project development on the federal, state and local levels. The TPO visions, plans, funds, and implements improvements to walking and bicycling networks, including linkages to transit within the service area. Pedestrian and bicycle facilities expand the travel opportunities for residents who, either by choice or by circumstance, do not use an automobile. These groups often include, but are not limited to, disabled individuals, children, the elderly, and the financially disadvantaged. In treating bicycling and walking as legitimate forms of travel, the Volusia TPO satisfies the spirit and intent of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU legislation seeks to "create an integrated, intermodal transportation system which provides travelers with a *real* choice of transportation modes."

**Federal: USDOT Policy Statement**

On March 15, 2010, the U.S. Department of Transportation (USDOT) issued a "Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations." The policy included a series of recommended actions intended to improve conditions for walking and bicycling. The full statement is included in Appendix D-1. Every transportation agency, including the USDOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide – including health, safety, environmental, transportation, and quality of life – transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these needs.

**State: FDOT Bicycle and Pedestrian Partnership Council**

The Florida Department of Transportation (FDOT) has established a standing statewide "Partnership Council" on bicycle and pedestrian mobility. The council includes key agency representatives and external stakeholders, including TPO Board member Patricia Northey. The Partnership Council provides guidance to FDOT on policy matters affecting Florida's bicycle and pedestrian transportation needs. The

council facilitates increased coordination and collaboration by advising FDOT on all statewide transportation planning and safety activities, including the Florida Transportation Plan. The council makes regular reports to FDOT on the status towards making Florida more bicycle and pedestrian friendly.

The council's policy recommendations include, but are not limited to, the following areas:

- Design:
  - FDOT's *Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways* (commonly known as the "Florida Greenbook" – Partnership Council recommendations or comments will be made to the Greenbook Advisory Committee)
  - FDOT's *Plans Preparation Manual and Design Standards*
  - Revisions to the *Traffic Engineering Manual* regarding pedestrian crosswalks and the use of countdown signals, rapid flashing beacons, and pedestrian hybrid signals
- Planning:
  - Identify best practices for local communities (e.g., land development codes, school siting), metropolitan planning organizations (MPOs), and regional planning councils (RPCs) to enhance bicycle and pedestrian mobility through planning and design criteria and practices.
  - FDOT plans (Strategic Intermodal Systems plan, 2060 FTP) and partner plans (e.g., local comprehensive plans, MPOs, RPCs)
  - Department of Community Affairs growth management rules
- Safety:
  - Strategic Highway Safety Plan and vulnerable road users (e.g. pedestrians, cyclists)
  - Safety Office Programs (School Crossing Guard, Safe Routes to School, Florida Traffic and Bicycle Safety Education, Pedestrian Safety Resource Center)
  - Highway Safety Grant Program
- Measures and Data:
  - "Denominator data" that measures the size of the population at risk
  - Identify best practices for incorporating state and local data into a cohesive statewide database system (e.g., crash records, facility data, exposure data, etc.)
  - Identify performance measures that accurately assesses the state of the system
- Programs and Funding:
  - Review of Pedestrian and Bicycle Program, Transit Office, and Rail Office procedures and programs
  - Establish policies for the use of existing funds such as Statewide Transportation Enhancements
  - Review and make recommendations for encouraging consistency with, and securing funding opportunities from, federal initiatives to promote more livable communities and well-connected walking and bicycling networks.

**Local: Volusia TPO Resolution 2010-06**

The TPO adopted Resolution 2010-06 on April 27, 2010, in support of the U.S. Department of Transportation (USDOT) Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations signed on March 11, 2010 by Ray LaHood, U.S. Secretary of Transportation. Resolution 2010-06, included in Appendix D-2, affirms the TPO's commitment to implement the USDOT Policy Statement for transportation projects in Volusia County and the cities of Flagler Beach and Beverly Beach in Flagler County.

**Bicycle and Pedestrian Facilities**

Bicycle and pedestrian facilities provide expanded recreational opportunities for residents and visitors alike. Shared-use path systems throughout Florida generate millions of dollars for state and local economies by attracting visitors from surrounding counties and states. Bicycle lanes enable vehicles to share the roadways in an efficient and safe manner. They establish the correct riding position for bicyclists, permit bicyclists to pass stopped motorists, guide bicyclists through intersections safely, permit motorists to pass bicyclists on two-lane roadways, create a buffer between the pedestrian and motorist, and enhance highway drainage by reducing vehicle hydroplaning. Sidewalks provide people with space to travel within the public right-of-way that is separated from roadway vehicles. Sidewalks improve mobility for pedestrians and provide access for all types of pedestrian travel. The TPO works with numerous government agencies, including Volusia County, to incorporate shared-use paths, bicycle lanes, and sidewalks into the functional aspects of the TPO planning efforts on a regional and local level.

An example of this collaboration on a regional level is the planned St. Johns River to the Sea Loop Trail. At a length of 260 miles, it will be the longest loop trail in Florida. The St. Johns River to the Sea Loop Trail will pass through Brevard, Flagler, Putnam, St. Johns, and Volusia counties. The loop trail is expected to break ground in 2013, to coincide with the 500th anniversary of the founding of America by Ponce de Leon. Another example of regional collaboration is the East Central Florida Regional Rail Trail.

**Bicycle and Pedestrian Statistics**

Volusia County crash statistics provided by the Florida Department of Highway Safety and Motor Vehicles for 2000 to 2009, indicate a trend of decreasing pedestrian injuries in Volusia County and in Florida. In 2000, Volusia County recorded 235 pedestrian injuries, compared with 7,782 statewide. In 2009, pedestrian injuries had been reduced to 211 in Volusia County and 7,676 statewide.

The trend for pedestrian fatalities is mixed in Volusia County and statewide. In 2000, Volusia County recorded 17 pedestrian fatalities, compared with 506 statewide. Pedestrian fatalities increased in Volusia County slightly during 2001 and 2002, before holding steady in 2004 and 2005. Toward the end of the decade, there was a decline to 14 fatalities, before spiking up to 20 in 2009. Statewide, pedestrian fatalities rose, then declined to 482 by 2009.

From 2000 to 2009, the trend for bicycle injuries decreased in Volusia County and statewide. In 2000, Volusia County recorded 169 bicycle injuries, compared with 4,585 statewide. By 2009, only 147 bicycle injuries were recorded in Volusia County and 4,376 statewide. The trend for bicycle fatalities in the state showed a slight increase over the ten-year period. In 2000, Volusia County recorded 2 bicycle fatalities, compared with 83 statewide. By 2009, Volusia County recorded only 1 bicycle fatality, compared with 100 statewide. It should be noted that Florida's population increased by 17.7% over the ten-year period.

Flagler County crash statistics provided by the Florida Department of Highway Safety and Motor Vehicles from 2000 to 2009, indicate a trend of increasing pedestrian injuries. In 2000, Flagler County recorded 7 pedestrian injuries, compared with 7,782 statewide. The trend increased to a peak of 32 in 2007, then decreased to 29 in 2009, compared with 7,676 statewide.

The trend for pedestrian fatalities also decreased in Flagler County from 2000 to 2009. In 2000, 2 pedestrian fatalities were recorded in Flagler County, compared with 506 statewide. By 2009, only 1 pedestrian fatality was recorded in Flagler County, compared with 482 statewide.

The trend for bicycle injuries showed an increase in Flagler County from 2000 to 2008, before decreasing in 2009. In 2000, 8 bicycle injuries were recorded in Flagler County, compared with 4,585 statewide. By 2008, 15 bicycle injuries were recorded in Flagler County, compared with 4,380 statewide. In 2009, only 6 bicycle injuries were recorded in Flagler County, compared to 4,376 statewide.

The trend for bicycle fatalities held steady in Flagler County from 2000 to 2009. In 2000, no bicycle fatalities were recorded in Flagler County, compared with 83 statewide. By 2009, no bicycle fatalities were recorded in Flagler County, compared with 100 statewide. It should be noted that Flagler County was one of the fastest growing counties in the United States during the last ten years.

**Table 6.7 Volusia County Bicycle and Pedestrian Crash Statistics**

| | Pedestrian Injury History | | Pedestrian Fatality History | | Bicycle Injury History | | Bicycle Fatality History | |
|---|---|---|---|---|---|---|---|---|
| **Year** | **Volusia** | **Florida** | **Volusia** | **Florida** | **Volusia** | **Florida** | **Volusia** | **Florida** |
| **2000** | 235 | 7,782 | 17 | 506 | 169 | 4,585 | 2 | 83 |
| **2001** | 223 | 7,894 | 18 | 510 | 184 | 4,476 | 4 | 107 |
| **2002** | 227 | 7,447 | 20 | 484 | 187 | 4,970 | 2 | 108 |
| **2003** | 240 | 7,449 | 16 | 509 | 172 | 4,991 | 2 | 95 |
| **2004** | 223 | 7,551 | 17 | 504 | 167 | 4,820 | 1 | 119 |
| **2005** | 208 | 7,975 | 17 | 576 | 142 | 4,515 | 1 | 119 |
| **2006** | 235 | 7,754 | 16 | 546 | 134 | 4,227 | 2 | 124 |
| **2007** | 230 | 7,529 | 14 | 530 | 161 | 4,303 | 3 | 121 |
| **2008** | 230 | 7,878 | 15 | 502 | 138 | 4,380 | 3 | 118 |
| **2009** | 211 | 7,676 | 20 | 482 | 147 | 4,376 | 1 | 100 |

*Source: Florida Traffic Safety Facts, published by the Florida Department of Highway Safety and Motor Vehicles, 2000, 2005, and 2010*

**Table 6.8 Flagler County Bicycle and Pedestrian Crash Statistics**

| | Pedestrian Injury History | | Pedestrian Fatality History | | Bicycle Injury History | | Bicycle Fatality History | |
|---|---|---|---|---|---|---|---|---|
| **Year** | **Flagler** | **Florida** | **Flagler** | **Florida** | **Flagler** | **Florida** | **Flagler** | **Florida** |
| **2000** | 7 | 7,782 | 2 | 506 | 8 | 4,585 | 0 | 83 |
| **2001** | 15 | 7,894 | 0 | 510 | 6 | 4,476 | 1 | 107 |
| **2002** | 7 | 7,447 | 1 | 484 | 12 | 4,970 | 1 | 108 |
| **2003** | 16 | 7,449 | 3 | 509 | 9 | 4,991 | 1 | 95 |
| **2004** | 21 | 7,551 | 1 | 504 | 15 | 4,820 | 1 | 119 |
| **2005** | 19 | 7,975 | 2 | 576 | 13 | 4,515 | 1 | 119 |
| **2006** | 18 | 7,754 | 0 | 546 | 13 | 4,227 | 1 | 124 |
| **2007** | 32 | 7,529 | 0 | 530 | 18 | 4,303 | 0 | 121 |
| **2008** | 19 | 7,878 | 4 | 502 | 15 | 4,380 | 1 | 118 |
| **2009** | 29 | 7,676 | 1 | 482 | 6 | 4,376 | 0 | 100 |

*Source: Florida Traffic Safety Facts, published by the Florida Department of Highway Safety and Motor Vehicles, 2000, 2005,and 2010*

**Volusia TPO Bicycle and Pedestrian Program**

The Volusia TPO Bicycle and Pedestrian Program includes a variety of project planning and safety-related activities to improve bicycling and walking in our communities. The program provides funding for the construction of new sidewalks, bicycle trails, and paths, as well as promotional programs including bicycle safety education for children, distribution of bicycle helmets, and funding and technical assistance to smaller communities for bicycle and pedestrian master planning. These activities are managed by the TPO's Bicycle and Pedestrian Coordinator, with recommendations provided by the Bicycle and Pedestrian Advisory Committee. Significant achievements of the program include the *Bicycle and Pedestrian Plan*, the *Volusia County Bicycling Map for the Experienced Cyclist*, assessment of safety issues at 63 schools under the Bicycle and Pedestrian School Safety Review Study, and the donation of fitted helmets to more than 4,000 bicyclists (mostly children).

**Bicycle and Pedestrian Coordinator -** The Volusia TPO has designated a Bicycle and Pedestrian Coordinator to address safety and planning issues, and to work towards improving the conditions faced by the traveling public. The coordinator accomplishes this through the active participation in several organizations. The TPO Bicycle and Pedestrian Coordinator maintains an ongoing dialogue with county and municipal planning agencies, local advocacy groups, representatives from the Volusia County School District, and other organizations that share a common interest in providing a safe environment for non-motorized travel. In doing this, the TPO supports federal transportation policy aimed at increasing non-motorized transportation while simultaneously reducing injuries and fatalities. The coordinator also promotes the continued expansion and upgrade of existing sidewalks, bike paths, bike lanes, and trails that accommodate the various needs and desires of the bicycling and walking community.

**Bicycle and Pedestrian Advisory Committee (BPAC) -** The Bicycle and Pedestrian Advisory Committee (BPAC) reviews issues and makes recommendations to the TPO Board on bicycle and pedestrian related transportation matters. The BPAC consists of private citizens and technical professionals appointed by

the TPO Board. Nineteen (19) voting members are private citizens. Non-voting members consist of city representatives, highway and transportation planners, professional engineers, and those technical personnel made available by the various municipalities. Planning efforts and technical reviews are completed through the BPAC. The BPAC reviews and prioritizes project applications and determines the evaluation criteria for bicycle and pedestrian projects. The BPAC reviews bicycle and pedestrian planning studies and its members participate in community events promoting bicycle and pedestrian safety.

**Bicycle and Pedestrian Plan -** The Volusia TPO's *Bicycle and Pedestrian Plan* incorporates the planned bicycle and pedestrian networks as provided by the local jurisdictions, the Volusia County Proposed Trails Network, TPO staff, and BPAC members. The *Bicycle and Pedestrian Plan* was adopted on January 25, 2005, and is currently being updated. The plan created a GIS database that brought together all existing and planned facilities in the area. The TPO's *Volusia County Bicycling Map for the Experienced Cyclist* was completed in November 2009.

**Bicycle and Pedestrian Projects -** The TPO provides assistance to local governments by providing federal funds to help plan, design, and build sidewalk/trail projects. The TPO uses Surface Transportation Program (STP) Extra Urban (XU) federal funds to hire consultants to perform bicycle and pedestrian feasibility studies for projects on the XU List of Prioritized Bicycle and Pedestrian Projects. Federal funds are combined with local matching funds to program projects in the FDOT Five-Year Work Program through the construction stage.

The Volusia TPO is beginning a program to provide *Master Planning Assistance for Smaller Communities* in 2011. The program is aimed at the communities of Beverly Beach, Flagler Beach, Lake Helen, Oak Hill, and Pierson. The BPAC and TPO staff will be working with these communities to help them develop bicycle and pedestrian master plans for adoption by their governments. The master plans will identify bicycle and pedestrian projects that can be submitted for the TPO's annual "Call for Projects".

The *Volusia County Bicycling Map for the Experienced Cyclist* was the first county-wide bicycling map for Volusia County. It was completed by the BPAC and TPO staff in 2009. The map was developed in cooperation with the Florida Bicycle Association, Florida Freewheelers Bicycle Club, Bike Florida, Inc., and local governments in Volusia County.

**Community Safety Programs**

Safety promotion, education, and injury prevention goals are emphasized through the TPO Safety Awareness Day events and involvement in the East and West Volusia Community Traffic Safety Teams (CTST) and Volusia/Flagler Safe Kids Coalition. These organizations sponsor bicycle rodeos, Walk to School Day, and other events that seek to increase awareness of transportation safety issues.

As part of its efforts to develop and expand a network of safe pedestrian and bicycle facilities, the TPO authorized the *Bicycle & Pedestrian School Safety Review Study.* The study is funded by the Florida Department of Transportation (FDOT), with input from the Volusia County School Board and local governments. The TPO initiated the *Bicycle & Pedestrian School Safety Review Study* with the principal

goal of analyzing safety issues for students who walk or bicycle to and from school, and providing recommendations for improvement. Other goals of the study were to encourage coordination among stakeholder agencies and to provide project ideas for future funding opportunities. The *Bicycle & Pedestrian School Safety Review Study* assessments have been completed on over 63 elementary, middle schools, and new school sites.

The federal Safe Routes to School (SRTS) Program was created to reduce the number of children hit by cars, reduce traffic congestion around schools, improve children's physical activity and health, reduce air pollution, and reduce costs related to school bus transportation. The State of Florida received approximately $27.8 million through 2009, and $9.7 million in 2010, from the federal government for Safe Routes to School Projects. The TPO collaborates with the Community Traffic Safety Teams, the Volusia County School Board, and local governments to compete for Safe Routes to School funding for sidewalk/trail projects. The TPO is a member of the Florida Network of the SRTS National Partnership. The SRTS National Partnership is a network of more than 500 non-profit organizations, government agencies, schools, and professionals working together to advance the SRTS movement in the United States. The mission of the SRTS National Partnership is to advocate for safe walking and bicycling to and from schools, and in daily life, to improve the health and well-being of America's children and to foster the creation of livable, sustainable communities.

The TPO conducts Bicycle Safety Awareness Programs that include fitting bicycle helmets. Bicycle helmets are both purchased by the TPO and awarded by the Bicycle Helmet Promotion Program from the Florida Department of Health. The bicycle helmets are fitted and donated to individuals free of charge. Over the past six years, the Volusia TPO has fitted over 4,000 bicycle helmets. The helmets are fitted at public events such as the Port Orange Family Days Festival and the Univision/Telefutura Community Health Fair. The TPO participates in, and provides technical support for bicycle rodeos. Equipment for setting up and running rodeos is owned by the TPO. This equipment includes cones, ropes, miniature stop signs, visual obstacle posters, instructional videos, and materials.

The TPO is a member of the Florida Bicycle Association (FBA), a non-profit organization that promotes bicycle safety and roadway sharing.


Workshops promoting bicycle and pedestrian safety are hosted by the TPO. The workshops are interactive and provide the latest information to engineers, planners, law enforcement personnel, safety professionals, and interested citizens.

The *Walk and Ride Bicycle & Pedestrian Safety Video* is a TPO project funded by the Florida Safe Routes to School Program and produced by WDSC-TV Channel 15. The video and accompanying public service announcements promote safe practices for walking and biking. English and Spanish versions of the video are available. The Walk and Ride Bicycle & Pedestrian Safety Video was selected for a Bronze Telly Award in 2010. The Walk and Ride video can be viewed on YouTube.com and Volusia County School

District's SAFARI Montage. Brighthouse Networks will begin broadcasting the Walk and Ride public service announcements in late 2011 on Marketplace on Demand Channel 973.

The *Bicycle Safety Awareness Decal* (*It's The Law Decal*), included in Appendix F, promotes Florida Statute 316.083 (1) – a statute that states the driver of a vehicle passing a bicycle or other non-motorized vehicle must pass at a distance of at least three feet.

**Funding**

Guidance provided by the Federal Highway Administration (FHWA) in interpreting the bicycle and pedestrian elements of SAFETEA-LU legislation states that "to varying extents, bicyclists and pedestrians will be present on all highways and transportation facilities where they are permitted." It goes on to say that "it is clearly the intent of SAFETEA-LU that all new and improved transportation facilities be planned, designed, and constructed with this fact in mind." Efforts made throughout the Volusia TPO area in the planning and development of bicycle and pedestrian facilities, both as a sub-component of other road improvements, or as stand-alone projects, clearly demonstrate the recognition of these requirements. In addition to the guidance provided by SAFETEA-LU for state highway projects, the Volusia County Comprehensive Plan addresses bicycle and pedestrian facilities on county-maintained roads. The county's plan states that as improvements are initiated "every effort will be made to include sidewalks, bike lanes, and/or paved shoulders to accommodate the mobility needs of both bicyclists and pedestrians."

The amount of funding allocated towards the construction of bicycle and pedestrian facilities is also an indicator of the sincere efforts to integrate bicycle and pedestrian facilities into mainstream transportation planning. In 1997, the Volusia TPO dedicated only 3% of its Surface Transportation Program (STP) Extra Urban (XU) funding towards bicycle and pedestrian facilities. Understanding the need to create real multimodal travel opportunities, the TPO supported an increase in the STP "set-aside" to 5% in 1998. The TPO Board raised the level to 12.5% in 1999 and 30% in 2005. While the amount of funding in this category varies, the approximate total of 30% of the TPO's XU funds is $1.2 million annually, which is matched with local government funding. The rate of matching funds required is set by the TPO Board annually.

In addition, funding on the state level is available through a safety set-aside that reserves 10% of the state's STP apportionment to address safety improvements to the transportation infrastructure. Historically, in Volusia County, the Community Traffic Safety Teams have identified and recommended projects that receive funding through this program. FDOT also provides financial support through the Transportation Enhancement Program (TEP). Projects selected for the TEP are prioritized by the TPO and the following 12 categories are eligible for TEP funds:

1. Provision of facilities for pedestrians and bicycles
2. The provision of safety and educational activities for pedestrians and bicyclists
3. Acquisition of scenic easements and scenic or historic sites
4. Scenic or historic highway programs (including the provision of tourist and welcome centers)
5. Landscaping and other scenic beautification

6. Historic preservation
7. Rehabilitation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals)
8. Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails)
9. Control and removal of outdoor advertising
10. Archaeological planning and research
11. Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity
12. Establishment of transportation museums

Volusia County government also allocates a portion of the local funds available for its road program to bicycle and pedestrian facilities. This allocation is approximately $250,000 annually. During the long-range planning horizon, the Volusia TPO will continue to enhance the safety and convenience of non-motorized forms of travel. To accomplish this, it will be important for the Volusia TPO to update the Bicycle and Pedestrian Plan to include clear and attainable goals and objectives. These plans will provide a logical framework for the continuation of successful programs and strategies as well as the incorporation of new techniques that will improve the overall environment for all travel modes.

**Future Direction**

In 2011, the TPO will begin a program to enhance pedestrian safety. The *Pedestrian Safety Enforcement Program* will be a collaborative effort between the TPO, the Center for Education and Research in Safety (CERS), and the cities of Daytona Beach Shores, DeLand, Flagler Beach, and Holly Hill. The purpose of the Pedestrian Safety Enforcement Program will be to increase awareness of pedestrian safety laws and decrease crashes involving pedestrians crossing streets and intersections.

The future direction of bicycle and pedestrian transportation will involve progress in the following three areas: public transportation, active transportation, and communities designed for health and safety.

The Center for Disease Control and Prevention (CDC) has identified transportation policies that can have a profound positive effect on health. Transportation systems have an impact on quality of life and health. Public transportation systems reduce the need for single occupancy vehicle trips, reduce vehicle emissions, and provide transportation access to people with physical, economic, and other limitations that prevent the use of single occupancy vehicles. Public transportation systems offering ride sharing encourage people to commute together to work and other destinations. In 2010, the Florida Department of Transportation initiated the *reThink Commuter Assistance Program* in Central Florida. The *reThin*k program uses a database to match people who commute by carpool, vanpool, or bike pool. In the future, the expansion of public transportation, commuter assistance programs, and commuting is likely.

The CDC recommends establishing a federal policy through federal agencies and nongovernmental organizations that would promote bicycling and walking to public transportation stations by making connecting trips easier, faster, and safer by:

- Providing bicycle storage at public transportation stations, bus stops, and city car-share point of departure locations;
- Assessing and addressing safety hazards for pedestrians and bicyclists through safety measures such as well-lighted crosswalks and signal timing and integrating those safety enhancements for pedestrian and bicycle access to public transportation stations, bus stops, and city car-share locations;
- Roving barriers to pedestrians and bicyclists on roads and intersections near public transportation stations and bus stops; and
- Enhancing the public transportation system to accommodate bicyclists and pedestrians.

The Volusia TPO works with the Volusia Community Traffic Safety Teams to address safety hazards for pedestrians and bicyclists in the built environment. Local governments are encouraged to submit new projects that address said such hazards. These projects can then be funded by the Volusia TPO with XU Bicycle and Pedestrian or ITS/Traffic Operations/Safety funds. The Volusia TPO works with Votran to identify and fund (through XU Transit Set-Aside funds) the removal of bicycle and pedestrian barriers and provide enhancements to public transportation systems and bus stops.

Active transportation systems connect places where people live, work, shop, play, and learn with safe and convenient walking and bicycling facilities. Some of the CDC recommendations to promote active transportation are:

- Support active transportation infrastructure, such as:
  - Well-lit sidewalks, shared-use paths, and recreational trails,
  - Safe roadway crossings,
  - Creation of bicycle-supporting infrastructure including shared-use paths and interventions that reduce motor vehicle traffic and vehicle speed on neighborhood streets (e.g. bicycle boulevards),
  - Safe pedestrian and bicycling connections to public transportation, and
  - Safe and convenient pedestrian and bicycling connections to public park and recreation areas;
- Increase opportunities for physical activity by devoting increased resources to non-motorized transportation options;
- Consider incentives for states and regions that reduce vehicle miles traveled per capita and implement active living environments that promote walking and bicycling, using public transportation, and reducing air pollution (including greenhouse gas emissions);
- Comprehensive street design measures, such as “complete streets,” which provide safe and convenient travel for all users of the street, such as expanding space for bicycle lanes and sidewalks, placing bus stops in safe and convenient locations, and making improvements accessible for disabled users;
- Bring health, transportation and community planners together to develop safe, convenient, and complete pedestrian and bicycle master plans, including an inventory of current sidewalks,

bicycle facilities, recreational trails, and shared-use paths, which can be incorporated into city general plans and capital improvement programs;

- Work with state and local transportation planning officials to integrate and enforce use of pedestrian and bicycle design guidelines and evidence-based safety standards into transportation planning practice and support evaluation of innovative designs;
- Bring together specialists in transportation, energy, community planning and health to establish federally recommended guidelines for the inclusion of active transportation infrastructure in building and development efforts; and
- Explore opportunities for increasing availability of funds for establishing active transportation initiatives.

In the future, communities will promote good health and safety by integrating transportation networks, streets, and zoning/land use polices into design work. The CDC encourages communities designed for health and safety. Some of the CDC recommendations are:

- Government and non-government organizations develop and implement model transportation and land use planning policies that encourage transit-oriented and mixed-use developments;
- Dense networks of connected streets which serve the needs of all transportation modes; for example, adopting measures such as "complete streets";
- Roads that include robust infrastructure for bicycling and walking while mitigating the potential adverse effects of motor vehicle travel;
- Design and locate destinations for children (such as schools, parks, and libraries) within neighborhoods so that children can reach destinations without having to cross busy streets;
- Design streets to reduce motor vehicle speeds and minimize pedestrian and bicycle injuries;
- Implement multimodal level of service indicators as performance measures for roadways that include measurements of pedestrian, bicyclists, and public transportation operability;
- Increase the adoption of motor vehicle technologies that reduce injuries to pedestrians, such as bumpers designed to minimize pedestrian injury; and
- Support motor vehicle design efforts to incorporate features that reduce the likelihood of injury to occupants of other vehicles, bicyclists and pedestrians.

The Volusia TPO has participated in activities that support the concepts of an "active" transportation system, such as the "How Shall We Grow" initiative. "How Shall We Grow" was an 18-month campaign (from March 2006 to August 2007) to create a shared growth vision for Central Florida. Over 20,000 residents from Brevard, Lake, Orange, Osceola, Polk, Seminole, and Volusia counties participated in an effort to project how the region will grow between 2006 and 2050, when population is expected to double from 3.5 million to 7.2 million people. The Volusia TPO, in cooperation with local governments, is working to incorporate land use planning elements into the 2035 LRTP and the newly formed Corridor Improvement Program. These initiatives are a few examples of how the Volusia TPO supports some of the CDC recommendations for Active Transportation Systems and Communities Designed for Health and Safety.

# Chapter 7 Project Development and Screening Programs

## Introduction

Previous chapters have described the available data, financial resources, public input, and analytical tools used to identify future transportation needs for the Volusia TPO planning area. This section describes how the TPO used that information to develop transportation alternatives and how the TPO combined and evaluated the projects to determine the final, cost-feasible transportation plan. This section will review:

- Transportation System Alternatives
- Congestion Management Plan Assessment
- Efficient Transportation Decision Making
- Environmental Justice Review
- Additional Screening and Ranking Criteria Considered

## Transportation System Alternatives

Two alternative transportation systems were developed and evaluated for the *Volusia TPO Long Range Transportation Plan (LRTP)*. The Central Florida Regional Planning Model, Version 5.0 (CFRPM 5.0) was used to predict, for each alternative, the impact the transportation improvements would have on the efficiency of the system (in terms congestion as measured by the ratio of roadway trip volume to carrying capacity).

Prior to the alternatives testing, the Existing Plus Committed (E+C) network was evaluated to understand how much congestion would exist if no new capacity improvements were made beyond those already programmed for funding through 2013. The E+C transportation system included the existing roadway network, plus all other projects funded for construction within the next five years. The E+C transportation system typically serves as the starting point to analyze the need for future transportation improvements.

### Existing Plus Committed Transportation Alternative

The Existing Plus Committed (E+C) Alternative represents the highway and transit network that currently exists along with the projects and programs that have a funding commitment. The focus for developing the existing project list is to include those projects that have been constructed between the model base year (2005) and the current year (2010). Committed projects are those that are programmed for construction within the next several years. In this case, the project team used the adopted FY 2009-2013 Transportation Improvement Program (TIP), local area capital improvement programs (CIP), the FDOT Work Program, and the Transit Development Plan (TDP). The E+C model assumes the 2035 land use and socioeconomic data discussed in previous sections of this report. Since this alternative assumes 25 years of employment and population growth but only those transportation improvements that are in place or have been committed to be funded through construction in the next few years, it highlights

areas where the greatest need for future transportation improvements will exist based on the projected growth patterns. Table 7.1 lists the projects included in the E+C Alternative.

**Table 7.1 Existing Plus Committed Alternative**

| E+C Road Projects | | |
|---|---|---|
| **Name** | **Limits (From - To)** | **Improvement** |
| Airport Rd | Pioneer Trail to SR 44 | New 2-lane road |
| Beresford Ave | Blue Lake Ave to Kepler Rd | New 2-lane road |
| Clyde Morris Blvd | Aberdeen development to LPGA Blvd | Widen to 4 lanes |
| CR 92 | SR 15A to US 17/92 | Widen to 4 lanes |
| DeBary Ave | I-4 to Providence Blvd | Realign/widen to 4 lanes |
| Dunn Ave Ext | Williamson Blvd to Bill France Blvd | New 2-lane road |
| I-4 | @ SR 472 | Interchange (add EB on-ramp) |
| I-4 | Saxon Blvd to Seminole County Line | Widen to 6 lanes |
| I-4 | SR 44 to SR 472 | Widen to 6 lanes |
| I-4 | SR 472 to Saxon Blvd | Widen to 6 lanes |
| I-95 | Flagler County Line to SR 40 | Widen to 6 lanes |
| I-95 | SR 40 to US 92 | Widen to 6 lanes |
| I-95 | US 92 to I-4 | Widen to 6 lanes |
| Normandy Blvd | Firwood Dr to Saxon Blvd | Add lanes |
| Plantation Oaks Blvd | US 1 to Old Dixie Highway | New 2 Lane road |
| Saxon Blvd | Urbana Blvd to Tivoli Blvd | Widen to 4 lanes |
| SR 15A (Spring Garden Rd) | Beresford Ave to US 17/92 | Widen to 4 lanes |
| SR 15A (Spring Garden Rd) | US 17 to US 92 | Widen to 4 lanes |
| SR 15A (Spring Garden Rd) | Plymouth Rd to CR 92 | Widen to 4 lanes |
| SR 40 | Cone Rd to I-95 | Widen to 4 lanes |
| SR 44 | @ I-4 | Interchange - modified interchange |
| SR 44 | Summit Ave to Pioneer Trail | Widen to 4 lanes |
| SR 44 | Pioneer Trail to SR 415 | Widen to 4 lanes |
| SR 472 | Howland Blvd to I-4 | Widen to 4 lanes |
| Tomoka Farms Rd | LPGA Blvd to US 92 | New 2-lane road |
| Town West Blvd | Tomoka Farms Rd to Williamson Blvd | New 2-lane road |
| US 17/92 | SR 15A/Taylor to SR 472 | Widen to 6 lanes |
| Williamson Blvd | Spruce Creek Blvd to Sable Creek Blvd | Widen to 4 lanes |
| Williamson Blvd | Dunn Ave to US 92 | Widen to 4 lanes |
| 10th St (SE Volusia) | Myrtle Ave to US 1 | Widen to 4 lanes |
| Dunn Ave | Tomoka Farms Rd to Williamson Blvd | New 2-lane road |
| Howland Blvd | Courtland Blvd to SR 415 | Widen to 4 lanes |
| LPGA Blvd | Old Kings Rd to Nova Rd | Widen to 4 lanes |
| Rhode Island Extension | Westside Pkwy to US 17/92 | New 2-lane road |
| SR 415 | Reed Ellis Rd to Acorn Lake Rd | Widen to 4 lanes |

**Table 7.1 Existing Plus Committed Alternative *(continued)***

| | | |
|---|---|---|
| Tymber Creek Rd | Peruvian Ln to SR 40 | Widen to 4 lanes |
| Yorktown Blvd Extension | Dunlawton Ave to Taylor Rd | New 2-lane road |
| **E+C Public Transportation Projects** | | |
| **Name** | **Limits (From - To)** | **Improvement** |
| SunRail | Seminole County Line to DeLand | New commuter rail service |
| Bus - added service for SunRail | DeBary and DeLand | New transit service |

Figure 7-1 provides a graphic presentation of the congestion predicted by the CFRPM 5.0 in the year 2035 with only the E+C projects completed (using a ratio of volume to capacity). This information served as a base to begin developing solutions to meet future demand.

Further analysis using data estimates produced by the CFRPM 5.0 reveals that overall Vehicle Miles of Travel (VMT) is estimated to increase approximately 65% between the 2005 base year and 2035. This will occur on a roadway network that is only funded to include an additional 5.5% in lane miles to accommodate the additional travel. The increasing congestion is evidenced by a reduction in the congested speed from 35 to 30 mph, almost a 15% drop. The total volume of traffic on the roadway as compared to the base year counts on the system is expected to increase from .93 to 1.46. Table 7.2 provides an illustrationof the traffic model estimates.

**Table 7.2 Performance Measures for Base Year and Existing Plus Committed in 2035**

| Category | 2005 Base | 2035 E+C | % Change |
|---|---|---|---|
| Total Number of Links | 3,331 | 3,367 | 1.08% |
| Total System Miles | 1,124 | 1,144 | 1.78% |
| Total Lane Miles | 2,683 | 2,831 | 5.52% |
| Total VMT Using Volumes | 5,411 | 8,955 | 65.50% |
| Total VMT Using Base Years Counts | 5,150 | 5,150 | 0.00% |
| Total VMT V/C | 1.05 | 1.74 | 65.71% |
| Total VHT Using Volumes | 124 | 379 | 205.65% |
| Total VHT Using Counts | 121 | 222 | 83.47% |
| Total VHT V/C | 1.03 | 1.71 | 66.02% |
| Total Original Speed (MPH) | 37.17 | 37.21 | 0.11% |
| Total Congested Speed (MPH) | 35.44 | 30.31 | -14.48% |
| Total Volume/Count Ratio | 0.93 | 1.46 | 56.99% |
| Transit Ridership | 8,475 | 9,096 | 32% |

These estimates are not very surprising given the E+C assumption of no additional funding beyond the current commitments through year 2013. The data does, however, provide a base of information by which to compare other transportation scenarios as explored in the two alternatives developed as part of this planning effort.

**Figure 7-1  2035 Traffic on Existing Plus Committed Roadway Network**

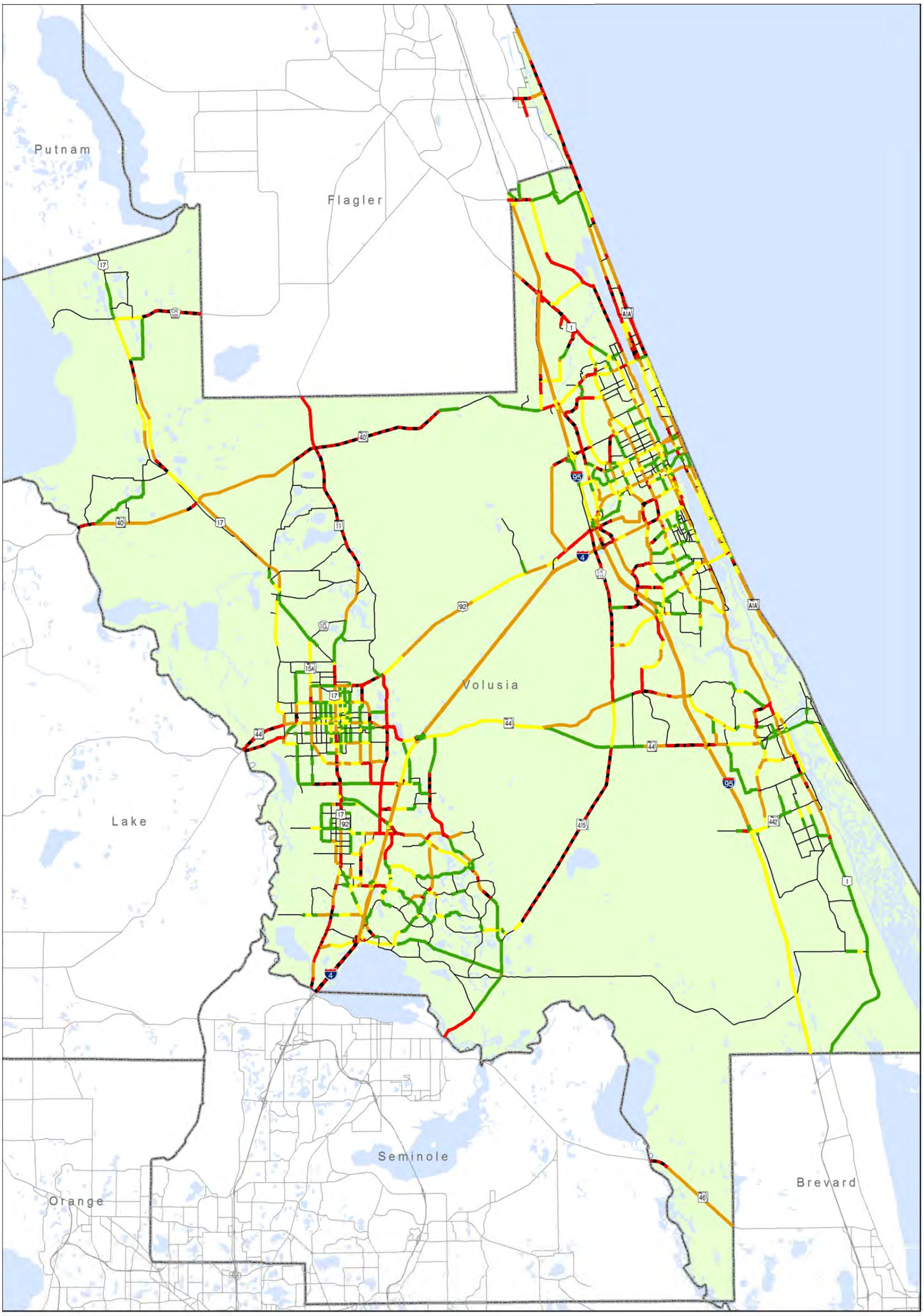
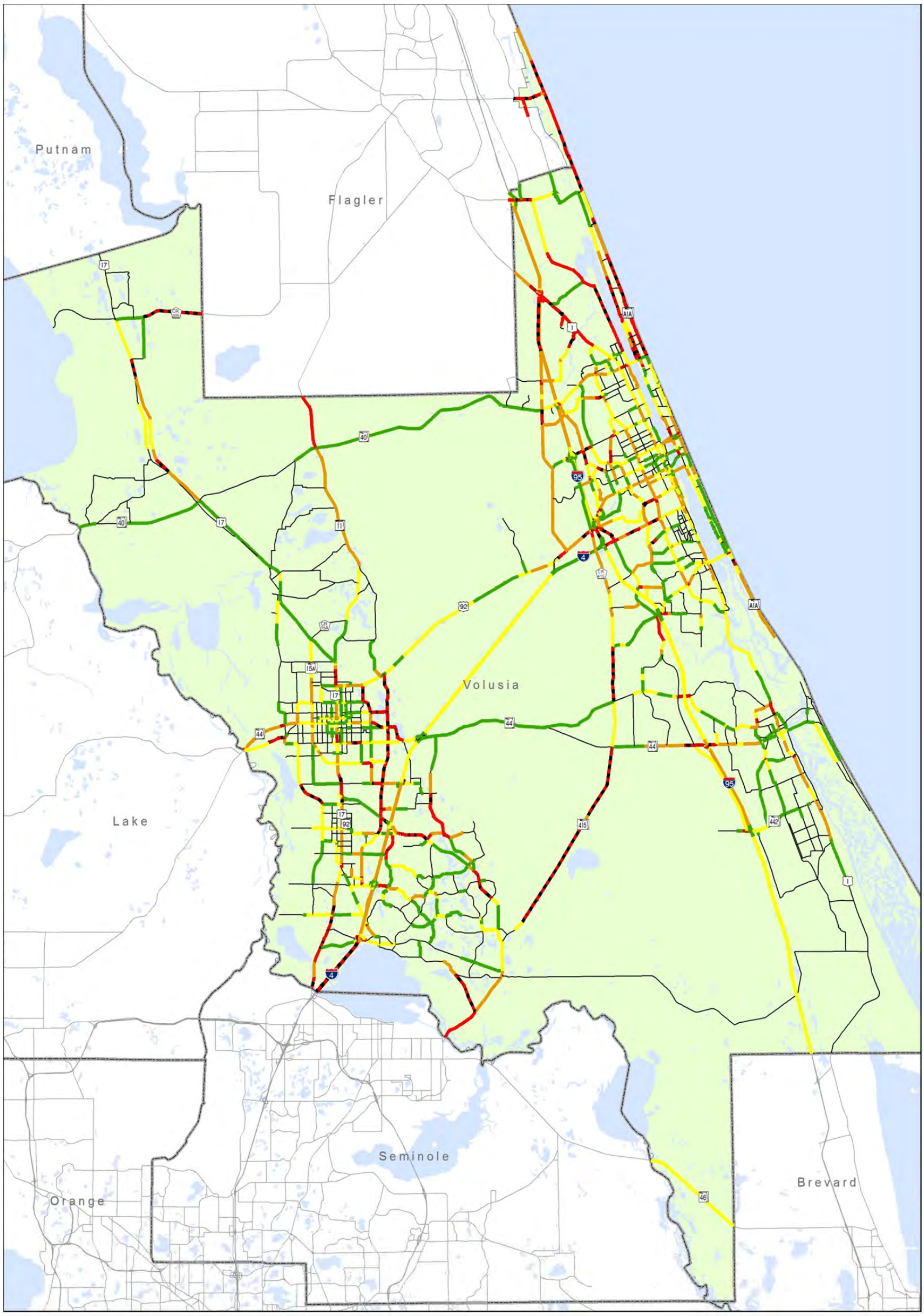


**Figure 7-2 2035 Traffic on Transportation Alternative #1 – Technical Alternative**



**Transportation Alternative #1 - Technical Alternative**

The LRTP Subcommittee used the results of the E+C network analysis and the *Make Your Mark in 2035* planning sessions conducted with members of the Volusia TPO advisory committees as a starting point to develop Transportation Alternative #1, the Technical Alternative. Additionally, subcommittee members used the 2025 LRTP project listing, the results of transportation studies that have been completed in recent years, and professional knowledge to refine the list of projects to be included in an evaluation using the CFRPM 5.0 traffic model. The project list was constrained by the amount of funding estimated to be available. Table 7.3 lists the projects included for Transportation Alternative #1, the Technical Alternative. In addition to the TPO projects, Volusia County submitted a listing of local road improvements to be added into the modeling effort. The list of local road projects submitted to the TPO to be used throughout this effort is included in the LRTP Cost-Feasible Project listing in Chapter 7. Figure 7-2 illustrates the levels of traffic congestion projected to occur by the year 2035 considering the transportation system improvements included in Alternative #1 - the Technical Alternative.

**Table 7.3 Transportation Alternative #1 – Technical Alternative**

| Alternative #1 Road Projects | | |
|---|---|---|
| **Name** | **Limits (From - To)** | **Improvement** |
| I-95 Interchange | @ SR 421 | Upgrade interchange |
| I-4 | SR 44 to I-95 | Widen to 6 lanes |
| I-95/I-4 | @ I-95 & US 92 | Systems interchange |
| I-95 | SR 400 (Beville Rd) to SR 44 | Widen to 6 lanes |
| SR 483 Clyde Morris Blvd | Beville Rd to US 92 | Widen to 6 lanes |
| SR 40 | Cone Rd (Airport Rd) to SR 11 | |
| SR 40 | SR 11 to US 17 (SR 15) | |
| SR 40 | SR 17 to County Line | Widen to 4 lanes w/ bridge |
| SR 415 | Reed Ellis Rd to Seminole Cnty | Widen to 4 lanes w/ bridge |
| SR 44 | SR 15A to SunRail Station | Miscellaneous improvements |
| SR 44 | Voorhis Ave to Kepler Rd | Widen to 4 lanes |
| US 17 | SR 40 to Ponce DeLeon Blvd | Widen to 4 lanes |
| US 92 | I-4 to CR 415/Tomoka Farms Rd | Widen to 6 lanes |
| SR 472 | Graves Ave to Kentucky/MLK Blvd | Widen to 6 lanes |
| I-95 Interchange | @ US 1 | Upgrade interchange |
| Intracoastal Bridge(Orange Ave) | Peninsula Dr to Beach St | Bridge replacement |
| US 1 Intersections | | Intersection improvements |
| Intersection-Port Orange | Reed Canal Rd - Nova Rd | Intersection improvements |
| Intersection-Orange City | Orange Camp Rd - US 17/92 | Intersection improvements |
| Intersection-DeLand | Plymouth Ave - US 17/92 | Intersection improvements |
| Intersection-DeLand | SR 44 (SR 15A, Amelia, Garfield, Blue Lake) | Intersection improvements |
| Intersection-Orange City | Highbanks Rd - US 17/92 | Intersection improvements |
| Intersection-Orange City | Saxon - US 17/92 | Intersection improvements |

**Table 7.3 Transportation Alternative #1 – Technical Alternative *(continued)***

| **Alternative #1 Road Projects *(continued)*** | | |
|---|---|---|
| **Name** | **Limits (From - To)** | **Improvement** |
| Intersection-Deltona | SR 415 - Ft. Smith Blvd | Intersection improvements |
| Park and Ride | SR 44 & I-95 | |
| Park and Ride | DBIA | |
| Park and Ride | I-95 & US 1 | |
| Park and Ride | I-95/I-4/US 92 | |
| Park and Ride | DeLand Airport | |
| Park and Ride | SR 472 & I-4 (Activity Center) | |
| Park and Ride | Southwest Volusia (TDB) | |
| Park and Ride | SR 44 & I-4 | |
| **Public Transportation** | | |
| **Name** | **Limits (From - To)** | **Improvement** |
| Commuter Rail | DeBary to DeLand | Extend commuter rail service |
| US 92 - East West Corridor System | DeLand (US 17/92) to SR A1A | New premium bus service |
| Bus - added service – US 92 | Daytona Beach to DeLand | Improved headways Route 60 |
| Bus - added service – Daytona Beach | Daytona Beach International Airport | Improved headways to and from airport in urban core |
| Daytona Area Circulator | Core Daytona Beach (US 92) | New bus service |
| DeLand Circulator (Trolley) | Downtown DeLand to SunRail Station | New bus service with connections to rail station |
| Commuter Rail Expansion | DeLand Station to Daytona Beach | Extend commuter rail service |
| Commuter Rail Station | Near US 92 and Seagrave St | New commuter rail facility |
| Bus - added service – US 1 | Ormond Beach to Port Orange | Improved headways Route 3/4 |
| Bus - added service - SR A1A | Ormond Beach to Port Orange | Improved headways Route 1/17 |
| Bus - added service - Rural Northwest | Pierson to Crescent City | Improve headways & extend Route 24 |
| Bus - added service – SR 44 | New Smyrna Beach to DeLand | New cross-county bus service |
| Bus - added service - East Volusia | Ormond Beach and Port Orange | Improved headways on routes serving these areas |

*Note: Only projects that increase traffic capacity are included in the model. This does not include projects such as park and ride lots.*

Alternative #1, the Technical Alternative was submitted to the Florida DOT for evaluation using the CFRPM 5.0 traffic model in February 2010. Table 7.4 provides additional data estimated by the CFRPM 5.0 model in the year 2035 considering the transportation system improvements included in Alternative #1 - the Technical Alternative. Further analysis using this data reveals that overall Vehicle Miles of Travel (VMT) is estimated to increase approximately 74% between the 2005 base year and 2035. This

will occur on a roadway network that includes an additional 16.6% in lane miles to accommodate the additional travel. The increasing congestion is evidenced by a reduction in the congested speed from 35 to 32 mph. Although this represents almost a 10% drop, it is more favorable than the E+C scenario. The total volume of traffic on the roadway as compared to the base year counts is expected to increase from .93 to 1.45.

**Table 7.4 Performance Measures for Existing Plus Committed and Alternative #1 in 2035**

| Category | 2005 Base | 2035 E+C | Alt. #1 Technical | % Change Over Base | % Change Over E+C |
|---|---|---|---|---|---|
| Total Number of Links | 3,331 | 3,367 | 3,416 | 2.55% | 1.46% |
| Total System Miles | 1,124 | 1,144 | 1,176 | 4.63% | 2.80% |
| Total Lane Miles | 2,683 | 2,831 | 3,129 | 16.62% | 10.53% |
| Total VMT Using Volumes | 5,411 | 8,955 | 9,409 | 73.89% | 5.07% |
| Total VMT Using Counts | 5,150 | 5,150 | 5,192 | 0.82% | 0.82% |
| Total VMT Volume/Count | 1.05 | 1.74 | 1.81 | 72.38% | 4.02% |
| Total VHT Using Volumes | 124 | 379 | 326 | 162.90% | -13.98% |
| Total VHT Using Counts | 121 | 222 | 187 | 54.55% | -15.77% |
| Total VHT V/C | 1.03 | 1.71 | 1.74 | 68.93% | 1.75% |
| Total Original Speed (MPH) | 37.17 | 37.21 | 37.17 | 0.00% | -0.11% |
| Total Congested Speed (MPH) | 35.44 | 30.31 | 32.01 | -9.68% | 5.61% |
| Total Volume/Count Ratio | 0.93 | 1.46 | 1.45 | 55.91% | -0.68% |
| Transit Ridership | 8,475 | 9,096 | 12,823 | 51.30% | 40.97% |

**Transportation Alternative #2 - Public Alternative**

Concurrently, Transportation Alternative #2, the Public Alternative, was developed using input from a series of *Make Your Mark in 2035* planning sessions held throughout the planning area. The *Make Your Mark* activities consisted of 13 events held over a three-month period involving 201 participants. These events represented over 600 citizen hours of participation and included lively discussions regarding the future of our communities and the transportation systems that would be needed to accommodate growth. A more detailed explanation of the *Make Your Mark in 2035* public outreach activities is included in Chapter 5, Public Involvement.

Once the planning sessions were complete, the transportation projects were combined into a single master table and ranked in order of frequency. Cost-feasible SIS projects were also added since these are funded and developed by FDOT. The list was then constrained by the amount of funding available and submitted to FDOT to be included in an evaluation using the CFRPM 5.0 traffic model.

Table 7.5 includes the projects included for Transportation Alternative #2, the Public Alternative.

**Table 7.5 Transportation Alternative #2 - Public Alternative**

| Road Projects | | |
|---|---|---|
| **Name** | **Limits (From - To)** | **Improvement** |
| SR 415 | Reed Ellis Rd to Seminole Cnty | Widen to 4 lanes w/ bridge |
| SR 415 | SR 44 to Acorn Lake Rd | Widen to 4 lanes |
| North-South Connector | SR 44 (Old Mission Rd) to SR 442 | New 4-lane road |
| Hand Ave | Williamson Blvd to Tymber Creek Rd | New 2-lane road w/ overpass |
| North-South Connector | SR 442 to Maytown Rd | New 4-lane road |
| Westside Parkway | Saxon Blvd to SR 15A | New 2-lane road |
| Tymber Creek Rd | SR 40 to LPGA Blvd | New 2-lane road |
| Rhode Island | Veterans Memorial Pkwy to Normandy Blvd | New 2-lane road w/ overpass |
| Intracoastal Bridge (Orange Ave) | Peninsula Dr to Beach St | Bridge replacement |
| SR 40 | Cone Rd to US 17 (SR 15) | Widen to 4 lanes |
| Howland Blvd | Providence Blvd to Lake-Helen-Osteen Rd | Widen to 4 lanes |
| Kepler Rd | SR 44 to US 92 | Widen to 4 lanes |
| Doyle Rd | SR 415 to Providence Blvd | Widen to 4 lanes |
| Dirksen/DeBary Rd | I-4 to US 17/92 | Widen to 4 lanes |
| Intracoastal Bridge (Main St) | Halifax Dr to Beach St | Bridge replacement |
| SR 442 | I-95 to SR 415 | New 2-lane road |
| SR 442 | US 1 to SR A1A | New Intracoastal bridge |
| Airport Rd | Current terminus to SR 44 | Widen to 4 lanes |
| Rhode Island | SunRail Station to Westside Parkway | New 2-lane road |
| **Public Transportation** | | |
| **Name** | **Limits (From - To)** | **Improvement** |
| Commuter Rail | DeBary to DeLand | Extend commuter rail service |
| US 92 -East West Corridor System | DeLand (US 17/92) to SR A1A | New premium bus service |
| Bus - added service - US 92 | Daytona Beach to DeLand | Improved headways Route 60 |
| Bus - added service - Daytona Beach | Daytona Beach International Airport | Improved headways to and from airport in urban core |
| Daytona Area Circulator | Core Daytona Beach (US 92) | New bus service |
| DeLand Circulator (Trolley) | Downtown DeLand to SunRail Station | New bus service with connections to rail station |
| Commuter Rail Expansion | DeLand Station to Daytona Beach | Extend commuter rail service |
| Commuter Rail Station | Near US 92 and Seagrave | New commuter rail facility |
| Bus - added service - US 1 | Ormond Beach to Port Orange | Improved headways Route 3/4 |
| Bus - added service - SR A1A | Ormond Beach to Port Orange | Improved headways Route 1/17 |
| Bus - added service - East Volusia | Core Daytona Area | Improved headways to major destinations |
| Bus -added service - US 17/92 | Saxon Blvd to US 92 | Improved headways Route 20 |
| Bus - added service - Rural Northwest | Pierson to Crescent City | Improve headways and extend Route 24 |
| Bus - added service - SR 44 | New Smyrna Beach to DeLand | New cross-county bus service |
| Bus - added service - East Volusia | Ormond Beach to Port Orange | New bus service |

*Note: Only projects that increase traffic capacity are included in the model. This does not include projects such as park and ride lots.*

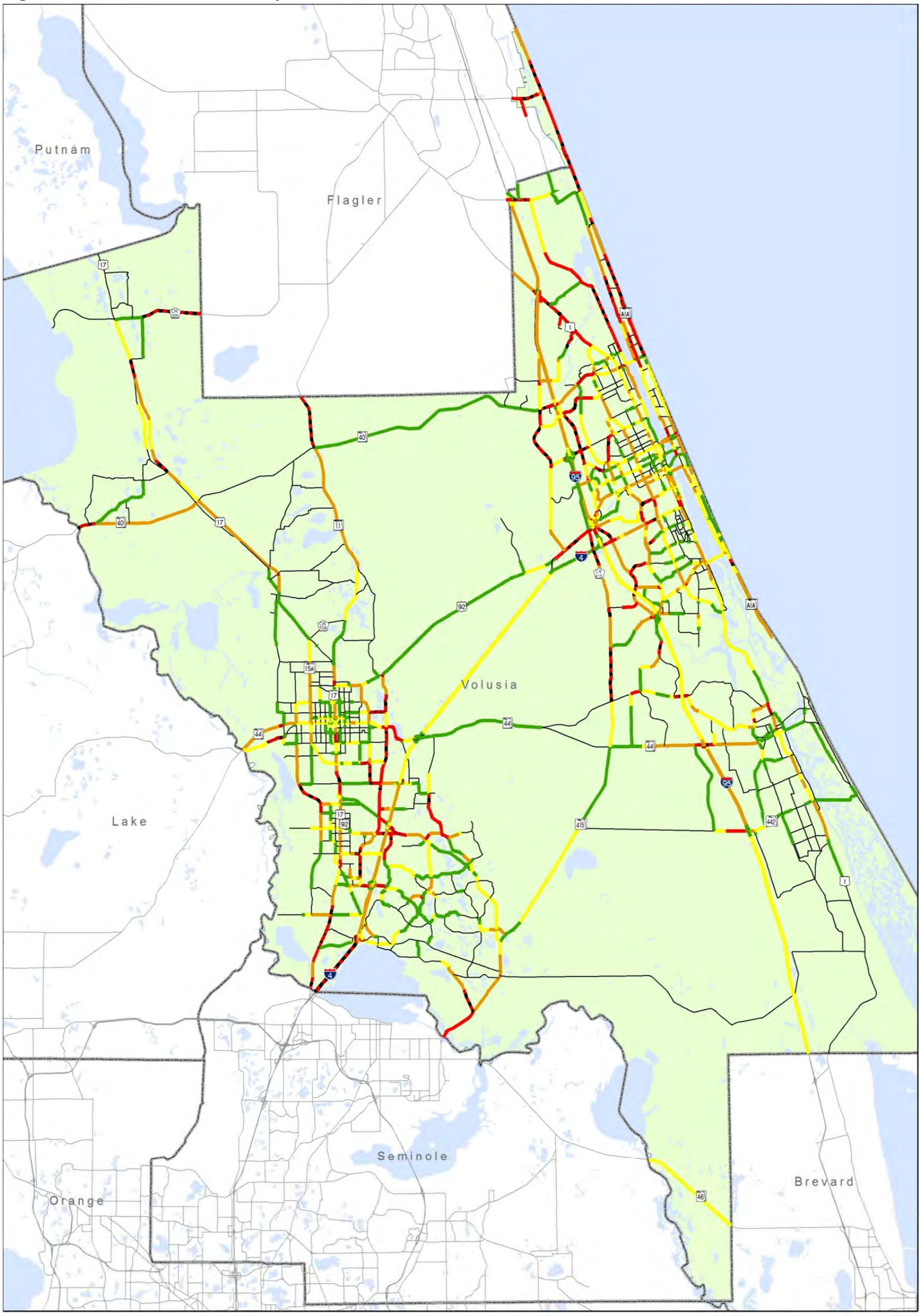
Alternative #2, the Public Alternative was submitted to the Florida DOT for evaluation using the CFRPM 5.0 traffic model in April 2010. Figure 7-3 illustrates the levels of traffic congestion projected to occur by the year 2035 considering the transportation system improvements included in the Public Alternative (Transportation Alternative #2).

Further analysis using model output data reveals that overall Vehicle Miles of Travel (VMT) is estimated to increase approximately 71.5% between the 2005 base year and 2035. This will occur on a roadway network that includes an additional 14% in lane miles to accommodate the additional travel. Increasing congestion is evidenced by a reduction in the congested speed from 35 to 31 mph. Although this represents an 11% drop, it is more favorable than the E+C scenario. The total volume of traffic on the roadway, as compared to the base year counts on the system, is expected to increase from .93 to 1.43. Transit ridership showed the most significant increase with estimates more than doubling over time. This occurred as the walk files were adjusted in the model to reflect that more people could access transit with the additional service provided by this alternative. Table 7.6 provides a more complete look at some of the traffic model estimates.

**Table 7.6 Performance Measures for Existing Plus Committed and Alternative #2 in 2035**

| Category | 2005 Base | 2035 E+C | Alt. #2 Public | % Change Over Base | % Change Over E+C |
|---|---|---|---|---|---|
| Total Number of Links | 3,331 | 3,367 | 3,412 | 2.43% | 1.34% |
| Total System Miles | 1,124 | 1,144 | 1,177 | 4.72% | 2.88% |
| Total Lane Miles | 2,683 | 2,831 | 3,067 | 14.31% | 8.34% |
| Total VMT Using Volumes | 5,411 | 8,955 | 9,280 | 71.50% | 3.63% |
| Total VMT Using Counts | 5,150 | 5,150 | 5,150 | 0.00% | 0.00% |
| Total VMT V/C | 1.05 | 1.74 | 1.80 | 71.43% | 3.45% |
| Total VHT Using Volumes | 124 | 379 | 321 | 158.87% | -15.30% |
| Total VHT Using Counts | 121 | 222 | 184 | 52.07% | -17.12% |
| Total VHT V/C | 1.03 | 1.71 | 1.74 | 68.93% | 1.75% |
| Total Original Speed (MPH) | 37.17 | 37.21 | 37.17 | 0.00% | -0.11% |
| Total Congested Speed (MPH) | 35.44 | 30.31 | 31.46 | -11.23% | 3.79% |
| Total Volume/Count Ratio | 0.93 | 1.46 | 1.43 | 53.76% | -2.05% |
| Transit Ridership | 8,475 | 9,096 | 20,585 | 142.89% | 126.31% |

**Figure 7-3  2035 Traffic on Transportation Alternative #2 – Public Alternative**



## Congestion Management Plan Assessment

> ***Congestion is relatively easy to recognize—roads filled with cars, trucks, and buses, sidewalks filled with pedestrians. The definitions of the term "congestion" mention such words as "clog," "impede," and "excessive fullness." For anyone who has ever sat in congested traffic, those words should sound familiar.***[1]

The FHWA "Traffic Congestion Reliability" reports define congestion as "an excess of vehicles on a roadway at a particular time resulting in speeds that are slower - sometimes much slower - than normal or free flow speeds. [Congestion is] stop-and-go traffic."

Congestion negatively affects safety, physical condition, environmental quality, economic development, quality of life, and "customer" satisfaction. As the level of congestion increases, all elements of society, including the local, state, and national economies, the environment and an individual's quality of life bear an increasing cost. Recognizing these heavy costs that congestion imposes, Congress determined that MPOs should "address congestion management through a process that provides for effective management and operation, based on a cooperatively developed and implemented metropolitan wide strategy of new and existing transportation facilities through the use of travel demand reduction and operational management strategies." The Final Rule on Statewide and Metropolitan Transportation Planning published on February 14, 2007, states that "The development of a congestion management process should result in multimodal system performance measures and strategies that can be reflected in the metropolitan transportation plan and the Transportation Improvement Program (TIP)."

*The Safe Accountable Flexible Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), the most recent reauthorization of the nation's surface transportation program, made several changes to metropolitan and statewide transportation planning provisions. One of the most significant changes was the updated requirement for a "congestion management process" (CMP) in Transportation Management Areas (TMAs – urban areas over 200,000 in population), as opposed to "congestion management systems" (CMS). The change in name (and acronym) is intended to be a substantive change in perspective and practice, to address congestion management through a process that provides for effective management and operations, an enhanced linkage to the planning process, and to the environmental review process, based on cooperatively developed travel demand reduction and operational management strategies as well as capacity increases.*

### Understanding the Congestion Problem

The process of congestion relief begins by understanding the problem. Simply stated, congestion occurs when demand (travel) exceeds supply (transportation system capacity). The FHWA website, "Focus on Congestion Relief"[2], lists the six contributing factors as:

- limited physical capacity (i.e., bottlenecks) - points where the roadway narrows or regular traffic demands cause traffic to backup–are the largest contributors to congestion;

[1] Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation, Office of Operations, Federal Highway Administration, U.S. Department of Transportation, November 10, 2005, http://www.ops.fhwa.dot.gov/congestion_report/chapter2.htm

[2] http://www.fhwa.dot.gov/congestion/

- poorly functioning traffic signals - the faulty operation of traffic signals or green/red lights where the time allocation for a road does not match the volume on that road–contributes to congestion on major and minor streets;
- traffic incidents - crashes, stalled vehicles, debris on the road–cause about 1/4 of congestion problems;
- work zones - for new road building and maintenance activities like filling potholes–are caused by necessary activities, but the amount of congestion caused by these actions can be reduced by a variety of strategies;
- bad weather - cannot be controlled, but travelers can be notified of the potential for increased congestion; and
- special events - cause "spikes" in traffic volumes and changes in traffic patterns. These irregularities either cause delay on days, times or locations where there usually is none, or add to regular congestion problems.

Of these six factors, the first five can be characterized as limitations on transportation system capacity, while the sixth factor is essentially a spike in transportation demand.

Figure 7-4 depicts the relative contribution to congestion resulting from each of these factors. Only the first and second factors contribute to persistent and/or recurring congestion. They result from design or operational deficiencies, and therefore, may be candidates for remediation. The remaining factors of congestion are nonrecurring and random. Nonrecurring congestion is unexpected or unusual congestion caused by an event that was unexpected and transient relative to other similar days. Common causes of nonrecurring congestion include:

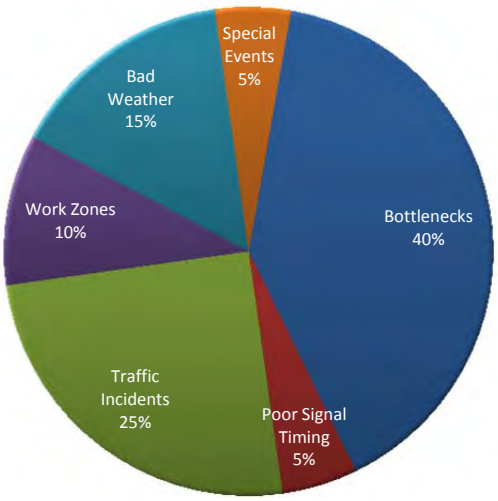



**Figure 7-4 Sources of Traffic Congestion**

- lane blocking accidents, disabled vehicles and debris on the roadway;
- construction lane closures;
- roadside accidents and other distractions;
- inclement weather; and
- special event traffic (e.g., race traffic, bike week traffic, rain-induced mass exodus from the beach).

While nonrecurring congestion usually cannot be effectively remediated, its severity and duration can often be minimized through the use of incident response strategies.

**Overview of the Congestion Management Process**

Congestion management requires a systematic approach to identifying locations in the transportation system that are not operating efficiently, then developing and implementing solutions to alleviate the contributing factors.

A well-designed Congestion Management Process should help the TPO to:

- Identify congested locations;
- Determine the causes of congestion;
- Develop alternative strategies to mitigate congestion;
- Evaluate the potential of different strategies;
- Propose alternative strategies that best address the causes and impacts of congestion; and
- Track and evaluate the impact of previously implemented congestion management strategies.

Once congestion management strategies have been identified and selected as part of the Volusia TPO *2035 Long Range Plan Transportation Plan (LRTP)*, the CMP can also be used to:

- Set priorities among projects for incorporation into the Transportation Improvement Program;
- Provide information for environmental analysis of proposed projects;
- Develop more detailed assessments of the potential for congestion, reduction at the corridor or activity center level; and
- Assist in the ongoing monitoring and evaluation of projects and programs implemented throughout the region.

FHWA's report, "*An Interim Guidebook on Congestion Management Process in Metropolitan Planning*" describes the Congestion Management Process as an "8-step" process, as follows:

1. Develop congestion management objectives;
2. Identify area of application;
3. Define system or network of interest;
4. Develop performance measures;
5. Institute system performance monitoring plan;
6. Identify and evaluate strategies;
7. Implement selected strategies and manage transportation system; and
8. Monitor strategy effectiveness.

**Congestion Management Activities**

The Volusia TPO developed its first congestion management systems (CMS) plan in 1995, in conjunction with the development of the *2020 Long Range Transportation Plan (LRTP)*. It was reviewed and updated in 2005, in conjunction with the development of the 2025 LRTP. These early efforts put into place a monitoring process that has been utilized throughout the TPO planning area. Roadways included in this CMS monitoring process are those on the state system and county thoroughfare roadway system for which traffic count data is available on an annual basis. Travel conditions (level of service) on these roadways have been reviewed annually.

As the 2020 LRTP was being developed, the TPO assessed a range of transportation demand management (TDM) strategies to address congestion issues. Managing transportation demand can sometimes be a cost-effective alternative to increasing transportation system capacity. The TPO's conclusion then, and again with the development of the 2025 LRTP, was that congestion during the

work-related peak hour periods was not severe on a widespread basis, and few employers with large-scale, consolidated work sites existed. Furthermore, with our orientation toward tourism, most travel was discretionary and was not structured and repetitive -- an environment which was not conducive to TDM. For those reasons, there seemed to be very few opportunities for employing TDM strategies to limit or shift "normal" demand to off-peak periods, or to transportation facilities with available capacity, and conditions have not changed much since then.

However, opportunities to reduce traffic congestion associated with special events and beach-related traffic do exist. The Volusia TPO planning area experiences approximately 25 special events each year, including some major events that attract tens of thousands of visitors. In order to minimize congestion resulting from these events, Volusia County formed the Volusia County Freeway Incident Management Team (VCFIMT). The VCFIMT was formed with the goal of reducing non-recurring (special events) congestion and improving safety and efficiency of the area's major roadways. The VCFIMT includes members in the area of law enforcement, fire, emergency medical services, emergency management, transportation planning, traffic operations, and roadway construction and maintenance agencies. Strategies employed to handle past events included providing remote parking and shuttle bus service, creating auto-free zones, and time restrictions on travel across key bridges have been implemented to alleviate some of the congestion experienced during these periods of peak traffic congestion.

The effort to manage congestion has continued through the development of the *Volusia TPO 2035 Long Range Transportation Plan*. The following goals and objectives from that plan directly pertain to congestion management:

Congestion Management Objectives

**Objective 2.1 –** Consideration shall be given to transportation improvements that support the economic aspirations of the TPO planning area.

It is implicit in this objective that congestion must be minimized to provide for the efficient operation and growth of the local economy.

**Objective 2.4 –** The transportation network will consider improvements that support the safe, appropriate and efficient movement of freight via highway, airport and rail systems.

This objective recognizes the need to minimize congestion and other delays affecting the movement of freight over the area's highway system as well as over air and rails systems. Maintaining efficient intermodal freight movement is implicit in this objective.

**Objective 3.4 –** The LRTP shall include projects that complement future development activity that minimizes travel times and trip distances.

**Goal 4*: Develop an efficient transportation system that promotes a wide range of transportation options and integrates these options cohesively with the surrounding community.***

**Objective 4.1 –** Priority shall be given to intermodal facilities and transportation projects that provide improved connectivity between modes, serve more than one mode of transportation or that facilitate the transfer from one mode to another.

**Goal 5:** ***Develop a transportation system that most effectively utilizes the financial resources available and improves the quality of life for residents.***

**Objective 5.1 –** Congestion management strategies such as Transportation System Management (TSM) and Transportation Demand Management (TDM) and Intelligent Transportation System (ITS) improvements will be used to create efficiencies in the existing infrastructure.

This is a key objective relating to congestion management. It clearly and directly expresses the Volusia TPO's commitment to mitigating congestion and maximizing the safety and effective use of the transportation system through the use of low-cost operational management and travel demand reduction strategies.

Area of Application

The Congestion Management Process is applied throughout the Volusia TPO planning area which includes Volusia County and the cities of Flagler Beach and Beverly Beach in Flagler County. The CMP area of application is shown in Figure 7-5.

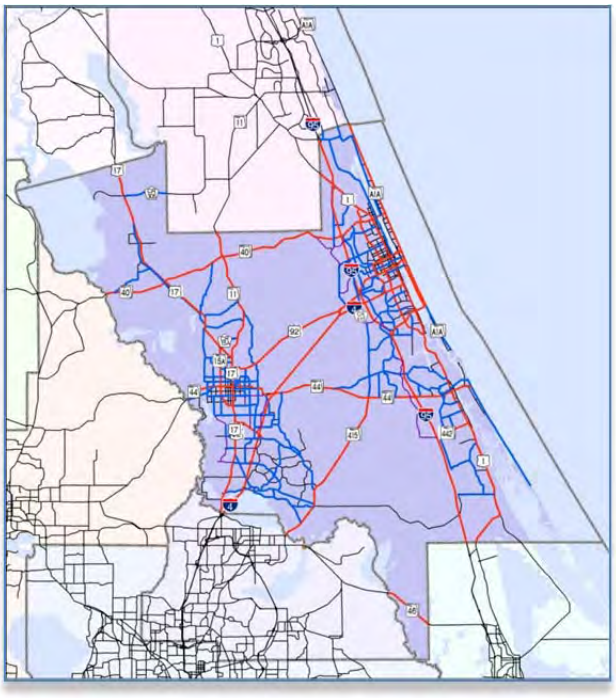


**Figure 7-5 Congestion Management Process Area of Application**

System or Network of Interest

The CMP is multi-modal. It considers public transit and non-motorized (bicycle and pedestrian) travel, as well as personal motor vehicle travel on the area's roadways. Roadways monitored for the process are those on the state system and county thoroughfare roadway system for which traffic count data is available on an annual basis. A review of the roadways included in the CMP will be conducted annually. The efficiency and effectiveness of the connections between modes is critical to the efficiency and effectiveness of the multi-modal transportation system as a whole.

**Performance Measures and Monitoring**

In order to identify congestion in the transportation systems, it was necessary to define congestion in measurable terms. These terms vary depending on the transportation system or network being considered and the data that is available. For roadways, we initially look to the common practice of measuring level of service using methods in the FDOT's Quality/Level of Service Handbook. Level of service is a quantitative assessment of road users' perceptions of roadway quality of flow calculated as a

ratio of volume to capacity. Volume is measured by counting the number of vehicles crossing a point on the roadway during a given time. This result may then be adjusted to account for known directional and temporal variations in traffic flow. The quantitative measure is often represented by the letters "A" through "F", with "A" generally representing the most favorable condition and "F" representing the least.

Public transit performance is evaluated periodically by Votran, the service provider, through the transit development plans and other studies.

The monitoring process of the CMP identifies locations where congestion now occurs or will occur in the future. As an initial screening tool, the TPO looks to Volusia County's LOS Spreadsheet. This spreadsheet, prepared by Volusia County Traffic Engineering Department staff, with support from the TPO, uses traffic counts, roadway characteristics, and adopted level of service (LOS) standards to calculate link capacity (based on FDOT Generalized LOS Tables), volume to capacity ratios and level LOS. Traffic counts and roadway characteristics inputs are updated annually, reflecting the latest available traffic counts provided by FDOT (State Highway System) and Volusia County (County Thoroughfare System), roadway widening, new signals, etc. Additionally, with the update of the TPO's long-range transportation plan approximately every five years, forecasted traffic volumes and planned roadway capacity improvements are plugged into the spreadsheet to provide a mid- to long-term look at where congestion will likely occur in the future.

This process evaluates the level of service for individual roadway segments and uses a tiered approach to establish priorities for addressing deficiencies. Five tiers are used to express varying levels of concern. These tiers are defined as follows:

**Tier One** – Identifies those locations that exhibit severe congestion (v/c ratio equal to or greater than 1.20) in the current year. These locations would be the most dependent upon transportation system management (TSM), transportation demand management (TDM), or other operational strategies to reduce congestion.

**Tier Two** – Identifies those locations that exhibit moderate congestion (v/c ratio between 1.00 and 1.19 in the current year. Similar to Tier One, these locations could be amenable to transportation system management (TSM), Transportation Demand Management (TDM), or other operational strategies to reduce congestion.

**Tier Three** – Identifies those locations that exhibit near-term congestion (v/c ratio between 0.90 and 0.99) in the current year. Like Tiers One and Two, TSM and TDM measures should be considered as viable improvement alternatives prior to constructing additional through lanes.

**Tier Four** – Identifies those locations that are forecasted to have severe congestion (v/c ratio equal to or greater than 1.20) by 2035 as identified in the Existing Plus Committed (E+C) model network of the *Volusia TPO 2035 Long Range Transportation Plan.*

**Tier Five** – Identifies those locations that are forecasted to have moderate congestion (v/c ratio between 1.00 and 1.19) by 2035 as identified in the Existing Plus Committed (E+C) model network of the *Volusia TPO 2035 Long Range Transportation Plan*.

These locations can be studied further through a variety of means for the purpose of identifying and implementing corrective actions consistent with the TPO's long-range transportation plan.

In addition to the annual review of the Level of Service Spreadsheet, the TPO relies on transportation system modeling to identify current and future congestion. With this update of the LRTP, the transportation system for FDOT District Five was modeled using the district-wide Central Florida Regional Planning Model version 5.0 (CFRPM 5.0). As part of the development of the Cost-Feasible Plan, four future year alternative networks were developed to assist with identification of our transportation needs and the projects that will address those needs. The four future year alternatives, each reflecting a different mix of roadway and transit improvements, were:

- Existing Plus Committed Alternative (E+C)
- Technical Alternative
- Public Alternative
- Cost-Feasible Alternative

For each alternative, the model was run with the same future year 2035 socioeconomic data (based on the county's and cities' adopted land use plans) to simulate future traffic flows.

The first alternative was essentially a "no build" alternative comprised of existing roadways and fully funded ("committed") improvements. As expected, when projected 2035 traffic was loaded onto this network, the most congested roadways were those that had been identified for improvement in the previous (2025) LRTP.

The performance results from this first model run were reviewed to refine the roadway and transit networks for the technical and public alternatives. In turn, the performance results from these two model runs were reviewed to refine the network for the final model run. This Cost-Feasible Alternative yielded the best performance results (least congested roadway network).

**Congestion Mitigation Strategies**

Based on the initial identification of congestion using Volusia County's LOS Spreadsheet and the CFRPM model performance measures, the TCC and CAC can make recommendations to undertake more detailed analyses on selected congested roadways to determine specific causes and the most cost-effective mitigation strategies. Where the initial identification of a congested roadway link may suggest the need to add additional lanes, a detailed analysis may conclude that operational measures, such as installing an adaptive signal control system that senses varying conditions, would resolve the congestion problem. The aim is to pursue the least costly alternative that yields the desired result.

Another means by which cost-effective congestion mitigation strategies are identified is through the TPO's annual "Call for Projects". Each year, TPO member cities and the county are invited to submit

project proposals. Candidate projects are selected and prioritized with consideration of a range of criteria including safety, mobility, and efficiency benefits. These candidate projects are then added to the TPO's Priority Projects Lists. For most project proposals, the TPO will conduct a feasibility study before specific improvements will be programmed for construction. One purpose of these feasibility studies is to identify and evaluate alternative strategies to ensure that the most appropriate strategy will be selected.

To advance the TPO's congestion management strategies, the TPO updates its Priority Projects Lists annually and forwards them to FDOT. FDOT selects projects from these lists, in order of priority, for programming with state and federal transportation funds in the Department's Work Program. The TPO, in turn, amends its Transportation Improvement Program (TIP) to include the projects.

Recognizing that correcting minor design and operational deficiencies in the existing roadway network can yield significant performance and safety benefits, the TPO sets aside 40% of its annual allocation of federal urban attributable (XU) funds to be used just for intelligent transportation systems (ITS), traffic operations, and safety projects. The remaining XU funds are set aside for bicycle and pedestrian projects (30%) and public transit projects (30%).

Monitoring the effectiveness of congestion mitigation strategies and evaluating their benefits can improve the likelihood that subsequent choices will yield more cost-effective results. However, evaluating the effectiveness of a congestion mitigation strategy can be very challenging. Congestion results from many factors, including available capacity and the demand for travel, all of which interplay in complex ways. Rarely can the effects of any particular strategy on congestion be isolated with reasonable certainty. Nevertheless, with routine collection of traffic counts, accident data, time/speed data, and other performance measures, we do consider "before" and "after" data to give us a general sense of how much benefit may have resulted from the addition of a turn-lane, signal coordination, or other congestion mitigation measure.

**The Congestion Management "Tool Box"**

The success of any congestion management process depends on selection of appropriate strategies from among the many available to remediate congestion. The following page includes a list of strategies that will be considered for use by the Volusia TPO. Preference should be given to the most cost-effective that achieves the desired result.

**Table 7.7 Congestion Management "Tool Box"**

| Travel Demand Management Strategies |
|---|
| 1. Mode Shift:<br>a. Improve transit service (add express service and increase route coverage, frequency and duration)<br>b. Improve intermodal connections<br>c. Provide "guaranteed ride home" programs<br>d. Provide park-and-ride facilities<br>e. Promote transit-oriented development<br>f. Improve bicycle and pedestrian facilities |
| 2. Temporal Shift:<br>a. Promote flex time programs |
| 3. Demand Reduction:<br>a. Promote rideshare programs<br>b. Promote compressed work scheduling (longer work day – shorter work week)<br>c. Promote telecommuting |

| Traffic Operations Strategies |
|---|
| 1. Intersection Improvements:<br>a. Add or reconfigure turn lanes<br>b. Improve intersection geometry<br>c. Improve channelization<br>d. Replace controlled intersections with roundabouts and grade-separated intersections |
| 2. Traffic Signal Improvements:<br>a. Optimize signal timing and phasing<br>b. improve signal coordination and synchronization<br>c. Install advanced signal controls |
| 3. Intelligent Transportation Systems (ITS):<br>a. Install congestion detection and real-time traveler alert systems<br>b. Provide advanced traveler information systems |
| 4. Access Management:<br>a. Add or extend acceleration/deceleration lanes<br>b. Promote shared driveways and service roads for access to properties adjacent to roadways<br>c. Promote minimum driveway spacing<br>d. Impose vehicle restrictions (e.g., weight restrictions, size restrictions, axle restrictions, etc.) |
| 5. Traffic Incident Management:<br>a. Install incident detection systems |
| 6. Special Events Management:<br>a. Schedule events for off-peak/off-season periods<br>b. Manage event traffic flows<br>c. Provide dedicated transit service for special events |
| 7. Work Zone Management:<br>a. Schedule work for off-peak/off season periods<br>b. Improve alternative (detour) route<br>c. Provide temporary mobility/flow improvements |

## Efficient Transportation Decision Making (ETDM)

The Efficient Transportation Decision Making (ETDM) process allows resource and regulatory agencies, as well as the public an opportunity to review and comment on potential impacts of proposed major transportation projects during the development of the LRTP. Based on the feedback from the planning screen, transportation planners may adjust project concepts to avoid or minimize adverse impacts, consider mitigation alternatives, and improve project cost estimates.

As part of the long-range transportation plan development process, TPO staff worked with FDOT District Five to conduct planning environmental screening associated with the ETDM process. This analysis was conducted for major projects identified in the cost-feasible plan list of projects that had not already undergone a Project Development and Environmental (PD&E) Study.

Examples of major transportation improvement projects include widening existing roadways to include additional through lanes; addition of High Occupancy Vehicle lanes; Bus Rapid Transit lanes; new roadways; new interchanges and major interchange modifications; new bridges and bridge replacements; and major public transportation projects such as intermodal passenger centers and new fixed guideway service.

***ETDM PARTCIPANTS***

- *Advisory Council on Historic Preservation*
- *Federal Highway Administration*
- *Federal Transit Administration*
- *Florida Department of Agriculture and Consumer Services*
- *Florida Department of Community Affairs*
- *Florida Department of Environmental Protection*
- *Florida Department of State*
- *Florida Department of Transportation*
- *Florida Fish and Wildlife Conservation Commission*
- *Florida Metropolitan Planning Organization Advisory Council*
- *The Miccosukee Tribe of Indians of Florida*
- *National Marine Fisheries Service*
- *National Park Service*
- *Natural Resources Conservation Service*
- *Northwest Florida Water Management District*
- *The Seminole Tribe of Florida*
- *Water Management Districts*
- *U.S. Army Corps of Engineers*
- *U.S. Coast Guard*
- *U.S. Environmental Protection Agency*
- *U.S. Fish and Wildlife Service*
- *U.S. Forest Service*

The coordinated review and screening process in ETDM provides the mechanism for required consultation with over 20 agencies at both the state and federal levels. These agencies comprise the Environmental Technical Advisory Teams (ETAT) for each FDOT district. The ETATs include representatives from agencies charged with managing or regulating environmental resources, land use, historical and cultural resources, as well as tribal government representatives. As part of this process, the TPO and FDOT District Five staffs evaluate and provide commentary about potential social and cultural effects (SCE) of projects included in the LRTP based on available information. There are six issues that are addressed in the SCE evaluation: social, economic, land use, mobility, aesthetics, and relocation.

Table 7.8 is included to document the level of agency consultation that has occurred through development of this LRTP. All major projects included in the Cost-Feasible Plan are listed, and noted as having been reviewed through the ETDM planning screen process and/or having been subject of a PD&E study.

**Table 7.8 Projects Screened through the ETDM Screening Process**

| Project | From | To | Project Type | Comment |
|---|---|---|---|---|
| **Strategic Intermodal System (SIS) Road Projects** | | | | |
| I-95 Interchange @ SR 421 | | | Minor Interchange Improvements | Final plans completed in 2009 |
| I-4 widening to 6 lanes | SR 44 | I-95 | Widening (6 lanes) | PD&E initiated prior to ETDM process; completed in 2000 |
| I-95 widening to 6 lanes | SR 400 (Beville Rd) | SR 44 | Widening (6 lanes) | Sent to ETAT 6/7/04; PD&E completed in 2008 |
| I-95/I-4 Systems Interchange | SR 600 (US 92) | SR 400/I-4 | Ultimate Interchange | Sent to ETAT 8/24/06; PE completed in 2011 |
| I-95 widening to 6 lanes | SR 44 | Brevard County Line | Widening (6 lanes) | Sent to ETAT 6/7/04; PD&E completed in 2008 |
| **State & Federal Road Projects** | | | | |
| SR 415 - widening to 4 lanes w/ bridge | Reed Ellis Rd | Seminole County Line | Widening (4 lanes) | PD&E initiated prior to ETDM process; completed in 2004 |
| SR 415 widening to 4 lanes | SR 44 | Acorn Lake Rd | Widening (4 lanes) | Eliminated from consideration for inclusion in Cost-Feasible Plan due to high cost; not submitted for ETDM review; PD & E and project design for a multi-use trail only has been completed |
| US 1 Intersection Improvements | Canal St, SR 421, Herbert St, Reed Canal Rd, Big Tree Rd, LPGA Blvd & Park Ave | | Intersection Improvements | ETAT process review not required; need was identified in 1999 US 1 Arterial Investment Study |
| US 17 (SR 15) | SR 40 | Ponce DeLeon Blvd | Widening (4 lanes) | PD&E initiated prior to ETDM process; completed in 2006 |
| SR 483 (Clyde Morris Blvd) | SR 400 (Beville Rd) | US 92/SR 600 (ISB) | Widening (6 lanes) | PD&E initiated prior to ETDM process; completed in 2006 |
| I-95 Interchange @ US 1 (Ormond Crossings) | | | Minor Interchange Improvements | ETAT process review not required |

**Table 7.8 Projects Screened through the ETDM Screening Process *(continued)***

| Project | From | To | Project Type | Comment |
|---|---|---|---|---|
| SR 44 Miscellaneous Improvements | SR 15A | Proposed SunRail Station | Traffic Operations and Safety Improvements | PD&E initiated prior to ETDM process; completed in 2002 |
| US 92/SR 600 (ISB) | I-4 Ramps | CR 415 (Tomoka Farms Rd) | Widening (6 lanes) | Sent to ETAT 12/22/06; PD&E underway |
| SR 472 | Graves Av | Kentucky/MLK Blvd | Widening (6 lanes) | Sent to ETAT 8/3/10; Planning Screen review completed with no disputes and no substantial adverse effects |
| SR 44 | Voorhis Av | Kepler Rd | Widening (4 lanes) | PD&E initiated prior to ETDM process; completed in 2002 |
| SR 442 Extension (west) | Current Terminus | SR 415 | New Road (2 lanes) | Eliminated from consideration for inclusion in Cost-Feasible Plan due to high cost and other reasons; not submitted for ETDM review |
| SR 442 Extension (east) with Intracoastal Bridge | US 1 (SR 5) | CR A1A | New Road (2 lanes) | Eliminated from consideration for inclusion in Cost-Feasible Plan due to high cost and other reasons; not submitted for ETDM review |
| SR 40 | I-95 (Williamson Blvd) | Breakaway Trails | Widening (6 lanes) | Sent to ETAT 11/17/10; PD&E underway |
| SR 40 | Cone Rd | SR 11 | Widening (4 lanes) | PD&E initiated prior to ETDM process; completed in 1990, but periodically updated; latest update now underway |
| SR 40 | SR 11 | US 17 (SR 15) | Widening (4 lanes) | PD&E initiated prior to ETDM process; completed in 1990, but periodically updated; latest update now underway |
| SR 40 | US 17 (SR 15) | Lake County Line | Widening (4 lanes); does not include bridge over St. Johns River | Sent to ETAT 6/2/06; PD&E underway (from 1 mile west of SR 326 in Marion County to SR 15/US 17) |

**Table 7.8 Projects Screened through the ETDM Screening Process *(continued)***

| Project | From | To | Project Type | Comment |
|---|---|---|---|---|
| **Other Road & Bridge Projects** | | | | |
| Intracoastal Bridge Replacement (Orange Av) | Peninsula Av | Beach St | Bridge Replacement | Sent to ETAT 4/24/09; PD&E completed in 2011 |
| Intracoastal Bridge Replacement – Main Street | To Be Determined | | Bridge Replacement | Not submitted for ETAT review as it was not included in Cost-Feasible Plan |
| Intracoastal Bridge Replacement – Knox Bridge | To Be Determined | | Bridge Replacement | Not submitted for ETAT review as it was not included in Cost-Feasible Plan |
| **Major Public Transportation Projects** | | | | |
| Commuter Rail (SunRail) Expansion | DeBary Rail Station | DeLand Rail Station | Passenger rail service on existing rail line | Environmental Assessment prepared under the lead of the Federal Transit Administration was completed in 2007. Service planned to start in 2020 |

## Environmental Justice Review

*"Environmental Justice"* is the fair treatment of all groups within the community. In 1994, Presidential Executive Order 12898 directed every federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on "minority populations and low-income populations." This Order was consistent with Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin.

An analysis was undertaken by the Volusia TPO during the development of the 2025 LRTP that supported the principles and requirements of environmental justice. Given the significant changes in the economy, an update of supporting data is essential to complete a current community assessment. However, current census information was not available during the development of the 2035 LRTP. In an effort to comply with the spirit and intent of the program, the environmental justice assessment performed for the 2035 LRTP included a review of previous information along with the addition of current, broad-based data to draw conclusions and evaluate the transportation projects considered. A more detailed examination will occur next year when accurate census information is available.

**Overview**

The USDOT is responsible to ensure nondiscrimination under Title VI of the Civil Rights Act of 1964. Environmental justice provides a framework for conducting assessments pertaining to matters of equity and nondiscrimination. To ensure environmental justice is achieved, it's important to consider the comparative impact of an action on different population groups, rather than simply identifying a specific population by size, geographic grouping, or concentration. A proposed action could cause a disproportionately high and adverse effect on a population even in cases where there are no clearly delineated neighborhoods or communities.

Within the framework provided by the Executive Order, the USDOT Order (5610.2) addresses only minority populations and low-income populations, and does not provide for separate consideration of elderly, children, disabled, and other populations. However, concentrations of the elderly, children, disabled, and other populations protected by Title VI and related nondiscrimination statutes should be considered. Of course, sound planning principles also dictate that the impacts of transportation decisions should consider ***all*** affected populations, neighborhoods, and communities, whether there are minority or low-income populations or not. Most importantly, the public should be involved in the planning process and in defining "neighborhood" and "community."

The 2035 LRTP was developed with strong consideration to the three fundamental environmental justice principles:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

3. To prevent the denial, reduction, or delay in the receipt of benefits by minority and low-income populations.

**Review and Comparison of Available Data**

The Volusia TPO planning area is comprised of Volusia County and the cities of Flagler Beach and Beverly Beach in southeast Flagler County. The built environment in Volusia County is geographically dispersed with development concentrated in the east and west, separated by rural areas and wetlands. The city of Deltona, on the west, is the largest in population and Daytona Beach, on the east, ranks second.

The county is awaiting release of the 2010 Census data related to urbanized area designations to determine the status of the west side of the county. Designation as an urbanized area is important because it impacts the overall administration of the surface transportation program. Due to the growth on the west side of Volusia County, the area may have a population of 200,000, tripping the threshold to be classified as an urbanized area.

**Table 7.9 Population by City and County**

| County and City | April 1, 2010 | April 1, 2000 | Total Change | Percent Change |
|---|---|---|---|---|
| **Volusia** | 494,593 | 443,343 | 51,250 | 11.6% |
| Daytona Beach | 61,005 | 64,112 | -3,107 | -4.8% |
| Daytona Beach Shores | 4,247 | 4,299 | -52 | -1.2% |
| DeBary | 19,320 | 15,559 | 3,761 | 24.2% |
| DeLand | 27,031 | 20,904 | 6,127 | 29.3% |
| Deltona | 85,182 | 69,543 | 15,639 | 22.5% |
| Edgewater | 20,750 | 18,668 | 2,082 | 11.2% |
| Flagler Beach ( part ) | 60 | 76 | -16 | -21.1% |
| Holly Hill | 11,659 | 12,119 | -460 | -3.8% |
| Lake Helen | 2,624 | 2,743 | -119 | -4.3% |
| New Smyrna Beach | 22,464 | 20,048 | 2,416 | 12.1% |
| Oak Hill | 1,792 | 1,378 | 414 | 30.0% |
| Orange City | 10,599 | 6,604 | 3,995 | 60.5% |
| Ormond Beach | 38,137 | 36,301 | 1,836 | 5.1% |
| Pierson | 1,736 | 2,596 | -860 | -33.1% |
| Ponce Inlet | 3,032 | 2,513 | 519 | 20.7% |
| Port Orange | 56,048 | 45,823 | 10,225 | 22.3% |
| South Daytona | 12,252 | 13,177 | -925 | -7.0% |
| UNINCORPORATED | 116,655 | 106,880 | 9,775 | 9.1% |

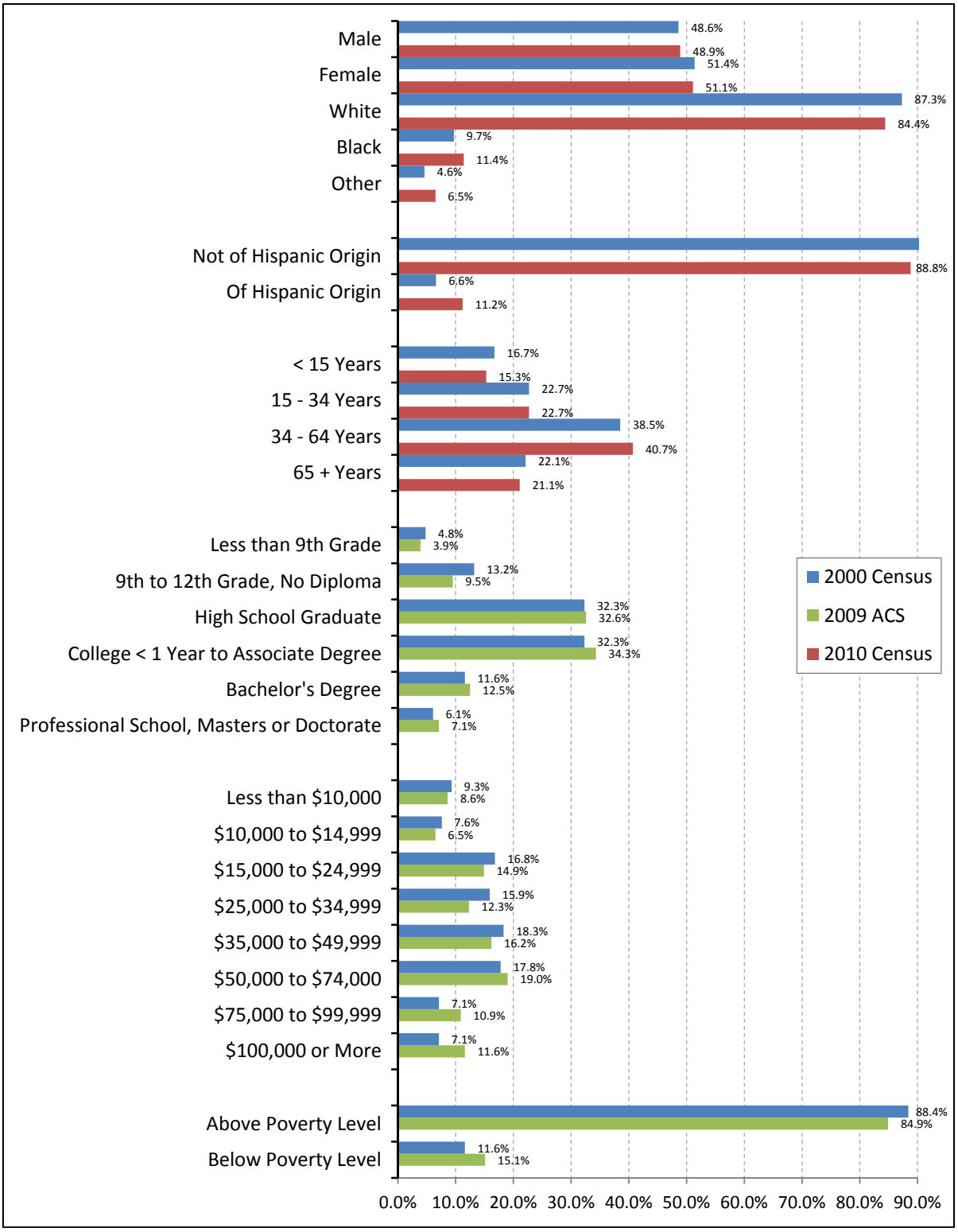
*Source: 2000 and 2010 Census*

Existing population densities are highest in the block groups located within Daytona Beach, Port Orange, Ponce Inlet, Edgewater, Deltona, DeBary, and DeLand. Based on the 2021 population projections, densities are expected to increase in South Daytona, Deltona, DeBary, and Orange City. Existing employment densities are highest in Daytona Beach, South Daytona, Port Orange, Edgewater, DeLand, and DeBary. The highest growth in employment density between 2012 and 2021 is expected to occur in the areas of Daytona Beach, Orange City, and DeBary. Existing dwelling unit densities are highest in the

block groups located in Volusia County's east coast municipalities (Ormond Beach, Holly Hill, Daytona Beach, Daytona Beach Shores, Port Orange, Ponce Inlet, New Smyrna Beach, and Edgewater) as well as the municipalities located in the western portion of the county that border I-4, including DeBary, Deltona, Orange City, and DeLand. Over the ten-year planning period, dwelling unit densities are expected to increase in South Daytona and Oak Hill. Block groups located in north Volusia County at the Putnam County line and south of DeLand and DeBary are also expected to experience slight increases in dwelling units.

Figure 7-6 shows that Volusia County's demographics have generally remained unchanged during the past decade in terms of gender, education, and age. Noteworthy observations of the broad data include an increase in minority races (Black, Hispanic, other) as a percentage of the overall population from roughly 21% in 2000, to almost 30% in 2010. Volusia also appears to have had an increase in top wage earners with those earning more than $50,000 per year increasing from 32% in 2000 to just over 41% in 2010.

**Figure 7-6 Demographic Data for Volusia County**




*Source: 2000 Census, 2009 ACS, and 2010 Census.*

**Population Projections through 2035**

The Volusia TPO worked in cooperation with the Florida Department of Transportation (FDOT) and other Central Florida participants in the development of a regional transportation model. The regional model, called the Central Florida Regional Planning Model, version 5.0 (CFRPM 5.0), was calibrated using data from the year 2005 to ensure it replicated the existing conditions recorded for that year. Once the 2005 model was calibrated and validated, it served as the base for the transportation planning activity. Trip production variables consist of population and employment information. The growth in total population for Volusia County was approximately 11.5% between 2000 and 2005. Important to note is that growth was very strong in the single family measures while Volusia County actually saw decreases in multi-family measures. This trend is not consistent with desires to limit sprawl and increase population densities. Employment grew approximately 11.75% between 2000 and 2005. This growth rate was roughly at pace with the growth in population, and mostly in the service sector, which is consistent with the tourist-based economy that has been a key segment of the local economy.

Future year (2035) population and employment data were also developed and distributed throughout the planning area. Forecasted population control totals were developed using the medium population projection data from the Bureau of Economic and Business Research (BEBR). Employment data was determined using forecasts by Woods & Poole. A second estimate was developed using the REMI Policy Insight tool and a comparison was reviewed. The Volusia TPO agreed to use an accommodated model that was primarily based upon the FLUAM trend based assignments with land uses and associated data adjusted for a few areas based on the vision. A more detailed description of this forecasting is explained in Chapter 3, Data Analysis. Table 7.10 shows the changes in socioeconomic data between the 2005 base year and the 2035 planning horizon year.

**Table 7.10 Socioeconomic ZData Summary for Volusia County**

| Category | 2005 | 2035 | % Difference |
|---|---|---|---|
| | | | |
| Population | 494,631 | 692,763 | 40.1% |
| Employment & School Enrollment | | | |
| Industrial Employees | 30,772 | 43,338 | 40.8% |
| Commercial Employees | 47,268 | 66,288 | 40.2% |
| Service Employees | 118,746 | 156,443 | 31.7% |
| Total Employees | 196,786 | 266,069 | 35.2% |
| School Enrollment | 95,702 | 135,902 | 42.0% |
| Ratio Statistics | | | |
| Industrial Employment / Total Employment | 0.17 | 0.16 | -6.7% |
| Commercial Employment / Total Employment | 0.25 | 0.24 | -5.1% |
| Service Employment / Total Employment | 0.58 | 0.60 | 4.3% |

The growth in total population for Volusia County is estimated to be approximately 40% between 2005 and 2035. This is at pace with the expected growth in employment as indicated by the ratios, which generally remain unchanged.

According to the *Investigation of Potential Local Area Transportation Alternatives for an Aging Population* report completed for the Volusia TPO in 2005, the population projections for the study area between 2010 and 2035 show an average growth rate of seven percent (see Table 7.11). If the growth rate among persons 65 years of age and over remains at three percent, a conservative estimate, by 2035, this age cohort could equal 249,266 or 27.9%. When giving consideration to the segment of this population that may cease to drive, consideration also must be given to an additional factor, those persons who may experience temporary disabilities.

**Table 7.11 Total Population Projections**

| Year | Volusia County | Beverly Beach | Flagler Beach | Palm Coast | Total | % Change from previous 5 years | Population 60 years and over |
|---|---|---|---|---|---|---|---|
| 2010 | 537,787 | 667 | 6,842 | 61,038 | 606,334 | n/a | 221,496 |
| 2015 | 578,307 | 795 | 8,152 | 72,727 | 659,981 | 8.8 | 254,509 |
| 2020 | 618,620 | 924 | 9,477 | 84,546 | 713,567 | 8.1 | 274,392 |
| 2025 | 657,376 | 1,050 | 10,773 | 96,107 | 765,306 | 7.3 | 287,720 |
| 2030 | 705,700 | 1,170 | 11,997 | 107,028 | 825,894 | 7.9 | 224,305 |
| 2035 | 755,099 | 1,333 | 13,677 | 122,011 | 892,120 | 8.0 | 198,344 |

*Sources: Volusia County MPO and Florida Legislature, Office of Economic & Demographic Research*

There are several socioeconomic characteristics or conditions that may directly or indirectly influence travel behavior, particularly the ability to own or operate an automobile. These characteristics also may influence a person's ability to "age in place." These characteristics include, but are not limited to, physical or mental impairment, educational attainment, household income, poverty status, and vehicle availability. Other characteristics, such as household tenure, household type, and marital status, have a less direct influence on travel behavior, but do have bearing on income security, the desire to age in place, and whether there is a friend or family member to provide transportation.

The median age for the four sub-areas within the study's boundaries were greater than the state and national estimates of 38.7 years and 35.5 years, respectively. Volusia County had the youngest median age of 42.4; Beverly Beach had the greatest, 62.6. These differences suggest that the study area is experiencing the anticipated impacts of the Baby Boom cohort roughly five years sooner than the state and the nation. (This may be a factor of immigration rather than aging-in-place, as suggested by the rapid growth.)

**Public Involvement**

The Volusia TPO adheres to a Public Participation Plan through which all citizens, regardless of race, color, gender, age, physical ability, or national origin are guaranteed full opportunity to participate in programs, plans, and processes, including transportation planning and the 2035 LRTP. The TPO conducted an extensive public outreach effort that reached out to all populations of the community when developing the 2035 LRTP. This included: 1) creating a project website; 2) conducting a series of interactive planning sessions and meetings; 3) conducting surveys both in print and online; and 4) utilizing the Volusia TPO Advisory Committees. Details of the public outreach effort are included in

Chapter 5 of this report titled Public Involvement. With regards to environmental justice, the public involvement effort includes:

- Varied delivery formats (face-to-face meetings, electronic media, print);
- Survey #1 provided in Spanish;
- *Make Your Mark* activities, geared to the TDLCB, the Division of Blind Services, and the Council On Aging;
- News media exposure (traditional print formats, radio interview); and
- Promotion of planning activities on public transit vehicles and through specific organizations.

**Project Review**

The Volusia TPO developed two project alternatives as part of the 2035 LRTP planning activities. These projects were initially combined into a single set of potential improvements to be considered for the long-range plan. The projects included roadways, bridges and public transit projects. Table 7.12 provides an assessment of the road and bridge projects considered. A discussion of transit projects follows.

**Table 7.12 Road and Bridge Projects**

| **Transportation Projects** (Project Limits) | **Comments and Observations** |
|---|---|
| **SR 483 - Clyde Morris Blvd**<br>Widen to 6 lanes<br>from Beville Rd to US 92 | There is residential development in the southern portion of the project with commercial, institutional and educational destinations throughout. A PD&E is complete and project design is underway. There has been significant public input including students and disabled representatives. Input has been documented and a variety of multimodal accommodations are being made. |
| **SR 40 – Granada Blvd**<br>Widen to 4 lanes<br>from Cone Rd to SR 11 | There is residential development throughout the corridor (primarily new development). A PD&E was completed and will be updated prior to project design. The TPO has not identified any disadvantaged populations that would be negatively impacted. |
| **SR 40 - Granada Blvd**<br>Widen to 4 lanes<br>SR 11 to US 17 (SR 15) | There is rural residential development along this section of the corridor. A PD&E was completed and will be updated prior to project design. The TPO has not identified any disadvantaged populations that would be negatively impacted. |
| **SR 40 - Granada Blvd**<br>Widen to 4 lanes<br>from US 17 (SR 15) to County Line | There is rural residential development along this section of the corridor. A PD&E was completed and will be updated prior to project design. The TPO has not identified any disadvantaged populations that would be negatively impacted. |
| **SR 40 - Granada Blvd**<br>Widen to 6 lanes<br>from I-95 to Tymber Creek Rd | There is primarily commercial development throughout the corridor. A PD&E is underway including ample opportunity for public input. The TPO has not identified any disadvantaged populations that would be negatively impacted. |

| Table 7.12 Road and Bridge Projects *(continued)* | |
|---|---|
| **SR 415 – Tomoka Farms Rd**<br>widen to 4 lanes with bridge<br>from Reed Ellis Rd to Seminole County | There is rural residential and some commercial development along this section of the corridor. PD&E and project design has been completed. |
| **SR 415 – Tomoka Farms Rd**<br>widen to 4 lanes<br>from SR 44 to Acorn Lake Rd | There is rural residential and some commercial development along this section of the corridor. PD&E and project design for a multi-use trail only has been completed. |
| **SR 44 – New York Ave**<br>miscellaneous road improvements<br>from SR 15A to SunRail Station | There is primarily rural residential development along this section of the corridor. Road improvements such as curve alignments and paved shoulders are intended to improve operations and safety as well as capacity to the SunRail station. The TPO has not identified any negative impacts to the local population. However, local concerns have been identified associated with potential TOD development. It will be important to monitor the project for traffic impacts of accessing SunRail and long-range land use development. |
| **SR 44 - New York Ave**<br>widen to 4 lanes<br>from Voorhis Ave to Kepler Rd | There is rural residential and some commercial development along this section of the corridor. There is currently significant freight and vehicle activity in the area. A PD&E has been completed. |
| **US 17**<br>widen to 4 lanes<br>from SR 40 to Ponce DeLeon Blvd | There is rural residential, agriculture and some commercial development along this corridor. A PD&E has been completed. Concerns have been expressed over freight traffic on a section of US 17 north of this project and the TPO will continue to monitor this issue in the future. |
| **US 92 – International Speedway Blvd**<br>widen to 6 lanes<br>from I-4 to CR 415 (Tomoka Farms Rd) | There is residential and commercial activity on this section of the corridor. A PD&E has been completed and design is underway. |
| **SR 472**<br>widen to 6 lanes (with I-4 overpass)<br>from Graves Ave to Kentucky/MLK Blvd | There is limited residential development just beyond the western terminus of this project, but no residential proximate to the corridor. This project will primarily serve commercial and industrial development such as the Activity Center near the Interstate. The TPO has not identified any disadvantaged populations that would be negatively impacted. |
| **I-95 Interchange** @ US 1 (Ormond Crossings) | This is primarily a commercial activity area with a mixed-use DRI proximate to the interchange. Improvements are expected to be minimal. The TPO has not identified any disadvantaged populations that would be negatively impacted. |
| **Intracoastal Bridge**<br>Replace (Orange Ave) TBD | This project replaces an existing bridge span. A PD&E has been completed and significant public input was provided. |
| **Intracoastal Bridge**<br>Replace (Main St)<br>from Halifax Ave to Beach St | This project replaces an existing bridge span. There is residential and commercial activity on each end of the span and the western end is proximate to the main public transit transfer station. The TPO will monitor the progress of this activity and support context-sensitive solutions. |

| Table 7.12 Road and Bridge Projects *(continued)* | |
|---|---|
| **US 1 Intersections**<br>Improvements at Canal St, SR 421, Herbert St, Reed Canal Rd, Big Tree Rd, LPGA Blvd, Park Ave, | There is residential and commercial activity as well as many redevelopment plans and CRA's proximate to these intersections. Improvements are intended to improve capacity, operations and safety for all modes. The TPO has not identified any disadvantaged populations that would be negatively impacted. |
| **SR 442**<br>Extend as 2-lane from current terminus to SR 415 | This is primarily located in a rural and undeveloped area, however the eastern end of the project is a gateway to the City of Edgewater and has significant residential development throughout. A more significant review of impacted populations will be required if this project is pursued. |
| **SR 442**<br>Extend with Intracoastal bridge from SR 5 (US1) to CR A1A | This is primarily located in a rural and undeveloped area, however the western end of the project connects to the City of Edgewater and has significant residential development throughout. A more significant review of impacted populations will be required if this project is pursued. |

**Transit Projects**

Throughout the development of the 2035 LRTP, it was clear that the provision of expanded and enhanced public transit services was desired. As discussed previously, the public alternative included more transit than the technical alternative. It is also apparent that most of the transit projects recommended are within the urban core and will directly benefit populations identified under environmental justice. These projects support populations identified in the previous review as well as many redevelopment activities initiated by local governments. The transit improvements considered for the 2035 LRTP are consistent with the desires of Votran and with the Title VI activities and analysis conducted for the TDP. The TDP is updated once every five years and an update is currently underway. The results of this activity will lay a foundation for the next update to the LRTP. Finally, it is also worth noting that the approved plan places funding for public transit improvements on par with road projects.

**Additional Activities and Considerations**

The TPO also sets aside 30% of its XU funding for bicycle and pedestrian projects to support mobility options. Many of these directly improve conditions for the populations identified under environmental justice. The TPO visions, plans, funds, and implements improvements to walking and bicycling networks, including linkages to transit within the service area. Pedestrian and bicycle facilities expand the travel opportunities for residents who, either by choice or by circumstance, do not use an automobile. These groups often include, but are not limited to, disabled individuals, children, the elderly, and the financially disadvantaged.

The TPO also involves the aging, disabled, and disadvantaged populations in the process through the Transportation Disadvantaged Local Coordinating Board (TDLCB), the Center for Visually Impaired (CVI) and the Council on the Aging (COA). The primary purpose of the TDLCB is to assist the designated official planning agency in identifying local service needs and providing information, advice, and direction to the Community Transportation Coordinator on the coordination of services to be provided to the

transportation disadvantaged. The TPO has also completed studies to ensure we understand the impacts to certain populations, which include the Elder Mobility Study.

## Safety Screening

### Introduction

The Safe, Affordable, Flexible, Efficient, Transportation Equity Act – a Legacy for Users (SAFETEA-LU), places an additional emphasis on safety—especially in the planning process. Examples of how safety planning is advanced by SAFETEA-LU include the following requirements:

- The metropolitan planning process should *"provide for the consideration and implementation of projects, strategies, and services that will increase the safety of the transportation system for motorized and non-motorized user."*
- The Metropolitan Planning Organization (MPO) planning process should be consistent with the [State] Strategic Highway Safety Plan (SHSP) and the metropolitan transportation plan [long range transportation plan] shall, at a minimum, *"include operational and management strategies to improve the performance of existing transportation facilities to relive vehicular congestion and maximize the safety and mobility of people and goods."*
- The metropolitan transportation plan [LRTP] *"should include a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects for the MPA [metropolitan planning area] contained in the SHSP."*

To meet the spirit and intent of SAFETEA-LU, the Volusia TPO partnered with the County of Volusia Traffic Engineering Department and the Florida Department of Transportation (FDOT) to complete a pilot project that recommended basic analytical procedures to address key aspects of the SAFETEA-LU requirements. The safety assessment methodology identified in the pilot program was used to plan and screen transportation infrastructure projects for the long range transportation planning effort.

### LRTP Pilot Project and Review

The Volusia TPO worked with Volusia County Traffic Engineering and the FDOT to develop practical approaches and procedures to address the requirements of SAFETEA-LU. The Volusia County Pilot Project was developed by Tindale-Oliver and Associates with joint funding from the three organizations. The completed report is titled *SAFETEA-LU Safety Planning Requirements and Implementation Procedures*.

Using the procedures developed, the 2035 alternative long range plan scenarios were compared to the 2035 E+C network. The alternative scenarios were the Alternative #1 (Technical), Alternative #2 (Public), and Cost Feasible (which became the adopted 2035 LRTP). Several departures from the recommended procedures were done in the safety review:

1. Only those roadway network segments that were modified in an alternative scenario were included in the analysis, not the entire transportation network.

2. On lengthy projects that encompassed several segments where multiple counts were available, an average traffic volume was determined for the project.

3. Volusia County adopted a new "Suburban 2-3 Lane 2-Way Divided Raised" typical section that implements access management standards to minimize conflict points and increase safety. The *Peer County* Total Crash rate developed by the Volusia County Pilot Project (ie., CR 3.21) was based upon very limited mileage. Instead, the 2008-2010 FDOT District 5 average crash rate for this typical section (CR = 1.82) was used since it had significantly more mileage and historical data from the time the County implemented this new typical section.

Although the pilot project and LRTP includes a long range estimate of local road improvements, these projects are not selected by the Volusia TPO and therefore a discussion and analysis is not provided as part of this LRTP safety review. Figure 7-7 provides a graphic illustration of the overall changes in crashes by type over the various alternatives modeled (including the final adopted plan, listed as Alt 3). In each case, the overall Vehicle Miles Traveled (VMT), Total Crashes, and Average Crash Rate for each alternative was higher than the E+C network. This is to be expected since the overall vehicle miles traveled increases substantially in each of the alternatives. It should be noted, however, that the overall average crash rates for each of the alternatives were below 1.0.

**Figure 7-7 Volusia LRTP Alternative Scenarios Average Crash Rates and Percent Increase in VMT**

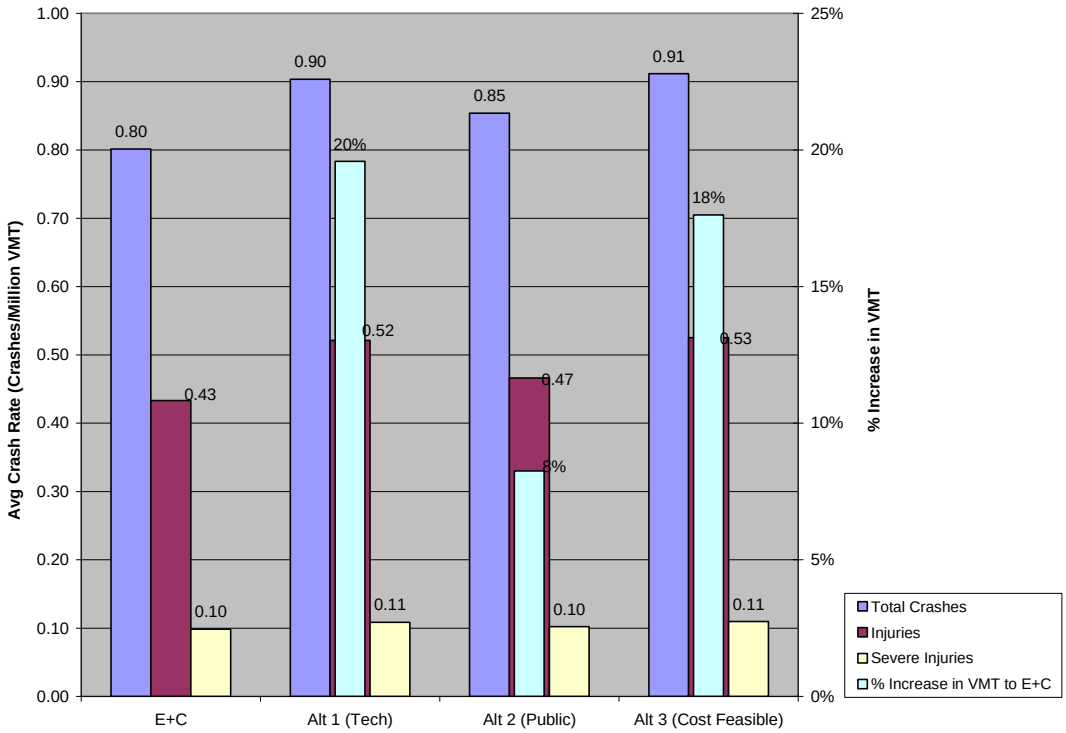



Table 7.13 shows the results of applying average and expected crash rates to the alternative scenarios in greater detail. Appendix E-2 includes a detailed safety analysis of the projects included in each of the alternative scenarios by category (Strategic Intermodal System, state and federal, county/local). Particular trends based upon comparison of the alternatives are as follow:

- Overall network crashes for the alternatives increased 35%, 15%, and 34% respectively, while the vehicle miles traveled (VMT) rose by 20%, 8%, and 18% respectively. The overall rate of crashes (crashes per million VMT) is estimated to have a slight increase from 0.8 to 0.91.
- For the three future alternatives, Strategic Intermodal System (SIS) roadways comprised roughly 60% of total VMT and accounted for roughly one-third (33%) of the overall crashes and 40% of crashes with severe injuries.
- For the three future alternatives, Non-SIS roadways comprised almost 15% of total VMT and accounted for roughly one-fourth (23%) of the overall crashes and 20% of crashes with severe injuries.

In summary, application of the crash prediction methodology did not indicate an increase in crashes associated with the Strategic Intermodal System (SIS) projects that warrants further consideration or analysis. The Non-SIS (state and federal roads) utilized a varied approach to the network of projects included in Alternatives #1 and #2. Alternative #1 included more road widening projects, while the Alternative #2 opted for more enhanced public transit in lieu of road widening. The final, cost-feasible plan included many of the widening projects identified in Alternative #1. A project level review of predicted crashes for this grouping indicates that two projects are the primary contributors to the increase in crashes over the existing plus committed (E+C) scenario. US 17 from Ponce DeLeon to SR 40 and SR 472 from Graves Avenue to Kentucky Boulevard. Each of these projects shows a significant increase in VMT and thus an increase in crashes. The planning and design phases for these projects should include a more detailed assessment of safety to minimize the impacts of increased activity along these roads. On all alternatives, county roadways comprised, on average, 24% of total VMT and accounted for, on average, nearly 40% of total crashes, injuries, and severe injuries, as seen in Figure 7-7. This represents a greater proportion compared to non-SIS roadways, and suggests that safety strategies should focus on all roadways, not just those under federal and state jurisdictions.

**Other Safety Considerations in Planning**

The Volusia TPO also includes safety as a factor in the short range by including safety (or crash history) as part of the ranking criteria for projects submitted during the annual call for projects including highway capacity improvements, bicycle and pedestrian facilities and traffic operations, intelligent transportation systems and safety. Additional weighting is provided for projects that address areas of documented conflict. Additionally, the Volusia TPO has taken a proactive approach to identifying and addressing child safety by completing an in depth assessment of all elementary and middle schools for needed improvements and by participating on local Community Traffic Safety Teams, conducting helmet giveaways, and developing public service videos and announcements. More details regarding the Volusia TPO's safety program are described in Chapter 6, Transportation Program Options. By setting aside a portion of the Surface Transportation Extra-Urban funding available in the TPO planning area and utilizing Safe Routes to School (SRTS) funding the Volusia TPO has been successful in identifying and correcting safety issues in the near term in addition to planning for further improvements in the long term.

## Table 7.13 Safety Analysis of Volusia LRTP Alternative Scenarios

| | Expected Rates/Million VMT | | | 2035 E+C Network | | | | 2035 Alt 1 (Technical) | | | | 2035 Alt 2 (Public) | | | | 2035 Alt 3 (Cost Feasibile) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Roadway Type** | **Crashes** | **Injuries** | **Severe Injuries** | **VMT** | **Crashes** | **Injuries** | **Severe Injuries** | **VMT** | **Crashes** | **Injuries** | **Severe Injuries** | **VMT** | **Crashes** | **Injuries** | **Severe Injuries** | **VMT** | **Crashes** | **Injuries** | **Severe Injuries** |
| Interstate Urban | 0.42 | 0.22 | 0.05 | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Interstate Rural | 0.39 | 0.21 | 0.05 | 2,549,406 | 363 | 195 | 47 | 2,615,508 | 372 | 200 | 48 | 2,601,891 | 370 | 199 | 47 | 2,547,725 | 363 | 195 | 46 |
| Urban Other Limited Access | 0.28 | 0.17 | 0.04 | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| **2-3 Lanes** | | | | | | | | | | | | | | | | | | | |
| Urban 2-3LN 2WAY DIVD PAVD | 3.96 | 1.92 | 0.23 | 0 | - | - | - | 8,125 | 12 | 6 | 1 | 12,860 | 19 | 9 | 1 | 11,563 | 17 | 8 | 1 |
| Urban 2-3LN 2WAY UNDIVD | 2.56 | 1.17 | 0.18 | 302,995 | 283 | 129 | 20 | 34,765 | 32 | 15 | 2 | 215,456 | 201 | 92 | 14 | 35,250 | 33 | 15 | 2 |
| Suburban 2-3LN 2WAY DIVD RASD | 1.82 | 1.65 | 0.31 | 0 | - | - | - | 220,480 | 146 | 133 | 25 | 16,275 | 11 | 10 | 2 | 209,812 | 139 | 126 | 24 |
| Suburban 2-3LN 2WAY DIVD PAVD | 2.25 | 1.21 | 0.24 | 9,376 | 8 | 4 | 1 | 44,400 | 36 | 20 | 4 | 7,812 | 6 | 3 | 1 | 53,200 | 44 | 23 | 5 |
| Suburban 2-3LN 2WAY UNDIVD | 0.92 | 0.52 | 0.13 | 585,020 | 196 | 111 | 28 | 44,239 | 15 | 8 | 2 | 368,591 | 124 | 70 | 17 | 39,011 | 13 | 7 | 2 |
| Rural 2-3LN 2WAY DIVD PAVD | 1.89 | 1.16 | 0.30 | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Rural 2-3LN 2WAY UNDIVD | 0.60 | 0.38 | 0.12 | 1,302,155 | 285 | 181 | 57 | 229,189 | 50 | 32 | 10 | 1,098,515 | 241 | 152 | 48 | 528,592 | 116 | 73 | 23 |
| **4-5 Lanes** | | | | | | | | | | | | | | | | | | | |
| Urban 4-5LN 2WAY DIVD RASD | 1.99 | 1.07 | 0.18 | 101,020 | 73 | 39 | 7 | 427,543 | 311 | 167 | 28 | 476,493 | 346 | 186 | 31 | 451,526 | 328 | 176 | 30 |
| Urban 4-5LN 2WAY DIVD PAVD | 3.00 | 1.60 | 0.26 | 60,420 | 66 | 35 | 6 | 30,600 | 34 | 18 | 3 | 60,572 | 66 | 35 | 6 | 26,960 | 30 | 16 | 3 |
| Urban 4-5LN 2WAY UNDIVD | 3.87 | 1.93 | 0.32 | 108,384 | 153 | 76 | 13 | 0 | - | - | - | 105,000 | 148 | 74 | 12 | 0 | - | - | - |
| Suburban 4-5LN 2WAY DIVD RASD | 1.31 | 0.71 | 0.14 | 216,864 | 104 | 56 | 11 | 762,572 | 365 | 198 | 39 | 283,356 | 135 | 73 | 14 | 734,440 | 351 | 190 | 38 |
| Suburban 4-5LN 2WAY DIVD PAVD | 1.48 | 0.84 | 0.16 | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Rural 4-5LN 2WAY DIVD RASD | 0.64 | 0.39 | 0.11 | 0 | - | - | - | 1,273,040 | 297 | 181 | 51 | 420,989 | 98 | 60 | 17 | 951,293 | 222 | 135 | 38 |
| **6+ Lanes** | | | | | | | | | | | | | | | | | | | |
| Urban 6+LN 2WAY DIVD RASD | 2.01 | 1.08 | 0.17 | 0 | - | - | - | 322,528 | 237 | 127 | 20 | 0 | - | - | - | 331,143 | 243 | 131 | 21 |
| Urban 6+LN 2WAY DIVD PAVD | 2.83 | 1.55 | 0.26 | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Suburban 6+LN 2WAY DIVD RASD | 1.74 | 0.96 | 0.17 | 0 | - | - | - | 248,116 | 158 | 87 | 15 | 0 | - | - | - | 237,914 | 151 | 83 | 15 |
| **Other** | | | | | | | | | | | | | | | | | | | |
| Urban ONE WAY | 4.87 | 2.10 | 0.29 | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Suburban ONE WAY | 1.57 | 0.84 | 0.12 | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - | 0 | - | - | - |
| Total Network = | | | | 5,235,640 | 1,532 | 828 | 188 | 6,261,104 | 2,065 | 1,191 | 248 | 5,667,810 | 1,766 | 965 | 212 | 6,158,431 | 2,049 | 1,181 | 246 |
| Average Rate (Crashes/Million VMT) = | | | | | 0.80 | 0.43 | 0.10 | | 0.90 | 0.52 | 0.11 | | 0.85 | 0.47 | 0.10 | | 0.91 | 0.53 | 0.11 |
| Change (absolute) = | | | | | | | | 1,025,464 | 533 | 363 | 60 | 432,170 | 235 | 137 | 23 | 922,790 | 517 | 353 | 58 |
| Percent Change = | | | | | | | | 20% | 35% | 44% | 32% | 8% | 15% | 17% | 12% | 18% | 34% | 43% | 31% |
| Change in Rate (Crashes/Million VMT) = | | | | | | | | | 0.10 | 0.09 | 0.01 | | 0.05 | 0.03 | 0.00 | | 0.11 | 0.09 | 0.01 |

**SAMPLE CALCULATION:**

$$\frac{\text{Expected Crashes}}{\text{Year}} = \frac{\text{Crash Rate} \times \text{Daily VMT} \times 365}{1{,}000{,}000\ \text{VMT}} = \frac{0.39\ \text{Expected Crashes}}{1{,}000{,}000\ \cancel{\text{VMT}}} \times \frac{2{,}615{,}508\ \cancel{\text{VMT}}}{\cancel{\text{Day}}} \times \frac{365\ \cancel{\text{Days}}}{\text{Year}} = 372\ \text{Crashes/Year}$$

MEDIAN TYPE:
UNDIVD - Undivided
DIVD PAVD - Divided Paved (eg., bidirectional left-turn lane)
DIVD RASD - Divided Raised (eg., concrete or grass)

## Other Project Assessment

In addition to the evaluation tools described above, the LRTP Subcommittee also identified and applied a series of qualitative criteria to the projects under consideration for the 2035 LRTP. These included:

1. Preserve the TPO List of Prioritized Regionally Significant Non-FIHS Roadway projects as the top ranked projects based on previous board policy direction.
2. Rank projects that provide access or support commuter rail.
3. Consider projects funded in partnership with private developers (at least 50% of project cost).
4. Include projects that support developments of regional impact (DRI).
5. Rank bridges that provide hurricane evacuation.
6. Consider projects with committed PD&E studies.
7. Include unfunded SIS facilities that are local priority.

By applying these attributes, the Volusia TPO maintains consistency and stability in the transportation system and supports the planning factors and goals identified for the long-range transportation plan. Other considerations, including preliminary assessments of financial viability, environmental mitigation and community impact/support, were also applied during project screening.

# Chapter 8 The 2035 Long Range Transportation Plan

## Introduction

Long-range transportation plans are meant to identify the transportation facilities that function as an integrated system, giving emphasis to those facilities that serve important national, state and regional transportation functions. Projects included in the plan are typically major road and bridge construction, transit system improvements, multi-modal and intermodal facilities, and transportation system connectors. Federal and state legislation regarding the development of long-range transportation plans require that the list of projects comprising the plan be limited to those that can reasonably be pursued given the financial resources available. That guidance, along with other planning strategies, was used by local area participants in a cooperative effort to identify and evaluate potential transportation system improvements. The results of these efforts have been used to create the Volusia Transportation Planning Organization's (TPO) *2035 Long Range Transportation Plan (LRTP)* to accommodate the area's future mobility needs.

The Volusia TPO employed a parallel approach for developing alternative transportation system plans for the year 2035. Each of these plans was assessed using a forecasting model designed and developed to predict future traffic conditions. The Volusia TPO LRTP Subcommittee then worked to consolidate the two alternatives into a single draft plan of projects and to refine that plan based on a variety of criteria.

Once the draft was developed, project cost estimates and revenue estimates were refined and the transportation plan was balanced to ensure that adequate revenue would be available for the projects being pursued. The "cost-feasible" listing of proposed projects was then submitted for review by the TPO advisory committees and Board and a draft plan was placed for public review and comment. Upon completion of the public comment period, a final plan was submitted for approval to all of the TPO advisory committees and the TPO Board. The *2035 Long Range Transportation Plan* was adopted by resolution of the Volusia TPO Board on September 28, 2010. Resolution 2010-20 is included in Appendix F-1. These activities were presented in greater detail in various chapters of this report. Information contained in this chapter includes an overview of the steps taken to present the final, cost-feasible *2035 Long Range Transportation Plan* and the unfunded transportation needs.

## Identifying Transportation Issues

A variety of strategies were used to estimate transportation conditions for the Volusia TPO planning area in the year 2035, and to identify the potential improvements that would address these issues. One of the first steps included collecting base year data and calibrating the Central Florida Regional Planning Model, version 5.0 (CFRPM 5.0) to represent existing traffic conditions. Once the model was calibrated, TPO staff worked with local representatives to forecast population and employment growth over the planning horizon and to distribute that information throughout the planning area based upon the development patterns and future land uses expected by each jurisdiction. More detailed discussion of this activity is included in Chapter 3, Data Analysis: Land Use and Network Modeling.

The CFRPM 5.0 was then used to analyze the Existing plus Committed (E+C) transportation network. This effort predicted traffic congestion in 2035 considering only those projects that were funded for construction within the five-year work program.

The Volusia TPO then initiated a parallel approach for developing transportation system alternatives for the 2035 LRTP:

1. Technical Alternative – This effort started with a *Make Your Mark* planning exercise for the TPO advisory committee members in December 2009. The results of that session were provided to the Long Range Transportation Plan (LRTP) Subcommittee for further refinement. The LRTP Subcommittee considered additional projects based on member input and then applied a variety of criteria to identify a set of projects to be considered in a traffic modeling forecast.

2. Public Alternative – This approach focused on encouraging public involvement in the decision-making process and maximized public input by utilizing a planning activity titled "*Make Your Mark in 2035*." In these sessions, participants relied upon information provided, in addition to their experiences and knowledge, to identify the transportation projects they wanted to be considered in the future.

These two alternatives were modeled for the year 2035 to determine the impacts of various road improvements and mass transit service expansion on predicted congestion. A combined listing of road and bridge projects was developed by comparing the two transportation alternatives with the project list included in the 2025 LRTP. Consideration was then given to a projects ability to support major development initiatives in the area, as well as their effectiveness in improving safety and reducing congestion on area roadways. Detail regarding the combined listing and project screening is included in Chapter 7, Project Development and Screening Programs.

In addition to road projects, a major element of the 2035 LRTP includes transit system improvements. The development of this component of the future transportation system included the projects identified in the two transportation alternatives, as well as the projects included in the Transit Development Plan adopted by Votran in December 2006. Transit projects were evaluated based on proximity to major urban areas, transit-oriented development activity in the planning area, and available funding. A workshop was held on May 10, 2010 for Volusia TPO Board members to determine the financial approach to use regarding mass transit, and direction was given to proceed in developing a public transit element.

**Determining Financial Feasibility**

At this point, project costs were revised and the draft listing was compared with updated revenue estimates for the planning horizon. The transit and roadway lists continued to be refined as project phases were estimated in year-of-expenditure terms, and transit projects were staged to begin at various points throughout the planning horizon. A revenue forecast was developed based on a proposed transportation surtax of ½ cent per dollar. Adjustments to the plan continued to be made to ensure that the total cost and timing of the projects balanced with the revenue streams anticipated

from 2014 to 2035. The estimated revenues and project cost information were detailed in Chapter 4, The Financial Plan.

Volusia County staff used a separate strategy to develop the local road listing and associated project costs and revenues. County staff used the existing local road program, along with input from the Volusia TPO LRTP activities, to identify projects for consideration. Although the locally funded road projects are included in this plan, the project list, limits, phasing, costs, and revenues are developed and approved by Volusia County. The inclusion of county or city road projects is solely for the purpose of providing a complete estimate of the future transportation system within the Volusia TPO planning area. The projects included in this section are typically those eligible for federal funding through special grant programs.

The timing and cost estimates for projects funded through the Strategic Intermodal System (SIS) were determined by FDOT and were reviewed and supported by the Volusia TPO. Since adoption of the 2035 LRTP, the "cost feasible" SIS program has been amended on two occasions to reflect changes in the plan. The first amendment included the extension of an existing lane widening project on I-95 in Brevard County. By extending the project limits, FDOT and the Volusia TPO were able to fully utilize the funding set aside for construction activity. The second amendment included the addition of widening I-4 from 6 to 10 lanes from the Seminole County line to SR 472 (the actual project limit extends to the Orlando metropolitan planning area and is included in the MetroPlan Orlando LRTP). The lane additions will include "special" or "managed-use" lanes, which are typically barrier separated and involve a paid toll. The financial and operational details of this project, including design and tolling considerations, will be considered in future project phases which will be coordinated with local stakeholders. The resolutions approving these amendments (Res. 2012-03 and Res. 2012-12) are included in Appendix F-1.

The following four elements, SIS Projects, State and Federal – Other Projects, Mass Transit Projects and Local Road Projects combine to comprise the cost-feasible *Volusia Transportation Planning Organization 2035 Long Range Transportation Plan (LRTP)*. Table 8.2 is a complete listing of the projects identified in the 2035 LRTP. Additionally, the maps shown in Figure 8-1 and Figure 8-2 illustrate the project locations.

**Results of Model Forecasting**

A draft of the cost-feasible 2035 LRTP was submitted to the Florida DOT for evaluation using the CFRPM 5.0 traffic model in July 2010. Considerable time was taken to ensure the model network was accurate in reflecting the projects and project limits. The model results were produced and distributed to the TPO for review in August 2010. Table 8.1 provides a variety of performance data as estimated by the CFRPM 5.0 model in the year 2035 considering the transportation system improvements included in the Cost-Feasible Alternative.

**Table 8.1 Performance Measures for Existing Plus Committed and Cost-Feasible in 2035**

| Category | 2005 Base | 2035 E+C | Cost-Feasible | % Change Over Base | % Change Over E+C |
|---|---|---|---|---|---|
| Total Number of Links | 3,331 | 3,367 | 3,432 | 3.03% | 1.93% |
| Total System Miles | 1,124 | 1,144 | 1,179 | 4.89% | 3.06% |
| Total Lane Miles | 2,683 | 2,831 | 3,138 | 16.96% | 10.84% |
| Total VMT Using Volumes | 5,411 | 8,955 | 9,498 | 75.53% | 6.06% |
| Total VMT Using Counts | 5,150 | 5,150 | 5,182 | 0.62% | 0.62% |
| Total VMT Volume/Count | 1.05 | 1.74 | 1.83 | 74.29% | 5.17% |
| Total VHT Using Volumes | 124 | 379 | 327 | 163.71% | -13.72% |
| Total VHT Using Counts | 121 | 222 | 188 | 55.37% | -15.32% |
| Total VHT V/C | 1.03 | 1.71 | 1.74 | 68.93% | 1.75% |
| Total Original Speed (MPH) | 37.17 | 37.21 | 37.25 | 0.22% | 0.11% |
| Total Congested Speed (MPH) | 35.44 | 30.31 | 32.18 | -9.20% | 6.17% |
| Total Volume/Count Ratio | 0.93 | 1.46 | 1.45 | 55.91% | -0.68% |
| Transit Ridership | 8,475 | 9,096 | 19,054 | 124.83% | 109.48% |

Further analysis using this data reveals that overall Vehicle Miles of Travel (VMT) is estimated to increase approximately 75% between the 2005 base year and 2035. This will occur on a roadway network that includes an increase of almost 11% in lane miles to accommodate the additional travel. Increasing congestion is evidenced by a reduction in the congested speed from 35 to 32 mph. This represents almost a 10% drop from the base year. The cost-feasible set of projects includes the greatest increase to additional system and lane miles, which indicates an efficient use of the financial resources available for roadway expansion. The cost-feasible plan also recorded the strongest increase in vehicle miles and hours traveled. The increase in activity could lead to higher greenhouse gas emissions, and additional performance measures and reduction strategies may be needed in the future. Transit ridership also shows a significant increase, more than doubling over the planning period. This is a reflection of the increased emphasis on public transit by the Volusia TPO. Figure 8-3 provides a graphic representation of the congestion predicted to occur by the year 2035, given the transportation improvements included in the Cost-Feasible Alternative.

**2035 LRTP Executive Summary**

An Executive Summary of this information has also been developed to succinctly describe the development of the 2035 LRTP and the future direction of transportation within the planning area. This document is available both in print and online at the Volusia TPO website (www.volusiatpo.org).

The summary is intended to be the primary tool for promoting and informing the public about the long-range transportation planning effort.

**Volusia TPO Project Priority Process**

Once identified in the Volusia TPO's long-range transportation plan, local governments can submit a project application through the TPO's annual Priority Project process to be ranked relative to all other projects trying to receive federal and state assistance.

The TPO typically accepts project applications between March and April of each year for evaluation and ranking. The TPO Board relies upon the advisory committees to screen and rank the applications and provide recommendations for final approval. The TPO must approve the lists of prioritized projects and submit them to FDOT by September. The FDOT announces how many of the priority projects have been funded in early December, as they release information about the tentative work program. FDOT then solicits public comment on its proposed list of newly funded projects. On July 1 of each year, the FDOT formally adopts its work program. Since the FDOT develops a stable five-year funding list of projects, the project applications that are submitted and ranked as part of the TPO's Priority Project Process are typically being considered for funding six years out in the future.

**Table 8.2 Volusia TPO 2035 Cost-Feasible Transportation Plan - Adopted 9/28/2010 (amended 1/24/2012, amended 4/24/2012)**

| Strategic Intermodal System (SIS) Projects | | | | | |
|---|---|---|---|---|---|
| **Project** | | **Limits** *(from - to)* | **Timing**[1] | **Cost**[1] *(in millions)* | **Improvement** |
| 1 | I-95 Interchange | @ SR 421 | 2021-25 | $36.0 | Interchange |
| 2 | I-4 widen to 6 lanes | SR 44 to I-95 | 2021-25 | $210.0 | Road |
| 3 | I-95/I-4 Systems Interchange | @ I-95 & US 92 | 2031-35 | $168.0 | Interchange |
| 4 | I-95 widen to 6 lanes | SR 400 (Beville Rd) to SR 44 | 2031-35 | $70.0 | Road |
| -- | I-95 widen to 6 lanes[2] | Brevard County Line to SR 44 | 2010-15 | --- | Road |
| -- | I-4 widen to 10 lanes[3] | Seminole County to SR 472 | 2021-25 | $681.3 | Managed-use lanes |
| | | | **SIS Total** | **$1,165.3** | |

[1] *The timing and costs for all SIS projects were determined by FDOT and supported by the Volusia TPO.*
[2] *Right-of-Way is funded in FY 2011/12 for $1.26 million; Brevard County project may be extended north under existing contract if funds are available (Res. 2012-03).*
[3] *This project is being developed by the Florida Department of Transportation as a Public-Private Partnership (Res. 2012-12).*

**Table 8.2 - Volusia TPO 2035 Cost-Feasible Transportation Plan - Adopted 9/28/2010 *(continued)***

| State and Federal – Other Projects | | | | | |
|---|---|---|---|---|---|
| **Project** | | **Limits** *(from - to)* | **Timing**[3] | **Cost**[4] *(in millions)* | **Improvement** |
| **6** | SR 415 - widen to 4 lanes w/ bridge | Reed Ellis Road to Seminole County | 2016-2020 | $51.1 | Road/Bridge |
| **7** | US 1 - Intersection Improvements | Canal St, SR 421, Herbert St, Reed Canal Rd, Big Tree Rd, LPGA Blvd & Park Ave | 2014-2015 | $9.0 | Intersection |
| **8** | US 17 - widening to 4 lanes | SR 40 to Ponce DeLeon Blvd | 2016-2020 | $44.8 | Road |
| **9** | SR 483 - Clyde Morris Blvd - widen to 6 lanes | SR 400 (Beville Road) to US 92 | 2021-2025 | $66.4 | Road |
| **10** | I-95 Interchange[5] | @ US 1 (Ormond Crossings) | 2016-2020 | $11.9 | Interchange |
| **11** | SR 44 - miscellaneous road improvements | SR 15A to the SunRail Station | 2021-2025 | $19.1 | Road/Intersection |
| **12** | US 92 - widen to 6 lanes[5] | I-4 to CR 415 (Tomoka Farms Rd) | 2021-2025 | $18.6 | Road |
| **13** | SR 472 - widen to 6 lanes (including I-4 overpass) | Graves Ave to Kentucky/MLK Blvd | 2021-2025 | $26.2 | Road |
| **14** | Veterans Memorial Bridge - Replace | Orange Ave (Limits To Be Determined) | 2026-2030 | $64.8 | Bridge |
| **15** | SR 44 - widen to 4 lanes | Voorhis Ave to Kepler Rd | 2026-2030 | $4.5 | Road |
| **16** | SR 40 - widen to 6 lanes[5] | I-95 to Breakaway Trail | 2031-2035 | $19.5 | Road |
| **17** | SR 40 - widen to 4 lanes | Cone Rd to SR 11 | 2026-2035 | $69.4 | Road |
| **18** | SR 40 - widen to 4 lanes | SR 11 to US 17 | 2031-2035 | $69.2 | Road |
| **19** | SR 40 - widen to 4 lanes | SR 17 to the Lake County Line | 2031-2035 | $49.6 | Road |
| | | | **Total** | **$524.1** | |

[3] *The estimated timing for the construction of projects was dependent upon the project ranking and the revenue available during each five-year period.*
[4] *Project costs were developed by phase and were factored to year-of-expenditure dollars as outline in the Revenue Estimating Handbook*
[5] *Project will be completed through a public-private partnership.*

**Table 8.2** - **Volusia TPO 2035 Cost-Feasible Transportation Plan - Adopted 9/28/2010** ***(continued)***

| Mass Transit Projects | | | | | | |
|---|---|---|---|---|---|---|
| Name | | Limits *(from - to)* | Timing [7] | Cost [8] *(in millions)* | | Improvement |
| | | | | Capital | Operating | |
| A | Added Bus Service – DeBary/DeLand | West Volusia Area to DeBary/DeLand SunRail stations | 2015 | $0.00 | $0.00 | Bus |
| B | Added Rail Station - Daytona Beach Area | Daytona Beach | 2015 | $0.00 | $0.00 | Rail |
| C | Added Bus Service - US 1 Corridor | Port Orange to Ormond Beach | 2016 | $1.76 | $26.90 | Bus |
| D | Added Bus Service – SR A1A Corridor | SR 40 (Granada Blvd) to SR 421 (Dunlawton Ave) | 2016 | $1.17 | $17.93 | Bus |
| E | Added Bus Service – Cross-County | Daytona Beach to DeLand | 2018 | $1.84 | $24.76 | Bus |
| F | Added Bus Service - East Volusia | Port Orange to Ormond Beach | 2018 | $2.46 | $33.02 | Bus |
| G | Added Bus Service - West Volusia | Crown Center to Northgate Plaza | 2018 | $1.84 | $24.76 | Bus |
| H | Added Bus Service - Daytona Beach | Daytona Beach International Airport to Transfer Plaza | 2018 | $1.84 | $24.76 | Bus |
| I | Added Bus Service – Cross-County | New Smyrna Beach to DeLand | 2018 | $1.23 | $16.51 | Bus |
| J | Added Bus Service - Deltona Circulator | Deltona Area | 2020 | $1.29 | $15.02 | Bus |
| K | DeLand Trolley Circulator | Downtown DeLand Rail Station (SunRail/Amtrak) | 2020 | $1.94 | $22.52 | Bus |
| L | Daytona Area Trolley Circulator | Downtown Daytona (International Speedway Blvd) | 2020 | $2.58 | $30.03 | Bus |
| M | Added Bus Service - Rural Northwest | Pierson to Crescent City | 2020 | $1.29 | $15.02 | Bus |
| N | Commuter Rail (SunRail) Expansion | DeBary Station DeLand Station | 2020 | $0.00 | $0.00 | Rail |
| O | DeLand Rail Spur | DeLand Amtrak Station to Downtown DeLand | 2025 | $13.40 | $9.61 | Rail |
| P | Transit Corridor - Bus Rapid Transit | DeLand to Daytona Beach | 2030 | $34.50 | $24.78 | Bus |
| Q | Commuter Rail (SunRail) Service | DeBary to Seminole County Line | 2013 | $0.00 | $0.00 | Rail |
| | | | **Total** | **$67.1** | **$285.6** | |

[7] *The estimated timing for the construction of projects was dependent upon the project ranking and the revenue available during each five-year period.*
[8] *Project costs were developed by phase and were factored to year-of-expenditure dollars as outlined in the Revenue Estimating Handbook.*

**Table 8.2 - Volusia TPO 2035 Cost-Feasible Transportation Plan - Adopted 9/28/2010 *(continued)***

| Local Road Projects | | | | | |
|---|---|---|---|---|---|
| **Project** | | **Limits** *(from - to)* | **Timing**[1] | **Cost**[2] *(in millions)* | **General Location** |
| **23** | Tymber Creek Rd - widen to 4 lanes | Peruvian Way to Airport Rd | 2016-2020 | **$10.0** | Ormond Beach |
| **47** | Saxon Blvd - widen to 6 lanes | Enterprise Rd to I-4 | 2016-2020 | **$7.8** | Orange City |
| **28** | Hand Ave - widen to 4 lanes | Williamson Blvd to Nova Rd | 2016-2020 | **$15.0** | Ormond Beach |
| **52** | Howland Blvd - widen to 4 lanes | Providence Blvd to Elkcam Blvd | 2016-2020 | **$13.0** | Deltona |
| **54** | Graves Ave - widen to 4 lanes | Veterans Memorial Pkwy to SR 472 | 2016-2020 | **$3.0** | Orange City |
| **66** | Westside Beltway/Kepler Rd - widen to 4 lanes | SR 44 to US 92 | 2016-2020 | **$16.5** | DeLand |
| **71** | Intersection Improvements | Orange Camp Rd to MLK Blvd | 2016-2020 | **$2.5** | DeLand |
| **60** | Intersection Improvements | Howland Blvd to Providence Blvd | 2016-2020 | **$2.5** | Deltona |
| **63** | Intersection Improvements | Saxon Blvd to Enterprise Road | 2016-2020 | **$2.5** | Orange City |
| **50** | Rhode Island Ave Ext as 2 lane with overpass @ I-4 | Veterans Memorial Pkwy to Normandy Blvd | 2021-2025 | **$15.0** | Orange City/Deltona |
| **27** | Williamson Blvd – widen to 4 lanes | LPGA Blvd to Hand Ave | 2021-2025 | **$10.0** | Daytona Beach |
| **33** | Airport Rd - widen to 4 lanes | Sabal Creek to Creekside Middle School | 2021-2025 | **$8.4** | Port Orange |
| **30** | Tymber Creek Rd - extend as 2 lane road | SR 40 to LPGA Blvd | 2021-2025 | **$18.0** | Ormond Beach |
| **21** | Williamson Blvd - extend as 4 lane road | Airport Rd to Pioneer Trail | 2021-2025 | **$9.3**[3] | Port Orange |
| **43** | Westside Beltway/Kentucky Ave - widen to 4 lanes | Graves Ave to SR 472 | 2021-2025 | **$4.0** | Orange City |
| **44** | Westside Beltway/VMP - realign existing facility | Veterans Memorial Pkwy to Kentucky Ave | 2021-2025 | **$1.9** | Orange City |
| **45** | Westside Beltway/VMP - widen to 4 lanes | Graves Ave to Harley Strickland Blvd | 2021-2025 | **$15.0** | Orange City |
| **68** | Beresford Ave - extend road | Kepler Rd to SR 44 | 2021-2025 | **$4.8** | DeLand |
| **70** | Plymouth Ave - widening to 3 lanes | SR 15A to US 17/92 | 2021-2025 | **$7.5** | DeLand |
| **65** | Beresford Ave - extend road | Blue Lake Ave to Kepler Rd | 2021-2025 | **$5.4** | DeLand |
| **67** | Westside Beltway/Martin Luther King - widen to 4 lanes | Orange Camp Rd to SR 472 | 2026-2030 | **$10.2** | DeLand |
| **31** | Madeline Ave - extend as 2 lane road | Sauls Rd to US 1 | 2026-2030 | **$7.0** | Port Orange |
| **48** | Westside Pkwy - extend road | French Ave to Rhode Island Ave ext. | 2026-2030 | **$7.5** | Orange City |

**Table 8.2 - Volusia TPO 2035 Cost-Feasible Transportation Plan - Adopted 9/28/2010 *(continued)***

| Local Road Projects | | | | | |
|---|---|---|---|---|---|
| | **Project** | **Limits** *(from - to)* | **Timing**[1] | **Cost**[2] *(in millions)* | **General Location** |
| **38** | Williamson Blvd - extend road | SR 44 to SR 442 | 2026-2030 | **$27.6** | New Smyrna Beach |
| **53** | Providence Blvd – widen to 4 lanes | Tivoli Dr to Doyle Rd | 2026-2030 | **$18.0** | Deltona |
| **55** | Saxon Blvd Extension - extend road | SunRail station to Westside Pkwy | 2026-2030 | **$3.6** | Orange City |
| **57** | Saxon Blvd Extension - extend road | Westside Parkway to US 17/92 | 2026-2030 | **$7.8** | Orange City |
| **58** | Dirksen Dr - widen to 4 lanes | US 17/92 to I-4 | 2026-2030 | **$12.0** | DeBary |
| **42** | Colony Park Rd - extend as 2 lane road | Current terminus (SR 44) to Pioneer Trail | 2026-2030 | **$4.2** | New Smyrna Beach |
| **22** | Dunn Ave - widen to 4 lanes | Williamson Blvd to Clyde Morris Blvd | 2026-2030 | **$12.0** | Daytona Beach |
| **24** | Williamson Blvd - widen to 4 lanes | Beville Rd to Pavilion Shopping Center | 2026-2030 | **$25.8** | Daytona/Port Orange |
| **25** | Taylor Rd - widen to 4 lanes | Summertrees Rd to Forest Preserve Blvd | 2026-2030 | **$6.0** | Port Orange |
| **26** | Hand Ave Extension - extend road | Williamson Blvd to Tymber Creek Rd ext. | 2026-2030 | **$17.5** | Daytona Beach/Ormond Beach |
| **34** | Airport Rd - widen to 4 lanes | Creekside Middle School to Pioneer Trail | 2026-2030 | **$8.4** | Port Orange |
| **37** | Main Street Bridge Replacement | To Be Determined | 2026-2030 | **$50.0** | Daytona Beach |
| **64** | Intersection Improvements | Saxon Blvd – Normandy Blvd | 2026-2030 | **$2.5** | Deltona |
| **59** | Intersection Improvements | Catalina Blvd – Howland Blvd | 2026-2030 | **$2.5** | Deltona |
| **61** | Intersection Improvements (City of Deltona) | Normandy Blvd – Deltona Blvd | 2026-2030 | **$2.5** | Deltona |
| **62** | Intersection Improvements | Providence Blvd– Doyle Rd | 2026-2030 | **$2.5** | Deltona |
| **29** | Dunn Ave Extension | Tomoka Farms Rd to LPGA Blvd | 2031-2035 | **$25.0** | Daytona Beach |
| **32** | Madeline Ave - widen to 4 lanes | Williamson Blvd to Clyde Morris Blvd | 2031-2035 | **$7.5** | Port Orange |
| **35** | LPGA Blvd - widen to 4 lanes | SR 5A/Nova Rd to US 1 | 2031-2035 | **$9.9** | Holly Hill |
| **51** | Westside Pkwy - extend road | McGregor Rd to Hamilton Ave | 2031-2035 | **9.0** | DeLand/ Orange City |
| **69** | Westside Beltway/Kepler Rd - extend road | SR 44 to Orange Camp Rd | 2031-2035 | **$16.2** | DeLand |
| **41** | Southeast Volusia North-South Connector Rd | Old Mission Rd (@ Josephine Av) to Volco Rd | 2031-2035 | **$42.0** | Edgewater |

**Table 8.2 - Volusia TPO 2035 Cost-Feasible Transportation Plan - Adopted 9/28/2010 *(continued)***

| Local Road Projects | | | | | |
|---|---|---|---|---|---|
| **Project** | | **Limits** *(from - to)* | **Timing**[1] | **Cost**[2] *(in millions)* | **General Location** |
| **20** | Madeline Ave - extend road w/ bridge over I-95 | Williamson Blvd to Tomoka Farms Rd | 2031-2035 | **$13.4** | Daytona Beach/Port Orange |
| **39** | Williamson Blvd - extend as 2 lane road | Pioneer Trail to SR 44 | 2031-2035 | **$15.6** | New Smyrna Beach |
| **56** | Doyle Rd - widen to 4 lanes | Providence Blvd to SR 415 | 2031-2035 | **$36.0** | Deltona |
| **46** | Westside Pkwy - extend road | Rhode Island Ext to Donald Smith Blvd | 2031-2035 | **$13.5** | Orange City |
| **49** | Providence Blvd - widen to 4 lanes | Howland Blvd to Fort Smith Blvd | 2031-2035 | **$14.4** | Deltona |
| **36** | Knox Bridge Replacement | To Be Determined | 2031-2035 | **$25.0** | Ormond-by-the-Sea |
| | | | **Local Total** | **$627.2** | |

[1] *The estimated timing for the construction of projects was developed by Volusia County staff.*
[2] *Project costs are presented in 2009 values.*
[3] *Project cost was modified in February 2011.*

**Figure 8-1 Cost-Feasible Projects**

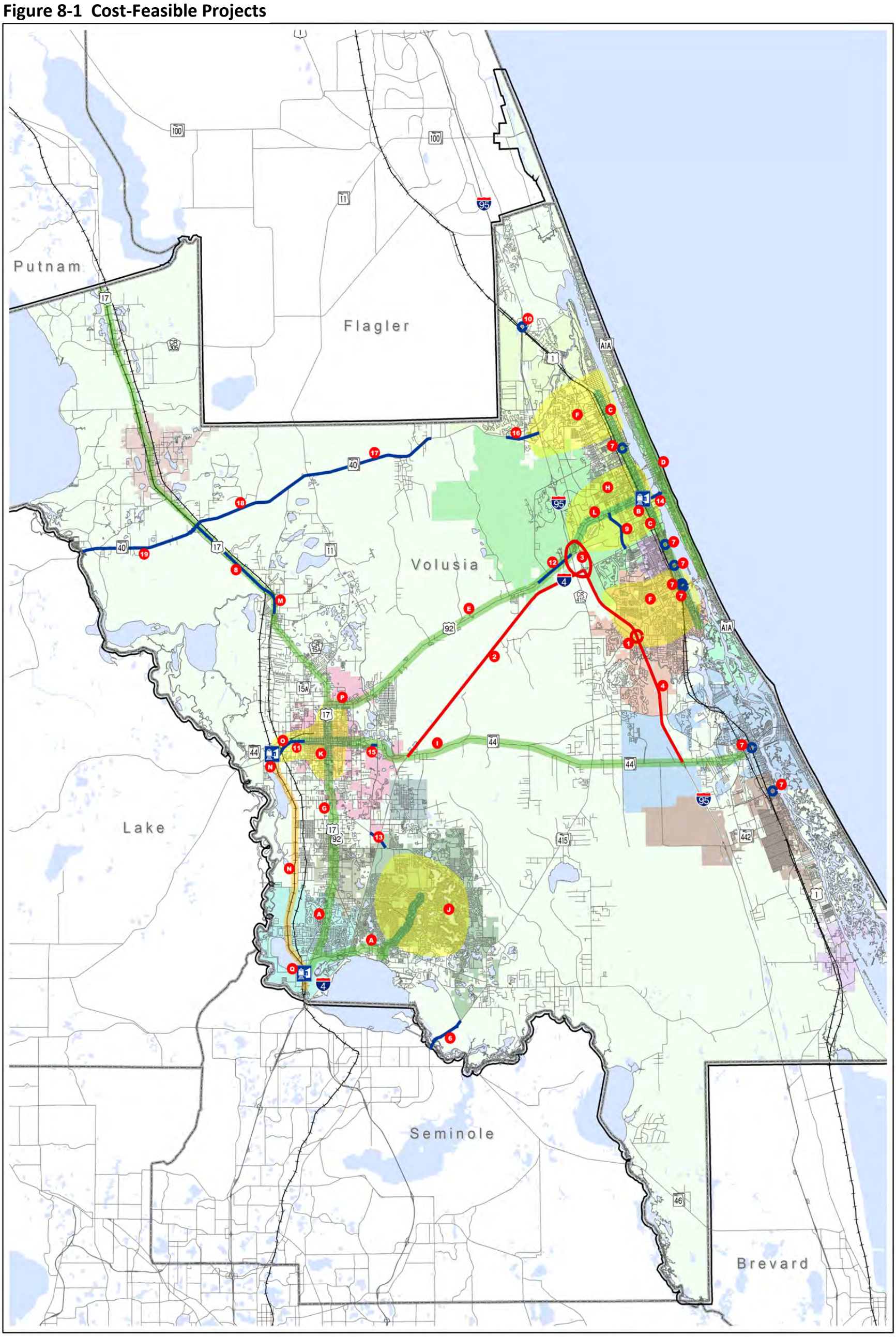
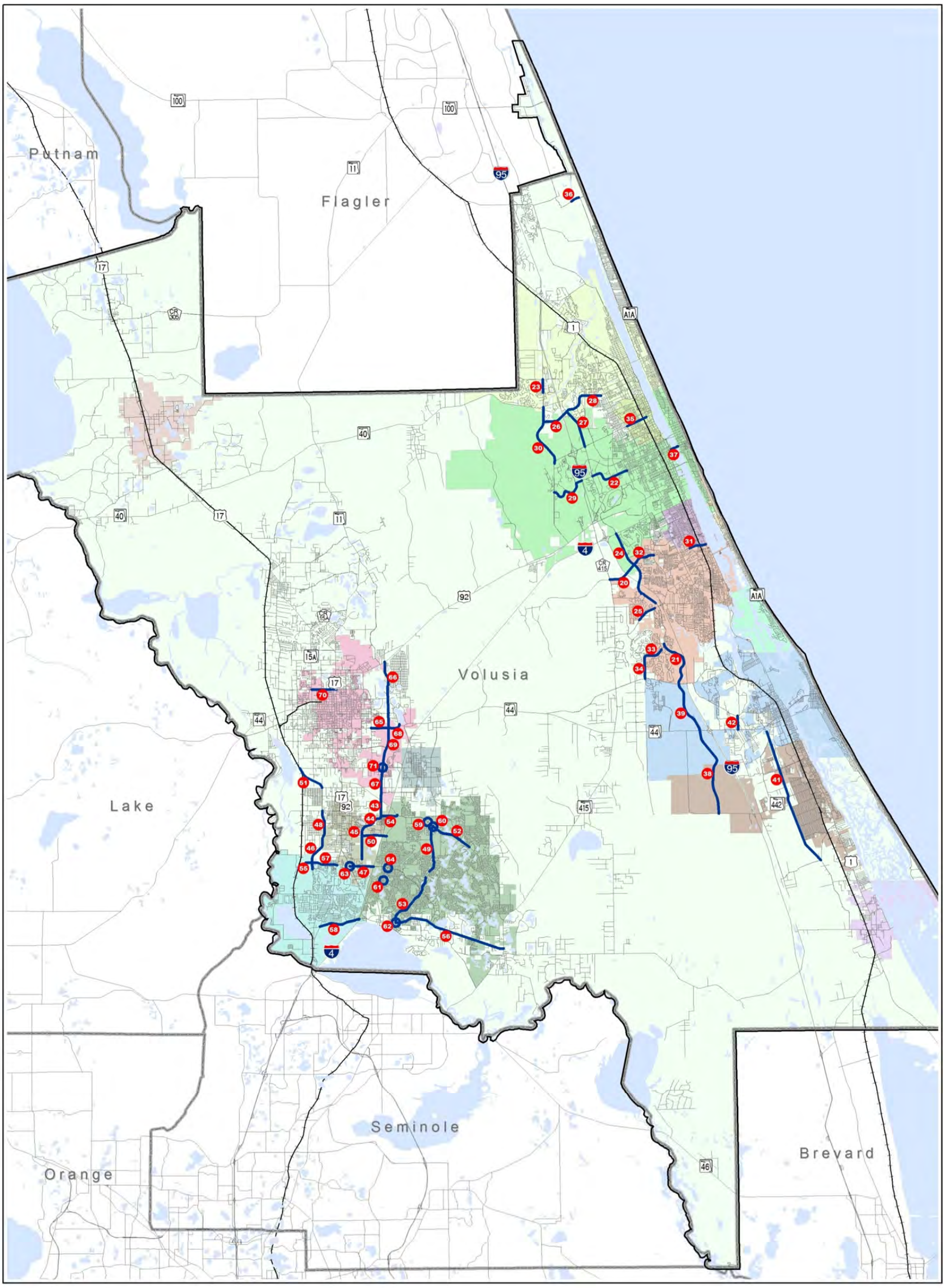
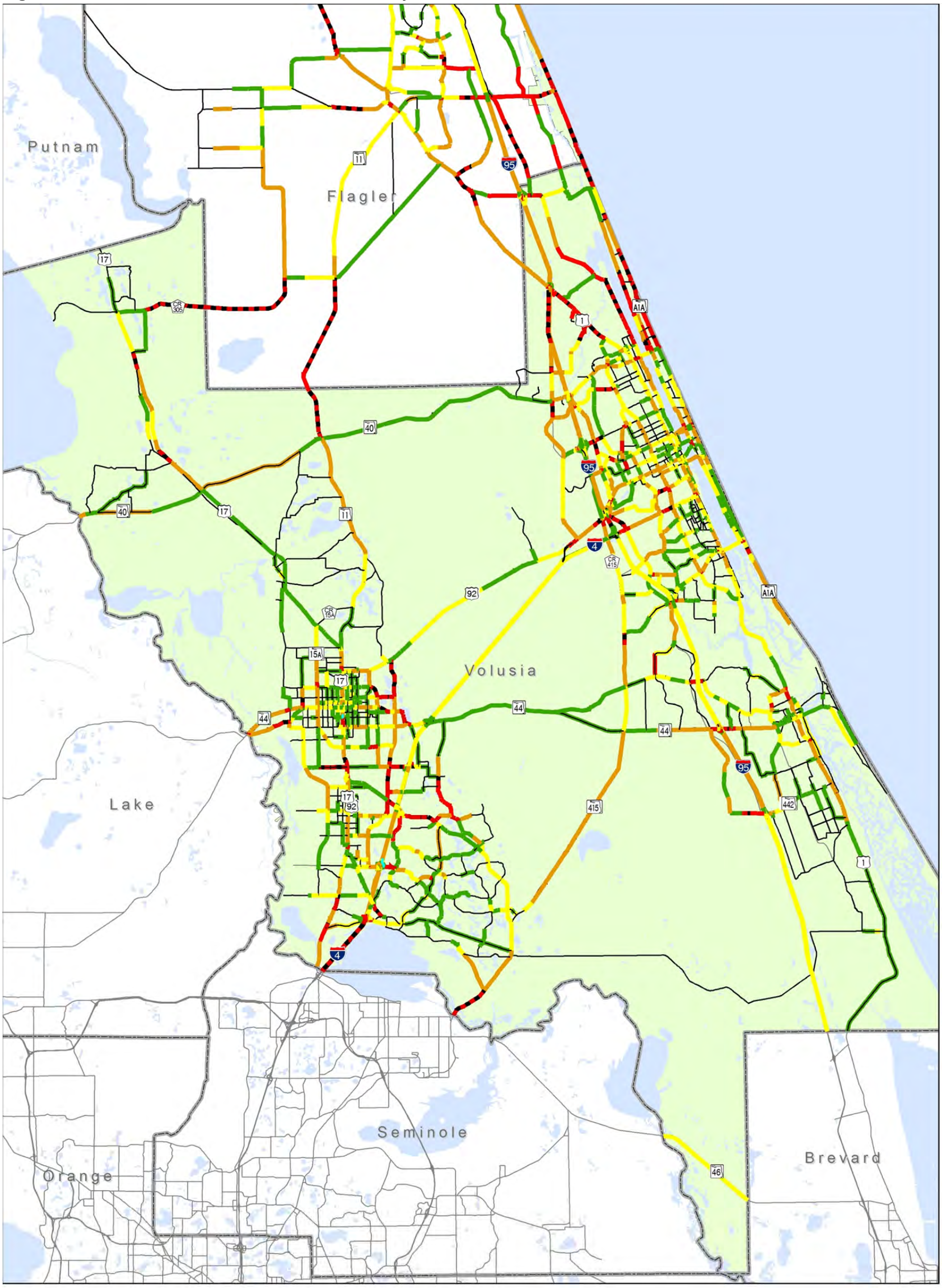


**Figure 8-2 Local Road Projects**




**Volusia TPO**
**2035 Long-Range Transportation Plan**
**Local Road Projects**

**Figure 8-3  2035 Traffic on Cost-Feasible Roadway Network**



## Unfunded Transportation Needs

Chapter 4 of the Metropolitan Planning Organization Program Management Handbook provides guidance for developing long-range transportation plans. This handbook states that MPOs and the FDOT have agreed that all plans will include information regarding "unmet regional and statewide needs." Like many areas around the nation, transportation demands within the Volusia TPO planning area continue to outpace the funding available for transportation project construction and maintenance. Given the limited availability of funds, allocating financial resources necessary to upgrade and maintain the transportation system continues to present a challenge to planning officials.

The challenge faced by planning organizations, however, is how to define a transportation system "need." The Volusia TPO agreed to the following definition: *A project and/or system enhancement, currently unfunded, that addresses an unmet trip destination or transportation system provision that cannot reasonably be met within current plans and/or construction schedules and would improve the ability of the TPO and member local governments to meet or exceed the stated goals of the LRTP.*

Additionally, the following criteria were identified to evaluate projects to be included in the 2035 LRTP and identified as a need:

1. **Considers the mobility needs of all user groups and is safe and secure**
   - Resolves mobility issues for all user groups (Does the project or a companion project address the mobility needs for all users?)
   - Enhances safety (Does it minimize, remove, or eliminate a safety concern? Does the project introduce any new concerns?)
2. **Contributes to the economic vitality of the region and provides a sustainable solution**
   - Supports commercial or freight activity (part of a designated truck route)
   - Address existing issues before future
   - ITS/Traffic Operations vs. lane additions
   - Protects (or minimizes the impact to) the environment
3. **Preserves and enhances existing urban areas and anticipates future needs**
   - Project supports infill opportunities
   - Project is part of an approved/adopted plan
   - Serves existing urbanized/built areas
4. **Promotes a wide range of transportation options integrated with the surrounding community**
   - Creates/promotes transportation choices
5. **Effectively uses financial resources and improves the quality of life for residents**
   - Reduces congestion (increases mobility) on a facility operating at least 20% above capacity
   - Offers a cost beneficial option to enhancing mobility
   - Supports development efforts of local community

Table 8.3 lists the transportation improvement projects that were identified and met the above stated criteria, but were not included in the *Volusia TPO 2035 Long Range Transportation Plan* due to financial constraints.

**Table 8.3 Unmet Transportation Needs**

| Facility | Sponsor | Improvement | From | To |
|---|---|---|---|---|
| **SIS Facilities** | | | | |
| SR 600/SR 15 (US 17/92) | FDOT | Widen to 8 lanes | SR 472 | SR 15A/Taylor Rd |
| I-95 | FDOT | Widen to 6 lanes | SR 44 | Brevard County Line |
| **Non-SIS Highways** | | | | |
| Park Ave | Edgewater | Widen to 4 lanes | ParkTowne Industrial Center | Old Mission Rd |
| SR 44 | DeLand | Widen to 4 Lanes | Interstate 4 | Kepler Rd |
| North Entrance DeLand Airport Industrial Park | DeLand | New 2 lane access road; SR 11 improvements | SR 11 | Industrial Dr |
| Madeline Ave | Daytona Beach | Roadway extension | Tomoka Farms Rd | LPGA Blvd (@ US 92) |
| **Enhancements** | | | | |
| Orange Ave | Daytona Beach | Streetscape/ enhance | Nova Rd | Ridgewood Ave |
| US 92 | Daytona Beach | Streetscape/ enhance | Nova Rd | Lincoln St |
| **Bike-Pedestrian-Trail Projects** | | | | |
| East West Neighborhood Mobility Corridor Phase I | DeLand | Multi-use trail | Old New York Ave | Daytona State College DeLand Campus (Beresford Rd Extension) |
| East West Neighborhood Mobility Corridor Ph. II | DeLand | Overpass | Overpass Kepler Rd | Overpass Kepler Rd |
| DeLand Greenway | DeLand | Multi-use trail | Minnesota Ave and Garfield Ave's | US 92 (International Speedway Blvd |
| Euclid Ave Improvements | DeLand | Repair, replace and construct sidewalks and pave the roadway shoulders; install signage to facilitate bicycle use | SR 15A | Ruby Ave |
| Cross-County Trail | New Smyrna Beach | Multi-use trail | Sugar Mill Dr | Venetian Bay |
| Airpark Rd | Edgewater | Sidewalks | SR 442 | 10th St |
| US 1 | Edgewater | Sidewalks | North City Limit | Volco Rd |
| Multi-use Trail | Edgewater | Multi-use trail | I-95 | Park Ave |
| Deltona Trail | Deltona | Multi-use trail | Eustace Ave | Doyle Rd |

**Table 8.3 Unmet Transportation Needs *(continued)***

| Facility | Sponsor | Improvement | From | To |
|---|---|---|---|---|
| **Multi-Modal Amenities** | | | | |
| Bicycle Lockers | DeLand | Install bicycle lockers | DeLand Intermodal Terminal | NA |
| Bus Shelters with Bicycle Lockers | DeLand | Construct east bound and west bound bus shelters with bicycle lockers | US 92 | Big John Dr |
| Bus Shelters with Bicycle lockers | DeLand | Construct bus shelters with bicycle lockers at major bus stops | Justified by ridership | |
| **Park and Ride Lots** | | | | |
| Western Beltway Park and Ride facilities with Bus Shelters and associated Bus Transit | DeLand | Install park and ride facilities and bus shelters; provide bus transit to and from the facilities | All exits of the Western Beltway | |

# Chapter 9 LRTP Amendment Procedure

## Introduction

During the development of the *2025 Long Range Transportation Plan (LRTP),* the Volusia Transportation Planning Organization (TPO) adopted an official procedure for amending the plan. This section of the 2035 LRTP outlines that procedure, which has been carried forward in this effort. It should be noted, however, that the Volusia TPO Board retains the authority to bypass this procedure and amend the long-range transportation plan as necessary to comply with the administrative requirements of either the federal or state governments.

## LRTP Amendment Procedure

The process for amending the adopted *Volusia TPO 2035 Long Range Transportation Plan* is established as follows:

1. Amendments that add a project(s) to the adopted long-range transportation plan must include a source of funding to pay for the proposed project. If the proposed amendment is based on a Congressional Earmark, it must be a funded earmark.
2. Amendments to the long-range transportation plan may be requested for consideration by the TPO two times annually, at the TPO's May and November meetings.
3. Notification of an amendment shall be requested in writing, and shall be addressed to the TPO Chairperson with two (2) additional copies for TPO staff.
4. Projects subject to the amendment request and review process include:
    a. Any transportation project, funded either entirely, or in part, by federal or state funds, that is proposed to be deleted, substituted, or added to the adopted long-range transportation plan.
    b. Any transportation project of regional significance not involving federal funds must come before the TPO Board for action prior to that project being deleted, substituted, or added to the adopted long-range transportation plan.
    c. Projects that are proposed to be added to the Needs Plan (which is not the adopted Cost-Feasible Plan) do not need to be fiscally constrained, and therefore, do not need to have any funding sources identified. However, amendments to add projects to the Needs Plan still must go through the technical review process.
5. Who may submit an amendment request:
    a. Amendment requests may be initiated by either a government or quasi-government agency such as the state, a city or county or, if applicable, a transportation or expressway authority.

b. Amendment requests originating from the private sector shall be sponsored by an effected local government of jurisdiction.

6. Who shall approve an amendment request:

   a. The Technical Coordinating Committee shall review the requested amendment based upon a technical evaluation of its merit and shall recommend approval or disapproval to the TPO Board.

   b. The Citizens' Advisory Committee shall review the requested amendment and shall recommend approval or disapproval to the TPO Board.

   c. The TPO Board shall consider the recommendations of its advisory committees and shall exercise final approval or disapproval of the amendment request.

7. Amendment requests shall describe the project and its location and shall include an analysis of the project impacts, as follows:

   a. Financial

      (1) Project capital costs subdivided according to preliminary engineering and design, right-of-way acquisition, and construction; and

      (2) Identification of funding source, time period, and impact on other projects.

   b. Traffic

      (1) Current year and future year analyses consistent with the adopted long-range transportation plan;

      (2) Annual average daily traffic (AADT) and peak-hour traffic volumes;

      (3) Directional traffic load on the roadway network; and

      (4) Level-of-service and roadway capacity.

   c. Environmental and social

      (1) Minimal, moderate, or major impact on wetlands displaced;

      (2) Minimal, moderate, or major impact on threatened and endangered species;

      (3) Minimal, moderate, or major impact on homes and businesses displaced; and

      (4) Minimal, moderate, or major impact on public facilities.

   d. Compatibility with all applicable local comprehensive plans and programs.

      (1) Existing and future land uses;

      (2) capital improvement programs; and

      (3) Transportation (traffic circulation and transit) elements.

   e. Compatibility with the TPO's adopted long-range transportation plan and the ECFRPC Strategic Regional Policy Plan.

f. Contribution to the implementation of a multi-modal transportation system.

(1) Potential for inclusion of future transit facilities; i.e. commuter rail, transit, exclusive bus lanes, etc.;

(2) Proximity to existing or proposed transit routes, transit centers, and/or multimodal facilities, and major activity centers; and

(3) Inclusion of transit passenger amenities.

8. Process of Evaluation:

a. The process for evaluating and approving or denying a proposed amendment will take a minimum of four months to complete. This process includes the following:

(1) A minimum of one month for the TPO staff to review the proposed amendment, make a sufficiency determination regarding the information provided by the applicant, and develop a justification analysis/summary of findings of the proposed amendment; and

(2) A minimum of one month for the Technical Coordinating Committee (TCC) and the Citizens' Advisory Committee (CAC) to review the proposed amendment and a minimum of one month to approve or deny the proposed amendment; a minimum of one month for the TPO Board to review the proposed amendment and a minimum of one month to approve or deny the proposed amendment. Under most circumstances, the proposed amendment will be placed on the TCC and CAC's agenda for approval or denial during the same month it is placed on the TPO's agenda for review.

b. The following checklist of evaluation criteria developed by the TPO will be utilized to evaluate each amendment request:

(1) Have the categories of information required by this rule been provided in sufficient detail?

(a) financial

(b) traffic

(c) environmental and social

(d) compatibility with local comprehensive plans

(e) compatibility with long-range transportation plan and strategic regional policy plan

(f) contribution to implementation of multi-modal transportation system

(2) Has an adequately-sized impact area been identified which includes the major arterials and collectors?

(3) Has the applicant used officially adopted level-of-service tables (FDOT) in preparing its report on traffic impacts?

(4) Has the applicant assumed various transportation projects, which may be of benefit to its project, to be funded and constructed in the immediate time period when there may be no commitments for doing so?

(5) Will the applicant prepare a mitigation plan for environmental (i.e., wetlands, threatened and endangered species, etc.) impacts?

(6) Has the applicant identified not only the project costs, but also the sources of funding?

(7) Has the applicant provided evidence of funding commitments, both from itself and other parties if involved?

(8) Does the project incorporate mobility improvements that address capacity or concurrency improvements?

(9) If it is a transit project, is it compatible with Votran's adopted Transit Development Plan?

(10) Does the project add to the connectivity of the current transportation system, and/or enhance the movement toward a seamless transportation system?

c. Within 30 days of receipt of the amendment request, the TPO staff will review the request to determine if it contains sufficient information upon which to base an analysis of the project.

(1) If the TPO staff finds that the amendment request contains insufficient information upon which to rule, the staff shall identify and request in writing from the applicant, prior to the expiration of the 30 day examination period, the additional information needed.

(2) If the TPO staff finds that the amendment request contains sufficient information upon which to rule, the staff shall notify the applicant in writing that the amendment request has been accepted for review.

d. Upon determination that the amendment request contains sufficient information upon which to rule, the TPO staff shall distribute copies of the amendment request to all members of the TPO Board and its advisory committees.

e. The applicant will present the amendment request and the TPO staff will present its justification analysis findings to the Technical Coordinating Committee and Citizens' Advisory Committee one month prior to the regularly scheduled TPO Board meeting. The applicant will be advised in writing by the TPO when the amendment request has been placed on the TPO Board meeting agenda.

f. The applicant will also present the amendment request and the TPO staff will present its justification analysis findings to the TPO, one month prior to the regularly scheduled

meeting at which the TPO Board will take formal action on the amendment request, approving or denying the request. In addition, a public hearing regarding the proposed amendment will be conducted during the TPO Board meeting at which the Board is presented with the proposed amendment for its initial review. Representatives of the applicant agency must be present at this meeting and prepared to answer all questions regarding the proposed amendment raised by the public, local government, and agency staff, and/or the members of the TPO Board. It is the responsibility of the amendment applicant agency to place a legal advertisement in the appropriate section of the Daytona Beach News-Journal to inform the general public of the public hearing. This legal advertisement must be published no later than seven calendar days before the scheduled public hearing.

Upon approval of the requested amendment, TPO staff, in coordination with FDOT District Five will initiate appropriate network changes to the Volusia TPO's long-range transportation plan. FDOT District Five will make all necessary changes to the Central Florida Regional Planning Model required as a result of the approval.