

## III. TRANSPORTATION ELEMENT

### PURPOSE

The purpose of the Transportation Element of the *City of New Smyrna Beach Comprehensive Plan* is to guide the City in developing a safe and efficient transportation system, based on the City's Future Land Use Plans, and consistent with the community goals and objectives as stated herein. Secondly, this element will help to ensure consistency among the transportation plans of New Smyrna Beach, Volusia County, and the State of Florida.

This element of the *City of New Smyrna Beach Comprehensive Plan* identifies a transportation system that is both technically sound and consistent with identified community goals and objectives. The remainder of this chapter consists of five (5) basic sections. The first section outlines the process and criteria used in developing a local transportation plan. The second section provides an inventory and analysis of the existing transportation system, and identifies the current deficiencies. The third section identifies roadway conditions that are expected to occur in the near future based on historical traffic growth and expected land development. Section four (4) outlines the community's goals and objectives for the local transportation system, setting forth the guidelines by which to plan future transportation improvements.

### STANDARDS

Transportation planning decisions must be closely coordinated with land use decisions. The improvement of existing roads, and the construction of new facilities, acts to change overall travel patterns, which may affect immediate individual land use decisions, and may influence entire land use patterns. Therefore, the Transportation Element must be closely coordinated with development of the Future Land Use Element, reflecting the access and travel needs of any proposed new or revised land uses.

### TRANSPORTATION PLANNING PROCESS

The methods used to develop the Transportation Element of the *City of New Smyrna Beach Comprehensive Plan* are part of a transportation planning process that should be a continuous effort. A general outline of this overall planning process is described by the following steps:

- a. Research previous transportation planning and analysis efforts;
- b. Identify and evaluate the current status of the transportation system;
- c. Identify community goals and objectives regarding transportation;
- d. Identify constraints imposed on the transportation system;
- e. Determine current and future transportation improvement needs;
- f. Propose alternative solutions;
- g. Evaluate and choose alternative solutions;
- h. Prepare a detailed implementation and funding plan;
- i. Implement the transportation plan; and
- j. Systematically review and update the transportation plan.

Steps "a" through "h" are embodied in the Transportation Element of the *Comprehensive Plan*, while steps "i" and "j" need to be standard policy of the City in order to implement an effective transportation planning process. This process needs to be ongoing and continuously recycling through the entire planning process in order to reflect constantly changing community needs.

### TRANSPORTATION SYSTEMS PLANNING PRINCIPLES

In preparing alternative potential transportation systems to serve projected travel demand, a number of general items should be considered. The broad categories of factors influencing local transportation planning include:

- existing facilities
- current and future land uses being served

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- local terrain
- financing
- travel characteristics of the local population
- travel patterns dictated by the character of the areas around the local planning area

In designing the actual transportation system, it is important to maintain flexibility both by providing alternative routes and travel modes, and by allowing for additions and modifications to the system. The following principles should be kept in mind while preparing the transportation plan:

- Provide many alternative travel paths, while keeping traffic conflicts to a minimum;
- Maintain system continuity, providing smooth and logical traffic flow patterns;
- Reflect land use access requirements;
- Consider public transit services, bicycle travel, and pedestrian safety;
- Pay special attention to freeways and interchanges;
- Consider one-way street systems;
- Provide for traffic signal coordination;
- Provide for future modification and expansions; and
- Ensure environmental compatibility.

## GOALS AND OBJECTIVES AS STANDARDS

The adopted community goals and objectives for the City of New Smyrna Beach, developed by the City and presented later in this element, act as local standards and criteria in the development of the New Smyrna Beach Transportation Plan. In particular, the objectives and policies present locally acceptable levels-of-service, right-of-way requirements, access provisions, and landscaping recommendations.

The subsequent analyses are based on generally accepted transportation analysis procedures and planning techniques. In addition, meetings were held with local staff and citizens to invite their opinions and comment. Specific criteria and definitions are presented in more detail in the portions of this element to which they are relevant. The final transportation plan is the result of a synthesis of the identified transportation-related needs and desires of the community of New Smyrna Beach.

## EXISTING SYSTEM AND TRAFFIC CONDITIONS

The first step in evaluating where the City wants to go with its transportation system is to determine where they are currently, thereby establishing a starting point for future planning.

This portion of the Transportation Element for the New Smyrna Beach area consists essentially of an inventory and analysis of the existing roadway system. For convenience, definitions of traffic-related terms are provided prior to the presentation of technical data. The information that this report is based on was obtained from local and state agencies.

## DEFINITIONS

In presenting the analysis and projections of existing and future traffic conditions in the New Smyrna Beach area, a number of technical terms and criteria specific to transportation planning are used. The following definitions apply to the methodology and procedures used in preparing the Transportation Element of the *City of New Smyrna Beach Comprehensive Plan*.

## FUNCTIONAL CLASSIFICATION

Roads are classified into various categories based on the land use environment they are located in, and the travel purposes they serve. The functional classifications shown in Table III-1 (presented later in this section) were derived from the *Volusia Transportation Planning Organization (TPO) 2000-2010 Federal Functional Classification and Urban Boundary* map dated July 18, 2005. General categories of land use environment that roads may be located in are Rural and Urban; and the general categories of travel service are Limited and Controlled Access Highway, Arterial, and Collector functions. The terms are defined in the following paragraphs.

- Rural - A class of roadway facility that generally serves low-density rural and suburban

areas, where the distances between signals are two (2) miles or greater. These facilities lack full access control, and usually have some development fronting directly on the highway. Vehicles enter and leave the highway at unsignalized intersections, or at parking facilities and driveways.

- Urban - A class of roadway facility that generally serves higher density urban and suburban areas, where the signalized intersection spacing is two (2) miles or less. These facilities generally have many more access points than rural highways, with a great deal of development fronting directly on the highway. With more frequent turning movements to and from urban highways, and quite often the presence of roadside parking, these facilities have a much lower capacity than rural highways.

Facilities serving primarily residential and commercial areas are generally classified as urban in character. Although there is much less direct access to land abutting these highways, there tend to be more frequent intersection control devices and higher turning movement volumes at roadway intersections.

- Limited and Controlled Access Highways - Freeways and expressways represent the highest class of these highways. Such Highways are designed to carry high volumes of traffic at high speeds and levels-of-service as is practicable. Access is strictly limited to interchanges, which are carefully located and designed for maximum safety. Longer distance trips, including goods movement, use such facilities. Other highways are also designed to carry longer distance traffic between important activity and population centers, but these highways are designed with some measure of access control through limits on driveway locations and spacing of intersections.
- Arterial Roads - Primarily provide traffic movement services, serving longer distance trips and traffic traveling through a given area. Vehicles on these facilities generally operate at higher speeds; and there is not a great deal of direct access to abutting properties. Turning movements to and from these facilities occur primarily at roadway intersections.
- Collector Roads - Provide both land access and traffic circulation service within residential, commercial, and industrial areas. Their primary function is to move traffic from local roads and streets to the arterial highway system, while providing some direct access to abutting property. While not dominated by signalized intersection traffic controls, these facilities do tend to have more frequent intersection controls, such as stop and yield signs.
- Local Roads - These roads provide for direct access to abutting land and for local traffic movements.

## LEVELS-OF-SERVICE

The quality of traffic operation on a roadway facility is measured in terms of levels-of-service (LOS). These levels-of-service are related to the operating characteristics of a facility and the amounts of traffic that can be accommodated. The various levels-of-service are defined by the 1985 *Highway Capacity Manual*, as follows:

- LOS "A" - Represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist is excellent.
- LOS "B" - In the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS "A." The level of comfort and convenience provided is somewhat less than at LOS "A," because the presence of others in the traffic stream begins to affect individual behavior.
- LOS "C" - In the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others

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in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level. This LOS is generally selected for design of new facilities.

- LOS "D" - Represents high-density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- LOS "E" - Represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle to "give way" to accommodate such maneuvers. Comfort and convenience are extremely poor, and driver frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.
- LOS "F" - Used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount, which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable.

These levels-of-service are related to facility type and traffic volume in the Florida Department of Transportation (FDOT) *2009 Quality/Level of Service Handbook*.

## INVENTORY

Table III-1 provides a summary of the road system shown on Maps III-1 and III-2, listed by jurisdiction. Each road is broken up into segments that are continuous in character.

Map III-1 has been prepared to present a summary of the existing peak hour, peak direction levels-of-service in the New Smyrna Beach planning area for the year 2009). This map summarizes the current operating conditions of the major thoroughfares under consideration, freight rail lines, and intermodal terminals.

Map III-1 has been prepared to present the inventory of existing road system, including collector roads, arterial roads, and limited and controlled access facilities in the New Smyrna Beach planning area for the year 2009). This map summarizes the functional classification of the major thoroughfares under consideration.

Map III-3 illustrates the 2010 public transit system, including public transit routes, public transit terminals and transfer stations, and public transit trip generators and attractors.

Map III-4 identifies the significant bicycle and pedestrian ways.

Map III-5 displays the New Smyrna Beach Municipal Airport, including clear zones.

Map III-6 denotes the designated local and regional transportation facilities critical to the evacuation of the coastal population prior to an impending natural disaster.

Map III-7 provides a summary of the projected levels-of-service in the New Smyrna beach planning area for the year 2025.

Map III-8 provides an inventory of the existing and projected roadway system, including collector roads, arterial roads, and limited and controlled access facilities in the New Smyrna Beach Planning area for the year 2025.

## EXISTING ROADWAY CONDITIONS

The New Smyrna Beach planning area contains essentially two (2) separate study areas: (1) a peninsula of land along the beachside of the Indian River and (2) the mainland areas that front on the Indian River. These two (2) areas are connected by State Road 44 (North Causeway) and State Road A1A (South

Causeway).

### **LOCAL TRAFFIC CHARACTERISTICS**

The New Smyrna Beach roadway network must be able to support the demands for local traffic circulation and land access, as in other medium-sized communities. However, the network must also be able to support inter-city traffic between Daytona Beach and Titusville, and a large daily influx of beach-bound traffic.

Existing traffic conditions are summarized on Maps III-1 and III-2 and Table III-2. Depending upon the locally acceptable levels-of-service, as indicated in the goals and objectives portion of this element, these facilities may need to be improved.

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Table III-1 Roadway Right-of-Way and Functional Classification in Planning Area, 2010

Roadway	Segment	2010	2010	2010	2010	2010	2009	2007	2009	Service Volume at Adopted LOS
		Number of Lanes	Existing ROW <sup>1</sup> (feet)	Future ROW (feet)	Functional Classification <sup>2</sup>	Acceptable Level-of-Service	AADT	Peak Hour Volume	Level-of-Service	
<b>State Highways</b>										
Interstate 95 / State Road 9	State Road 421 (Dunlawton Avenue) to State Road 44	4	350	400	Urban Interstate	C	37,432	3,597	C	59,800
Interstate 95 / State Road 9	State Road 44 to South City Limits	4	350	400	Urban Interstate	C	32,000	3,075	B	59,800
US Highway 1 / State Road 5 (North Dixie Freeway)	North City Limits to Industrial Park Avenue	4	128	Existing	Urban Principal Arterial	D	20,900	2,042	B	64,300
US Highway 1 / State Road 5 (North Dixie Freeway)	Industrial Park Avenue to County Road 4093 (Turnbull Bay Road)	4	100	Existing	Urban Principal Arterial	D	11,600	1,133	C	36,700
US Highway 1 / State Road 5 (North Dixie Freeway)	County Road 4093 (Turnbull Bay Road) to County Road 4089 (Wayne Avenue)	4	100	Existing	Urban Principal Arterial	D	26,000	2,540	D	36,700
US Highway 1 / State Road 5 (North Dixie Freeway)	County Road 4089 (Wayne Avenue) to Business 44 (Canal Street)	4	100	Existing	Urban Principal Arterial	D	26,000	2,540	D	36,700
US Highway 1 / State Road 5 (South Dixie Freeway)	Business 44 (Canal Street) to State Road 44 (Lytle Avenue)	4	100	Existing	Urban Principal Arterial	D	27,000	2,638	D	36,700
US Highway 1 / State Road 5 (South Dixie Freeway)	State Road 44 (Lytle Avenue) to 10th Street / South City Limits	4	100	Existing	Urban Principal Arterial	D	27,000	2,638	D	36,700
State Road A1A/South Causeway	State Road 44 (Live Oak Street) to South Peninsula Avenue	4	200	Existing	Urban Principal Arterial	D	30,000	2,931	B	36,700
State Road 44A1A (East 3rd Avenue)	South Peninsula Avenue to County Road 4133 (Saxon Drive)	4	100	Existing	Urban Principal Arterial	D	26,000	2,540	D	36,700
State Road 44A1A (East 3rd Avenue)	County Road 4133 (Saxon Drive) to East 76th Avenue	4	100	Existing	Urban Principal Arterial	D	18,300	1,788	B	34,865
State Road 44	West City Limits to Airport Road	4	300	Existing	Urban Principal Arterial	D	18,200	1,778	B	45,400
State Road 44	Airport Road to Williamson Boulevard	4	300	Existing	Urban Principal Arterial	D	18,200	1,778	B	45,400
State Road 44	Williamson Boulevard to Interstate 95 / State Road 9	4	300	Existing	Urban Principal Arterial	D	18,800	1,837	B	45,400
State Road 44	Interstate 95 / State Road 9 to Sugar Mill Drive	4	200	Existing	Urban Principal Arterial	D	25,500	2,491	C	36,700
State Road 44	Sugar Mill Drive to Business 44 (Canal Street)	4	200	Existing	Urban Principal Arterial	D	25,500	2,491	C	36,700
State Road 44	Business 44 (Canal Street) to South Myrtle Avenue	4	100	Existing	Urban Principal Arterial	D	22,000	2,149	C	36,700
State Road 44 (Lytle Avenue)	South Myrtle Avenue to US Highway 1 / State Road 5 (South Dixie Freeway)	4	200	Existing	Urban Principal Arterial	D	22,000	2,149	B	36,700
State Road 44 (Lytle Avenue)	US Highway 1 / State Road 5 (South Dixie Freeway) to State Road 44 (Live Oak Street)	4	100	Existing	Urban Principal Arterial	D	22,000	2,149	B	36,700
State Road 44 (North Causeway)	State Road 44 (North Riverside Drive) to Barracuda Boulevard	2	200	Existing	Urban Minor Arterial	D	9,200	899	C	16,500
State Road 44 (North Causeway)	Barracuda Boulevard to East End of Bridge	2	200	Existing	Urban Minor Arterial	D	9,200	899	C	16,500
Business 44 (Canal Street)	State Road 44 to County Road 4118 (Pioneer Trail)	2	100	Existing	Urban Minor Arterial	D	12,200	1,192	D	16,500
Business 44 (Canal Street)	County Road 4118 (Pioneer Trail) to US Highway 1 / State Road 5 (Dixie Freeway)	2	70	Existing	Urban Minor Arterial	D	12,500	1,221	D	16,500
<b>County Roads</b>										
County Road A1A (South Atlantic Avenue)	East 6th Avenue to East 27th Avenue	4	100	Existing	Urban Principal Arterial	E	19,070	1,863	C	35,010
County Road A1A (South Atlantic Avenue)	East 27th Avenue to South City Limits	4	100	Existing	Urban Principal Arterial	E	9,030	882	C	15,890
County Road 4089 (Enterprise Avenue)	County Road 4118 (Pioneer Trail) to County Road 4089 (Halleck Street)	2	100	Existing	Urban Collector	E	6,970	681	C	12,710
County Road 4089 (Halleck Street)	County Road 4089 (Enterprise Avenue) to County Road 4089 (Wayne Avenue)	2	50	Existing	Urban Collector	E	5,940	580	C	12,710
County Road 4089 (Wayne Avenue)	County Road 4089 (Halleck Street) to US Highway 1 / State Road 5 (North Dixie Freeway)	2	60	Existing	Urban Collector	E	6,200	606	D	12,710
County Road 4093 (Turnbull Bay Road)	County Road 4118 (Pioneer Trail) to Williams Road	2	50	Existing	Urban Collector	E	2,090	204	B	12,710
County Road 4093 (Turnbull Bay Road)	Williams Road to United Drive	2	50	Existing	Urban Collector	E	3,480	340	B	12,710
County Road 4093 (Turnbull Bay Road)	United Drive to Industrial Park Avenue	2	100	Existing	Urban Collector	E	4,030	394	B	12,710
County Road 4093 (Turnbull Bay Road)	Industrial Park Avenue to Fairgreen Avenue	2	60	Existing	Urban Collector	E	3,460	338	B	12,710
County Road 4093 (Turnbull Bay Road)	Fairgreen Avenue to US Highway 1 / State Road 5 (North Dixie Freeway)	2	60	Existing	Urban Collector	E	4,790	468	C	12,710
County Road 4118 (Pioneer Trail)	Airport Road to Williamson Boulevard	2	66	120	Urban Collector	E	2,700	264	B	12,710
County Road 4118 (Pioneer Trail)	Williamson Boulevard to County Road 4093 (Turnbull Bay Road)	2	66	120	Urban Collector	E	2,700	264	B	12,710
County Road 4118 (Pioneer Trail)	County Road 4093 (Turnbull Bay Road) to Sugar Mill Drive	2	66	100	Urban Collector	E	2,050	200	A	12,710
County Road 4118 (Pioneer Trail)	Sugar Mill Drive to Williams Road	2	66	100	Urban Collector	E	2,680	262	B	12,710
County Road 4118 (Pioneer Trail)	Williams Road to Enterprise Avenue	2	66	100	Urban Collector	E	3,900	381	B	12,710
County Road 4118 (Pioneer Trail)	Enterprise Avenue to Jungle Road	2	90	Existing	Urban Collector	E	9,410	919	A	12,710
County Road 4118 (Pioneer Trail)	Jungle Road to Business 44 (Canal Street)	2	60	80	Urban Collector	E	2,080	203	C	12,710
County Road 4133 (Saxon Drive)	State Road A1A (East 3rd Avenue) to East 16th Avenue	2	Prescriptive	Existing	Urban Collector	E	5,750	562	C	9,180
County Road 4133 (Saxon Drive)	East 16th Avenue to East 27th Avenue	2	75	Existing	Urban Collector	E	3,160	309	B	9,180
County Road 4133 (Saxon Drive)	East 27th Avenue to South City Limits	2	Prescriptive	Existing	Urban Collector	E	2,860	279	B	9,180
County Road 4137 (Mission Drive)	County Road 4137 (Old Mission Road) to County Road 4137 (Old Mission Road) / Mission Drive	2	40	Existing	Urban Collector	E	800	78	A	9,180
County Road 4137 (Old Mission Road)	State Road 44 to County Road 4137 (Mission Drive)	2	30	66	Urban Collector	E	738	72	A	9,180
County Road 4137 (Old Mission Road)	County Road 4137 (Mission Drive) to Josephine Street	4	100	Existing	Urban Collector	E	13,630	1,332	C	9,180
County Road 4137 (Old Mission Road)	Josephine Street to County Road 4136 (Park Avenue)	2	70	100	Urban Collector	E	8,040	786	D	9,180
North Airport Road	County Road 4118 (Pioneer Trail) to Luna Bella Lane	2	100	Existing	Urban Local	E	0	0	N/A	unknown
North Airport Road	Luna Bella Lane to State Road 44	2	100	Existing	Urban Local	E	0	0	N/A	unknown
North Glencoe Road	County Road 4118 (Pioneer Trail) to State Road 44	2	30	Existing	Urban Local	E	1,240	121	A	9,180
South Glencoe Road	State Road 44 to Paige Avenue	2	60	Existing	Urban Local	E	3,640	356	B	9,180
South Glencoe Road / Taylor Road	Paige Avenue to County Road 4137 (Old Mission Road)	2	60	Existing	Urban Local	E	1,330	130	A	9,180
Josephine Street	County Road 4137 (Old Mission Road) to Tatum Boulevard	2	60	120	Urban Collector	E	6,370	622	D	12,710
Mission Drive	State Road 44 to County Road 4137 (Old Mission Road) / Mission Drive	4	80	Existing	Urban Collector	E	15,200	1,485	C	9,180
Sugar Mill Drive	County Road 4118 (Pioneer Trail) to State Road 44	2	100	Existing	Urban Local	E	2,760	270	B	12,710
Williams Road	County Road 4093 (Turnbull Bay Road) to Mooneyham Drive	2	100	Existing	Urban Local	E	1,270	124	A	9,180
Williams Road	Mooneyham Drive to County Road 4118 (Pioneer Trail)	2	60	Existing	Urban Local	E	1,430	140	A	9,180

Notes: N/A = Not Available

<sup>1</sup> New Smyrna Beach Plat Sheets; Daniel W. Cory, Florida Registered Surveyor #2027

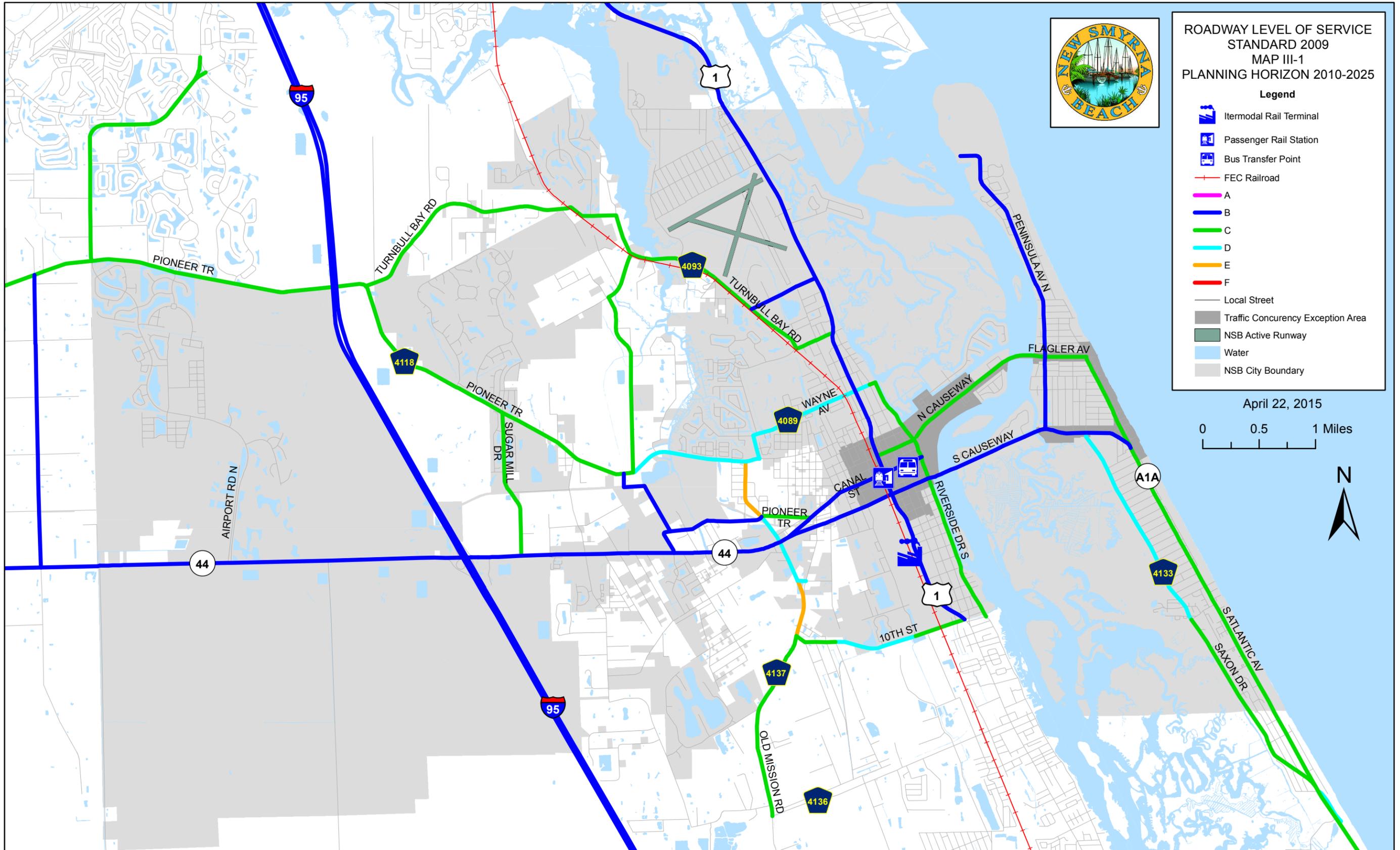
<sup>2</sup> Federal Functional Classification

Source: Volusia Transportation Planning Organization (TPO) 2000-2010 Federal Functional Classification and Urban Boundary map, July 18, 2005

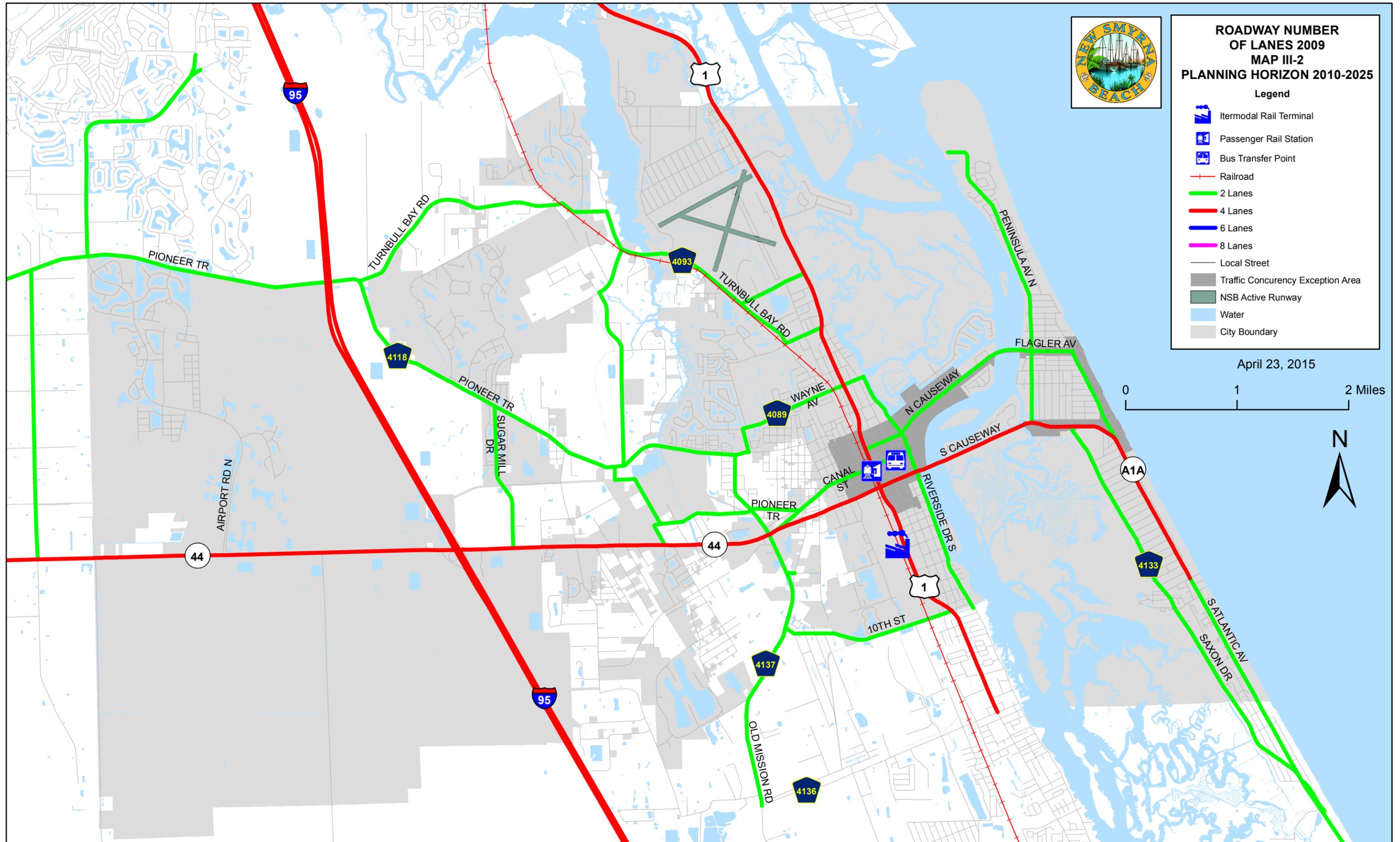
Table III-2 Existing Traffic Conditions, 2009

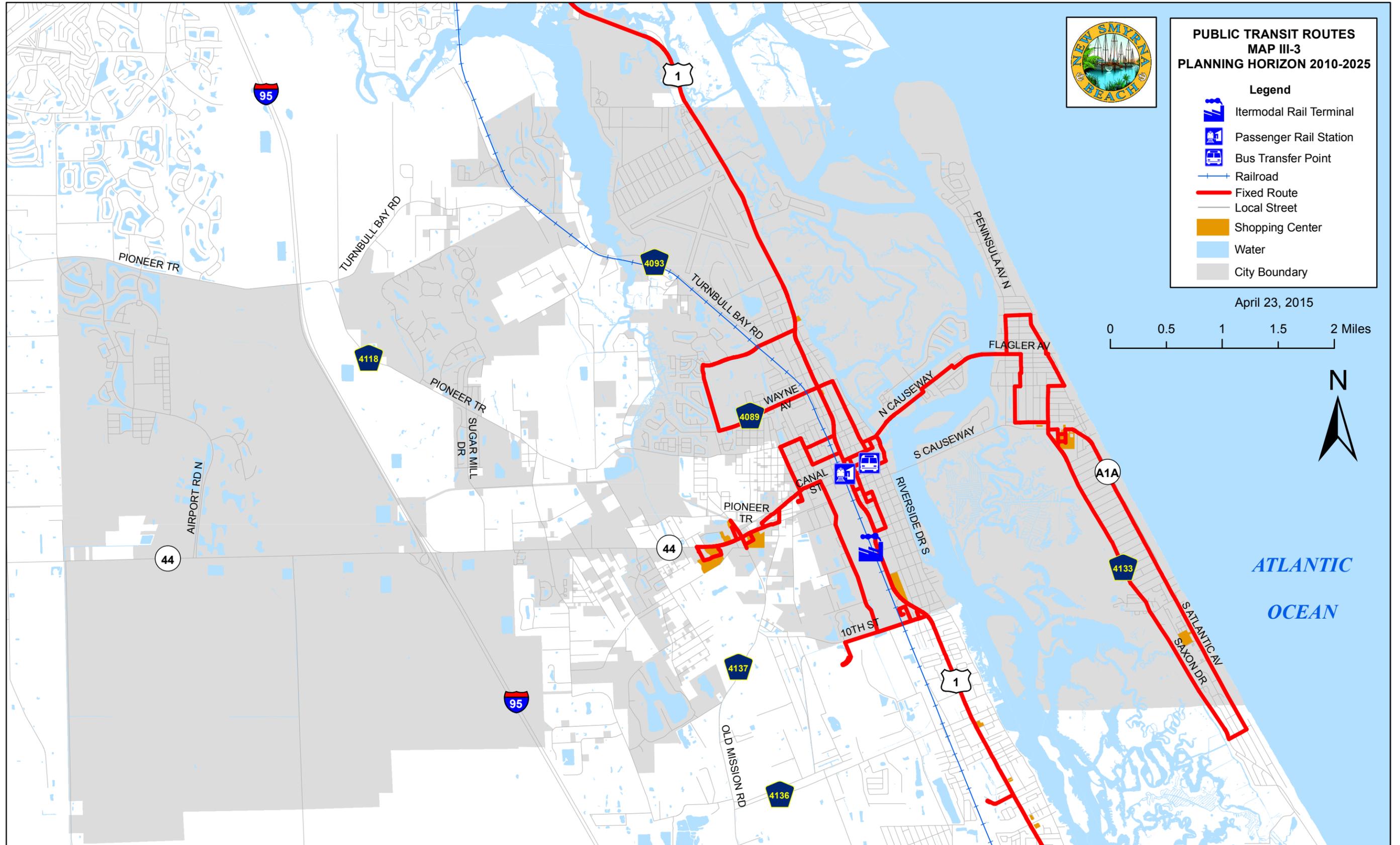
Roadway	Segment	Number of Lanes	Acceptable Level-of-Service	AADT	Peak Hour Volume	Level-of-Service
<b>State Highways</b>						
Interstate 95 / State Road 9	State Road 421 (Dunlawton Avenue) to State Road 44	4	C	37,432	3,597	C
Interstate 95 / State Road 9	State Road 44 to South City Limits	4	C	32,000	3,075	B
US Highway 1 / State Road 5 (North Dixie Freeway)	North City Limits to Industrial Park Avenue	4	D	20,900	2,042	B
US Highway 1 / State Road 5 (North Dixie Freeway)	Industrial Park Avenue to County Road 4093 (Turnbull Bay Road)	4	D	11,600	1,133	C
US Highway 1 / State Road 5 (North Dixie Freeway)	County Road 4093 (Turnbull Bay Road) to County Road 4089 (Wayne Avenue)	4	D	26,000	2,540	D
US Highway 1 / State Road 5 (North Dixie Freeway)	County Road 4089 (Wayne Avenue) to Business 44 (Canal Street)	4	D	26,000	2,540	D
US Highway 1 / State Road 5 (North Dixie Freeway)	Business 44 (Canal Street) to State Road 44 (Lytle Avenue)	4	D	27,000	2,638	D
US Highway 1 / State Road 5 (South Dixie Freeway)	State Road 44 (Lytle Avenue) to 10th Street / South City Limits	4	D	27,000	2,638	D
State Road A1A (South Causeway)	State Road 44 (Live Oak Street) to South Peninsula Avenue	4	D	30,000	2,931	B
State Road A1A (East 3rd Avenue)	South Peninsula Avenue to County Road 4133 (Saxon Drive)	4	D	26,000	2,540	D
State Road A1A (East 3rd Avenue)	County Road 4133 (Saxon Drive) to East 6th Avenue	4	D	18,300	1,788	B
State Road 44	West City Limits to Airport Road	4	D	18,200	1,778	B
State Road 44	Airport Road to Williamson Boulevard	4	D	18,200	1,778	B
State Road 44	Williamson Boulevard to Interstate 95 / State Road 9	4	D	18,800	1,837	B
State Road 44	Interstate 95 / State Road 9 to Sugar Mill Drive	4	D	25,500	2,491	C
State Road 44	Sugar Mill Drive to Business 44 (Canal Street)	4	D	25,500	2,491	C
State Road 44	Business 44 (Canal Street) to South Myrtle Avenue	4	D	22,000	2,149	C
State Road 44 (Lytle Avenue)	South Myrtle Avenue to US Highway 1 / State Road 5 (South Dixie Freeway)	4	D	22,000	2,149	B
State Road 44 (Lytle Avenue)	US Highway 1 / State Road 5 (South Dixie Freeway) to State Road 44 (Live Oak Street)	4	D	22,000	2,149	B
State Road 44 (North Causeway)	State Road 44 (North Riverside Drive) to Barracuda Boulevard	2	D	9,200	899	C
State Road 44 (North Causeway)	Barracuda Boulevard to East End of Bridge	2	D	9,200	899	C
Business 44 (Canal Street)	State Road 44 to County Road 4118 (Pioneer Trail)	2	D	12,200	1,192	D
Business 44 (Canal Street)	County Road 4118 (Pioneer Trail) to US Highway 1 / State Road 5 (Dixie Freeway)	2	D	12,500	1,221	D
<b>County Roads</b>						
County Road A1A (South Atlantic Avenue)	East 6th Avenue to East 27th Avenue	4	E	19,070	1,863	C
County Road A1A (South Atlantic Avenue)	East 27th Avenue to South City Limits	4	E	9,030	882	C
County Road 4089 (Enterprise Avenue)	County Road 4118 (Pioneer Trail) to County Road 4089 (Halleck Street)	2	E	6,970	681	C
County Road 4089 (Halleck Street)	County Road 4089 (Enterprise Avenue) to County Road 4089 (Wayne Avenue)	2	E	5,940	580	C
County Road 4089 (Wayne Avenue)	County Road 4089 (Halleck Street) to US Highway 1 / State Road 5 (North Dixie Freeway)	2	E	6,200	606	D
County Road 4093 (Turnbull Bay Road)	County Road 4118 (Pioneer Trail) to Williams Road	2	E	2,090	204	B
County Road 4093 (Turnbull Bay Road)	Williams Road to United Drive	2	E	3,480	340	B
County Road 4093 (Turnbull Bay Road)	United Drive to Industrial Park Avenue	2	E	4,030	394	B
County Road 4093 (Turnbull Bay Road)	Industrial Park Avenue to Fairgreen Avenue	2	E	3,460	338	B
County Road 4093 (Turnbull Bay Road)	Fairgreen Avenue to US Highway 1 / State Road 5 (North Dixie Freeway)	2	E	4,790	468	C
County Road 4118 (Pioneer Trail)	Airport Road to Williamson Boulevard	2	E	2,700	264	B
County Road 4118 (Pioneer Trail)	Williamson Boulevard to County Road 4093 (Turnbull Bay Road)	2	E	2,700	264	B
County Road 4118 (Pioneer Trail)	County Road 4093 (Turnbull Bay Road) to Sugar Mill Drive	2	E	2,050	200	A
County Road 4118 (Pioneer Trail)	Sugar Mill Drive to Williams Road	2	E	2,680	262	B
County Road 4118 (Pioneer Trail)	Williams Road to Enterprise Avenue	2	E	3,900	381	B
County Road 4118 (Pioneer Trail)	Enterprise Avenue to Jungle Road	2	E	9,410	919	A
County Road 4118 (Pioneer Trail)	Jungle Road to Business 44 (Canal Street)	2	E	2,080	203	C
County Road 4133 (Saxon Drive)	State Road A1A (East 3rd Avenue) to East 16th Avenue	2	E	5,750	562	C
County Road 4133 (Saxon Drive)	East 16th Avenue to East 27th Avenue	2	E	3,160	309	B
County Road 4133 (Saxon Drive)	East 27th Avenue to South City Limits	2	E	2,860	279	B
County Road 4137 (Mission Drive)	County Road 4137 (Old Mission Road) to County Road 4137 (Old Mission Road) / Mission Drive	2	E	800	78	A
County Road 4137 (Old Mission Road)	State Road 44 to County Road 4137 (Mission Drive)	2	E	738	72	A
County Road 4137 (Old Mission Road)	County Road 4137 (Mission Drive) to Josephine Street	4	E	13,630	1,332	C
County Road 4137 (Old Mission Road)	Josephine Street to County Road 4136 (Park Avenue)	2	E	8,040	786	D
North Glencoe Road	County Road 4118 (Pioneer Trail) to State Road 44	2	E	1,240	121	A
South Glencoe Road	State Road 44 to Paige Avenue	2	E	3,640	356	B
South Glencoe Road / Taylor Road	Paige Avenue to County Road 4137 (Old Mission Road)	2	E	1,330	130	A
Josephine Street	County Road 4137 (Old Mission Road) to Tatum Boulevard	2	E	6,370	622	D
Mission Drive	State Road 44 to County Road 4137 (Old Mission Road / Mission Drive)	2	E	15,200	1,485	C
Sugar Mill Drive	County Road 4118 (Pioneer Trail) to State Road 44	2	E	2,760	270	B
Williams Road	County Road 4093 (Turnbull Bay Road) to Mooneyham Drive	2	E	1,270	124	A
Williams Road	Mooneyham Drive to County Road 4118 (Pioneer Trail)	2	E	1,430	140	A
<b>City Streets</b>						
Business 44 (Canal Street)	US Highway 1 / State Road 5 (Dixie Freeway) to State Road 44 (Live Oak Street)	2	E	8,900	870	C
State Road 44 (Canal Street)	State Road 44 (Live Oak Street) to State Road 44 (North Riverside Drive)	2	E	3,870	378	C
State Road 44 (North Riverside Drive)	State Road 44 (North Causeway) to State Road 44 (Canal Street)	2	E	3,870	378	B
Flagler Avenue	East End of Bridge to Peninsula Avenue	3	E	7,960	778	D
Flagler Avenue	Peninsula Avenue to Atlantic Avenue	2	E	4,500	440	B
South Atlantic Avenue	Flagler Avenue to Oakwood Avenue	3	E	3,760	367	B
South Atlantic Avenue	Oakwood Avenue to Maralyn Avenue	3	E	3,760	367	B
South Atlantic Avenue	Maralyn Avenue to 1st Avenue	3	E	3,760	367	B
South Atlantic Avenue	1st Avenue to State Road A1A	3	E	3,760	367	B
South Riverside Drive	State Road 44 (Canal Street) to Lytle Avenue	3	E	3,870	378	B
10th Street	West City Limits to South Myrtle Avenue	4	E	6,860	670	B
10th Street	South Myrtle Avenue to US Highway 1 / State Road 5 (South Dixie Freeway)	2	E	6,920	676	B

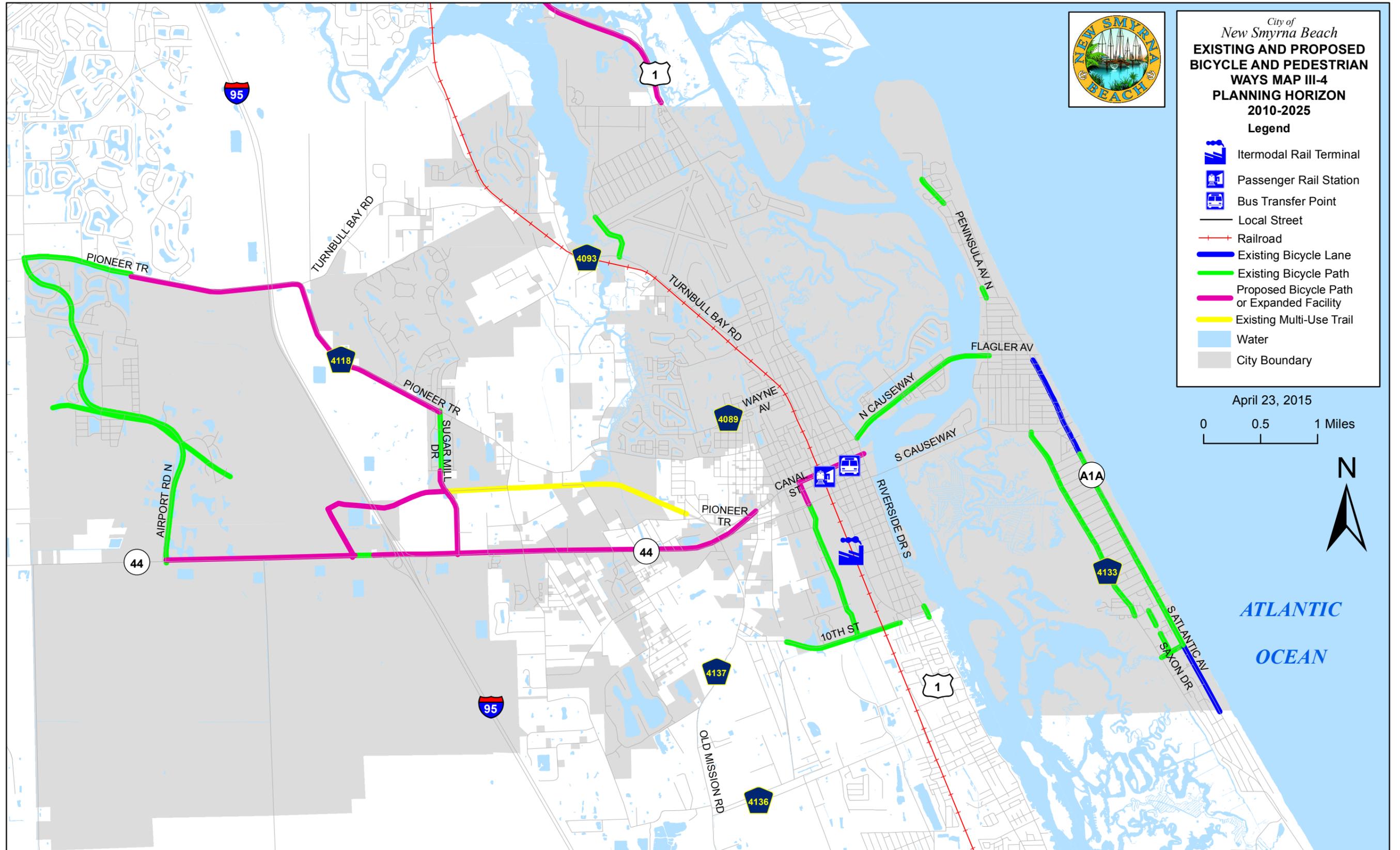
Sources: Florida Department of Transportation and Volusia County Traffic Engineering

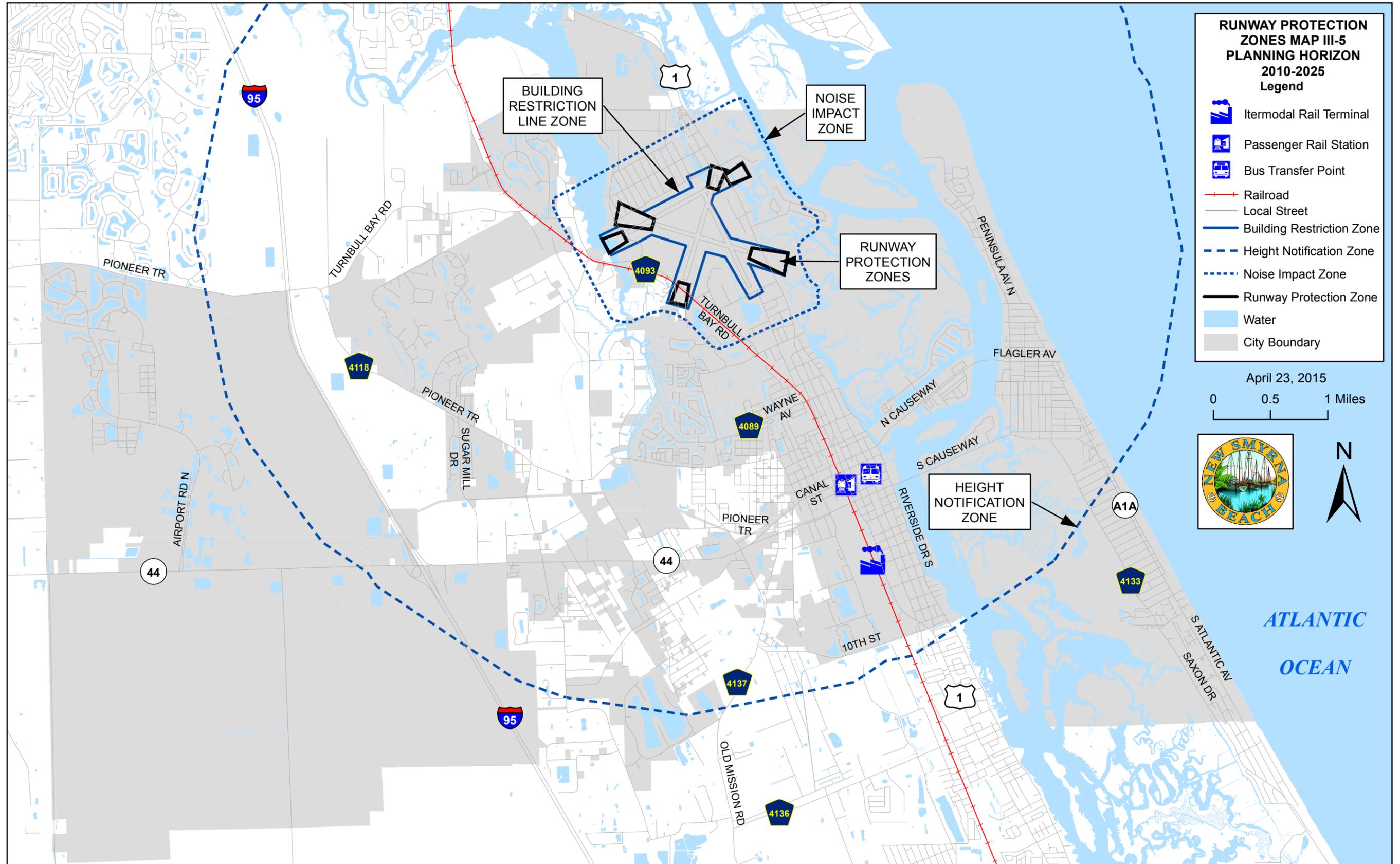


Map III-2 Year 2009 Existing Roadway Number of Lanes

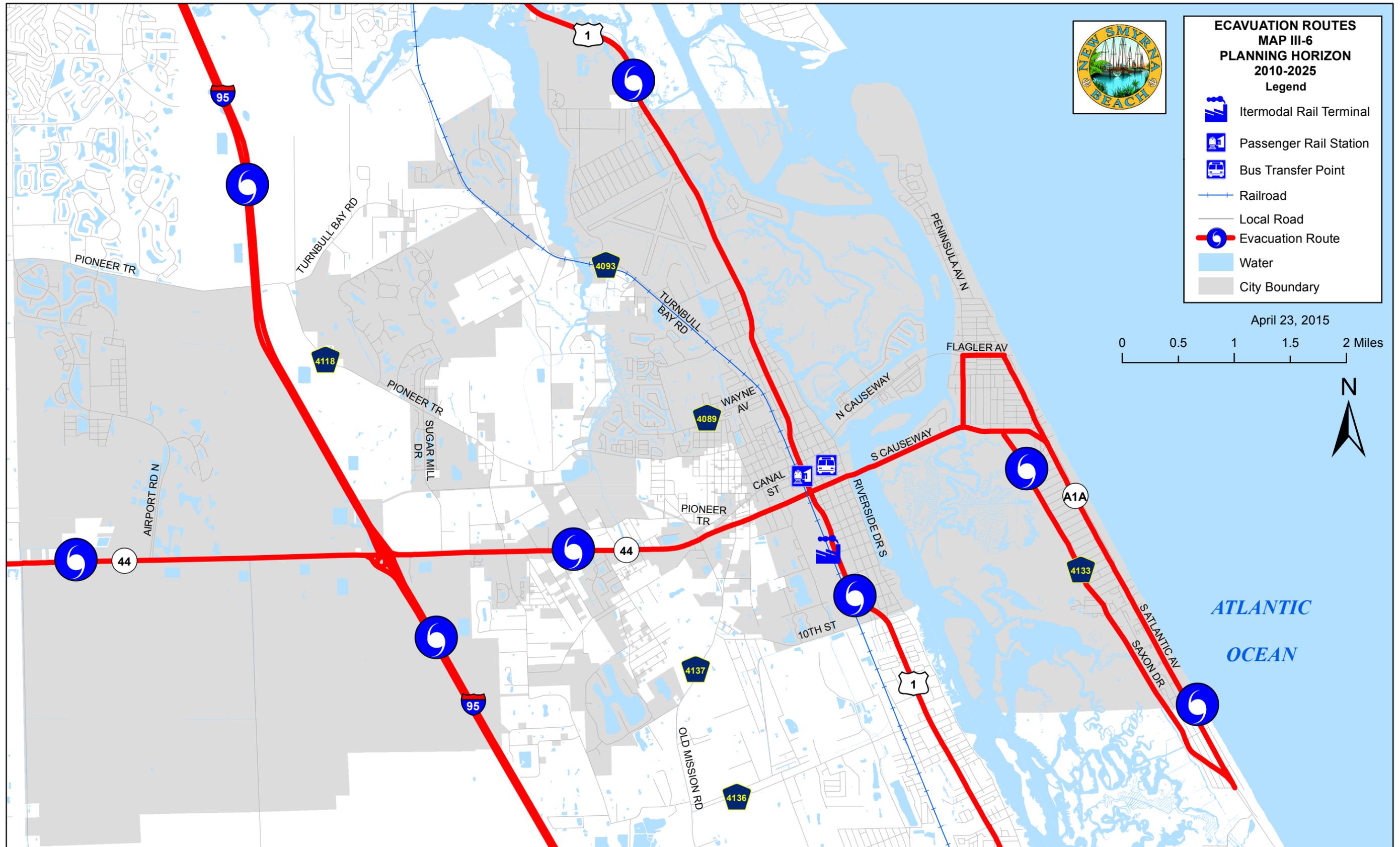








Map III-6 Year 2010 Evacuation Routes



# Comprehensive Plan

City of New Smyrna Beach, Florida

## **TRAFFIC CRASH DATA**

Traffic crash data is available from the local law enforcement agencies. To promote and implement transportation system improvements for all modes that minimize the occurrence of potential crashes that might result in the loss of health, life, and property, transportation plans should be developed with a priority consideration to transportation system improvements that prevent crashes, injuries, and minimize losses with the following actions:

- Properly maintain the various types of transportation facilities, including streets, intersections, buses, sidewalks, multi-use trails, transfer facilities, intermodal terminals, etc.
- Upgrade the street system to minimum width standards based on an overall system plan.
- Focus on high crash areas for transportation improvements.
- Minimize motor vehicle, truck, bus, train, bicycle, and pedestrian conflicts.

## **CURRENT ROADWAY DEFICIENCIES**

No facilities in the New Smyrna Beach planning area currently carry volumes that are higher than the maximum level-of-service established for these facilities.

## **ROADWAYS WITH SPECIAL CHARACTERISTICS**

Some roadways exist within the New Smyrna Beach City limits that the City considers roadways with special characteristics:

- Canal Street: Canal Street is a physically constrained facility due to the unavailability of right-of-way.
- Flagler Avenue: Flagler Avenue is a physically constrained facility due to the unavailability of right-of-way .
- Riverside Drive: Riverside Drive has been designated as a scenic drive from Wayne Avenue south to the south City limits.
- Faulkner Street: Faulkner Street has been designated as a historic drive from Tanglewood Avenue to Canal Street.
- Washington Street: Washington Street has been designated as a historic drive from US Highway 1 to Riverside Drive.
- Saxon Drive: Saxon Drive has been designated as a scenic drive from East 3<sup>rd</sup> Avenue south to the south City limits.
- State Road 44 (Lytle Avenue): State Road 44 (Lytle Avenue) is a physically constrained facility due to the unavailability of right-of-way from US Highway 1 to Live Oak Street.
- State Road A1A (South Causeway / East 3<sup>rd</sup> / South Atlantic Avenues): State Road A1A is a physically constrained facility due to the unavailability of right-of-way from Live Oak Street to the south City limit.

The City shall monitor traffic volumes and operating conditions on designated constrained, scenic, or historic facilities and, at the time the level-of-service on a constrained, scenic, or historic facility falls below the minimum acceptable level-of-service for that facility, the City may not allow further significant development of the facility unless acceptable, mitigative measures to the adverse traffic impact of the development are provided.

On City roads designated as constrained, scenic, or historic facilities, New Smyrna Beach shall not schedule improvements to increase the number of through lanes. On state or county maintained highways and roads designated as constrained, scenic, or historic facilities, the City shall coordinate with the FDOT and Volusia County to not schedule improvements to increase the number of through lanes.

## **FUTURE TRAFFIC CONDITIONS**

In developing a transportation plan to meet the future needs of the City, it is necessary to determine where, and to what extent, deficiencies in the transportation system will exist. This portion of the Transportation Element presents the results of an analysis of expected future traffic conditions under the assumption that no further improvements are made to the system other than those currently programmed. These results will be used in subsequent sections to identify potential roadway improvements. Table XII-6 in the Capital Improvements Element summarizes the five (5) year programmed roadway improvements for New Smyrna Beach planning area.

### **FUTURE TRAVEL DEMANDS**

The basic premise involved in projecting future roadway traffic conditions is that there is a stable relationship between travel demand (as indicated by traffic volumes) and socioeconomic activities in an urban area. The best indicators of socioeconomic activity in an area are population and employment. As the population and employment increase in a given urban area, the demand upon the local transportation facilities should increase accordingly. This method of deriving traffic projections from population and employment projections is usually conducted for an entire urban area by use of a computer-based traffic simulation model.

New Smyrna Beach is located within a Metropolitan Area Planning Boundary comprised of the entire Volusia County and a portion of Flagler County. The Volusia TPO currently maintains an extensive computer-based transportation planning process, in which the City actively participates. These countywide projections have been used extensively in projecting traffic volumes for the New Smyrna Beach area.

In 2006, the cities of New Smyrna Beach, Edgewater, Port Orange, and Volusia County participated in the *Southeast Volusia Regional Transportation Study*. This study identified needed roadway improvements through the year 2035. However, a financial plan could not be agreed upon amongst the study partners. Therefore, no official action has been taken on the part of the study partners to formally adopt the study. Data used to create Maps III-7 and III-8 has been obtained from the Volusia County Traffic Engineering department and is the same data incorporated into Volusia County's Comprehensive Plan.

### **FUTURE TRAFFIC CONDITIONS**

As used in this context, the term "future traffic conditions" refers to those traffic conditions expected to exist during the horizon year on the programmed and planned roadway system. This roadway network, as shown in Maps III-7 and III-8 reflects the existing roads plus new roads and improvements to existing roads, and programmed and planned roadway improvements. The programmed improvements to the roadway system in the New Smyrna Beach area were included in state or local roadway programs adopted in 2009. Maps III-7 and III-8 also present the long-range traffic volume projections (as derived from land use projections for the year 2025) and the corresponding peak hour, peak direction level-of-service expected throughout the New Smyrna Beach planning area. These levels-of-service were determined using information from Volusia County Traffic Engineering and the Florida Department of Transportation (FDOT) *2009 Quality/Level of Service Handbook*.

### **REGIONAL DEMAND**

Future traffic demands for New Smyrna Beach and Volusia County have been based upon population and employment projections. Like many other coastal communities, New Smyrna Beach also has an extremely high influx of non-city trips passing through the community destined for the beaches. The planning for this population segment rests with the inland areas, such as Orange and Seminole Counties. New Smyrna Beach is basically at the mercy of growth and travel demands for beach access from the inland areas of the state. This is evidenced by the fact that over 40,000 trips per day are projected for the North and South Causeways in 2015. Regardless of the controls placed upon growth within the City by the

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City, outside demands will continue to use a disproportionate share of major road capacity.

The City will be undertaking several initiatives to address the capacity of roads within the community. Two (2) programs include a regular traffic counting program and travel time studies on major State roads.

The traffic counting program will be implemented in cooperation with Volusia County and the FDOT. This will develop a database in order that the City can anticipate future capacity improvements required on the City street network.

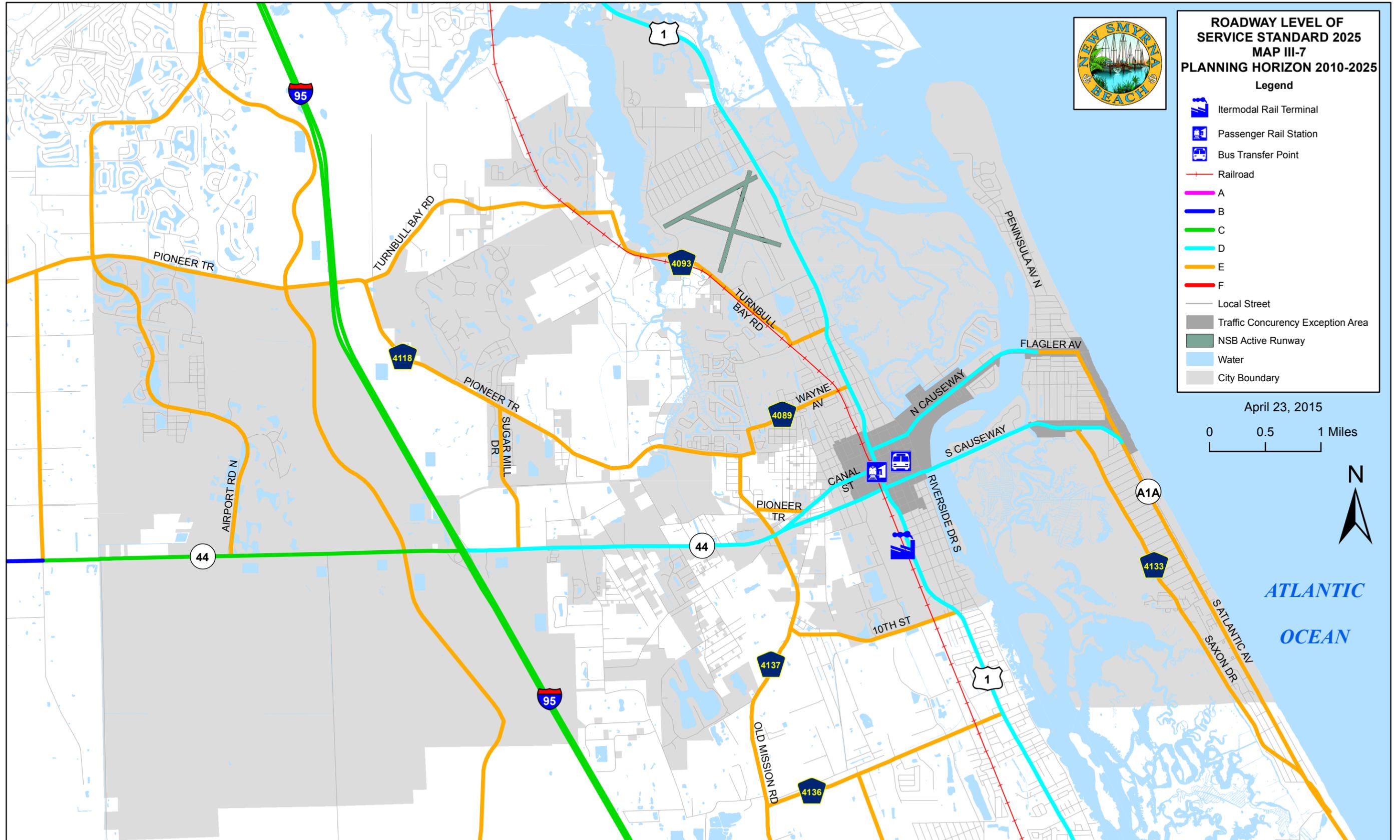
The travel time studies will look at the operating level-of-service for roadway corridors versus specific links as a determinant of system capacity. This will also be done in conjunction with Volusia County and the FDOT.

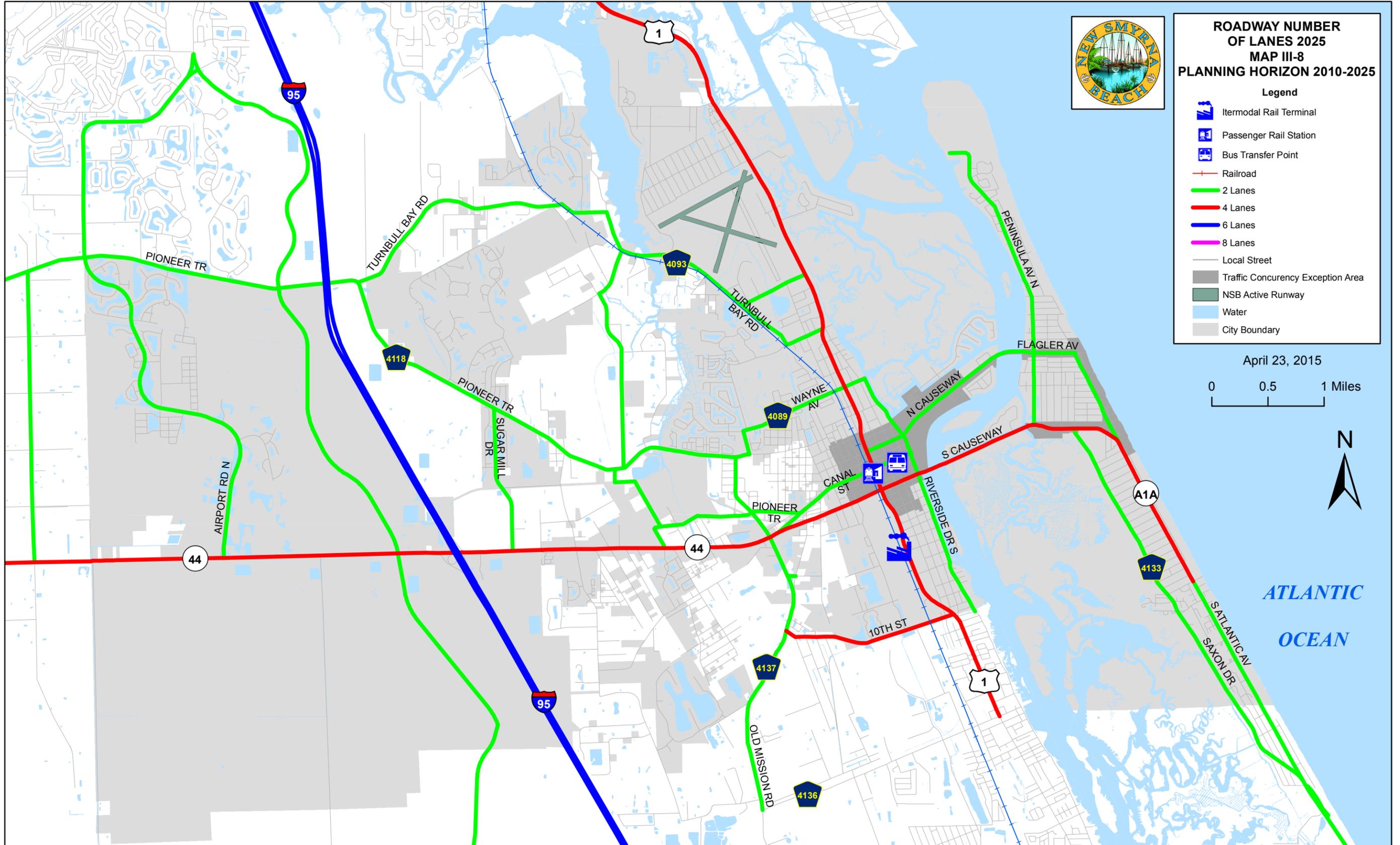
Table III-3 Programmed Roadway Improvements 2010-2025

<b>Project</b>	<b>From</b>	<b>To</b>	<b>Length (miles)</b>	<b>Cost (millions)</b>	<b>Construction Date</b>	<b>Comments</b>
I-95 Widening to 6 Lanes	SR 400 (Beville Road)	SR 44	7.8	\$70.0	ROW – 2011	Construction 2031-2035
I-95 Widening to 6 Lanes	SR 44	Brevard County Line		\$1.34	ROW - 2011-2013	Project is not fully funded.

Source: Volusia County Transportation Planning Organization 2035 Long Range Transportation Plan

Map III-7 Year 2025 Existing Plus Committed Traffic Conditions





# AVIATION FACILITIES

## OVERVIEW

The information on local aviation facilities is based on the 2005 New Smyrna Beach Municipal Airport Master Plan Update. The emphasis of the policies contained in the Master Plan is directed toward sound management of airport land uses, facilities, and the surrounding lands and environments.

The City of New Smyrna Beach owns and operates New Smyrna Beach Municipal Airport. Through a six-member Airport Advisory Board, recommendations regarding the development, use, and operation of the Airport are made to the City Commission. The Airport Manager reports to the City Manager regarding operational matters. Airport Advisory Board members serve three-year terms with a two consecutive term limit unless approved by the City Commission. Additional staff needs at the Airport are fulfilled by City staff on an as needed basis.

The Airport at New Smyrna Beach began as a grass strip in the middle of an orange grove. In 1942, the strip was acquired by the United States Navy and was immediately developed into a military airfield. Navy operations began in 1944. After World War II, the Airport was given to the City of New Smyrna Beach by the US Government's War Assets Administration on April 10, 1947, becoming New Smyrna Beach Municipal Airport.

The New Smyrna Beach Municipal Airport is included within the National Plan of Integrated Airport System (NPIAS), which is published by the U.S. Department of Transportation. In the NPIAS, the Federal Aviation Administration (FAA) establishes the role of those public airports defined as essential to meet the needs of civil aviation and to support the Department of Defense and Postal Service. New Smyrna Beach Municipal Airport is a General Aviation Airport categorized as a Reliever Airport for the Daytona Beach metropolitan area, based on data collected and transmitted to Congress by the Secretary of Transportation for the 2001-2005 planning period.

The airport, which is comprised on nearly 718 acres of land, is located approximately three miles east of Interstate 95, between the North Dixie Freeway (US 1) and Turnbull Bay Road. Major arterial roadways serving the area include Interstate 95 and Highway US 1. Interstate 95 passes north and south through Volusia County to the west of the airport, and US 1 runs north and south through Volusia County immediately to the east of the airport. Both arterial roadways follow the general direction of the Atlantic Ocean shoreline. There are two entrances to the Airport property, one from US 1 on Skyline Drive and the other from Turnbull Bay Road via United Drive or Industrial Park Boulevard. Additionally, Airway circle and South Street offer access to the southern and northern sides of the Airport, respectively. There are no on-airport roadways offering access from one quadrant of the airfield to another.

The City prepared an Airport Master plan in 2005, which is the basis for the information in this section. An update to the 2005 Airport Master Plan will begin in March 2012. The City is also in the process of adopting a Part 150 Noise Study.

## EXISTING FACILITIES

### AIRSIDE FACILITIES

Airside facilities at New Smyrna Beach Municipal Airport include runways, taxiways, aprons, lighting, and navigational aids. **Figure 1 – Existing Facilities**, depicts an overview of the existing airfield facilities. This section describes the Airport's existing airfield facilities in terms of location, configuration, size, and use characteristics.

### RUNWAYS

New Smyrna Beach Municipal Airport is currently served by three active runways, Runway 11-29, Runway 06-24, and Runway 02-20. Runway 15-33 was recently decommissioned.

During the preparation of this study, new survey data from the aerial photogrammetry confirmed that Runway 06-24 would need to be re-designated to Runway 07-25 to reflect its correct magnetic bearing. Using the updated runway endpoints for the existing thresholds of Runway 06-24, the alignment of the runway centerline was calculated, in both AutoCAD and using the FAA accepted GEO83 software, to have a true bearing of 61.6 degrees. For the New Smyrna Beach area, the current magnetic declination is plus five degrees (five degrees west) with an annual rate of change of seven minutes per year also plus, or to the west. Therefore, the current magnetic bearing (what pilots use for initial/basic runway alignment) is 66.6 degrees. Thus, Runway 06-24 will need to change to Runway 07-25 designation. A check of the bearings for Runway 11-29 and Runway 02-20 showed that neither of these two would need



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to change. The re-marking of this runway, as well as the coordination with the FAA to have the various aeronautical publications updated, should occur as soon as possible. As such, Runway 06-24 will be referred to as Runway 07-25 in this Master Plan Update and on the updated Airport Layout Plan drawings.

The primary runway, Runway 11-29, is 4,323 feet long, 100 feet wide, and is oriented in a roughly east-southeast to west-northwest direction. The Runway is made of asphalt, is equipped with Medium-Intensity Runway Lighting (MIRL) and is served by a parallel taxiway, Taxiway A. The Runway also has PAPI-4s on both ends, and the Runway has non-precision instrument runway markings. The FAA published gross weight pavement strength is 55,000 pounds for aircraft with a single wheel configuration.

The remaining runways are 07-25 and 02-20. Runway 07-25 is 5,000 feet long and 75 feet wide. It is oriented in a northeast-southwest direction and has visual runway markings. It is constructed of asphalt and the pavement strength is 55,000 pounds single wheel. Runway 02-20 is 4,001 feet long and 100 feet wide. It is oriented in a roughly north-south direction and has visual runway markings. It is constructed of asphalt and the pavement strength is 55,000 pounds single wheel.

The runways at New Smyrna Beach Municipal Airport are not each utilized equally. There are several reasons runways are used unequally at an Airport, ranging from capacity issues to climactic concerns to preferred arrival and departure tracks. While different aircraft types tend to use different preferred runways for their operations, the runways at New Smyrna Beach are utilized in approximately the following manner: Runway 02, 20 percent usage; Runway 07, 11.25 percent usage; Runway 11, 25 percent usage; Runway 20, 12.5 percent usage; Runway 25, 8.75 percent usage; Runway 29, 22.5 percent usage. The standard traffic pattern at New Smyrna Beach Municipal Airport is left. **Table III-4** provides a summary of facility data for each Runway at the Airport.

**Table III-4 – Runway Data**

	Runway Ends									
	11	29	07	25	02	20	15	33		
<b>Length (ft)</b>	4,323		5,000		4,001		Runway 15-33 Decommissioned April 2003			
<b>Width (ft)</b>	100		75		100					
<b>Surface Material</b>	Asphalt		Asphalt		Asphalt					
<b>Load Bearing Capacity by Gear Type</b>										
<b>Single Wheel (lbs)</b>	55,000		55,000		55,000					
<b>Approach Slope Ratio</b>	20:1	34:1	20:1	20:1	20:1	20:1				
<b>Approach Aids – GPS</b>	-	GPS	-	-	-	-				
<b>Approach Aids – NDB</b>	-	NDB	-	-	-	-				
<b>Approach Aids – Visual</b>	PAPI-4	PAPI-4	-	-	-	-				
<b>Displaced Threshold (ft)</b>	-	-	335	300	785	-				
<b>Run-up Areas</b>	No	No	No	No	No	No				
<b>Lighting</b>	MIRL		-		-					
<b>Marking</b>	Non-Precision		Visual		Visual					

Source: Airport/Facility Directory, Southeast US, 4 September 2003; Florida Aviation Database Facility Information Directory; HTA.

## TAXIWAYS

The Airport's Taxiway system consists of four taxiways. Three runways are served by full-length, parallel taxiways: Runways 11-29, 07-25, and 02-20, served by Taxiways A, B, and D, respectively. The former Runway 15-33 also has a parallel Taxiway C, which passes through the primary aircraft parking aprons and then crosses Runway 29 to access T-hangars at the south end of the Airport. Each of the taxiways were originally 50 feet wide, but have been reduced during overlay projects. Taxiway B, between Taxiway A and Runway 11-29, as well as Taxiway C between the FBO apron and Runway 11-29 are 40 feet wide with five foot paved shoulders. The remaining portions of Taxiways B and C are overlaid as 35 foot marked pavement.

Taxiway A is the parallel taxiway for Runway 11-29. It begins at its intersection with Runway 07-25, crosses Runway 02-20, and terminates at its intersection with Taxiway C. Taxiway B is the parallel taxiway for Runway 07-25. It begins

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## City of New Smyrna Beach, Florida

at the approach end to Runway 07, crosses Runway 11-29, passes through the intersection of former Runway 15-33 and Runway 02-22, and terminates at its intersection with Taxiway D. Taxiway C is the partial parallel taxiway for former Runway 15-33. It begins at Runway 25, passes through the aircraft parking apron, and crosses Runway 29, and continues south to access the T-hangar area. Taxiway D is the parallel taxiway for Runway 02-20. It begins at the approach end of Runway 02, intersects with Runway 11-29, intersects Taxiway A, crosses over former Runway 15-33, crosses Taxiway C, and then terminates at the approach to Runway 25.

### **AIRCRAFT APRONS AND STORAGE AREAS**

Currently there is only one public-use aircraft apron area on the Airport. The apron is situated east of former Runway 15-33, between the ends of Runways 25 and 29. The area of the apron is approximately 150,000 square feet, and the apron accommodates 47 tie down spaces, ten of which are used for based aircraft, with the remainder reserved for transient operations.

There are approximately 13 hangars at New Smyrna Beach Municipal Airport, as well as six t-hangar facilities, each incorporating from 12 to 16 individual t-hangar units.

### **RUN UP AREAS AND COMPASS ROSE**

Aircraft engine run-ups at New Smyrna Beach Municipal Airport are usually conducted on the parallel taxiways near the runway ends. There are no specifically designated run-up areas on the airfield.

A compass rose is an encircled area designated on the airfield for aircraft operators to calibrate their compasses to either true or magnetic north. The Airport has recently laid out a Compass Rose, located on the former Runway 15-33 midfield pavement area.

### **LIGHTING**

Lighting at Airports facilitates identification, approaches, landing, and taxiing operations at night and in adverse weather conditions. A variety of lighting aids are available at New Smyrna Beach Municipal Airport. These include runway edge lighting and taxiway lights. Runway edge lighting is used to outline the edges of a runway during darkness and times of restricted visibility. These systems are identified by white and amber edge lights with green threshold and red runway end lights. Medium Intensity Runway Lighting (MIRL) systems provide three intensity settings which are appropriate for visual and non-precision runways. Taxiway lighting is blue in color and is used to identify the edges of taxiways. Taxiway lighting is identified in accordance to their intensity of illumination in the same manner as runway edge lighting, with Medium Intensity Taxiway Lighting (MITL) the most commonly used and appropriate for this facility. Currently, only Runway 11-29 is equipped with MIRL, and Taxiway A (excluding a section northwest of Taxiway B), Taxiway B (from Taxiway B to its intersection of Runway 11-29), and Taxiway C (from the FBO apron to its intersection with Runway 11-29) are equipped with MITLs. Rehabilitation of the lighting system is currently underway. There is no apron lighting on the airfield.

The airfield lighting vault supplying power to the lights is in poor condition, and is planned to be replaced with a new vault near the new Airport Traffic Control Tower (ATCT) in a future project. It is anticipated that most of the remaining taxiways, as well as Runway 07-25, will be lighted within the planning period of this Master Plan Update.

Both ends of Runway 11-29 are equipped with a visual approach slope indicators. The type of indicator provided is a 4-box Precision Approach Path Indicator (PAPI-4). PAPI devices are used by pilots for visual approaches and include a number of lights aligned horizontally that change color from red to white depending on whether the aircraft on approach is above or below the glideslope. The PAPI-4s in use at New Smyrna Beach Municipal Airport have four horizontally aligned lights. The PAPI systems provide the correct approach slope to pilots under visual conditions and maintain accurate guidance to pilots for a safe touchdown, as well as for obstacle clearance. The FAA maintains the Runway 11 PAPI and the City maintains the Runway 29 PAPI.

Other lighting at the Airport includes a rotating beacon. The location and presence of an Airport is universally identified at night by an Airport beacon, designated alternating white and green for civil Airports. The rotating beacon is located on top of the ATCT, and is in excellent condition as it was installed in 2004. The lighted wind cone and segmented circle at New Smyrna Beach Municipal Airport are located near the center of the airfield, adjacent to the intersection of Runways 11-29 and 02-20.

Currently, the Airport has temporary painted plywood airfield guidance signage. The Airport has received an FAA grant to replace most of the temporary airfield signage with permanent signs.

### **NAVIGATIONAL AIDS**

Navigational Aids (Nav aids) include any visual or electronic devices, either airborne or on the ground, that provide point-to-point guidance information or position data to aircraft in flight.

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At New Smyrna Beach Municipal Airport there are no precision approaches. The non-precision instrument approach at New Smyrna Beach Municipal Airport is for Runway 29. The approaches to Runways 11, 02, 20, 07, and 25 are visual. The approach to Runway 29 is via either Non-Directional Beacon (NDB) or Global Positioning System (GPS).

The Non-Directional Beacon (NDB) is a general purpose, low-frequency radio beacon that a properly equipped aircraft can use to determine a bearing. The New Smyrna Beach Municipal Airport NDB operates at a frequency of 417 KHz, and continuously transmits the three letter identifier of the Airport, EVB, in Morse code. The NDB is located on the east side of the airfield near the aircraft apron. The current approach information for this Runway can be found in the US Terminal Procedures Southeast publication, published by the FAA.

An ATCT was recently constructed at New Smyrna Beach Municipal Airport, located on the northeast side of the Airport near the intersections of Taxiways C and D. The tower was activated in October 2004. This new tower will significantly increase the attractiveness of the Airport to pilots, as well as enforce aviation regulations within local airspace, providing an extra measure of safety. Additionally, the data the tower will collect on climactic conditions, usage, operations, etc. will be invaluable for future Airport master planning efforts and the identification of needed Airport development.

## **HELIPADS**

New Smyrna Beach Municipal Airport currently does not have a designated helicopter landing area. However, with the decommissioning of Runway 15-33 a designated site is anticipated to be created in the midfield area for rotorcraft operations.

## **LANDSIDE FACILITIES**

Landside facilities at New Smyrna Beach Municipal Airport are divided into the following categories: Fixed Base Operators (FBOs), Airport facilities, Airport fueling, and public safety coverage.

### **FIXED BASE OPERATORS (FBOS)**

There are three primary FBOs at New Smyrna Beach Municipal Airport. FBOs typically provide aviation services to Airport users, such as fuel, aircraft maintenance, flight training, aircraft rentals, pilot supplies, etc. The three tenants, Epic Aviation, and American Aero Services, are discussed in the following paragraphs.

#### **Epic Aviation**

Epic Aviation provides flight instruction, aircraft rentals, full aircraft maintenance services, and aviation accessories. They do not offer fuel services. Epic has 17 aircraft, approximately 24 tie-downs, and has been at New Smyrna Beach for approximately five years.

#### **American Aero Services**

American Aero Services is a full service aviation restoration and maintenance facility specializing in the care of World War II to Korean War aircraft. Additionally, American Aero Services performs inspections, import/export services, and provides fuel (Avgas only). American Aero Services is located adjacent to Airport property and has been in business for over 20 years.

## **AIRPORT FACILITIES**

On Airport property, only the north PAPI system is directly maintained by the FAA. All other facilities are maintained by the City of New Smyrna Beach.

Currently the Airport does not have a main terminal building. Each business on the airfield has its own facility for operations and customer use.

There is currently only one formal auto parking facility for public use at the Airport, located just off Skyline Drive, with approximately 64 parking spaces. However, each business at the Airport maintains a rough parking area for customer use.

The Airport administration is located at the southeast corner of the Airport in the Department of Public Works facility. The Airport maintenance facility is located immediately adjacent.

Recently the Airport completed a new security fencing project, completely enclosing the Airport, except for short sections remaining to be completed between hangars on the east side of the Airport.

## **AIRPORT FUELING**

The Airport's fueling facilities and fuel flowage volumes are described in the following paragraphs.

### **Fuel Storage Facilities**

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There are three fuel storage tanks on the airfield. The Avgas tanks are located at Epic Aviation, and American Aero Services. The tanks on the Airport are both above and below ground. Additionally, there are several fuel trucks in operation at the various FBOs on the Airport. A self-service fueling facility is available at Epic Aviation.

## **Fuel Flowage**

Fuel flowage at an Airport is expressed as the volume of fuel sold in gallons by the FBOs, which are reported on a monthly basis. The yearly total for Avgas flowage in 2002 was 401,200 gallons and the yearly total for Jet A flowage in 2002 was 250,000 gallons.

## **PUBLIC SAFETY COVERAGE**

The City of New Smyrna Beach provides police and fire-fighting services for the Airport. Additional support services are provided by Volusia County. Both the fire and police stations are located onsite in the southeast portion of the Airport property.

## **AIRSPACE STRUCTURE**

Daytona Beach Approach Control handles instrument arrivals and departures for New Smyrna Beach Municipal Airport. Jacksonville Center is responsible for all IFR traffic enroute into and out of the northern portion of Florida. Because of New Smyrna Beach Municipal Airport's proximity to Daytona Beach International Airport, and its associated Class C airspace, pilots climbing through 1,200 feet in the roughly northeast to southwest direction must contact Daytona Beach air traffic control.

Aircraft flying through the region or to a neighboring Airport usually follow designated air routes known as the Low Altitude Victor Airway system, which are generated by VHF Omnidirectional Range devices (VORs). Victor airways are eight nautical miles wide and are between 1,200 and 18,000 feet in altitude.

Other nav aids in the area that are used for air navigation include the Ormond Beach VORTAC, the St. Augustine VOR-DME, and the Orlando VORTAC. Other public-use Airports in the area include Massey Ranch Airpark, Daytona Beach International Airport, Ormond Beach Municipal Airport, Deland Airport, Orlando Sanford International Airport, and Space Coast Regional Airport. Daytona Beach International Airport, the nearest commercial service Airport, is located 15 miles north of the New Smyrna Beach Municipal Airport.

## **ON-AIRPORT LAND USE**

The City of New Smyrna Beach Land Development Regulations, updated continuously, provides for the development of public and/or private facilities at the Airport in Article V, Part 504.00, *New Smyrna Beach Airport*. The purpose of this district is to provide an appropriate site for business and industrial operations that are appropriate for and compatible with aviation.

## **COMMUNITY INVENTORY**

The following paragraphs describe the different aspects of the community inventory.

## **OFF-AIRPORT LAND USE**

Chapter 163 of the Florida Statutes requires all local governments to develop a comprehensive plan to "facilitate the adequate and efficient provision of transportation..." Governments with populations of 50,000 persons or greater are required to include a Port, Aviation, or related facilities element in their comprehensive plans. The City of New Smyrna Beach is a part of the Volusia County Comprehensive Plan, effective 1990, which includes an aviation element.

Florida State Legislation created the Safety and Land Use Compatibility Plan in 1990. This Plan ensures that Florida's Airports have the capability to accommodate aviation demand while maintaining public safety. The Plan recommends the establishment of compatible land use around Airports, and adequate protection of safety zones around Airports. The State Legislation requires these recommendations be enforced at the County level.

Adequate protection of safety zones around Airports includes keeping those safety zones, including Runway Object Free Areas, free and clear of objects and to control the land-use in the Runway Protection Zones. Compatible land use around Airports includes industrial and commercial. Examples of incompatible land uses around Airports include residential, schools, and churches.

## **ZONING**

Off-airport land use around New Smyrna Beach Municipal Airport consists of various different uses ranging from industrial to residential. To the north of the Airport there are residential neighborhoods. Most of this residential concentration is located to the north of South Street, and there are no approaches to the Airport directly over these neighborhoods. To the east of the Airport is US 1 and some commercial businesses along the route. To the

south of the Airport are various industrial park, maintenance, and city operations areas. To the west of the Airport there is a sports complex, some recreational parkland, and Turnbull Bay.

## **HEIGHT ZONING**

While the FAA does not exercise regulatory or permitting functions regarding structures that might penetrate navigable airspace, the FAA does rely on State and local zoning regulations to provide height and airspace protection. Such regulation around an Airport limits encroachment of the Runway Protection Zones (RPZs), thus ensuring the safety of the airspace around the Airport.

The State of Florida Height Zoning regulations are established in Chapter 333 of the Florida Statutes. Subsection 333.03(1) requires that "every political subdivision having an airport hazard area within its territorial limits shall, by October 1, 1977, adopt, administer, and enforce, under police power and in the manner and upon the conditions hereinafter prescribed, airport zoning regulations for such airport hazard areas."

The City of New Smyrna Beach Code of Ordinances supports FAA Part 77 Airspace Obstruction Notification requirements and the Florida Chapter 333 Statutes in Ordinance Number 10-95, §3, 3-28-1995.

## **ENVIRONMENTAL ISSUES**

At most Airports, the primary environmental issues relate to aircraft noise, water quality, habitat protection, and land use compatibility. New Smyrna Beach Municipal Airport is no exception. In addition, after the September 11, 2001 terrorist attacks there was been a change in the public perception of Airports and some of the impacts they create. Airport management is responding to these developments with voluntary procedures, pilot education efforts, and complaint response and resolution measures.

Storm water drainage is the primary water quality issue in Florida. As with any developed area in the state, run-off must be controlled and treated through the use of swales and detention areas. Any development performed on Airport must be permitted and approved by the St. Johns River Water Management District. Other important environmental issues are reviewed and discussed in *Chapter 5 – Environmental Overview*.

Land use "buffer" areas on and around the Airport are part of the analysis that will be undertaken before finalizing the Airport Layout Plan (ALP). The history of New Smyrna Beach Municipal Airport includes many such efforts, which will be reflected in the results of this study. Examples are the creation of light commercial and industrial on former and current Airport areas, the development of City recreation areas and parklands, and the development of an Industrial Park along the southern perimeter of the Airport.

## **FUTURE NEEDS**

The facility requirements are developed with demand and capacity evaluations to determine the abilities of Airport systems and facilities to accommodate the forecasted aviation related demand. The demand and capacity analysis considers the effects of possible design features and additional facilities that may increase capacity levels equal to or greater than forecasted demand. FAA procedures are used to alert Airport management to initiate planning, design, land acquisition, and construction programs for all of the recommended programs, so as to maintain Airport operations without extending periods of inefficient operations and delay. Planning, acquiring land, and designing required systems and facilities should begin when 60 percent of the existing facilities' capacity is reached. Construction should begin when 80 percent of the existing capacity is reached.

## **AIRFIELD**

Demand and capacity analysis of airfield systems and facilities (runways and taxiways) result in calculations of hourly capacities under visual flight rule (VFR) and instrument flight rule (IFR) conditions plus an annual service volume (ASV) of aircraft operations that may be accommodated without excessive aircraft delays and operating expenses. Utilizing FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*, the existing ASV for New Smyrna Beach Municipal Airport was established to be 230,000 operations per year.

## **BASIS OF CALCULATED CAPACITIES**

Calculated airfield capacities are developed by methods and capacity assumptions described in FAA AC 150/5060-5, *Airport Capacity and Delay*. In this AC, capacity is defined as the throughput rate, i.e. the maximum number of operations that can take place in an hour. Delay is the difference in time between a constrained and

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an unconstrained aircraft operation. These definitions take into account that delays occur because of simultaneous demands on the facility. The acceptable level of delay will vary from Airport to Airport. Calculations are based on runway utilizations, which produce the highest sustainable capacity consistent with current air traffic control rules and practices. The parameters and assumptions used in calculations are discussed in the following sections.

## AIRFIELD CAPACITY ANALYSIS

An airfield capacity analysis for New Smyrna Beach Municipal Airport was conducted to determine the capacity on the airfield and to identify any present or potential deficiencies in the airfield system. The demand and capacity analysis was conducted by calculating the capacity of the existing airfield layout (ASV) and comparing it to the projected levels of aviation operations. The results of this analysis are reflected in **Table III-5**.

Table III-5 - Airfield Capacity Analysis

Source: Hoyle, Tanner & Associates, Inc.

As shown, delay due to runway capacity during the planning period for New Smyrna Beach Municipal Airport is not anticipated until the second half of the planning period. However, these numbers should be revisited during the

<u>Year</u>	<u>Annual Operations</u>	<u>ASV</u>	<u>Percent Capacity</u>
<u>2002</u>	<u>140,554</u>	<u>230,000</u>	<u>61%</u>
<u>2007</u>	<u>158,327</u>	<u>230,000</u>	<u>69%</u>
<u>2012</u>	<u>178,347</u>	<u>230,000</u>	<u>78%</u>
<u>2022</u>	<u>226,303</u>	<u>230,000</u>	<u>98%</u>

next master planning process, at which time the new Airport Traffic Control Tower (ATCT) will have been in operation for some time. This will allow the future capacity analysis to benefit from actual annual operations counts, which could significantly alter the outcome.

The hourly capacity of New Smyrna Beach Municipal Airport under visual conditions is 98 operations per hour, and under instrument conditions is 59 operations per hour. These numbers are derived wholly from the Airport's runway configuration. The current annual delay is estimated to be between 12 and 48 seconds per operation. By the time operations reach their peak in 2022, the annual delay per operation will range from one to three and a half minutes. The annual delay calculations are based upon runway configuration and number of annual operations. All data contained here are calculated by the FAA's *Airport Design 4.2D* software.

## AIRCRAFT MIX INDEX & AIRCRAFT APPROACH CATEGORIES

The FAA has established a classification system for the various sizes, weights, and performance of aircraft as shown in **Table III-6**. These classifications allow the calculation of a mix index for use in airfield (runway) capacity studies. The mix index is calculated by the formula  $C+3D$ , where C is the percent of Class C aircraft utilizing the Airport, and where D is the percent of Class D aircraft utilizing the Airport. The result of this formula is a mix index, and mix indices fall into five ranges for use in capacity calculations. These ranges are 0 to 20, 21 to 50, 51 to 80, 81 to 120, and 121 to 180. Currently there are no Class D aircraft operating at New Smyrna Beach Municipal Airport, and none are forecasted in the planning period. Although there are currently limited Class C aircraft utilizing the Airport, the current and forecasted activity does not indicate a significant level of Class C aircraft operations. It is therefore assumed that a mix index of 0 to 20 is appropriate for New Smyrna Beach Municipal Airport capacity calculations for this planning period, giving the Airport an ASV of 230,000 operations per year, as discussed in Section 3.1 of this chapter.

Table III-6 - Aircraft Classification System for Airfield Capacity Analysis

<b>Classification</b>	<b>Maximum Certified</b>	<b>Number of Engines</b>	<b>Wake Turbulence</b>

	Takeoff Weight (lbs.)		Classification
Class A	12,500 or less	Single	Small
Class B	12,500 or less	Multi	Small
Class C	12,500 to 300,000	Multi	Large
Class D	over 300,000	Multi	Heavy

Source: FAA AC 150/5060-5, Airport Capacity and Delay

The FAA also groups aircraft into Aircraft Approach Categories based on 1.3 times their stall speed in their landing configuration at the maximum certified landing weight. The category definitions are shown in **Table III-7** below.

Table III-7 - Aircraft Approach Categories

Category	Approach Speed
A	Less than 91 knots
B	91 knots or more but less than 121 knots
C	121 knots or more but less than 141 knots
D	141 knots or more but less than 166 knots
E	166 knots or more

Source: FAA AC 150/5300-13, Airport Design

Aircraft with approach speeds within the range of Categories A and B include virtually all piston and turboprop driven aircraft and several of the popular business turboprop and turbojet driven aircraft. Aircraft with approach speeds within the range of Categories C and D include the remainder of the current aircraft with the exception of some very high performance military aircraft.

Many Category B and C aircraft that presently use Runway 11-29 at their maximum landing weights may also use Runway 07-25, when the crosswinds for Runway 11-29 exceed 13 to 16 knots. Although there are some aircraft operating at landing weights and approach speeds that require Runway 07-25, some aircraft will continue to be able to operate on Runway 11-29. The crosswind limitation for many larger, heavier aircraft using a 100-foot wide runway, such as Runway 11-29 during crosswind conditions, is 16 knots. With this crosswind limitation, Runway 11-29 increases total wind coverage for Category B and C aircraft by 3.23 percent to 99.18 percent under all weather conditions. With the same 16-knot crosswind limitation, for those aircraft that are able to utilize Runway 07-25, the total wind coverage for Category B and C aircraft increases by 2.04 percent to 99.57 percent under all weather conditions.

Runway 11-29 should be kept as the primary runway. Though the runway is shorter and has less wind coverage than Runway 07-25, it is nevertheless within FAA criteria for operation under all weather conditions. Additionally, Runway 11-29 is currently the only runway that is lighted and has precision visual glideslope indicators. Runway 11-29 is also 25 feet wider than Runway 07-25, and is the only runway with an NDB approach. Runway 11-29 also provides the best opportunity for additional length in the future due to the layout of the Airport's property. Both Runway 11-29 and Runway 07-25 are Approach Category B runways, and these planning and design criteria should be maintained for the planning period of this Master Plan update. Should Runway 11-29 be extended, the FAA recommends that the future length of Runway 07-25 be based upon a minimum of 80 percent of the future length of Runway 11-29.

**AIRPLANE DESIGN GROUP**

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Aircraft are also divided into Airplane Design Groups based on their wingspan. Those Airplane Design Groups are defined in **Table III-8**.

Table III-8 - Airplane Design Groups

Group	Wingspans
I	Up to but not including 49 feet
II	49 feet up to but not including 79 feet
III	79 feet up to but not including 118 feet
IV	118 feet up to but not including 171 feet
V	171 feet up to but not including 214 feet
VI	214 feet up to but not including 262 feet

Source: FAA AC 150/5300-13, *Airport Design*

As was true for approach speed categories, it is feasible to have different Airport Design Groups at the same Airport facility. However, to allow aircraft of a Design Group full access to New Smyrna Beach Municipal Airport, the planning and design criteria for both runways and associated taxiways should be kept the same.

## AIRPORT REFERENCE CODE

The Airport Reference Code (ARC) recommended for the planning and design of facilities for New Smyrna Beach Municipal Airport, as previously discussed, is comprised of the Aircraft Approach Category and the Airplane Design Group selected for each airfield element.

As the Airport exists currently, the most demanding ARC (Aircraft Approach Category B – Airplane Design Group II; B-II) has been utilized as the design criteria for Runway 11-29 (as the primary runway) and for Runway 07-25 (as the secondary runway). It is understood that this reference code is representative of the type of aircraft that are and will be utilizing New Smyrna Beach Municipal

Airport throughout the planning period. While there are a number of larger turboprop and business jet aircraft within this classification, the aircraft representing the current and future designation is the Beechcraft 1900D. In fact, it is understood that on a regular basis the Beechcraft 1900Ds will utilize Runway 02-20 for both takeoffs and landings. Because this runway has the proper runway width and separation standards, it too has been designated as having an existing and future ARC of B-II. The Beechcraft 1900D has a maximum allowable takeoff weight of 16,950 pounds with a single wheel landing gear configuration.

## AIRSIDE FACILITIES

Airside facilities include runways, taxiways, navigational and landing aids, lighting, and markings. Each of these are addressed below. Aircraft parking aprons are discussed under landside facilities.

## RUNWAYS AND TAXIWAYS

The selection of the appropriate FAA design standards for the development of runways and taxiways is based upon the critical aircraft forecast use at the Airport. Based upon the Airport activity fleet mix presented in Section 3.1.5, the existing and future critical aircraft forecasted to utilize the Airport will include those with an ARC of B-II. Therefore, the airfield facilities must meet or exceed the required design standards for this ARC as outlined in FAA AC 150/5300-13, *Airport Design*.

Of the various design standards, the most critical are the Runway Safety Area (RSA), Runway Object Free Area (ROFA), and Runway Object Free Zone (ROFZ). The size of the RSA, ROFA, and ROFZ are a function of the ARC as well as the minimums associated with the most critical approach to the runway. Under ARC B-II with not lower than  $\frac{3}{4}$  statute mile minimums, all of the runways at the Airport require a 150 foot wide RSA (75 feet either side of the runway centerline) that extends 300 feet beyond each runway end. The ROFA for each runway needs to be 500 feet wide (250 feet either side of the runway centerline) and also extend 300 feet beyond each runway end. The ROFZ needs to be 250 feet wide and extend 200 feet beyond each runway end. All three runways at the Airport currently meet the FAA standards required for each RSA, ROFA, and ROFZ. In addition, all of these critical surfaces

are on Airport property and any proposed changes resulting from runway modifications will be addressed in *Chapter Four – Airport Alternatives*.

As noted above, airfield capacity provided by the three existing runways is adequate throughout the first half of the planning period. As operations approach the theoretical 230,000 operations per year threshold during the second half of the planning period, consideration should be given to decommissioning Runway 02-20. Depending on the ultimate length and extension(s) to Runway 11-29, the decommissioning of Runway 02-20 could create an open-V runway layout, thus increasing the airfield capacity to 270,000 per year. As stated before, once the new ATCT has been operational for a few years, the figures of the capacity analysis can be compared to the annual operations officially counted by the control tower staff.

The City of New Smyrna Beach considers the existing facilities for executive jet traffic to be inadequate. The current 4,323 foot primary runway, Runway 11-29, and the lack of an instrument landing system (ILS), deter business jet traffic from utilizing the Airport. This type of traffic would be better served by a precision approach for periods of inclement weather, as well as a longer runway. However, due to the land requirements needed for an ILS, it is unlikely that this would be feasible. At a minimum, a runway extension should be considered for this runway, along with associated improvements to the taxiway system.

Both the current widths of the runways as well as their pavement strength are adequate for the planning period. However, both runway pavements will need work during the planning period. Runway 11-29 is scheduled for resurfacing in the short term, and Runway 07-25 is scheduled for resurfacing of the portion between thresholds and reconstruction of the displaced thresholds in the intermediate term. Runway 02-20, should it remain in operation, is in the poorest condition of the three runways, and should be rehabilitated as soon as practicable. An evaluation of the airfield's pavements was conducted by Eckrose/Green Associates, Inc. in 1998 for the FDOT.

Determination of the recommended runway length is dependent on the type of aircraft expected to use the runway, the mean maximum annual temperature at the Airport, and the Airport's elevation. Currently, both runways can only accommodate small, Class A or B aircraft. An extension to 5,280 feet would allow 75 percent of large airplanes 60,000 pounds in weight or less to access the Airport with 60 percent useful loads in all weather conditions. An extension of Runway 11-29 to 5,500 feet would allow 100 percent of large airplanes 60,000 pounds in weight or less to access the Airport with 60 percent useful loads in all weather conditions. This data was obtained from FAA AC 150/5325-4A, *Runway Length Requirements for Airport Design* and the FAA's *Airport Design 4.2D* software.

The existing taxiway layout at the Airport is adequate, except that a taxiway parallel to Taxiway C is needed to relieve congestion in the terminal apron area, provide another exit from Runway 07-25, and provide a circulating aircraft path for the t-hangar area. Taxiways A and D require pavement rehabilitation. Currently most airfield development has good access to the taxiway system.

## **NAVIGATIONAL AND LANDING AIDS**

Airport and runway navigational aid requirements are based upon FAA recommendations as described in FAA Advisory Circular AC 150/5300-13, *Airport Design*. Recommendations are predicted upon type, mission, or volume of aeronautical activity projected for the Airport as well as the associated design standards related to safety considerations and operational needs.

Activity forecasts that were presented in the previous chapter, *Chapter Two – Aviation Forecasts*, projected 6,761 annual instrument operations by 2007 and 9,663 by 2022. Should new instrument approach procedures be implemented, these numbers would probably be a conservative estimate of future activity.

A new Airport rotating beacon is currently mounted on top of the new ATCT. The ATCT was constructed in 2004 and was activated in October 2004.

Instrumentation and lighting are critical components in accommodating growth in traffic, especially by sophisticated aircraft. Adequate facilities not only contribute to safety and reliability, but also encourage additional activity. Additional navigational aid capability (for example, the installation of an ILS or new technology landing systems) should be considered sometime in the future as traffic levels increase and technology becomes available.

Due to the significant number of helicopter operations at New Smyrna Beach Municipal Airport, the Airport should consider creating a dedicated helipad for the ascent and descent of rotorcraft. Currently helicopter operators

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utilize different areas around the Airport for ascent and descent, as well as emergency procedure training. The separation of rotorcraft from fixed wing operations increases operational efficiency and enhances safety.

## **AIRFIELD LIGHTING, SIGNS AND MARKINGS**

Existing airfield lighting is poor, but replacement with a new system is underway. Currently, only one runway, Runway 11-29, and its parallel taxiway, Taxiway A are illuminated. It is recommended that the secondary runway, Runway 07-25, and its parallel taxiway, Taxiway B, along with portions of Taxiway C and D north of Runway 11-29 also be illuminated. Because the current airfield electrical vault is in poor condition, it is recommended that it be replaced as part of one of the lighting improvement projects. The new vault should be located in the vicinity of the new ATCT. An emergency generator should also be provided to serve the ATCT as well as the airfield lighting.

Temporary airfield guidance signs, made of painted plywood, were recently installed throughout the airfield, but these should be replaced with permanent signs meeting FAA L-858 requirements. Most of the permanent signs which are set to be installed in 2005 will be internally illuminated. This project will also include the redesignation of Runway 07-25

Pavement markings are in poor condition and do not meet FAA standards as outlined in AC 150/5340-1H, *Standards for Airport Markings*, except for Taxiway B, Taxiway C, and a portion of Taxiway D. Restriping will be performed concurrently with the rehabilitation of the Airport's runways and taxiways.

## **LANDSIDE FACILITIES**

Following the determination of airfield facilities needed to accommodate aviation demand throughout the planning period, an analysis was conducted to determine needs for future landside facilities. Generalized relationships developed by the FAA were utilized to project space required for various types of facilities. These relationships established space requirements on a per aircraft or per operation basis. Projected space requirements for future landside facilities to meet the levels of demand forecasted are discussed in the following sections.

The forecasts of aviation demand contained in Chapter Two presented projections of based aircraft for different scenarios, with the Airport Advisory Board selecting the multiple regression analysis as the preferred forecasting methodology. As mentioned in this and earlier chapters, the City of New Smyrna Beach recently completed the construction of a new ATCT. For planning purposes, it is assumed that the number of based aircraft will not increase due to the ATCT construction. The facility requirements contained here are based wholly on the multiple regression projections contained in *Chapter Two – Aviation Forecasts*.

## **TERMINAL FACILITIES**

A terminal building typically provides areas such as offices, conference rooms, lounge areas, food services, storage, and other amenities to passengers and pilots. These facilities are currently available in space provided by the FBOs at the Airport. Their adequacy throughout the planning period is in question, but it is likely that terminal space will continue to be provided by the FBOs rather than by the Airport sponsor. The New Smyrna Beach Municipal Airport Administration Office is currently located adjacent to and southeast of the Airport in the City of New Smyrna Beach Public Works facility. While this facility is adequate for the short-term, a larger administration office should be considered as part of the ongoing development at the Airport.

## **AUTO PARKING REQUIREMENTS**

Auto parking requirements at general aviation Airports are a function of peak hour aircraft operations. Parking spaces are typically used by aircraft owners and their passengers as well as by Airport employees. Auto parking spaces, for the most part, should be located in such a way that they conveniently serve aircraft storage and parking areas, terminal and administrative areas, and businesses located on the airfield. Currently at New Smyrna Beach Municipal Airport each FBO or business has their own auto parking, and overall there is a shortage of parking at the Airport. The shortage of parking spaces is most notable at the Epic Aviation facility, where many vehicles routinely park on the grass shoulders, causing erosion and maintenance problems. A parking lot expansion is recommended in the future.

## **HANGAR AND HANGAR APRON REQUIREMENTS**

The space required for hangar facilities at a general aviation Airport is dependent upon the number and type of aircraft based at the Airport and the availability of hangar facilities.

To determine future hangar needs for general aviation aircraft at New Smyrna Beach Municipal Airport, it is first necessary to determine the number of aircraft that would request future hangar storage. Typically, the more sophisticated and expensive the airplane, the more likely it will require hangar storage. Based on this assumption, it was concluded that all Class C aircraft projected to be based at New Smyrna Beach Municipal Airport over the planning period would request hangar storage space. Hangar storage requirements for the remaining aircraft based at the Airport were developed based on past trends. Approximately 50 percent of the aircraft at New Smyrna Beach Municipal Airport have been stored in hangar facilities, and it was assumed that this hangar storage trend would continue. The remaining aircraft will be parked on existing open tie-down areas.

As construction costs increase, general aviation Airports across the country have shown an increased tendency to use less expensive T-hangars, rather than conventional hangars, for aircraft storage. T-hangars are not only less expensive per stored aircraft to construct, they also provide the aircraft owner greater ease in accessing the airplane while, at the same time, helping to reduce possible damage from other aircraft when moving into and out of hangar storage, compared to multiple aircraft storage in a conventional hangar. For these reasons, the primary purpose of conventional hangars at general aviation Airports has shifted away from exclusive use as a storage facility. Conventional hangars are primarily being used for maintenance activities, fixed based operator operations, and storage of larger, sophisticated aircraft. Based on this data, it was assumed that all Class C aircraft hangared over the forecast period would be housed in conventional hangars. All other hangar storage requirements will be met with T-hangar facilities.

The final step in the identification of hangar requirements involved allocating adequate space to accommodate future hangar facilities. General FAA planning criteria presented in AC 150/5300-13 and the National Fire Protection Association 409 regulations indicate a general standard of 1,200 square feet per T-hangar unit for Class A and B aircraft, with a one-hour firewall between each pair of units. This is based on the limitation of 3,000 square foot maximum occupied by multiple tenants without a firewall for conventional hangars, and approximately 3,600 square feet should be allocated to each Class C aircraft to be based at the Airport. It is also recommended that an additional 10 percent of the total hangar area be included in the conventional hangar facility for maintenance areas. These standards are applied to the number of aircraft to be hangared in each of the planning years. **Table III-9** presents the total area needed for both conventional and T-hangars over the forecast period.

Various hangar development projects are planned for construction at the Airport over the planning period. These projects are discussed in greater detail in later sections of this Master Plan.

## **LOCAL AIRCRAFT APRON REQUIREMENTS**

Parking aprons should be provided for at least the number of aircraft not stored in hangar facilities. This parking apron is typically paved or a designated grassed tie-down area. As with other landside facilities, conversion from the number of aircraft parking spaces on the local ramp to square yardage was required for allocating space on Airport property through the planning period. This conversion was made using the planning standard of 300 square yards per aircraft to be parked on the local apron. This planning standard is taken from FAA AC 150/5300-13, *Airport Design*. The existing apron areas are generally in good condition.

## **ITINERANT AIRCRAFT APRON REQUIREMENTS**

FAA AC 150/5300-13 also suggests a methodology to determine future itinerant aircraft parking needs. The methodology used is based on the busiest day during the peak month to determine itinerant ramp requirements. A condensed version of this methodology is outlined below:

- Calculate or obtain total annual operations.
- Calculate the average day operations for the most active month.
- Assume the busy day is 10 percent more active than the average day.
- Assume that 50 percent of the transient aircraft will be on the apron at one time.
- Allow an area of 360 square yards per aircraft.

Using this methodology, the number of parking spaces required for itinerant aircraft was determined. Forecast total itinerant apron requirements are presented in **Table III-9**.

## **FUEL STORAGE REQUIREMENTS**

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To calculate fuel storage requirements, peak month fuel sales were used as a base and increased proportionally with the forecast annual aircraft operations. Discussions with the FBO at New Smyrna Beach Municipal Airport with the highest volume of total fuel sales indicated that the average fuel consumption per departure ranges from 15 to 20 gallons for single-engine piston aircraft, 50 to 60 gallons for multi-engine piston, and 400 to 500 gallons for jet aircraft. This level of consumption was assumed to remain relatively constant over the planning period, as any changes in fleet mix (including the likely scenario of more jet operations consuming more fuel) will likely be offset by increased jet engine fuel efficiency.

Currently there is only one Jet A fuel sales agent at New Smyrna Beach Municipal Airport.

**Table III-9** presents the forecast fuel storage capacity to accommodate peak monthly fuel needs in each of the planning years. Recommended storage capacities will be adequate to meet fueling needs over the 20-year planning period only if fuel supplies are continued to be replenished at the same interval they are presently. Fuel storage requirements shown in **Table III-9** should be viewed as the minimum storage capacity to be planned for in each of the planning years and must be considered within the context of fuel distributor delivery policies. The capacities presented represent the requirements for both Avgas and Jet A fuel types. While the quantities are considered adequate, Airport management would like to eventually consolidate all aviation fuel storage at one location on the airfield.

Table III-9 - Future Storage and Apron Requirements

Conventional hangar requirements (square feet)	11,880 (100,300)	11,880	15,840	19,800
T-hangar requirements (square feet)	91,800 (82,850)	103,800	116,400	147,600
Local aircraft apron requirements (square yards)	22,800 (11,100)	25,800	29,100	36,900
Itinerant aircraft apron requirements (square yards)	89,777 (14,361)	101,127	113,914	144,540
Fuel storage, Avgas (gallons)	33,434	37,661	42,423	53,830
Fuel storage, Jet A (gallons)	20,834	23,468	26,435	33,543

\*Existing facilities for base year 2002 listed in parentheses

It is interesting to note that using the FAA criteria, the Airport appears to have much more hangar and much less apron space than they currently require. With respect to hangar space, not all of the square footage documented is used for aircraft storage. In fact, in most instances for the conventional hangar space, the square footage also included the various areas utilized for office space, equipment storage, and other uses in addition to actual aircraft parking. On the apron side there appears to be a significant deficiency as the FAA methodology also accounts for a part of the space required to have the proper aircraft access. In other words, the FAA methodology tries to account for the necessary setbacks associated with taxilanes and the required object free areas.

## GROUND ACCESS FACILITIES

A forecast of vehicular traffic, as related to general aviation activity, was reviewed to determine the scope of surface access facilities needed to serve automobiles traveling to and from the Airport. It was determined that the current four-lane roadway (US 1) serving the New Smyrna Beach Municipal Airport main entrance and the City of New Smyrna Beach Public Works Department is adequate. Additional vehicular accesses, at various locations for all Airport quadrants, serve the various businesses around the airfield. Generally, these roadways are in good condition and provide adequate access. However, the internal access road parallel to US 1 that connects the main entrance (Skyline Drive) is unpaved, and needs to be upgraded to a paved road.

## UTILITIES

The current utilities (electrical, telephone, water, and sewage disposal) at New Smyrna Beach Municipal Airport are generally adequate at the existing facilities, except that the sewer service should be extended, at the time Aero

Circle is paved, to replace septic disposal systems serving various hangars on the east side of the Airport. Utility improvements are needed, as a constituent of other projects, to support future aviation facility development areas throughout the planning period.

## **SECURITY FENCING**

Security fencing is needed to protect aircraft operating areas from unauthorized vehicular and pedestrian traffic. Currently, the Airport is enclosed by security fencing, except for an area that is made inaccessible by water bodies and a small section on the east side of the Airport where fencing remains to be installed. The Airport fence is a six foot tall chain-link without barbed wire.

## **AWOS – AUTOMATED WEATHER OBSERVING SYSTEM**

An Automated Weather Observing System (AWOS) provides continuous real-time weather reports, 24 hours a day, without human involvement. Using a computer-synthesized voice, AWOS can generate new weather reports every minute in a standard format familiar to pilots. The information may be broadcasted through common navigational aids or its own discrete VHF frequency. The weather report, in digital form, can be sent to continuously update the weather.

There are three basic types of AWOS configurations. AWOS I includes sensors to measure and report temperature, dew point, wind speed, wind direction, altimeter setting and density altitude. AWOS II includes all measurements from AWOS I, plus visibility and precipitation sensors. AWOS III includes all measurements from AWOS II, plus cloud height and cloud cover information. Most AWOS systems also have the option to include sensors for precipitation detection; including time of occurrence, rate of accumulation and total accumulation; freezing rain detection and time of occurrence; and thunderstorm detection and time of occurrence.

The only instrument approach to New Smyrna Beach Municipal is the non-precision NDB/GPS approach to Runway 29. Currently this approach requires the pilot to use the Daytona Beach International Airport altimeter setting, which provides a minimum descent altitude (MDA) of 640 feet on the approach. Once a local altimeter setting becomes available, the MDA might be lowered. The addition of an AWOS would also provide 24-hour weather information and a 24-hour local altimeter setting information even when the new ATCT is closed. Therefore, it is recommended that an AWOS III be installed at the Airport during the short-term planning period.

Using FAA siting criteria, a location was selected for the construction of the AWOS near the center of the Airport. This area is bounded by Taxiway A, Taxiway B, and Runway 02-20. This area was selected as the best site based on the FAA's criteria, including requirements such as distance from runway centerline, distance from runway threshold, and siting the AWOS free of any of the Airport's critical areas, such as the runway and taxiway safety areas and object free zones. The area reserved is shown on the ALP, including the recommended 500-foot clearance radius around the instrument.

## **ARFF – AIRCRAFT RESCUE AND FIRE FIGHTING**

Consideration for the design and construction of an Aircraft Rescue and Fire Fighting facility is recommended in the long-term future development of the Airport. These facilities would include rapid intervention vehicular equipment and an airside building, providing rapid response times. This project should be considered as the Airport grows or the traffic mix necessitates it. Currently there is a City fire station at the southeast corner of the Airport, on Airport property.

## **AIRFIELD STORMWATER AND DRAINAGE**

The existing airfield drainage system, except for additions constructed during the previous 20 years, is a positive drainage system consisting of inlets, pipes, and open swales, to convey stormwater off Airport property without deliberate ponding. This system functions well, with no significant drainage problems, and is in fair to good condition.

Improvements constructed since the mid-1980's have individual dry ponding facilities to provide stormwater treatment and peak-discharge attenuation, in compliance with government regulatory requirements.

Future development projects will require new stormwater management facilities which will be designed individually to meet the particular requirements of the development. These could be grouped into logical localized master-permitted systems, as was done previously for the south T-hangar complex. Unless required in the future by the governing regulatory agencies, there is no significant benefit to the Airport in developing an Airport-wide master

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stormwater plan. Such master drainage plans are typically difficult to implement due to the unpredictable nature of tenant development and the dynamics of funding such projects. After completion of a master stormwater plan, permitting and construction of stormwater management systems typically reverts quickly to being performed on a project-by-project basis.

# GOALS, OBJECTIVES, AND POLICIES

## MOBILITY / EFFICIENCY GOAL:

To provide for the development of a comprehensive transportation system for the movement of people and goods that safely, conveniently, and efficiently serves the travel needs in the New Smyrna Beach area, while protecting established neighborhoods, environmentally sensitive areas, and archaeologically / historically significant sites. This goal will be met by initiating the objectives and policies stated herein.

### OBJECTIVE:

1. To guide the City in developing the future transportation system, the Transportation Element shall establish the preferred transportation plan within the City and the New Smyrna Beach planning area .

### POLICIES:

- a. Alleviate traffic congestion and reduce travel time between geographical areas within the New Smyrna Beach planning area. The projected traffic circulation system demand through the year 2025 will be met by undertaking the projects listed in Future Traffic Conditions Table III-3.
- b. Preserve corridors for future transportation system development.
  - i. Designate a corridor alignment for a two (2) lane collector road with a minimum 130' right-of-way approximately parallel to Interstate 95 along the present power line corridor extending from Pioneer Trail to south City limit.
  - ii. Recommend to Volusia County and the Volusia County Transportation Planning Organization (TPO) that County Road 4118 (Pioneer Trail) / Wallace Road be planned as a four (4) lane facility from Airport Road to State Road 44. Alternate routes along this alignment may be considered so long as the impacts to the traffic network are equivalent.
  - iii. Designate corridor alignments connecting the Airport Road extension south of State Road 44 to an extension of the other proposed collector to create a potential network that could be expanded over Interstate 95 to connect to Park Avenue in Edgewater. Suggest this alignment for consideration as part of the TPO long-range plan updates.
  - iv. Require all development within the Southeast Volusia Activity Center to access State Road 44 via a network of service roads.
- c. Promote the use of alternative modes of transportation to reduce congestion and vehicle miles traveled (VMT) caused by single occupant vehicle (SOV) usage.
  - i. Work with the Volusia TPO to establish numerical indicators against which the achievement of the mobility goals of the community can be measured, such as modal split and automobile occupancy rates;
  - ii. Develop a safe usable pedestrian circulation system by providing sidewalks along all major streets adjacent to schools, between school sites and selected major streets, between school sites and parks or recreational areas, and add sidewalks, where necessary, to connect or complete either existing or proposed sidewalks in a manner that provides a complete pedestrian circulation system;
  - iii. Develop a safe bicycle and pedestrian transportation system with access to and within regional and community parks, all major public and private facilities, public transit, beach and river access areas, and other recreational facilities. Such provision should include bicycle parking at these locations, as well as at public, commercial, and service buildings, which is accessible;
  - iv. Include the construction of bicycle and pedestrian ways in conjunction with the

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construction, reconstruction, or changes in any state facilities, and assure that all transportation improvements address the needs of bicyclists and pedestrians and where bikeways and sidewalks are needed;

- v. Incorporate public transit, bicycle, and pedestrian considerations in the review of all site plans and plats;
  - vi. Promote developments designed to encourage non-motorized trips by providing efficient, convenient, and safe bicycle and pedestrian facilities;
  - vii. Increase information to the public regarding available transportation choices;
  - viii. Utilize Intelligent Transportation System technology applications to meet transportation system demands;
  - ix. Encourage the use of public transit; and
  - x. Create bicycle and pedestrian facilities, including multi-use trails and greenways, which tie the street system with greenway systems and major activity centers. Consider off-roadway travel corridors, such as drainage canal, railroad, and utility right-of-way property, as potential corridors.
- d. Continue to monitor and support the work of the Amtrak® /Florida East Coast Railway Corridor Project to re-establish intercity passenger rail service from New York to Florida's east coast communities with the objective of additional services in the corridor between Jacksonville and Miami, Florida.
  - e. Pursue Amtrak® for a commitment of a stop on the proposed re-establishment of intercity passenger rail service on the Florida East Coast Railway.
  - f. Maximize the useful life of existing facilities of the transportation system.
  - g. Work with VOTRAN to establish achieve a level-of-service for public transit of 15 minute service during peak-hour demand by 2020.

## **OBJECTIVE:**

2. To implement programs to ensure that the long-range Transportation Plan supports, and is consistent with, the current and Future Land Use Plans of New Smyrna Beach.

**POLICIES:**

- a. Coordinate the Future Land Use Plan and Transportation Plan to encourage the location of high traffic-generating development adjacent to the arterial and collector network.
- b. Coordinate the Future Land Use Plan and Transportation Plan to minimize the disruptions of commercial and residential neighborhoods. Toward this end, the City has established a policy of not widening several roadways that are designated as constrained, scenic, or historic facilities.
- c. Coordinate the right-of-way needs with the Future Land Use Plan , as identified as part of the long-range Transportation Plan.
- d. Building setbacks and landscaping criteria will be considered in the location of new transportation facilities and the improvement of existing ones.
- e. The roadway network on the beachside of the Indian River will be planned and constructed in such a way as to encourage the preservation of the existing beach area community, and to discourage development of high-intensity land uses. Toward this end, the City has established a policy of not widening roadway facilities on the beach side of the river north of East 3<sup>rd</sup> Avenue.

**OBJECTIVE:**

3. To implement a Transportation Plan, which is consistent with county and state transportation plans, to the extent required by law.

**POLICIES:**

- a. Coordinate the planning and programming of local transportation improvements with Volusia County, FDOT, Volusia TPO, and the Volusia Council of Governments (VCOG).
- b. Adopt the *FDOT Five (5) Year Work Program* and *Volusia County Five (5) Year Road Program* as part of the short-range element of the New Smyrna Beach Transportation Plan.
- c. Update both the long-range and short-range elements of the Transportation Plan at established periodic intervals. The short-range element will be updated yearly in conjunction with the *Volusia TPO Year Transportation Improvement Program (TIP)*; and the long-range element will be updated at least at five (5) year intervals.
- d. Actively participate in the Volusia County TPO process, and with the Volusia Council of Governments.
- e. Provide all affected agencies with copies of the New Smyrna Beach Transportation Plan.
- f. Keep on file copies of the current plans of any agencies affecting transportation within the New Smyrna Beach planning area within the City Planning and Zoning Department.
- g. Request reviews from other agencies, which may be affected by new development proposals.

**OBJECTIVE:**

4. To maintain and create transportation facilities that operate in a safe and efficient manner while maintaining an aesthetically pleasing character.

**POLICIES:**

- a. Specific design and planning criteria for transportation facilities should meet or exceed those criteria published on the federal, state, and local level. These include the Florida Department of Transportation *Manual of Uniform Minimum Standards for Design, Construction and Maintenance of Streets and Highways*; and the American

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Association of State Highway and Transportation Engineers *Policy on Geometric Design of Highways and Streets, 5<sup>th</sup> Edition, 2002.*

- b. The minimum acceptable roadway operating conditions during peak hour will be LOS "C" on the Florida Interstate Highway System, LOS "D" on other state highways, and LOS "E" on minor arterials, collectors, local roadways, and all facilities located within a central business district. The central business districts shall be defined as follows:

Mainland: That area designated as Mixed Use on the Future Land Use Map including roads adjacent to areas designated as Mixed Use.

Beachside: The area bounded by an east west extension of Florida Street on the north and Jessamine Street on the south and the Indian River and Atlantic Ocean as west and east boundaries, respectively.

- c. Coordinate with the FDOT, the Volusia TPO, Volusia County, and the East Central Florida Regional Planning Council to designate the following facilities as constrained, scenic, or historic:

Road Name	From	To
Canal Street	US Highway 1	Riverside Drive
Flagler Avenue	Peninsula Avenue	Atlantic Avenue
Riverside Drive	Wayne Avenue	South City Limit
Faulkner Street	Tanglewood Avenue	Canal Street
Washington Street	US Highway 1	Riverside Drive
Saxon Drive	East 3 <sup>rd</sup> Avenue	South City Limit
State Road 44 (Lytle Avenue)	US Highway 1	Live Oak Street
State Road A1A (South Causeway / East 3 <sup>rd</sup> / South Atlantic Avenues)	Live Oak Street	South City Limit

- d. On City roads designated as constrained, scenic, or historic facilities, New Smyrna Beach shall not schedule improvements to increase the number of through lanes. The City shall monitor traffic volumes and operating conditions on designated constrained, scenic, or historic facilities and at the time the level-of-service on a constrained, scenic, or historic facility falls below the minimum acceptable level-of-service for that facility, the City may not allow further significant development of the facility unless acceptable, mitigative measures to the adverse traffic impact of the development are provided.
- e. New Smyrna Beach shall coordinate with the FDOT, the Volusia TPO, and Volusia County to not schedule improvements to increase the number of through lanes on state or county maintained highways and roads designated as constrained, scenic, or historic. Work with the state and Volusia County to develop access management plans that maximize roadway capacity and safety by minimizing median and curb cuts to effectively manage access to US Highway 1, State Road A1A, State Road 44, and County Road A1A, as dictated by adjacent land uses.
- f. Pursue improving the capacity of the existing traffic signal control systems, and maximizing the capacity of any new signal control systems, through the use of traffic signal interconnection and/or coordination where appropriate. Other Transportation System Management (TSM) techniques will be explored to improve the capacity of congested roadways.
- g. Continue to coordinate with the Volusia TPO to develop a bicycle facilities plan.
- h. Enforce building and landscape setbacks to preserve rights-of-way for needed roadway expansion.

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- i. Observe effective street signing procedures in accordance with criteria outlined in the *Manual of Uniform Traffic Control Devices*.
- j. Monitor crash data for major arterial thoroughfares.
- k. Use state grants, transportation impact fees, proportionate share agreements, and special assessments, when available, to upgrade deficient facilities.
- l. Develop regulations for the safe and efficient movement of pedestrians within all new development proposals and the redevelopment of sites.
- m. Establish a regular traffic counting program on the City major roadways in cooperation with Volusia County and the FDOT. This shall include those streets designated as constrained, scenic, or historic. The purpose of this program will be to adequately monitor traffic conditions so that the City can anticipate future capacity improvements required on the City street network.
- n. Work with Volusia County and the FDOT to establish a traffic operating conditions monitoring program for the major state roads running through the City (US Highway 1, State Road A1A, and State Road 44). This program will include travel time studies to determine actual peak-period operating levels-of-service. The purpose of these studies will be to accurately determine operating levels-of-service on these roadways; in addition, these studies will attempt to determine how much of the traffic volume increases on these state roadways is attributable to new development activity approved within the City of New Smyrna Beach.
- o. Implement the adopted long-term transportation concurrency management system to maintain adopted levels-of-service.
- p. Establish a Transportation Concurrency Exception Area (TCEA) coterminous with the Community Redevelopment Agency area to promote urban infill and redevelopment where opportunities for expansion or addition of new transportation corridors are limited. Development/redevelopment projects within the TCEA shall address their transportation impacts and mitigation through alternative methods, which will be examined and considered instead of the typical roadway capacity projects, consistent with the following strategies:
  - i. Prepare a plan by November 1, 2012, to support and fund mobility within the TCEA consistent with §163.3180(5)(a), *Florida Statutes*;
  - ii. Mitigating measure(s) shall advance the goals of adopted area or subject matter plans, such as community redevelopment agency master plans, neighborhood plans, corridor plans, bicycle and pedestrian plans, or transit development plans;
  - iii. Potential alternative mitigating measure(s) may include but not be limited to the following; operational and/or capital enhancements for Votran, participation in a transit pass program for employees, van pooling, or ride sharing programs, pedestrian improvements, bus shelter/stop improvements, bicycle improvements, lighting improvements, connectivity improvements, roadway/Intersection Improvements, streetscape improvements, enhancements to a traffic management system, creating parallel travel ways connecting adjacent development, financial contributions to implement actions consistent with this policy, and any other measures which increase mobility options and intermodal connections as may be approved by the City; and
  - iv. Any development or redevelopment project within the TCEA that impacts roadway segments or intersections outside the TCEA shall be subject to concurrency requirements for those impacts outside the TCEA.

## **OBJECTIVE:**

5. To minimize the public sector capital outlay in the construction of new transportation

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facilities and the improvement of existing facilities.

## **POLICIES:**

- a. Reserve and/or acquire rights-of-way required for future roadway widenings or new construction as early as reasonably possible; and require the dedication of the necessary right-of-way in the development approval process.
- b. Adopt and enforce ordinances requiring new development to provide needed rights-of-way, and develop an acquisition and funding program for rights-of-way to be acquired by the City.
- c. Require new development to provide facilities and/or pay its fair share toward transportation improvements.
- d. Require developers to provide paved roads, lighting, street trees, and sidewalks within all new developments.
- e. Monitor new development patterns and revise the Transportation Plan in a timely manner, as necessary. This may entail revising the schedule, and/or the content, of the improvement program at irregular intervals.
- f. Accept maintenance responsibility for any roads only with a concurrent shift in adequate maintenance revenues.

## **ENVIRONMENT GOAL:**

Preserve and enhance the City of New Smyrna Beach's unique and natural environmental features by protecting the integrity of air, land, water, energy, cultural, and aesthetic resources.

## **OBJECTIVE:**

1. To protect and preserve the character of the existing New Smyrna Beach central business districts and beachside areas, areas of historic and archaeological significance, and environmentally sensitive areas, while providing for safe traffic circulation.

## **POLICIES:**

- a. Several City and state roadways have been designated constrained, scenic, or historic facilities and will not be widened as provided in Policy 4.c.
- b. Consider pedestrian and bicycle travel and safety in conjunction with vehicle operating efficiency.
- c. Vigorously discourage roadway construction that impacts areas of historic, archaeological, and/or natural significance.
- d. Require mitigation measures for roadway construction, which has a negative impact on historically, archaeologically, and/or environmentally sensitive areas, such as noise and water runoff.
- e. Initiate and support projects, programs, and services that conserve energy and reduce greenhouse gases.
  - i. Examine the *Land Development Regulations* to identify inconsistencies with the Smart Growth Principles and determine if separated land uses, low-density, large setbacks, parking regulations, and street design standards should be changed to reduce greenhouse gases;
  - ii. Require a bicycle parking ratio based on the number of automobile parking spaces for new and redevelopment projects; and
  - iii. Provide parking reductions for compact vehicles and motorcycle/scooter parking.
- f. Undertake and promote energy conservation programs in transportation.
- g. New or reconstructed roadways shall be designed to prevent and control soil erosion, minimize clearing and grubbing operations, minimize stormwater runoff, and avoid

unnecessary changes in drainage patterns.

- h. Encourage pedestrian and transit orientated land development designs that accommodate pedestrians, bicycles, and public transit by providing the community with travel alternatives other than the automobile.
  - i. Reduce large front yard setbacks;
  - ii. Provide pedestrian and bicycle facilities, including sidewalks, multi-use trails, bicycle racks or lockers;
  - iii. Accommodate public transit with route extensions, bus stops and shelters, turnarounds, and taller overhangs; and
  - iv. Place parking to the side or rear of building.

## **SAFETY GOAL:**

Promote and implement transportation system improvements for all modes that minimize the occurrence of potential crashes that might result in the loss of health, life, and property.

### **OBJECTIVE:**

- 1. Develop a Transportation Plan that gives priority consideration to transportation system improvements that prevent crashes, injuries, and minimize losses.

### **POLICIES:**

- a. Properly maintain the various types of transportation facilities, including streets, intersections, buses, sidewalks, multi-use trails, transfer facilities, intermodal terminals, etc.
- b. Upgrade the street system to minimum width standards based on an overall system plan.
- c. Focus on high crash areas for transportation improvements.
- d. Minimize conflicts between and within roadways, public transit, rail, bicycle, and pedestrian facilities.

### **OBJECTIVE:**

- 2. Maintain an adopted roadway plan and evacuation routes, which provide for safe and efficient evacuation of the population in emergency situations.

### **POLICY:**

An emergency evacuation plan consistent with state and local guidelines will be adopted and maintained by the City of New Smyrna Beach.

## **ECONOMIC DEVELOPMENT GOAL:**

Promote the balanced and sustained economic growth through the efficient movement of goods and people in a safe, energy efficient, and environmentally sound manner.

### **OBJECTIVE:**

- 1. To give priority consideration to transportation projects and systems that facilitate local job creation and retention.

### **POLICIES:**

- a. Promote efficient land-use patterns, appropriate commercial and industrial development locations, and redevelopment opportunities.
- b. Address truck accessibility and maneuverability to and within commercial and industrial areas.
- c. Collaborate on the *Volusia County Truck & Freight Study* and participate on the Goods Movement Advisory Committee (GMAC)

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- d. Give consideration of the true costs and benefits of providing the transportation facilities necessary to move goods.

## **OBJECTIVE:**

2. To maintain the viability of the municipal airport as a tool for economic development.

## **POLICIES:**

- a. Complete improvements detailed in the 2005 Airport Master Plan by December 31, 2013.
- b. Update the Airport Master Plan by December 31, 2013.

## **ACCESSIBILITY GOAL:**

Develop a transportation system that is reliable and accessible to all potential users.

## **OBJECTIVE:**

1. To create a physical environment that supports access to public transit.

## **POLICIES:**

- a. Improve accessibility to bus stops through the extension of sidewalks and the removal of architectural barriers in both new development and reconstruction projects.
- b. Improve the amenities available at bus stops through provision of benches, landscaping, shade trees, and shelters. Locations for improvements shall be coordinated with Votran.
- c. Assist Votran in improving the transfer site in the Canal Street central business district.
- d. Within existing and potential transit corridors, geometric design of intersections and driveways to major activity centers will be adequate to service standard transit vehicles.
- e. Assist Votran in identifying options for park-and-ride lots supporting express bus service.
- f. Work with Votran to establish bus service in higher-density areas and encourage higher-density development and redevelopment in support of public transit.
- g. Work with the Volusia TPO to establish numerical indicators against which the achievement of the accessibility goals of the community can be measured, such as modal split and annual transit trips per capita.
- h. Consider the needs and requirements of system users, specifically transportation disadvantaged persons.
- i. Follow the *Votran Transit Development Design Guidelines* for bus stops, bus shelters, new developments, and redevelopment of sites.

## **OBJECTIVE:**

2. To support the provision of public transit service and its coordination with other modes of transportation.

## **POLICIES:**

- a. Continue to support transit service at the policy and technical levels of the TPO.
- b. Assist Votran in the distribution of schedules and literature about transit services by making this information available at the various City facilities.

Assist Votran in generating public involvement by hosting meetings, assisting in surveys and other similar efforts.