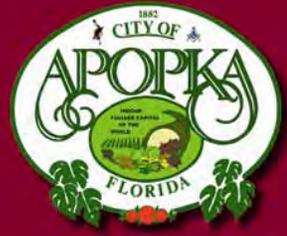


# City of Apopka

## Comprehensive Plan 2030



### Transportation Element



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# TRANSPORTATION ELEMENT

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## **TRANSPORTATION ELEMENT**

### **INTRODUCTION**

Mobility is a key element in the well-being of a City, thus the transportation system is the framework upon which the city is built. However, the transportation system must be fully coordinated with other elements of the comprehensive plan, especially the Future Land Use Element, to complement the collective goals, objectives, and policies of all the other elements and the City's vision.

One of the most vital elements of any community, urban or rural, is its transportation system. Transportation impacts virtually every aspect of our lives. An area's transportation network, including its streets, highways, public transit, airports, and railroads, is essential to the orderly functioning of an area by providing mobility for people and goods and access to land.

### **PURPOSE AND SCOPE**

This Transportation Element addresses existing and anticipated transportation conditions in the Apopka area. Substantial growth has occurred in the Apopka area, both inside and outside of the current City limits. Therefore, this element addresses transportation needs within the existing City limits as well as outside of the City limits in an area of potential future City annexations.

### **RELATIONSHIP TO OTHER ELEMENTS**

It is important to coordinate land use and transportation planning. Often, in response to demands for additional capacity, new roadways are built that divide or destroy established neighborhoods. Many times, a two-lane roadway is widened to increase capacity, much to the detriment of surrounding neighborhoods. The existence of a roadway facility often influences the location of certain land uses. However, it is not all one sided. Effective transportation planning can be accomplished if it is based on future land use projections, and effective land use planning can be accomplished if it is coordinated with transportation planning efforts.

## EXISTING CONDITIONS ANALYSIS

The City of Apopka is located in northwest Orange County. As in most urbanized areas, the City's transportation system consists of an integrated network of state, Orlando Orange County Expressway Authority (OOCEA), Orange County and local roadways. State facilities include U.S. Highway (US) 441(also referred to as SR 500), and State Road (SR) 436. County roads include County Road (CR) 424, CR 435, and CR 437A, as well as a number of other collector level roads. City facilities, which comprise much of the City's roadway system, include a number of major and minor collector roads as well as all local residential roads. The City is also served by the Central Florida Railroad. **Map 3-1** depicts the general location of the Apopka area and some of the roadways.

This section of the element presents an analysis of existing transportation conditions for the City of Apopka. As a first step in the analysis, roadways within and outside the City limits are functionally and administratively classified. This section also contains a discussion of existing transportation facilities other than roadways.

### ROADWAY CLASSIFICATION

A roadway system can be classified in two ways, functionally and administratively. The functional classification defines a facility's physical and operational characteristics. The administrative classification refers to actual governmental responsibility. As part of the existing conditions analysis, the functional and administrative classification of roads in the Apopka area was determined.

#### Administrative

The administrative classification of roads in the Apopka area is limited to State, OOCEA, County, and City responsibilities.

- State facilities: SR 436 and US 441
- OOCEA facilities: SR 429, SR 414 John Land Expressway (Apopka Bypass)

Orange County facilities: CR 424 (Apopka Boulevard), CR 435 (Park Avenue/Rock Springs Road), CR 437A (Ocoee-Apopka Road), Bradshaw Road, Binion Road, Boy Scout Road, Hawthorne Avenue, Keene Road, Lakeville Road, Piedmont-

Wekiva Springs Road, Plymouth-Sorrento Road, Ponkan Road, Sheeler Road, Sandpiper Road, Thompson Road, Votaw Road and Welch Road

- City roadways include all local streets and several collector roads.

### Functional

The function of a roadway is two-fold: to provide access to land uses adjacent to the roadway facility and to provide mobility through an area. As more access points are added to a roadway, the ability of the facility to provide mobility to through-traffic decreases. Roadway facilities designed for mobility generally have higher speeds and restrictive access controls as well as more capacity than those designed for land access. Roads are traditionally classified into six general categories, which are listed below.

1. Limited Access Roadways (Interstates, Expressways, Freeways) - Devoted primarily to the movement of trips over long distances. Access from adjoining parcels is prohibited and access is limited to exit and entrance ramps located at major roadways. This roadway is generally a multi-lane divided facility designed to serve large volumes of high-speed traffic.
2. Major Arterial - Designed for the movement of large volumes of traffic over a relatively long distance. Serves major movements of traffic entering or leaving an urban area, as well as a majority of trips not destined or originating in an urban area. Access to adjacent land is not prohibited; however, mobility is the primary function of this facility, thus access should be strictly controlled.
3. Minor Arterial - Similar to a major arterial but designed to serve moderate volumes of traffic as well as provide connections to the major arterial system. Has a lower degree of travel mobility than a major arterial and allows more land access.
4. Major Collector - Serves internal traffic movement and connects localized area to the arterial system. Collectors serve short to moderate length trips. Land access is a function of this facility, provided it does not inhibit local traffic movement.

5. Minor Collector - Similar to that of a major collector except that it serves a more limited geographic area.
6. Local - Provides access to adjacent land uses. Average speeds and volumes are low and trips are usually short in length. Local streets are limited to servicing small local subareas.

In determining appropriate functional classifications for the Apopka area, three sources were reviewed. A functional classification system was then developed that is, for the most part, consistent with these three sources.

**Map 3-2** depicts the functional and administrative classification of Apopka's major roadways. The classification of the two state facilities as major arterials (US 441 and SR 436) is consistent with FDOT and Orange County classification of principal arterials. All county facilities that have been designated by the FDOT as either "urban extension" or "intra urban" collectors have been classified as major collectors for purposes of this element.

The mileage of classified roads within the City of Apopka, as well as a percentage breakdown, is provided in **Table 3-1**. It is important to note that this table does not include mileage for local roads, nor does it include mileage for roads outside of the City limits. A community's local roads typically consist of 80 percent of the road system, but generally carry only 20 percent of the vehicle trips.

**TABLE 3-1: ROADWAY FUNCTIONAL AND ADMINISTRATIVE CLASSIFICATION (CITY LIMITS ONLY)**

Road	Miles	Percent
Major Arterial State Highway	16.6	25.3
Minor Arterial County	16.5	25.2
Major and Minor Collector		
County	9.6	14.7
County/City	3.5	5.3
City	19.3	29.5
Total	65.5	100.0

Source: City of Apopka Engineering, 2008

## EXISTING TRAFFIC CHARACTERISTICS

In order to conduct the existing conditions analysis for Apopka's roadways, 2008 daily traffic volumes were collected from the FDOT, Orange County, Luke Transportation Engineering Consultants, and recently submitted traffic impact studies.

**Table 3-2** lists, for all analyzed roadways, the daily traffic volume, the a.m. and p.m. peak-hour traffic volumes, the "K" factor (the percentage of daily traffic that occurs in the peak hour) and the "D" factor (the directional distribution).

In a typical urban area, p.m. peak-hour traffic volumes are generally higher than those experienced in the a.m. peak hour, with seven to ten percent of the daily traffic occurring in the p.m. peak hour. A review of the traffic characteristics noted in **Table 3-2** indicates that this is also the case for Apopka area roads. The p.m., peak-hour directional splits noted in this table typically range from 55 to 65 percent. Traffic volumes on major arterials in the area generally range from 25,000 to 45,000 vehicles per day (vpd). Traffic volumes on major collectors generally range from 3,000 to 15,000 vpd, and on minor collectors the daily volumes generally range from 500 to 5,000 vpd.

**TABLE 3-2: EXISTING ROADWAY TRAFFIC CHARACTERISTICS**

Class	Road Segment	Exist Lanes	Lgth.	Year	Source	Daily Volume	AM Peak Volume	"K" Factor	"D" Factor	PM Peak Volume	"K" Factor	"D" Factor
<b>Major Arterials</b>												
<b>US 441</b>												
	Hermit Smith to Ply. Sorr Rd	4 LD	0.56	2008	LTEC	32,843	1,689	8.05%	63.90%	1,642	8.54%	58.60%
	Ply Sorr Rd to Lakeview Rd	4 LD	0.63	2008	LTEC	38,023	1,947	7.89%	64.90%	2,911	7.86%	58.60%
	Lakeview Rd to Errol Pkwy	4 LD	1.14	2008	LTEC	39,638	2,040	8.05%	64.00%	2,518	7.88%	57.40%
	Errol Pkwy to SR 429	4 LD	0.91	2008	LTEC	47,120	2,527	8.06%	66.50%	2,870	7.96%	61.70%
	SR 429 to Bradshaw Rd	4 LD	0.91	2008	LTEC	42,337	1,630	7.48%	51.50%	2,870	8.08%	51.20%
	Bradshaw Rd to Hawthorne Ave	5 LD	0.34	2008	LTEC	40,548	1,727	7.39%	57.60%	3,046	7.73%	52.50%
	Hawthorne Ave to Central Ave	5 LD	0.45	2008	LTEC	40,860	1,472	7.06%	51.00%	2,878	7.76%	53.50%
	Central Ave to Park Ave	5 LD	0.11	2008	FDOT	38,847	1,372	7.03%	50.20%	2,930	7.35%	52.10%
	Park Ave to Alabama St	5 LD	0.38	2008	FDOT	45,765	1,777	6.77%	57.40%	3,221	7.30%	52.30%
	Alabama St to SR 436	4 LD	0.38	2008	FDOT	50,045	2,009	6.93%	57.90%	2,017	7.50%	53.80%
	SR 436 to Sheeler Rd	4 LD	0.34	2008	LTEC	27,473	1,383	7.62%	66.10%	2,356	7.37%	58.60%
	Sheeler Rd to Pied-Wek Rd	4 LD	0.68	2008	LTEC	33,283	1,662	7.45%	67.00%	2,440	8.08%	63.50%
	Pied-Wek Rd to Sem Co Line	4 LD	0.88	2008	LTEC	39,406	2,183	8.04%	68.90%	3,327	8.44%	66.10%
<b>SR 436</b>												
	US 441 to Thompson Rd	4 LD	0.47	2008	LTEC	31,427	1,296	7.20%	57.30%	1,330	8.36%	50.60%
	Thompson Rd to Pied-Wek Rd	4 LD	1.31	2008	LTEC	37,088	1,637	7.23%	61.00%	1,611	8.35%	52.00%
	Pied-Wek Rd to Sem Co Line	4 LD	0.5	2008	LTEC	53,464	2,434	7.42%	61.40%	2,514	8.59%	54.80%
<b>Minor Arterials</b>												
<b>CR 424 (Alabama St/ Apopka Blvd)</b>												
	US 441 to 8th St	2L	0.37	2008	LTEC	4,900	220	8.18%	54.90%	554	11.31%	62.30%
	8th St to Sheeler Rd	2L	0.8	2008	LTEC	5,429	251	8.64%	53.50%	594	10.94%	66.70%
	Sheeler Rd to Lakeville Rd	2L	1.14	2008	LTEC	9,391	569	8.99%	67.40%	958	10.20%	67.80%

Class	Road Segment	Exist Lanes	Lgth.	Year	Source	Daily Volume	AM Peak Volume	"K" Factor	"D" Factor	PM Peak Volume	"K" Factor	"D" Factor
	Lakeville Rd to Pied-Wek Rd	2L	1.56	2008	LTEC	12,331	663	8.56%	62.80%	1,211	9.82%	67.20%
<b>CR 435 (Rock Springs Road)</b>												
	Kelly Park Rd to Ponkan Rd	2L	2.05	2008	Orange	7,866	482	8.38%	73.10%	393	9.03%	55.40%
	Ponkan Rd to Welch Rd	2L	1.08	2008	Orange	21,817	1,126	7.98%	64.70%	1,201	8.98%	61.30%
	Welch Rd to Votaw Rd	5 LD	1.65	2008	LTEC	22,211	1,111	7.28%	68.70%	1,365	9.43%	65.20%
	Votaw Rd to Orange St	5 LD	0.63	2008	LTEC	22,388	912	6.94%	58.70%	1,155	8.52%	60.50%
	Orange St to US 441	5 LD	0.34	2008	Orange	24,129	1,384	7.93%	72.30%	1,069	7.90%	56.10%
	US 441 to M. Gladden Blvd	2L	0.4	2008	LTEC	12,203	527	7.92%	54.50%	570	8.45%	55.30%
	M.Gladden Blvd to Cleveland St	2L	0.94	2008	Orange	8,582	288	6.23%	53.80%	412	7.80%	61.60%
	Cleveland St to Keene Rd	2L	1.14	2008	LTEC	7,891	303	6.91%	55.60%	392	8.25%	60.20%
	Keene Rd to McCormick Rd	2L	1.63	2008	LTEC	10,444	398	7.26%	52.50%	487	8.52%	54.70%
<b>CR 437A (Ocoee-Apopka Rd/Central Ave)</b>												
	Keene Rd to Boy Scout Rd	2L	1.48	2008	LTEC	5,071	282	10.00%	55.60%	322	10.49%	60.50%
	Boy Scout Rd to Bradshaw Rd	2L	0.91	2008	LTEC	4,999	283	10.42%	54.30%	303	10.16%	59.60%
	Bradshaw Rd to Central Ave	2L	0.61	2008	Orange	3,983	176	8.76%	50.40%	244	9.44%	64.90%
	M.Gladden Blvd to US 441	2L	0.45	2008	LTEC	3,586	132	6.47%	56.90%	197	9.98%	55.00%
<b>Piedmont-Wekiva Road</b>												
	Welch Rd to Votaw Rd	2L	1.65	2008	LTEC	16,928	1,032	8.18%	74.50%	1,058	9.33%	67.00%
	Votaw Rd to SR 436	5 LD	0.74	2008	Orange	24,174	1,406	7.93%	73.30%	1,530	9.29%	68.10%
	SR 436 to Pied Lakes Blvd	5 LD	0.87	2008	LTEC	26,553	1,224	7.50%	61.40%	1,500	9.17%	61.60%
	Pied Lakes Blvd to US 441	5 LD	0.51	2008	LTEC	25,503	1,239	7.56%	64.30%	1,395	8.96%	61.00%
	US 441 to CR 424	2L	0.51	2008	Orange	19,948	725	7.25%	50.10%	1,006	8.28%	60.90%
<b>Plymouth-Sorrento Road</b>												
	Ponkan Rd to US 441	2L	2.5	2008	LTEC	9,241	592	9.41%	68.00%	344	7.42%	50.10%
<b>Sheeler Road</b>												
	SR 436 to US 441	2L	0.17	2008	LTEC	11,379	370	6.07%	53.50%	722	11.16%	56.90%

Class	Road Segment	Exist Lanes	Lgth.	Year	Source	Daily Volume	AM Peak Volume	"K" Factor	"D" Factor	PM Peak Volume	"K" Factor	"D" Factor
	US 441 to Apopka Blvd	2L	0.63	2008	LTEC	9,152	404	6.59%	67.00%	532	10.31%	56.40%
	Apopka Blvd to Keene Rd	2L	1.48	2008	LTEC	9,377	503	10.10%	53.10%	552	10.10%	58.30%
	<b>Welch Road</b>											
	Vick Rd to Rock Spgs Rd	2L	1.04	2008	LTEC	12,091	612	9.68%	52.30%	628	9.68%	53.70%
	Rock Spgs Rd to Thompson Rd	2L	1.36	2008	LTEC	16,445	726	8.60%	51.30%	743	8.80%	51.30%
	Thompson Rd to Pied-Wek Rd	2L	1.31	2008	Orange	15,550	1,034	9.01%	73.80%	921	9.27%	63.90%
	<b>County Collectors</b>											
	<b>Binion Road</b>											
	Apk-Ocoee Rd to Boy Scout Rd	2L	2.75	2008	LTEC	3,713	245	9.86%	66.90%	255	11.02%	62.30%
	Boy Scout Rd to Boy Scout Blvd	2L	1.8	2008	LTEC	4,961	379	11.03%	69.30%	339	10.38%	65.80%
	Boy Scout Blvd to US 441	2L	0.81	2008	LTEC	3,929	340	11.68%	74.10%	250	10.28%	61.90%
	<b>Boy Scout Road</b>											
	Binion Rd to Ocoee-Apk Rd	2L	1.5	2008	LTEC	870	56	7.59%	84.80%	40	7.59%	60.60%
	<b>Lakeville Road</b>											
	Apopka Blvd to Wildwood St	2L	0.49	2008	LTEC	5,636	357	12.22%	51.80%	339	9.44%	63.70%
	<b>Ponkan Road</b>											
	Ply-Sorr Rd to Rock Spgs Rd	2L	3.2	2008	LTEC	4,277	252	9.52%	61.90%	247	10.12%	57.00%
	<b>Thompson Road</b>											
	Welch Rd to Votaw Rd	2L	1.59	2008	Orange	9,235	483	7.30%	71.70%	546	9.15%	64.60%
	Votaw Rd to SR 436	2L	0.76	2008	Orange	9,498	599	8.02%	78.60%	489	8.42%	61.10%
	<b>Votaw Road</b>											
	Park Ave to Thompson Rd	2L	1.31	2008	LTEC	7,594	291	7.64%	50.20%	528	10.81%	64.30%
	Thompson Rd to Pied-Wek Rd	2L	1.45	2008	LTEC	8,024	334	7.68%	54.20%	448	9.66%	57.80%
	<b>County - City Collector</b>											

Class	Road Segment	Exist Lanes	Lgth.	Year	Source	Daily Volume	AM Peak Volume	"K" Factor	"D" Factor	PM Peak Volume	"K" Factor	"D" Factor
	<b>Bradshaw Road</b>											
	US 441 to Ocoee-Apk Rd	2L	1.04	2008	LTEC	2,626	169	10.51%	61.20%	162	9.67%	63.80%
	<b>Hawthorne Avenue</b>											
	US 441 to Ocoee-Apk Rd	2L	1.14	2008	LTEC	1,819	86	7.20%	65.60%	129	10.39%	68.30%
	Apk-Ocoee Rd to I3 St	2L	0.37	2008	LTEC	1,337	58	6.36%	68.20%	71	9.65%	55.00%
	<b>Keene Road</b>											
	Ocoee-Apopka Rd to Clarcona Rd	2L	0.45	2008	LTEC	2,762	139	9.74%	51.70%	135	9.78%	50.00%
	<b>Sandpiper Road</b>											
	Rock Spg Rd to Ustler Rd	2L	0.51	2008	LTEC	4,210	227	8.05%	67.00%	325	11.31%	68.30%
	Ustler Rd to Thompson Rd	2L	0.78	2008	LTEC	5,115	315	8.27%	74.50%	361	10.38%	68.00%
	<b>Christiana Avenue</b>											
	Monroe Ave to Votaw Rd	2L	0.63	2008	LTEC	2,285	224	12.78%	76.70%	229	12.78%	78.40%
	<b>Cleveland Street</b>											
	Park Ave to Sheeler Rd	2L	0.81	2008	LTEC	2,003	98	8.09%	60.50%	98	9.29%	52.70%
	<b>Errol Parkway</b>											
	Lake Francis Dr to Old Dixie Hwy	2L	1.48	2008	LTEC	7,166	465	8.09%	80.20%	429	8.90%	67.20%
	<b>Jason Dwellley Parkway</b>											
	Ponkan Rd to Kelly Park Rd	2L	0.81	2008	LTEC	1,277	96	11.12%	67.60%	99	12.69%	61.10%
	<b>Lake Avenue</b>											
	Martin St to Orange St	2L	0.94	2008	LTEC	1,746	124	10.25%	69.30%	119	10.82%	63.00%
	Orange St to US 441	2L	0.25	2008	LTEC	1,515	90	8.58%	69.20%	92	10.30%	59.00%
	<b>Lake Francis Drive</b>											
	Schopke Lester Rd to Errol Pkwy	2L	0.71	2008	LTEC	1,740	84	7.87%	61.30%	103	10.17%	58.20%
	Errol Pkwy to Vick Rd	2L	0.63	2008	LTEC	3,410	187	7.42%	73.90%	198	9.38%	61.90%
	<b>Lester Road</b>											
	Vick Rd to Lester Schopke	2L	0.37	2008	LTEC	2,823	181	8.71%	73.60%	161	9.17%	62.20%

Class	Road Segment	Exist Lanes	Lgth.	Year	Source	Daily Volume	AM Peak Volume	"K" Factor	"D" Factor	PM Peak Volume	"K" Factor	"D" Factor
Rd	Lester Schopke Rd to Ply Sorr Rd	2L	1.36	2008	LTEC	1,782	95	9.88%	54.00%	87	9.43%	51.80%
<b>Maine Avenue</b>												
	Martin St to Old Dixie Hwy	2L	0.77	2008	LTEC	2,266	123	10.33%	52.60%	219	14.61%	66.20%
<b>Marden Road</b>												
	Keene Rd to Ocoee-Apopka Rd	2L	0.77	2008	LTEC	923	57	10.51%	58.80%	65	9.75%	72.20%
<b>Monroe Avenue</b>												
	Park Ave to Alabama St	2L	0.44	2008	LTEC	5,137	425	10.03%	82.50%	491	12.91%	74.10%
	Alabama St to Sheeler Rd	2L	0.59	2008	LTEC	6,091	412	8.68%	77.90%	494	12.12%	66.90%
<b>Old Dixie Highway / Orange Avenue</b>												
	Lakeview Rd to Errol Pkwy	2L	0.37	2008	LTEC	4,040	301	9.93%	75.10%	242	10.00%	59.90%
	Errol Pkwy to Bradshaw Rd	2L	1.36	2008	LTEC	8,178	649	11.01%	72.10%	473	10.01%	57.80%
	Bradshaw Rd to Hawthorne Ave	2L	0.3	2008	LTEC	6,271	492	10.14%	77.40%	381	10.08%	60.30%
<b>Schopke Lester Road</b>												
	Lake Francis Dr to Old Dixie Hwy	2L	1.12	2008	LTEC	2,164	186	10.03%	85.70%	138	9.57%	66.70%
<b>Vick Road</b>												
	Old Dixie Hwy to Martin St	2L	0.37	2008	LTEC	9,022	591	9.39%	69.80%	573	9.69%	65.60%
	Martin St to Welch Rd	2L	1.36	2008	LTEC	9,777	682	9.36%	74.50%	609	9.32%	66.80%
	Welch Rd to Lester Rd	2L	0.3	2008	LTEC	11,329	780	8.51%	80.90%	720	9.72%	65.40%
	Lester Rd to Ponkan Rd	2L	0.6	2008	LTEC	3,649	219	9.92%	60.50%	235	10.58%	60.90%

**Sources:** LTEC - Luke Transportation Engineering Consultants; Orange County Engineering; Florida Department of Transportation; City of Apopka

**Notes:** K Factor = Peak Volume / Daily Volume; D Factor = Directional Distribution

## Capacity/Level of Service

To adequately evaluate existing transportation conditions and plan for future improvements, a roadway capacity must be determined for each facility that is to be analyzed. The capacity of a roadway is defined as the maximum number of vehicles that have a reasonable expectation of passing over or through a given roadway or intersection under prevailing roadway and traffic conditions. For the purpose of this study, daily capacities were obtained from methodology outlined in FDOT's "Level of Service Handbook".

Level of service (LOS) standards are qualitative measures that describe the operational conditions of a roadway. These LOS standards will be used for evaluating the existing and future transportation system and will no longer be used to measure transportation concurrency, as the City has been designated a Dense Urban Land and Transportation Concurrency Exception Areas. These standards indicate the quality of traffic flow which is measured by driver satisfaction. A number of factors influence the LOS including speed and travel time, traffic interruptions, the maneuverability of a facility, safety, driver comfort, convenience and operating costs. There are six designations for levels of service which define a facility type, ranging from "A" to "F," and defined in **Table 3-3**. LOS "A" describes free flow conditions, while LOS "F" describes forced flow, congested conditions.

**TABLE 3-3: LEVEL OF SERVICE DEFINITIONS**

Level of Service	Definition
A	Free flow condition. Speed is controlled by the driver's desires, speed limits, and physical roadway conditions, while traffic density is low. Any turning movements are made easily, and there is little or no restriction in maneuverability.
B	Stable flow condition. However, operating speeds are beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom; however, they may begin to feel somewhat restricted.
C	Stable flow condition. However, speeds and

maneuverability are more closely controlled by higher volumes. Traffic conditions are still tolerable for most drivers, and operating speeds are not unsatisfactory.

- D Approaches unstable flow. Although operating speeds may still be maintained, delays begin to occur frequently due to high volumes. Drivers have little freedom to maneuver, and comfort and convenience are low. Conditions can be tolerated for short periods of time.
- E Unstable flow condition. There may be stoppages of momentary duration. This level of service describes a roadway that is near or at full capacity (maximum volume). Speeds are slow, and there is very little driver comfort or independence. Accident potential is high.
- F Forced flow condition. Operation at low speeds, where volumes are below capacity. This condition usually results from queues of vehicles backing up from restriction downstream. Stoppages may occur for long periods of time because of downstream congestion.

Source: Highway Capacity Manual, 2000, Transportation Research Board

#### **EXISTING AIRPORTS**

The Orlando Apopka Airport is located within the City limits on US 441 northwest of downtown Apopka. The privately-owned, public use airport provides general aviation services. For commercial flights, two international airports are located close to the City: the Orlando International Airport and the Orlando-Sanford Airport, both within 26 miles.

#### **EXISTING RAIL FACILITIES**

Apopka is served by the Florida Central Railroad for freight services. One line is located along US 441 to Orlando and the other travels along an easement through the City from the southwest to the northeast. The closest passenger rail service is provided by the AMTRAK Silver Service/Palmetto route, which offers daily service from Miami to New York City. The closest passenger rail station to Apopka is located in Winter Park, approximately 15 miles southeast of the City

## **EXISTING TRANSIT SERVICE**

Transit service is provided by LYNX (Central Florida Regional Transportation Authority). Four routes presently service Apopka (Routes 17, 41, 44 and 405). These routes operate on approximately fifteen minute to one hour headways, with service beginning at 4:35 a.m. and ending at 12:35 a.m. Route 405 is a circulator within the Apopka area connecting residential to shopping and businesses. The routes have a central transfer stop (Apopka Superstop) at Central Avenue/7<sup>th</sup> Street. **Map 3-3** shows the existing LYNX transit Routes.

LYNX is the Community Transportation Coordinator for Orange County and provides services for the transportation disadvantaged. People who are unable to transport themselves or purchase needed transportation because of physical or mental disability, income status or age are considered transportation disadvantaged.

## **EXISTING INTERMODAL FACILITIES**

LYNX provides a transit "Superstop" on West Central Avenue in downtown Apopka. This transfer station has additional bus bays for future expansion.

## **MODAL SPLIT AND VEHICLE OCCUPANCY RATES**

Modal split is a term that describes the number or percentage of travelers using a particular type of transportation, generally for work trips. Vehicle occupancy rates are used to convert person trips to vehicle trips and are used in travel demand surveys. Census tables do not specify data at the city level for this type of statistic, so the Orlando-Kissimmee Metropolitan Statistical Area (MSA) is the closest level that applies to the City of Apopka. The average vehicle occupancy rate for the Orlando MSA is 1.129, according to the Orlando Urban Area Transportation Study (OUATS) model. **Table 3-3** shows a comparison of the Orlando-Kissimmee MSA modal split with that of Orange County, the state and the country, based on the 2000 census.

**TABLE 3-4: MODAL SPLIT**

	<b>Orlando MSA</b>	<b>Orange County</b>	<b>Florida</b>	<b>United States</b>
Car, truck or van - drove alone	81.4	79.9	79.4	75.5
Car, truck or van - carpooled	9.2	12.2	10.3	10.7
Public Transportation	1.6	2.5	2.0	5.0
Walked	1.2	1.4	1.5	2.8
Other means	2.1	1.5	2.3	1.8
Worked at home	4.6	2.5	4.5	4.1

**Source:** U.S. Census Community Survey, 2008

### **EXISTING BICYCLE AND PEDESTRIAN FACILITIES**

The City coordinates bicycle/pedestrian planning with MetroPlan Orlando. A majority of the City's primary and secondary streets have five-foot sidewalks on both sides of the street and crosswalks are striped with reflective paint.

In addition to the local sidewalk system, a portion of the West Orange Trail rails-to-trails project is located in Apopka along Forest Avenue. Currently the trail is 19 miles in length, with the southern terminus in Oakland and the northern terminus in Apopka. The entire trail will eventually be a part of the 200-mile planned regional connection known as the Central Florida Loop.

### **ACCIDENT ANALYSIS**

In addition to assessing the impact of traffic volumes on roadway facilities, accident crash data was reviewed to determine high crash locations as well as crash characteristics. The Apopka Police Department provided data that revealed the highest crash intersections from 2004 to 2008, as shown below:

<b>Intersection</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
US 441 & CR 435	45	48	34	46	43	216
US 441 & Sheeler Road	35	43	47	56	32	213
US 441 & SR 429	39	34	34	52	30	189
US 441 & Bradshaw Road	26	32	28	23	12	121
US 441 & Piedmont Wekiva Road	20	24	24	20	18	106
US 441 & SR 436	15	11	14	16	12	68

<b>Intersection</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Total</b>
US 441 & Benbow Court	9	5	23	8	11	56
US 436 & Piedmont Wekiva Road	16	21	21	21	17	96
CR 435 & 3 <sup>rd</sup> Street	14	14	13	17	9	67

**PROGRAMMED AND PLANNED ROADWAY IMPROVEMENTS**

Programmed and planned improvements for the Apopka area are listed in **Table 3-4**. Information for this table was obtained primarily from MetroPlan's Transportation Improvement Program (2009-20013). Programmed improvements are defined as projects which have funding committed towards construction within the next five years. Planned improvements have no financial commitment towards construction within the next five years. Instead, planned improvements include those which have funding towards some aspect of the project other than construction, as well as those that are in a governmental agency's long-range plans.

The most significant planned improvements are the proposed Wekiva Parkway and the extension of SR 414 John Land Expressway (Apopka Bypass) from Ocoee-Apopka Road to US 441. The first phase of this facility was constructed by the Orlando-Orange County Expressway Authority (OOCEA). Situated on the south side of Apopka, it serves as an alternative route for drivers utilizing US 441 that are not destined for Apopka. The expressway has only been open for a short time so traffic volumes and changes in traffic patterns are not available.

**TABLE 3-5: PROGRAMMED AND PLANNED IMPROVEMENTS**

<b>Improvement Status</b>	<b>Road Segment</b>	<b>Improvement</b>	<b>Responsible Agency</b>	<b>Year</b>	<b>Comments</b>
Programmed	Rock Springs Road - Ponkan Road to Kelly Park Road	Widen to 4-Lane	Orange County	2009	Under Construction
Programmed	Lester Road - Vick Road to Rock Springs Road	New 2-Lane	City of Apopka	2011	---
Planned	Apopka Bypass - North US 441 to Ocoee Apopka Road	New 4-Lane	OOCEA	---	Phase 2 - Construction only
Planned	Wekiva Parkway (Western Beltway - Park B) US 441 North	New 4-Lane	OOCEA	---	

*Note: OOCEA denotes Orlando Orange County Expressway Authority*

## **REGIONAL ROADWAY SYSTEM**

A regional transportation system is generally made up of a network of interstates, limited-access toll/non-toll expressways and bridges, major federal and state highways, and public transit including buses and rail service. The primary purpose of the regional roadway and bridge facilities is for interstate commerce and to move commuter and other pass-through vehicles to their ultimate destinations as quickly and efficiently as possible. Apopka is located within the Orlando Metropolitan Area, which is served by the regional transportation system that includes Interstate 4, the Florida Turnpike, several limited access expressways, US 441, SR 436, county roads CR 424, CR 435 and CR 437A, a general aviation airport, freight rail service and the LYNX public transit system. Future alternative transportation modes may include the planned Northwest Corridor Commuter Rail as listed in the draft MetroPlan Orlando 2030 Long Range Plan and shown in **Map 3-4**.

The Orlando/Orange County Expressway Authority was authorized to develop plans for a loop expressway surrounding the Orlando metropolitan area to increase mobility and the quality of life in Central Florida. Construction began on the first of a number of toll roads that were to eventually form that loop system. With completion in 2000 of the latest segment of SR 429 - the Western Beltway located along the west side of Apopka - the loop is almost completed. The final segment, the Wekiva Parkway, is still in the planning stages and will be located north of Apopka heading east somewhere north of the Lake County line to Interstate 4, completing the entire loop expressway system. Other east/west toll roads have also been or will be constructed within the loop system to address high traffic volumes. **Map 3-5** shows the current and planned expressway system for the Orlando Metropolitan Area.

Until such time as the Wekiva Parkway is completed and connects Apopka to Interstate 4 to the northeast, the Western Beltway is the only "loop" segment that connects Apopka to Interstate 4, Florida's Turnpike, and the East-West Expressway, all to the south. The first segment of the SR 414 John Land Apopka Expressway (the east/west toll road) was completed and opened in 2009.

## **ISSUES AND OPPORTUNITIES**

An issue that affects the function of Apopka's arterial roadways is allowing direct access to adjacent retail and office land

uses. The operational capacity of a roadway facility begins to break down when numerous curb cuts and median openings are allowed. The City has taken steps to limit access onto US 441 and SR 436 by requiring joint access driveways and limiting access only to collector and local roads that intersect with major arterials. However, there are still segments along these facilities with multiple access driveways due to earlier development.

There are opportunities available to the City of Apopka that can address these issues. First, the City completed a capacity enhancement study for US 441 for its entire length through the Apopka area. This study identifies actual available capacities based upon field conditions and not based upon generalized information. Also, SR 414 John Land Apopka Expressway will substantially alleviate congestion presently experienced on US 441 and SR 436. A portion of the expressway has been completed and opened to traffic and the remaining phase should be scheduled soon.

Second, the Wekiva Parkway is planned to connect north US 441 to Interstate 4 in Seminole County. A conceptual route has been selected that is considered the best available that can preserve sensitive environmental areas. There is only one interchange area planned in the Apopka area, thus preserving the desire to move traffic through the area.

Third, the City continues to update its transportation impact fee program. Funds collected can be used for improving roadways in the Apopka area. In addition, impact fees are being collected by Orange County in unincorporated areas adjacent to Apopka. Orange County and Apopka continually coordinate transportation issues in the area.

Finally, in 2009 the Florida Legislature and governor passed a bill (SB 360) designating certain jurisdictions as Dense Urban Land Areas (DULA). The City of Apopka is one of them. Recognizing that minimum acceptable level of service standards may not always be attainable in dense urban areas and requiring roadways to meet these standards may add to urban sprawl, DULAs are now exempt from transportation concurrency. It is the City's intent to remove state mandated transportation concurrency and operate it as a matter of local law. Transportation concurrency exceptions and use of mobility strategies are fully operational. However, mobility funding and implementation schedule will be identified following the adoption of the City's Mobility Plan, estimated July 9, 2011.

## **Transportation Coordination**

The largest area of coordination for traffic management is with Orange County. Many of the higher facility roads in the City of Apopka (Arterials and Major Collectors) are Orange County roads. The City of Apopka coordinates counts and levels of service with Orange County on an annual basis. The City regularly checks available trips and participates in Orange County planning studies on roads within the City of Apopka's travel area. Utilizing available traffic counts allows the City to be current with the County.

Seminole County and Lake County roadways that continue into Orange County and the City of Apopka are also higher facility type roads. The City of Apopka reviews the adopted level of service, levels of service capacity volumes, and volumes on each roadway annually. As the City annexes property closer to each of these areas, the road, the appropriate adopted level of service, and service volumes are considered. Many of these roads are State Roads that must comply with Florida Department of Transportation standards. The City adheres to FDOT standards on these roadways.

The City of Ocoee shares two adjacent Orange County maintained roadways with Apopka: Ocoee-Apopka Road (CR 437) and McCormick Road. As the City annexes near the area, information is obtained from Ocoee and Orange County regarding the adopted level of service, service volumes, and volumes on the road.

Overall, the City of Apopka coordinates with all the adjacent counties and municipalities through regular communication and by attending meetings and workshops. City planning staff is very active in MetroPlan Orlando and with other committees such as the Wekiva Parkway Project Advisory Group. Traffic planning is coordinated through these working groups and relationships. The utilized methodology and assumptions are professionally accepted for measuring impacts on the transportation system.

As noted previously, the City of Apopka qualifies as a DULA and is therefore exempt from transportation concurrency. As adjacent jurisdictions and the County decide whether to establish their own local concurrency systems to replace the previously mandated system, or to eliminate transportation concurrency, the City of Apopka will continue to coordinate with them.

## **Impacts Related to the Local and Regional Transportation System**

For a relatively small city such as Apopka there are several major expressways built or planned within its limits. Although these expressways move pass-through traffic through the City without much impact on the local facilities, access to and from the expressways results in some impacts to the local transportation system. These expressways are a positive addition to the City in terms of connecting Apopka with the region and reducing peak hour traffic congestion; however, the massive infrastructure associated with the Western Beltway has disrupted existing development patterns, caused adjacent land use patterns to change and affected the aesthetics and character of the western section of the City. The same issues are expected with the construction of the remaining segment of the John Land Apopka Expressway. The conceptual corridor recommended for the proposed Wekiva Parkway may cause impacts on some existing, older residential and commercial areas of Apopka.

Within the Apopka City limits there are relatively few minor arterial/major collector roads to channel traffic to the larger expressways and to the major streets where employment and commercial activities are located. Many of these roadway facilities have only two lanes. The design of residential developments, which feed traffic onto these minor arterials and major collectors, tend to favor "dead-end" street systems that don't connect to neighboring residential and/or commercial developments. With few choices for access to the collector or arterial roads, larger and more inefficient intersections are required, which cause time delays and congestion.

The only way to reduce congestion on regional roadways is to keep "local" traffic off of them as much as possible. For this to happen Apopka must provide an effective local roadway network that meets the day-to-day needs of its residents and visitors. Traffic generated by new development in Apopka along US 441 and south will be able to access the regional transportation network with relative ease, since there are many interchanges and access points. Effects on the local roadway network will be mitigated by this to some extent, as long as arterial and major collector roads are designed effectively.

## **Impacts of Development on the Transportation System**

The traditional response to congestion has been to add more lanes to existing highways and bridges and to build new ones; however, it is becoming increasingly difficult to undertake

major highway expansions because of funding constraints, increased development, increased right-of-way and construction costs, and opposition from local groups. Therefore, it makes more sense to focus on how to operate existing capacity more efficiently to get more out of existing facilities.

In order to address the impacts of development on the regional and local transportation system, the City must promote development patterns and transportation design that improves connectivity, favors alternative modes such as transit and cycling, and improves walkability. This type of transportation system tends to reduce the volume of automobile traffic, all of which also enhances the quality of the local trips. Each of these factors must be implemented in a way that complements the others in order to fundamentally change the course from automobile-oriented to one that offers a full-range of multi-modal transportation opportunities.

- o Change Land Use Patterns

Higher residential densities and a mixture of land uses are concepts that at first glance might seem factors that would make traffic congestion worse in a community. However, studies indicate that residents of higher density urban areas make fewer automobile trips and more than twice as many pedestrian and transit trips as the national average. Land use effects on travel behavior tend to be cumulative. As an area becomes more urbanized (denser, more mixed, less parking), automobile ownership and use decline and more travel takes place by walking, cycling and public transit.

- o Change the Way Streets are Designed

When designing roadways that serve local transportation needs, the entire right-of-way must be considered as part of the design. This means the inclusion of pedestrian and bicycle lanes/paths, on-street parking if appropriate, medians and pedestrian-friendly crosswalks. Frequently, transportation systems and networks are planned and operated in an uncoordinated manner – both within and between jurisdictions. Providing efficient connections between different transportation modes is key to achieving a functioning multimodal system. Roads, sidewalk and bicycling facilities should be designed in a way that allows maximum integration with each other and with transit facilities.

- o Develop a Pedestrian and Bicycle Master Plan

For most cities, public improvements that make walking and bicycling more attractive options are possible, but there is often no evaluation of these needs during the planning process. As a result, other infrastructure improvements often do not address walkability and may perpetuate existing problems. A pedestrian and bicycle master plan can help focus time and attention on improvements to pedestrian and bicycle traffic.

Walking and cycling conditions are affected by the quantity and quality of sidewalks, crosswalks and paths, pedestrian system connectivity, the security and attractiveness of pedestrian facilities, and support features such as bike racks. Improved walking and cycling conditions tend to increase non-motorized and transit travel, and reduce automobile travel. A short walking or cycling trip often substitutes for a longer motorized trip.

- o Provide Safe and Comfortable Public Transit Facilities

Creating an environment conducive to the development of a balanced transportation system requires the circulation system to be engineered to functionally accommodate all modes. Designing for the functional requirements of transit vehicles means creating suitable facilities in which the vehicles can operate properly and passengers can wait in comfort. Such facilities should be developed as street designs are developed and private developments are approved. To accommodate and enhance transit opportunities, amenities in the form of attractive transit stops and shelters, loading spaces for transit buses, and bicycle and pedestrian connections are needed

- o Alter Trip Patterns/Provide Alternatives to Single Occupancy Vehicles

In order to cut automobile trips - particularly trips during peak travel times that involve one person driving alone - innovative alternatives are needed that affect the demand for travel. These alternatives are generally employer-based and, as such, not solutions that can be addressed by the City. However, the City should support the ongoing efforts of MetroPlan Orlando to engage regional employers in discussion and pilot programs that address such issues as flexible work hours and telecommuting, both

effective methods to reduce daily automobile trips for employees, as well as carpooling programs and public transit.

### **Transportation Right-of-Way and Corridor Master Plan**

In order to address future roadway needs, the City should consider preparing a Transportation right-of-way and corridor plan. Corridor preservation is a broad strategy for the long-term planning and management of important roadways. The master plan will include techniques the City can use to protect existing transportation corridors or planned corridors from inconsistent development.

### **Downtown Redevelopment**

The City conducted downtown redevelopment workshops on September 12, 2005 and March 6, 2006, to garner input from the public on proposed redevelopment efforts within the downtown area. In December 2006, the City Council created a downtown development overlay zoning district within and adjacent to the eastern boundary of the CRA. The concept of the redevelopment efforts was prepared in the March 2006 Downtown Community Redevelopment Plan and a result of visioning workshops.

Roadways in the Community Redevelopment Area are of average to above-average condition; however, there is a section of 5th Street from Washington Avenue to Hawthorne Avenue that is not paved, and portions of Lake Avenue are in need of roadway improvements, including curbs, gutters, resurfacing, and sidewalks. Traffic congestion on US 441 in the CRA has increased over the past 20 years and is projected to continue to do so into the future. In an effort to decrease congestion on US Hwy. 441 (Main Street), a driveway study would be able to determine needed driveway improvements. Some of the improvements could be shared driveways between businesses or moving driveways to side streets, where feasible.

The City has completed a Redevelopment Plan for Downtown Apopka that identifies recommended land use patterns and transportation improvements. For the downtown area where higher residential densities and mixed use patterns are recommended, the City may want to consider adopting strategies, other than building more or wider roadways, to mitigate traffic impacts. In cooperation with the efforts of the downtown redevelopment and with the planned Northwest Corridor Commuter Rail, the City's future downtown redevelopment should include Transit Oriented Design

(TOD) principles. These TOD principles would help decrease congestion on existing roadways and overall commuting times. Components and principles of TOD include the following but not limited to:

- Walkable design with pedestrian as the highest priority.
- Train station as a major feature of the town center.
- A regional node containing a mixture of uses in close proximity including office, residential, retail, and civic uses.
- High density, high quality development within a 10-minute walk circle surrounding the train station.
- Collector support transit systems including trolleys, streetcars, light rail, and buses, etc.
- Designed to include the easy use of bicycles, scooters, and rollerblades as daily support transportation systems.
- Reduced and managed parking inside 10-minute walk circle around town center/train station.
- Integrated Land-Use Planning.
- Community spaces, plazas, activities and attractive design.

## FUTURE CONDITIONS ANALYSIS

The development of a comprehensive transportation system is ultimately based upon the travel patterns that are anticipated from existing and future development. Travel patterns from land use development must not only be considered for the specific area being studied, but also for the entire metropolitan region. For the Apopka area, a substantial amount of travel information is available from MetroPlan Orlando. In determining the need for future transportation facilities in Apopka, consideration was given to the regional travel patterns.

### FUTURE TRAVEL DEMAND

Travel demand is a function of existing and future land use projections based on existing and anticipated development activities, population and employment density, vehicle availability, transit service quality, roadway capacity and historical trends. In order to ensure that the modeling process is reliable, the year 2000 or "base year" traffic conditions were modeled and checked against observed traffic flows. The City hired a consultant to develop a sub-area model that updated the OUATS utilizing the latest land use data, highway network and census for the year 2000. The OUATS model was expanded to include a portion of the area networks in Lake, Volusia and Polk counties. This allows for enhanced accuracy in the areas near the fringe of the old model, where Apopka is located. With the new model, the roadway network represents and reflects the existing travel patterns in the Apopka area.

After obtaining the year 2000 socio-economic (S/E) database from MetroPlan Orlando, the City refined the Traffic Analysis Zones (TAZ's) in the Apopka area. The S/E database identifies population, employment, dwelling unit and hotel/motel unit information for each TAZ.

Future S/E databases were developed by MetroPlan Orlando and City staff through a process of reviewing existing development patterns, future land use maps and probable development scenarios. **Table 3-5** lists the socioeconomic data estimates and projections for 2010, 2015, 2020 and 2025 for the entire study area. As shown in this table, between 2005 and 2025, a 44 percent growth in dwelling units and a 35 percent growth in employment is anticipated. This growth is less than projected in the City's 2002 Transportation Element; however, it is still substantial. The growth projections acknowledged the opening of SR 414, the John Land Expressway/Apopka Bypass, as well as the

anticipated development projects expected as a result of the construction of the Wekiva Parkway.

**TABLE 3-6: SOCIOECONOMIC DATA SUMMARY**

	Year					
	2005	2010	2015	2020	2025	2030
<b>Production Values</b>						
Single Family DUs	21,795	24,215	26,636	29,056	31,477	44,573
Multi Family DUs	6,760	7,385	8,010	8,635	9,535	13,510
Total DUs	28,555	31,600	34,646	37,691	41,012	58,083
<b>Attraction Values</b>						
Industrial	4,147	4,526	4,905	5,284	5,663	7,877
Commercial	11,174	12,032	12,889	13,747	14,604	20,255
Service	14,715	16,104	17,493	18,882	20,271	28,132
Total	30,036	32,662	35,287	37,913	40,538	56,264

**Source:** City of Apopka, Ghyabi & Associates.

### 2030 LEVEL OF SERVICE ANALYSIS

Prior to the projection of future roadway conditions, the 2000 traffic conditions were replicated in order to validate the transportation modeling tool. The modeling software used for the analysis was FSUTMS, a TRANSPLAN-based program and process used statewide. The FSUTMS incorporates the gravity model in the trip distribution process. Socioeconomic data is used to estimate the number of vehicle trip ends. Trip ends are then assigned throughout the study area by linking travel between trip origins and trip destinations (productions and attractions). The summary of trips by road segments results in an estimate of traffic using each road segment.

The socioeconomic database described in **Table 3-5** was utilized to determine appropriate trip production and attraction equations by trip purpose, which resulted in computer-generated traffic volumes for the year 2000. These volumes were compared to actual traffic counts to determine the accuracy of the model. Slight adjustments were made to the model to more accurately reflect actual traffic volumes. After calibration of the transportation computer model for 2000, traffic projections were developed for 2025.

For the year 2025, vehicle trip assignments were analyzed on the area network, including both programmed and planned improvements. Two planned improvements that will impact Apopka are the completion of SR 429, from John Land Expressway (SR 414 Extension) to US 441, and the completion of the Wekiva Parkway, from US 441 to I-4. These two freeways will connect to each other and complete a loop roadway network around the Orlando Metropolitan Area.

Because MetroPlan Orlando is in the process of updating the OUATS model to 2030, the City of Apopka utilized historical traffic count trends to predict the growth from 2025 to 2030. The resulting traffic demand estimates for 2030 were then compared to each roadway's service volume to determine which roadways face future problems.

Although some of the traffic growth is due to external traffic (vehicles traveling through the study area, but without an origin or destination within the study area), a portion of the growth is due to increased traffic within the study area. This causes traffic to be diverted to collector roadway facilities.

**Table 3-6** presents the analysis for the 2025 network volumes and the 2030 projected volumes. Based upon the projected traffic volumes, a number of road facilities are anticipated to operate at or below their respective capacity, as described below:

Road Segments Projected to Operate **at** capacity

US 441	from Errol Parkway to SR 429
US 441	from Bradshaw Road to Hawthorne Avenue
US 441	from Hawthorne Avenue to Central Avenue
SR 436	from Piedmont Wekiva Road to Seminole County Line
Welch Road	from Rock Springs Road to Thompson Road
Welch Road	from Thompson Road to Piedmont Wekiva Road

Road Segments Projected to Operate **Below** capacity

US 441	from Hermit Smith Road to Plymouth Sorrento Road
US 441	from Central Avenue to Park Avenue
US 441	from Park Avenue to Alabama Street
US 441	from Alabama Street to SR 436
CR 435	from US 441 to M. Gladden Boulevard
CR 435	from Keene Road to McCormick Road
Sheeler Road	from SR 436 to US 441

**TABLE 3-7: 2030 LEVEL OF SERVICE ANALYSIS**

Class	Road Segment	Lanes	2025 Daily Volume	2030 Daily Volume	LOS Std	Capacity @ LOS	2030 V/C	2030 LOS
<b>Major Arterials</b>								
	<b>SR 429</b>							
	Ocoee Apopka Rd to Binion Rd	4 LD	28,727	30,882	C	55,200	0.56	B
	Binion Rd to US 441	4 LD	34,625	37,222	C	55,200	0.67	B
	<b>SR 451 (Old SR 429 Section)</b>							
	South of US 441	4 LD	18,062	19,417	C	55,200	0.35	A
	<b>US 441</b>							
	Hermit Smith to Ply. Sorrento Rd	4 LD	58,213	62,579	D	60,700	1.03	F
	Ply Sorrento Rd to Lakeview Rd	4 LD	54,260	58,330	D	62,500	0.93	C
	Lakeview Rd to Errol Pkwy	4 LD	50,019	53,770	D	62,500	0.86	C
	Errol Pkwy to SR 429	4 LD	57,055	61,334	D	62,500	0.98	D
	SR 429 to Bradshaw Rd	5 LD	40,114	43,123	D	62,500	0.69	C
	Bradshaw Rd to Hawthorne Ave	5 LD	31,887	34,279	D	43,400	0.79	D
	Hawthorne Ave to Central Ave	5 LD	33,774	36,307	D	43,400	0.84	D
	Central Ave to Park Ave	5 LD	49,589	53,308	D	43,400	1.23	F
	Park Ave to Alabama St	5 LD	42,706	45,909	D	43,400	1.06	F
	Alabama St to SR 436	4 LD	46,793	50,302	D	43,400	1.16	F
	SR 436 to Sheeler Rd	4 LD	20,376	21,904	D	44,200	0.5	B
	Sheeler Rd to Pied-Wek Rd	4 LD	35,245	37,888	D	44,200	0.86	C
	Pied-Wek Rd to Seminole Co Line	4 LD	36,400	39,130	D	61,800	0.63	C
	<b>SR 436</b>							
	US 441 to Thompson Rd	4 LD	43,319	46,568	D	67,100	0.69	B
	Thompson Rd to Pied-Wek Rd	4 LD	43,581	46,850	D	88,300	0.53	B
	Pied-Wek Rd to Seminole Co Line	4 LD	60,637	65,185	D	66,300	0.98	D
	<b>SR 414 Extension (Apopka Bypass)</b>							
	Keene Rd to Park Ave	4 LD	21,948	23,594	C	52,000	0.45	B
	Park Ave to SR 429	4 LD	28,838	31,001	C	52,000	0.6	B
	<b>Wekiva Parkway</b>							
	US 441 to Kelly Park Rd	4 LD	26,100	28,058	C	55,200	0.51	B
	Kelly Park Rd to Lake County Line	4 LD	24,911	26,779	C	55,200	0.49	B
<b>Minor Arterial</b>								
	<b>CR 424 (Alabama Ave / Apopka Blvd)</b>							

Class	Road Segment	Lanes	2025 Daily Volume	2030 Daily Volume	LOS Std	Capacity @ LOS	2030 V/C	2030 LOS
	US 441 to 8 <sup>th</sup> St	2L	3,315	3,481	E	16,900	0.21	B
	8 <sup>th</sup> St to Sheeler Rd	2L	3,072	3,226	E	16,900	0.19	B
	Sheeler Rd to Lakeville Rd	2L	12,965	13,613	E	16,900	0.81	C
	Lakeville Rd to Hiawasse Rd	2L	14,660	15,393	E	18,590	0.83	C
	<b>CR 435 (Rock Springs Rd – Park Ave )</b>							
	Kelly Park Rd to Ponkan Rd	5 LD	15,955	16,753	E	35,700	0.47	B
	Ponkan Rd to Welch Rd	5 LD	22,186	23,295	E	35,700	0.65	B
	Welch Rd to Votaw Rd	5 LD	24,700	25,935	E	35,700	0.73	B
	Votaw Rd to Orange St	5 LD	23,033	24,185	E	35,700	0.68	B
	Orange St to US 441	5 LD	21,408	22,478	E	35,700	0.63	B
	US 441 to M. Gladden Blvd	2L	19,079	20,033	E	16,900	1.19	F
	M.Gladden Blvd to Cleveland St	2L	13,517	14,193	E	16,900	0.84	D
	Cleveland St to Keene Rd	2L	7,692	8,077	E	16,900	0.48	C
	Keene Rd to McCormick Rd	2L	31,461	33,034	E	16,900	1.95	F
	<b>CR 437A (Ocoee-Apk Rd/Central Ave)</b>							
	Keene Rd to Boy Scout Rd	2L	8,308	8,724	E	27,000	0.32	C
	Boy Scout Rd to Bradshaw Rd	2L	9,445	9,917	E	27,000	0.37	C
	Bradshaw Rd to Central Ave	2L	4,328	4,544	E	27,000	0.17	B
	M.Gladden Blvd to US 441	2L	1,837	1,929	E	27,000	0.07	A
	<b>Piedmont-Wekiva Road</b>							
	Welch Rd to Votaw Rd	3L	14,308	15,023	E	22,400	0.67	D
	Votaw Rd to SR 436	5 LD	29,612	31,093	E	35,700	0.87	C
	SR 436 to Pied Lakes Blvd	5 LD	31,825	33,416	E	35,700	0.93	C
	Pied Lakes Blvd to US 441	5 LD	33,168	34,826	E	35,700	0.98	D
	US 441 to CR 424	4L	27,503	28,878	E	35,700	0.81	B
	<b>Plymouth-Sorrento Road</b>							
	Kelly Park Rd to Ponkan Rd	2L	5,490	5,765	E	27,000	0.21	B
	Ponkan Rd to US 441	2L	6,560	6,888	E	27,000	0.26	B
	<b>Sheeler Road</b>							
	SR 436 to US 441	2L	17,395	18,265	E	17,750	1.03	F
	US 441 to Apopka Blvd	2L	12,744	13,381	E	16,900	0.79	C
	Apopka Blvd to Keene Rd	2L	7,868	8,261	E	16,900	0.49	C
	<b>Welch Road</b>							
	Vick Rd to Rock Springs Rd	2L	5,793	6,083	E	15,000	0.41	C
	Rock Springs Rd to Thompson	2L	25,569	26,847	E	27,000	0.99	E
	Thompson Rd to Pied-Wek Rd	2L	19,736	20,723	E	27,000	0.77	E
<b>County Collectors</b>								
	<b>Binion Road</b>							

Class	Road Segment	Lanes	2025 Daily Volume	2030 Daily Volume	LOS Std	Capacity @ LOS	2030 V/C	2030 LOS
	Apopka - Ocoee Rd to Boy Scout Rd	2L	5,988	6,287	E	27,000	0.23	B
	Boy Scout Rd to Lakeview Dr	2L	8,234	8,646	E	27,000	0.32	C
	Lakeview Dr to US 441	2L	225	236	E	27,000	0.01	A
	<b>Boy Scout Road</b>							
	Binion Rd to Apopka - Ocoee Rd	2L	3,589	3,768	E	15,600	0.24	C
	<b>Lakeville Road</b>							
	Apopka Blvd to Wildwood St	2L	8,486	8,910	E	27,000	0.33	C
	<b>Ponkan Road</b>							
	Ply-Sorr Rd to Vick Rd	2L	3,149	3,306	E	27,000	0.12	B
	Vick Rd to Rock Springs Rd	2L	4,091	4,296	E	27,000	0.16	B
	<b>Thompson Road</b>							
	Welch Rd to Votaw Rd	2L	8,516	8,942	E	27,000	0.33	C
	Votaw Rd to SR 436	2L	10,227	10,738	E	27,000	0.4	C
	<b>Votaw Road</b>							
	Park Ave to Thompson Rd	2L	8,632	9,064	E	15,600	0.58	C
	Thompson Rd to Pied-Wek Rd	2L	9,481	9,955	E	15,600	0.64	D
<b>County - City Collectors</b>								
	<b>Bradshaw Road</b>							
	US 441 to Apopka - Ocoee Rd	2L	3,760	3,948	E	15,600	0.25	C
	<b>Hawthorne Avenue</b>							
	US 441 to Apopka - Ocoee Rd	2L	3,002	3,152	D	15,600	0.2	C
	Apopka - Ocoee Rd to 13 <sup>th</sup> St	2L	2,185	2,294	D	15,600	0.15	C
	<b>Keene Road</b>							
	Apopka - Ocoee Rd to Clarcona Rd	2L	6,107	6,412	E	16,900	0.38	C
	Rock Spring Rd to Ustler Rd	2L	3,178	3,337	E	15,600	0.21	C
	Ustler Rd to Thompson Rd	2L	4,202	4,412	E	15,600	0.28	C
<b>City Collectors</b>								
	<b>6th Street</b>							
	Park Ave to Alabama St	2L	5,749	6,036	D	10,000	0.6	C
	<b>Christiana Avenue</b>							
	Monroe Ave to Votaw Rd	2L	3,285	3,449	E	14,600	0.24	C
	<b>Cleveland Street</b>							
	Park Ave to Sheeler Rd	2L	1,007	1,057	E	14,600	0.07	C
	<b>Errol Parkway</b>							
	Lake Francis Dr to Old Dixie Hwy	2L	1,732	1,819	D	14,600	0.12	C
	<b>Jason Dwelley Parkway</b>							

Class	Road Segment	Lanes	2025 Daily Volume	2030 Daily Volume	LOS Std	Capacity @ LOS	2030 V/C	2030 LOS
	Ponkan Rd to Kelly Park Rd	2L	2,841	2,983	E	14,600	0.2	C
	<b>Lake Avenue</b>							
	Martin St to Orange St	2L	2,524	2,650	D	14,600	0.18	C
	Orange St to US 441	2L	1,238	1,300	D	14,600	0.09	C
	<b>Lake Francis Drive</b>							
	Schopke Lester Rd to Errol Pkwy	2L	1,217	1,278	D	14,600	0.09	C
	Errol Pkwy to Vick Rd	2L	2,747	2,884	D	14,600	0.2	C
	<b>Lester Road</b>							
	Rock Springs Rd to Vick Rd	2L	8,478	8,902	E	14,600	0.61	C
	Vick Rd to Lester Schopke Rd	2L	7,220	7,581	E	14,600	0.52	C
	Lester Schopke Rd to Ply Sorr Rd	2L	7,302	7,667	E	14,600	0.53	C
	<b>Maine Avenue</b>							
	Martin St to Old Dixie Hwy	2L	4,581	4,810	D	14,600	0.33	C
	<b>Marden Road</b>							
	Keene Rd to Apopka – Ocoee Rd	2L	3,000	3,150	E	14,600	0.22	C
	<b>Monroe Avenue</b>							
	Park Ave to Alabama St	2L	3,868	4,061	D	14,600	0.28	C
	Alabama St to Sheeler Rd	2L	7,097	7,452	D	14,600	0.51	C
	<b>Old Dixie Highway</b>							
	Lakeview Rd to Errol Pkwy	2L	2,412	2,533	E	18,200	0.14	B
	Errol Pkwy to Bradshaw Rd	2L	6,656	6,989	E	18,200	0.38	C
	Bradshaw Rd to Hawthorne Ave	2L	6,897	7,242	E	18,200	0.4	C
	<b>Schopke Lester Road</b>							
	Lake Francis Dr to Old Dixie Hwy	2L	3,372	3,541	E	14,600	0.24	C
	<b>Vick Road</b>							
	Old Dixie Hwy to Martin St	2L	7,295	7,660	E	18,200	0.42	C
	Martin St to Welch Rd	2L	5,975	6,274	E	18,200	0.34	B
	Welch Rd to Lester Rd	2L	3,142	3,299	E	18,200	0.18	B
	Lester Rd to Ponkan Rd	2L	554	582	E	18,200	0.03	A

Sources: LTEC - Luke Transportation Engineering Consultants; Orange County Engineering; Florida Department of Transportation; City of Apopka

Notes = \* denotes best achievable LOS with road characteristics V/C - Volume to Capacity ratio

n/a - not available

## **RECOMMENDED TRANSPORTATION NETWORK**

The previous sections of this element have presented existing and anticipated traffic projections in the Apopka area. Road segments anticipated to operate at, or below, recommended capacity have been identified and potential improvement opportunities have been discussed. This section presents the recommended transportation network for 2030. **Map 3-6** depicts the proposed functional classification of roadways, while **Map 3-7** identifies the proposed traffic circulation network.

### **2030 Transportation Network**

The analysis provided in this element for the 2030 time period indicated several anticipated capacity deficiencies. Even with the proposed Western Beltway and US 441 Bypass in place, several roads are anticipated to operate over capacity.

To address deficiencies, alternative transportation networks were reviewed, along with area land use studies completed for the City. Land use is an important part of projecting future transportation needs. The improvements identified as being needed by the year 2030 are identified in **Table 3-7**. With these improvements in place, it is anticipated that all classified roads within the defined planning area will operate at acceptable capacity.

It is important to note that several of the improvements shown in this element for the time period analyzed are outside of the City limits and are not City-controlled facilities. The intent of showing these facilities is to show a recommended network that can be coordinated with Orange County. It is also important to note that improvements noted in this element may not be consistent with those shown in the Orange County Comprehensive Plan. Policies are provided in this plan to resolve those discrepancies.

**TABLE 3-8: RECOMMENDED 2030 ROAD IMPROVEMENTS**

<b>Roadway</b>	<b>Segment</b>	<b>Improvement</b>
Wekiva Parkway	US 441 to North (I-4)	New 4 Lane Toll Road
SR 429 Extension	Ocoee Apopka Rd to West US 441	New 4 Lane Road
US 441	Hermit Smith Rd to Plymouth Sorrento Rd	Widen to 6 Lanes
Plymouth Sorrento Road	US 441 to Kelly Park Rd	Widen to 4 Lanes
Lester Road	Vick Rd to CR 435	Extend 2 Lane Road
CR 435 (Park Avenue)	US 441 to M. Gladden	Widen to 4 Lanes
CR 435 (Park Avenue)	Keene Rd to McCormick Rd	Widen to 4 Lanes
CR 437 A (Ocoee-Apopka Rd)	Boy Scout Rd to CR 435	Widen to 4 Lanes
Welch Road	Piedmont Wekiva Rd to CR 435	Widen to 4 Lanes
Sheeler Road	US 441 to Apopka Blvd	Widen to 4 Lanes
Apopka Blvd	Sheeler Rd to Piedmont Wekiva Rd	Widen to 4 Lanes
Boy Scout Road	Binion Rd to CR 437A	Widen to 4 Lanes
Rogers Road	Lester Rd to Ponkan Rd	New 2 Lane Road
Bradshaw Road	US 441 to CR 437A	Widen to 4 Lanes
	CR 437A to Cleveland Street	New 4 Lane Road
Highland Avenue	13th St to Cleveland St	New 2 Lane Road
Welch Road	CR 435 to Vick Rd	Widen to 4 Lanes
	CR 435 to Thompson Rd	Widen to 4 lanes
Vick Road	Dixie Hwy to Martin St	Widen to 4 Lanes
	Martin St to Lake Francis Dr	Widen to 4 Lanes
	Lake Francis Dr to Lester Rd	Widen to 4 Lanes
	Lester Rd to Ponkan Rd	Widen to 4 Lanes
	Ponkan Rd to Mt. Stirling Ave	New 2 Lane Road
John's Road	Binion Rd to Bradshaw Rd	New 2 Lane Road
East-West Collector Road	Binion Rd to Lake Marshall Rd	New 2 Lane Road

**Recommended Functional Classifications**

A future functional classification map is provided for the 2011 time period on **Map 3-5**, and the proposed laneage is noted on **Map 3-6**. Proposed functional classifications and laneage are noted for roads within the City limits as well as outside. The intent of showing classifications and laneage outside of the City limits is to assist the City in properly designating roads during future annexations, as well as to coordinate future joint planning activities with Orange County.

**Transit Service**

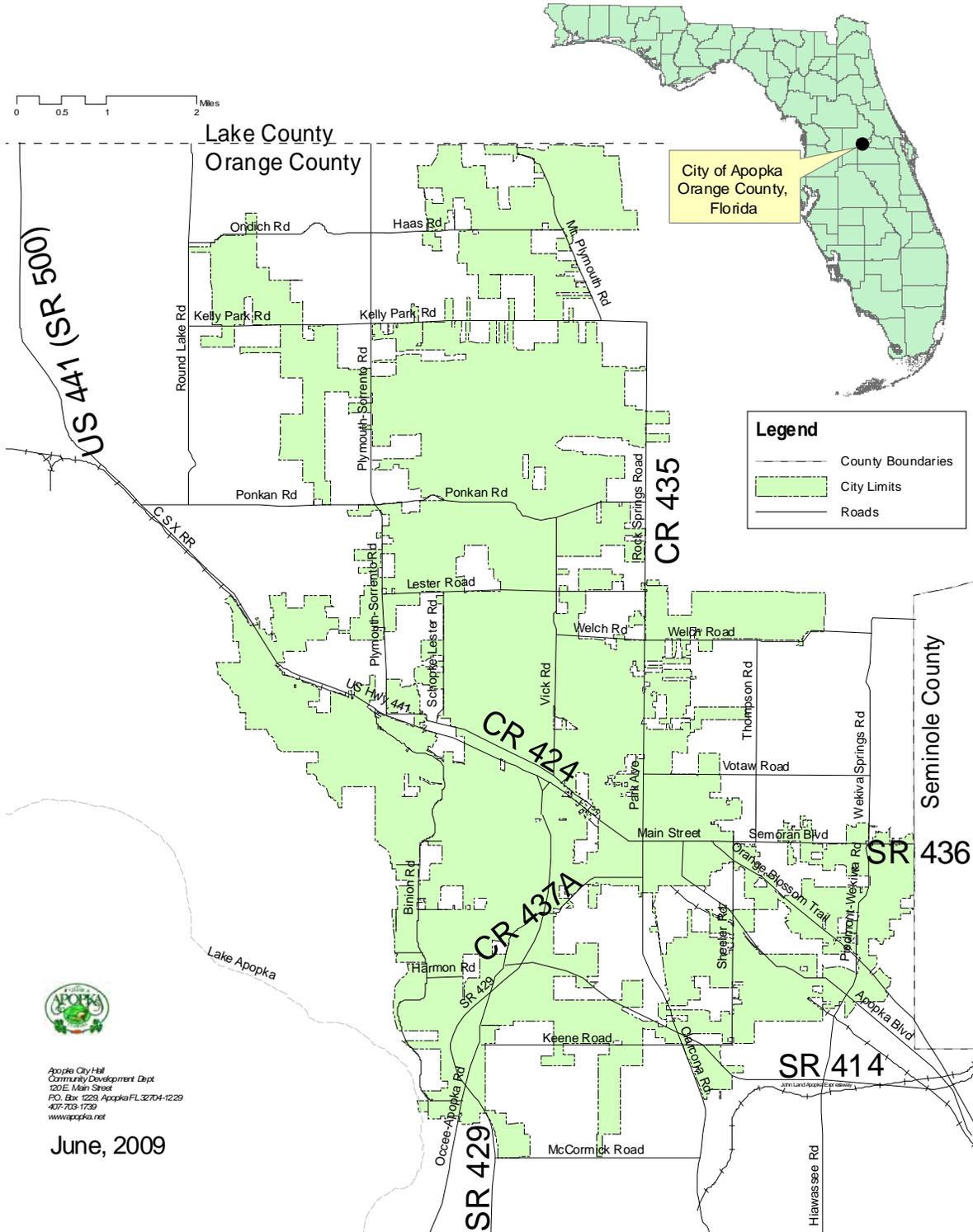
Transit service for the City of Apopka is provided by LYNX. Four routes presently service Apopka (Routes 17, 41, 44 & 405) - three regional and one local circulator. It is recommended that a transit survey be conducted of Apopka residents and businesses to determine the potential of localized transit service, which

includes service between residential neighborhoods, shopping facilities and recreational facilities. In addition, it may be feasible to enhance regional transit service in the Apopka area in conjunction with the provision of park-and-ride facilities

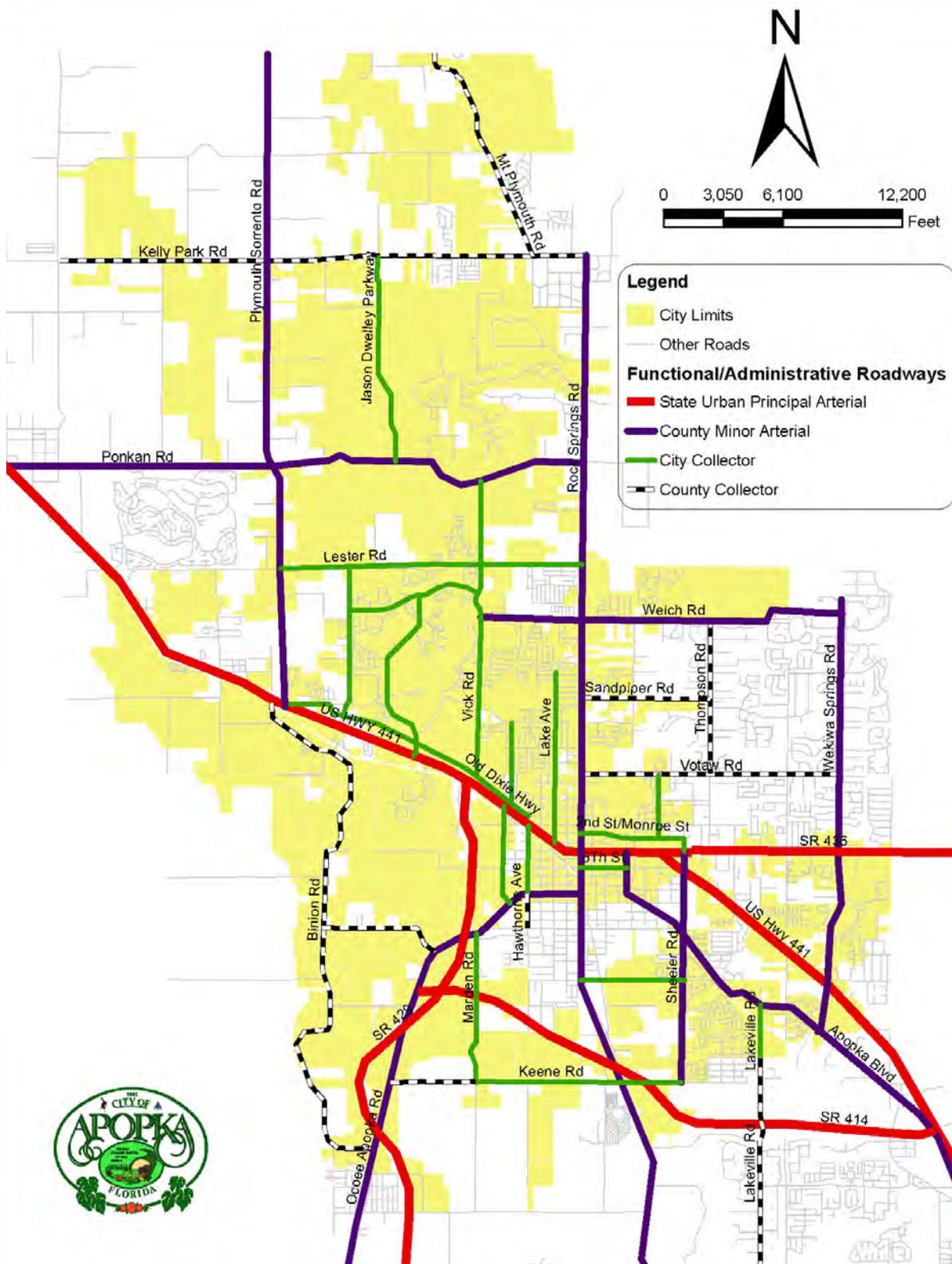
### **Proposed Bicycle and Pedestrian Facilities**

The City will continue coordinating with all regional bicycle and pedestrian planning efforts, primarily through membership on the BPAC and other transportation planning committees. **Map 3-8** shows the existing and planned bicycle and pedestrian facilities.

**MAP 3-1: APOPKA GENERAL LOCATION**



**MAP 3-2: EXISTING ROADWAYS FUNCTIONAL AND ADMINISTRATIVE CLASSIFICATION**





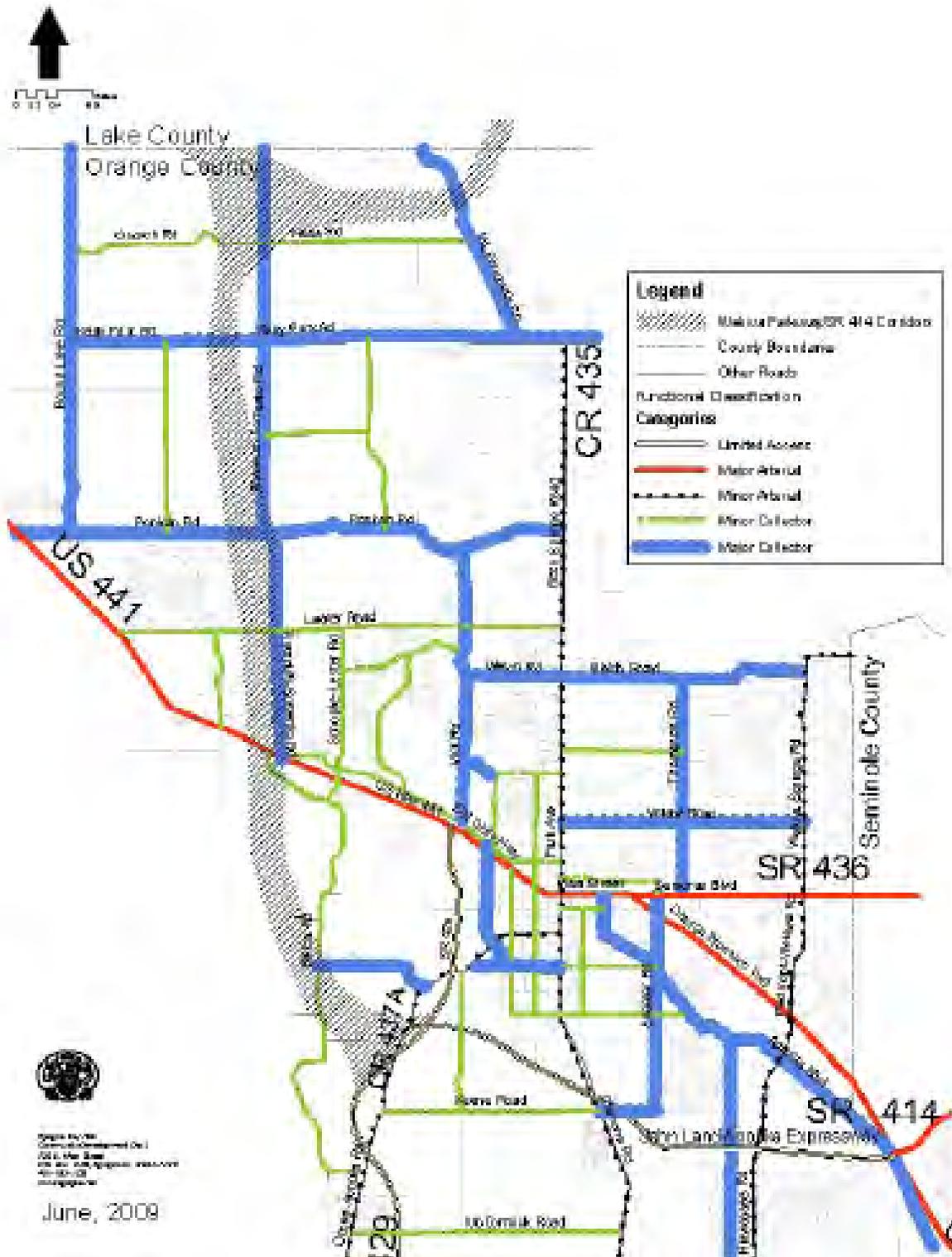


**MAP 3-5: REGIONAL ROADWAY SYSTEM**



Source: Apopka Community Development Department, 2008

MAP 3-6: PROPOSED 2030 FUNCTIONAL CLASSIFICATION MAP



# MAP 3-7: 2030 FUTURE TRANSPORTATION MAP





## **TRANSPORTATION ELEMENT**

### **GOALS, OBJECTIVES AND POLICIES**

#### **GOAL**

The City of Apopka shall promote the continued development of a financially feasible, safe and energy-efficient multi-modal transportation system that is integrated functionally and aesthetically into the surrounding land use framework and enhances the mobility needs of the Apopka area.

#### **Objective 1**

The City of Apopka shall coordinate with adjacent jurisdictions and all applicable transportation planning agencies to develop a system of multi-modal transportation facilities, as an alternative to automobile-oriented development that meets existing and future mobility needs of residents.

##### **Policy 1.1**

The City has been designated a "Dense Urban Land Area" (DULA) and is exempt from state-mandated transportation concurrency. The City shall monitor transportation as a matter of local law as addressed in this Comprehensive Plan.

##### **Policy 1.2**

Land use and transportation strategies to support and fund mobility within the Citywide Transportation Concurrency Exception Area (TCEA) are established in this element.

##### **Policy 1.3**

The City of Apopka shall coordinate with the Central Florida Regional Transportation Authority (LYNX) to assess the feasibility of expanding local and regional public transit services based upon existing and proposed major trip generators and attractors, safe and convenient public transit terminals, land uses and accommodation of the special needs of the transportation disadvantaged.

**Policy 1.4**

Within one year after completion of the Town Center Master Plan, the City shall consider the feasibility of establishing a Transit-Oriented District (TOD) within its downtown area to better coordinate implementation of the master plan.

**Policy 1.5**

Where feasible, the City of Apopka shall coordinate efforts between the regional transit provider and private development in designating park-and-ride facilities.

**Policy 1.6**

The City shall seek grant monies for the development of a Bicycle and Pedestrian Master Plan.

**Policy 1.7**

The City of Apopka shall support the efforts of Metroplan Orlando and the East Central Florida Regional Planning Council to provide bike facilities for new and reconstructed roadway facilities, where feasible.

**Policy 1.8**

The City of Apopka shall continue to participate on the MetroPlan Orlando Regional bicycle technical committee

**Policy 1.9**

The City of Apopka shall support and assist the Tri-County Chapter of "Rails to Trails" and Orange County's effort in acquiring abandoned railroad right-of-way and other properties necessary within the City for the construction of bicycle trails.

**Policy 1.10**

The City shall support the planned extension of the West Orange Trail to connect to the Seminole County and Lake County trail systems and has identified the trail in the Future Transportation Map series.

### **Policy 1.11**

By July 2011, the City shall determine the feasibility of incorporating bicycle-friendly facilities into the City's arterial and collector roadway network as follows:

1. The City shall evaluate the right-of-way/pavement width characteristics of all existing arterial and collector roads by December 2011 to determine which roads could safely and feasibly incorporate striped bicycle lanes, signed bicycle routes or other such bicycle facilities.
2. During the annual budgeting process beginning in 2012, the City shall develop a five-year capital improvements schedule for incorporating bicycle facilities into the resurfacing or reconstruction programs for applicable roads using the following criteria:
  - Where sufficient pavement width exists, the City shall provide a designated bicycle lane with a minimum of four feet on roads adjacent to curb and gutter (per Chapter 8 of the Florida Department of Transportation Plans Preparation Manual) and a minimum width of five feet on roads having no curb and gutter. Vehicle lanes shall meet or exceed the minimum width standards.
  - When it is not feasible for the area intended for bicycle travel to meet the minimum width standards, a bicycle lane will not be designated. However, the width of vehicle lanes may be set at minimum standards with the outside lane made as wide as possible.

### **Policy 1.12**

The City shall include sidewalks alongside roadways scheduled for improvements in its Capital improvement Program.

### **Policy 1.13**

The City of Apopka shall, by July 2011, update its Transportation Master Plan, which shall include a transportation corridor right-of-way component. The plan shall be based on the mobility indicators established by the City and shall provide for coordination and provisions

for population density, land uses, trip generators and attractors.

## Objective 2

The City of Apopka shall develop and maintain a transportation system that, ~~for planning purposes, should be evaluated based on~~ ~~adheres to established~~ level of service standards ~~Upon adoption of this plan, the level of service standards described~~ established in Policy 2.1 shall become the roadway Level of Service standards for the city, in accordance with the requirements of Chapter 9J-5, Florida Administrative Code and Chapter 163, Part II, Florida Statutes.

### Policy 2.1

~~Through adoption of this Transportation Element, and the maximum service volumes established in Table 4-4, For planning purposes only,~~ the City of Apopka shall establish that all roads should operate at LOS "E" or better on a following daily and peak hour basis ~~Level of Service standards for roads~~ within the city. ÷

- ~~All city "local" facilities shall operate at LOS "CE" or better on a daily and peak hour basis.~~
- ~~All city collector facilities (minor and major) shall operate at LOS "DE" or better on a daily and peak hour basis.~~
- ~~All county minor arterial and collector facilities that are within the city and are not designated as backlogged shall operate at LOS "E" or better on a daily and peak hour basis.~~
- ~~All state principal arterial facilities that are within the city and not classified as backlogged or constrained within a proposed Special Transportation Area shall operate at LOS "DE" or better on a daily and peak hour basis.~~
- ~~All backlogged and constrained facilities shall operate according to the standards set forth in Policies 2.3 and 2.4.~~

## Objective 23

The City of Apopka shall coordinate with Orange County, MetroPlan Orlando and FDOT to develop an efficient, interconnected roadway network that addresses regional and local traffic circulation needs while respecting environmentally

sensitive lands and the character of surrounding neighborhoods.

**Policy ~~2~~3.1**

To assess roadway functionality and conditions within the City of Apopka, the City shall continue to conduct regularly scheduled peak hour traffic counts for major arterial, minor arterial and major collector facilities. The most recent traffic count data from FDOT, Orange County and traffic impact studies submitted with development plans shall be utilized and supplemented with additional counts by the City as needed. For state-maintained principal arterials, adherence to specific studies may enhance and supplement roadway capacity analysis.

**Policy ~~2~~3.2**

The City of Apopka shall seek citizen participation for proposed widening of existing roads or the construction of new roads that are classified as minor collectors or higher.

**Policy ~~2~~3.3**

Prior to January 2012, the City of Apopka shall coordinate with Orange County to resolve discrepancies of transportation analysis for existing and 2030 conditions, as well as discrepancies in road improvements that have been identified in this element. In addition to the monthly meeting of the MPO Technical Transportation Committee, in which both the City and Orange County participate, the City of Apopka will conduct annual meetings with Orange County to review City and county changes to roadway improvement plans. The City of Apopka will recommend modifications to the county plan and provide information on roadway improvement projects recommended in the City's comprehensive plan.

**Policy ~~2~~3.4**

By December 2013, the City shall investigate the feasibility of alternative improvements to the existing roadway system, City-wide, such as: intersection improvements, synchronization of traffic signals, traffic calming measures, installing of auxiliary lanes, redesign or realignment of roadways, intelligent transportation initiatives, and improving public transit facilities and

programs.

**Policy 33.5**

Downtown redevelopment master plan efforts and land uses shall coordinate transportation linkage from employment centers and residential areas to the Lynx Super Stop and other transit facilities.

**Policy 33.6**

In order to address the reduction of greenhouse gas emissions, energy conservation and energy-efficient design, the City shall coordinate with MetroPlan Orlando and the ECFRPC to establish transportation demand management programs and transportation system management strategies to modify peak hour travel demand, reduce the number of vehicle miles traveled per capita, improve roadway system efficiency and enhance safety.

**Objective 34**

To discourage urban sprawl, the City of Apopka shall coordinate transportation system improvements through the adopted Future Land Use Map to support existing and projected population densities, housing and employment patterns; and ensure that land development is consistent with existing and proposed transportation facilities.

**Policy 34.1**

The City of Apopka shall designate the Transportation Element as the official Master Transportation Plan for Apopka. The Future Transportation Map series establishes the functional classification of the City's roadway system and its relationship to airports, freight and passenger rail lines, public transit and pedestrian/bicycling facilities within the City limits.

**Policy 34.2**

The City of Apopka shall promote, through the implementation of programs such as mixed-use land development, projects that support reduced travel demand, shorter trip lengths and balanced trip demand.

**Policy 34.3**

By December 2011, the City shall update the Land Development Code (LDC) to include requirements for new commercial developments adjacent to bus stops to provide separated and/or buffered pedestrian ways (e.g. sidewalks, crosswalks) connecting the bus stop to proximate building entrances.

**Policy 34.4**

The City shall require new residential developments with greater than 100 units to provide pedestrian cross-connection walkways to adjacent arterial or collector roadways, taking into account surrounding land uses such as schools, parks, and shopping centers.

**Policy 34.5**

The City will cooperate with transportation agencies and adjacent counties to help ensure the construction of the Wekiva Parkway and associated improvements. The City encourages limited access highway stormwater systems for aquifer recharge, wetland and habitat restoration and as irrigation in lieu of groundwater.

**Policy 34.6**

Within one year after the interchange location is established, the City of Apopka shall adopt an interchange land use plan for any property located within one-mile of a proposed interchange for the Wekiva Parkway. The interchange land use plan shall address appropriate land uses and compatible development, secondary road access, access management, right-of-way protection, vegetation protection, water conserving landscaping, and the height and appearance of structure and signage.

**Policy 34.7**

The City of Apopka shall, when feasible, include the costs of landscape buffer and aesthetic design measures scheduling capital improvements projects for construction of on new road or the of road widening projects through residential neighborhoods.

**Policy 34.8**

The City shall pursue grant opportunities for median landscaping and road beautification.

**Policy 34.9**

The City shall require that new development and redevelopment consider measures that address access management and traffic-calming. Such measures may include the use of curved streets and cul-de-sacs and limited entrances and exits to the subdivision.

**Policy 34.10**

The City shall include landscaping and streetscaping as roadway design components in order to enhance the function of the road for all users.

**Policy 34.11**

The City shall support the development of a financially feasible commuter rail line connecting Apopka to Tavares and Orlando.

**Policy 34.12**

The City shall support the principles of Transit-Oriented Design (TOD), especially within the downtown redevelopment and Town Center areas, and will require proposed developments that are located in the vicinity of planned transit and commuter rail stations to incorporate TOD elements in their site plans.

**Policy 34.13**

The City shall coordinate with LYNX in the following areas:

1. Identify appropriate locations for transit routes, stops, and facilities, taking into consideration affordable housing developments, employment centers and educational or public facilities;
2. Identify locations for park and ride facilities, including the possibility of public/private partnerships or private development of these facilities;
3. Promote regional transit service within the Apopka area by, at minimum, making regional transit service

information available to residents at specified City facilities.

4. Ensure that the design of transit stations and facilities includes security measures and accommodates people with disabilities or special needs
4. Promote integration of bicycle and transit facilities including bicycle racks on buses and locating bus stops that are accessible to trails or bicycle routes.

**Policy 34.14**

The City shall incorporate consideration of transit facilities in the City's site plan review process, including bus stops, bus stop facilities, and transfer facilities. This review process will be coordinated with the regional transit provider.

**Policy 34.15**

The City of Apopka shall require the construction of sidewalks abutting new developments where sidewalks are presently deficient, and shall coordinate with FDOT and Orange County to construct sidewalks where needed, with priority given to linking neighborhoods to schools and community shopping centers

**Policy 34.16**

The City shall coordinate the siting of new, or expansion of existing, airports with the future land use and conservation elements.

**Policy 34.17**

The City shall provide for the mitigation of adverse structural and non-structural impacts from development activities of the airport or associated facilities upon natural resources located within the airport or upon adjacent natural resources and land uses.

**Policy 34.18**

The City shall protect the airport from encroachment of incompatible land uses.

**Objective 45**

The City of Apopka shall coordinate the development of a financially feasible transportation system with the plans and programs of Orange County, MetroPlan Orlando, the Orlando - Orange County Expressway Authority, the Central Florida Transportation Authority, the Florida Statewide Passenger Rail Commission and the FDOT adopted work program consistent with the Florida Transportation Plan.

**Policy 45.1**

Transportation improvements identified in this element shall be incorporated into the City's 5-year capital improvement program on a phased basis.

**Policy 45.2**

The City of Apopka shall coordinate with Orange County, the Florida Department of Transportation and the Orlando-Orange County Expressway Authority in identifying funding sources for road improvements identified in this element for the Apopka area.

**Policy 45.3**

The City of Apopka shall continue to fund road improvement projects through a City-wide impact fee or mobility fee program. The fee rates shall be analyzed and shall be updated at least every five years.

**Policy 45.4**

By July of 2011, the City shall evaluate the establishment of mobility fees to fund mobility strategies and replace the transportation impact fee structure.

**Policy 45.5**

The City of Apopka shall participate on Orange County technical committees in identifying county transportation impact fee projects needed within the Apopka area during each update of the Orange County impact fee program.

**Policy 45.6**

The City of Apopka shall provide procedures for

coordinating with the private development community in the funding and implementation of functionally classified roads identified in this element.

**Policy 45.7**

In the evaluation of alternative road improvements, the City of Apopka shall give priority to alternatives that promote expansion of the Apopka area's collector road system and minimize the need to add lanes to existing roads.

**Policy 45.8**

Prior to approving funding for new road construction projects adding capacity, the City shall first investigate the feasibility of alternative improvements to the existing roadway system such as intersection improvements, multimodal capacity improvements, synchronization of traffic signals, traffic calming measures, installation of auxiliary lanes and the redesign or realignment of roadways.

**Policy 45.9**

The City shall continue to support the construction of the John Land Apopka Expressway (Maitland Boulevard Extension), the Wekiva Parkway and associated projects.

**Policy 45.10**

The City of Apopka shall remain active in transportation planning efforts of the Metropolitan Planning Organization through participation on the MPO's Transportation Technical Committee and Policy Board.

**Policy 45.11**

The City of Apopka shall participate in the public participation and review process provided for the Florida Department of Transportation five-year work program by providing comment on FDOT proposed projects in the Apopka area.

**Policy 45.12**

The City of Apopka shall participate in the public

participation and review process provided for Orlando-Orange County Expressway Authority road projects in the Apopka area.

**Policy ~~4~~5.13**

The City of Apopka shall participate in safety groups that review and improve pedestrian and intersection problems by participation on various safety meetings.

**Policy ~~4~~5.14**

The City of Apopka shall coordinate with local and regional public transit providers to provide for safe and efficient public transit terminals and transit services where appropriate, and to provide for the accommodation of special needs of the transportation disadvantaged.

**Policy ~~4~~5.15**

During the review of the City's transportation network, the City shall analyze any extra-jurisdictional impacts on roadways outside of the corporate City limits including, but not limited to Plymouth Road, State Road 46, State Road 436 and US Highway 441.

**Objective ~~5~~6**

The City of Apopka shall protect existing rights-of-way from building encroachment and require the reservation of future rights-of-way to the extent permitted by law, to provide for transportation needs within the City.

**Policy ~~5~~6.1**

The City of Apopka shall adopt typical right-of-way standards for functionally classified roads in accordance with FDOT standards. Variation from the specified typical standards will require approval from the Development Review Committee. Deviation from typical standards will be permitted in areas where redevelopment and historic preservation is being promoted, such as the Apopka Central Business District.

**Policy 56.2**

The City shall develop a priority listing of future rights-of-way needed for the purpose of orderly and economical land acquisition to implement the roadway network illustrated on the four Small Area Conceptual Master Plans discussed in the Future Land Use Element for the purpose of orderly and economical land acquisition.

**Policy 56.3**

The City shall:

1. Require developers to provide for required rights-of-way.
2. Maintain a listing of roadways requiring additional rights-of-way.
3. Require dedication of necessary rights-of-way at time of development.
4. Require building setbacks to adequately protect rights-of-way.
5. Include right-of-way standards and procedures in the LDC.

**Policy 56.4**

Public transit in designated public transportation corridors shall be promoted where appropriate, based on coordination with MetroPlan Orlando and other applicable transit authorities.

**Policy 56.5**

The City of Apopka shall support construction of the Wekiva Parkway through the limitation of development approvals within the proposed alignment, to the extent permitted by law.

**Objective 67**

The City of Apopka shall work toward the implementation of a transportation system that allows for the movement of vehicular traffic on a network that adheres to minimum transportation

planning and engineering design criteria.

**Policy ~~€~~7.1**

The City of Apopka shall limit access points on principals and minor arterials and collectors through a reduction of median and curb cuts, joint access requirements and use of service roads. FDOT criteria will be incorporated into the City's LDC.

**Policy ~~€~~7.2**

The City shall continue to require traffic impact studies for development that is projected to generate 400 or more gross daily trips. The Development Review Committee may require a traffic impact study of developments generating less than the daily and peak hour thresholds on a case by case basis.

**Policy ~~€~~7.3**

New roadway design standards shall, at minimum, be in accordance with those presented in "A Policy on Geometric Design of Highways and Streets" (AASHTO, 2004) "Manual on Uniform Traffic Control Devices" (FHWA, 2003), and "Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways", State of Florida, FDOT, 2006. Deviation from standards identified in these manuals shall require approval by the Development Review Committee.

**Policy ~~€~~7.4**

The City shall require the provision of pedestrian and vehicular access to all parts of new development projects. The City of Apopka shall regularly review the Land Development Code to ensure measures are included that enhance the safety of pedestrians and motorists by designing and upgrading systems that reduce conflicts and hazardous conditions. Such measures include crosswalks at intersections, pedestrian actuated features at signalized intersections and curb cut sidewalk ramps. Measures which address vehicular access shall include requirements for safe and convenient on-site traffic flow and parking for new development projects.

**Policy ~~€~~7.5**

For minor and major collector city facilities, the typical cross section for new and reconstructed roads shall allow for the safe movement of bicycle traffic. The Orange County Parks and Trails Master Bicycle Plan will be reviewed annually to ensure consistency with the Apopka Comprehensive Plan. In addition, the City will continue to cooperate with Orange County in implementing the planned Rails to Trails Bicycle Way by protecting corridors planned within the City.

**Policy ~~€~~7.6**

The City of Apopka will continue to coordinate with the FDOT to provide emergency vehicle signal preemption control for US 441.

**Policy ~~€~~7.7**

The City of Apopka shall not accept the transfer of administrative or maintenance responsibilities of county roads that do not meet minimum city design criteria, as specified in the LDC.

**Policy ~~€~~7.8**

Future developments within the Northwest, West, Plymouth and Expressway Study Areas should be encouraged to follow the grid pattern when proposing new roads to improve traffic flow and connectivity.

**Policy ~~€~~7.9**

The City of Apopka shall coordinate with the Florida Department of Transportation, MetroPlan Orlando and other governmental agencies to facilitate local traffic to use alternatives to the Florida Intrastate Highway System (FIHS) to protect its interregional and intrastate functions. These techniques shall be included in the updated Transportation Master Plan.

**Objective 78**

The City of Apopka shall coordinate vehicular, public transit and bicycle/pedestrian access to airports and rail facilities with the facilities shown on the transportation map series.

**Policy 78.1**

The City shall coordinate roadway, transit and bicycle/pedestrian improvements with the future needs of airports and passenger rail lines.

**Policy 78.2**

The City shall coordinate with MetroPlan Orlando, the Apopka-Orlando Airport, LYNX and the Florida Statewide Passenger Rail Commission to develop strategies to address intermodal terminals and access to airport and rail facilities.

**Objective 89**

The City of Apopka shall support mobility City-wide through strategies that address alternative modes of transportation by providing context-appropriate sidewalks, bikeways, transit facilities, parking management and improvements that will contribute to specific and identified mobility needs within the City. Mobility strategies and standards shall be used in the interim prior to the adoption of the City's Mobility Plan, estimated by July 9, 2011.

**Policy 89.1**

Transportation concurrency exceptions on roadways shall not exempt development from meeting policy requirements established to address mobility needs within the City.

**Policy 89.2**

Although development is exempt from transportation concurrency, new development or redevelopment must submit a Traffic Analysis Impact Study to determine impacts of the development, if the development is projected to generate 400 or more gross daily trips.

**Policy §9.3**

The City shall require the provision of transportation modifications that are necessary due to traffic safety and/or roadway operating conditions. Any such modification shall not count towards meeting the mobility standards required for that development.

**Policy §9.4**

Proposed development generating more than 1,000 net, new average daily trips and located within one (1) mile of an SIS or FIHS interchange shall include an interchange ramp study that assesses potential impacts to SIS and FIHS facilities.

**Policy §9.5**

Funding mobility strategies shall be provided through developer contribution to the maximum extent feasible, mobility fees, the County, state and federal government and other outside sources such as grant funds.

**Policy §9.6**

The following table provides the net new average daily trip generation thresholds for the corresponding minimum required amount of mobility standards for a development.

<b>Net, new average daily trip generation</b>	<b>Number of Mobility Standards which must be met</b>
0 to 9	Zero (0)
10 to 49	At least 1 Mobility Standard
50 to 99	At least 3 Mobility Standards
100 to 399	At least 5 Mobility Standards
400 to 999	At least 7 Mobility Standards
1,000 to 4,999	At least 12 Mobility Standards
5,000 or greater	At least 18 Mobility Standards and either be on an existing transit route or provide funding for a new transit route.

**Policy §9.7**

Development or redevelopment shall be required to meet the following Mobility Standards, at the developer's expense,

based on the development's trip generation and proportional impact on roadway facilities.

- a) Intersection and/or signalization modifications to improve level of service and safety and address congestion management. This may include, but is not limited to: signal timing studies, fiber optic interconnection for traffic signals, roundabouts, OPTICOM signal preemption, and/or implementation of Intelligent Transportation System (ITS) features such as state of the art traffic signal controllers, dynamic message signs and traffic monitoring cameras designed to maximize the efficiency of the roadway network by reducing congestion and delay.
- b) Addition of dedicated turn lanes into and out of the development.
- c) Construction of bus shelters and/or the addition of bus shelter lighting using solar technology designed and constructed to the Central Florida Regional Transportation Authority (LYNX) specifications.
- d) Construction of bus turn-out facilities.
- e) Provision of bus pass programs provided to residents and/or employees of a development. The bus passes must be negotiated as part of a contract with the Central Florida Regional Transportation Authority, and approved by the City.
- f) Payments to the City, with satisfactory conditions will be transferred to the Central Florida Regional Transportation Authority, which either increase service frequency or add new bus service.
- g) Construction of off-site public sidewalks to complete sidewalk connectivity. Sidewalk construction required to meet the Land Development Code requirements along property frontages shall not count as meeting this Mobility Standard.
- h) Widening of existing public sidewalks to increase pedestrian mobility, comfort and safety.
- i) Deeding of land for the addition and construction of bicycle lanes to City specifications.
- j) Provision of ride sharing or van pooling programs.
- k) Provision of park and ride facilities.

- l) Funding of streetscaping/landscaping (including pedestrian scale lighting, where relevant) on public right-of-ways or medians.
- m) Buildings with architectural features that provide significant shading and weather protection (e.g. canopies, awnings, colonnades) over sidewalks to promote pedestrian mobility.
- n) Provision of additional bicycle parking over the minimum required by the Land Development Code. The bicycle parking shall be located convenient to the entrance of primary buildings and covered, where practicable.
- o) Removal of non-conforming signage, billboards, and signage that impedes pedestrian movement at the site.
- p) Enhancements to the City's system of greenways, bike paths, and trails which increase the system's utility for multi-modal transportation. Such enhancements may include, but not be limited to:
  - 1. Trail amenities such as benches, directional signage, or safety systems;
  - 2. Bicycle parking at entry points or connecting with transit lines;
  - 3. Land acquisition for expansion or better connectivity of the trail system;
  - 4. Additional entry points to the trail system;
  - 5. Bridges spanning creeks or wetland areas; and/or,
  - 6. Appropriate trail surfacing.
- q) Development of, or participation in, a Transportation Demand Management (TDM) program that provides funding or incentives for transportation modes other than single occupant vehicle to reduce Vehicle Miles Traveled (VMT). Such TDM programs shall utilize a methodology approved by the City and may require performance monitoring and reporting.
- r) Develop the project at or near maximum densities and intensities with transit-supportive building and site design.
- s) New roadway facilities that provide a more interconnected transportation network in the City and/or provide alternate routes to reduce congestion. These types of facilities include, but are not limited to State and County arterials and collectors, and may include projects outside the limits of the City that can be demonstrated to be a direct benefit to the City's transportation system.

- t) Developers may deed land for right of way and/or construct roadway extensions to City specifications.
- u) Addition of lanes on existing road facilities, where acceptable to the City.
- v) An innovative transportation-related modification, VMT reduction program or Mobility Standard submitted by the developer, where acceptable to and approved by the City.

**Policy §9.8**

The developer may choose to provide one or more Mobility Standard(s) off-site with the City's approval. The Mobility Standard(s) chosen shall be subject to the final approval of the City during the plan approval process. Mobility Standards shall relate to the particular site, transportation conditions, special characteristics and needs of the specific area where the development is located.

**Policy §9.9**

The City shall amend the Concurrency Management section and any other relevant sections of the Land Development Code to reflect the adoption of the Mobility Standards and include funding for alternative transportation improvements.

**Policy §9.10**

Developments approved prior to the adoption of the Mobility Standards shall be required to provide any transportation improvements, modifications or mitigation required as part of the development plan approval unless an amendment is made to the development plan and the previously approved improvements, modifications, or mitigation are inconsistent with current design standards or other adopted policies. Amendments to development plans made after the adoption of the Mobility Standards shall be required to meet the mobility policies.

**Policy §9.11**

On an annual basis, the City shall monitor and evaluate the impacts of approved development on adjacent city or adjacent county-maintained roads and share that information with the adjacent city or county.

**Policy ~~9~~.12**

The City shall evaluate the effectiveness of the TCEA every seven years as part of the Evaluation and Appraisal Report (EAR).

**Policy ~~9~~.13**

The City shall monitor the success of the Mobility Strategies using the following performance measures. Evaluation of these performance measures shall occur with the next Evaluation and Appraisal Report of the City of Apopka Comprehensive Plan. Any recommendations to refine the mobility strategies shall occur through EAR-based amendments.

<b>Mobility Strategy</b>	<b>Performance Measure*</b>	<b>Target*</b>
Support alternative modes of transportation	Transit shelters in the City	Increase number of bus shelters by 1 per year
Support alternative modes of transportation	Sidewalk coverage near transit stops in the City	Increase percentage of sidewalks by 10 percent by next EAR on roadways within ¼ mile of bus stops
Urban design and land use mix	Dwelling units near non-residential land use	Increase percentage of dwelling units within ¼ mile of non-residential land uses by 5 percent by next EAR
Urban design and land use mix	Accidents involving pedestrians and bicyclists in the City	Reduce annual number of accidents involving pedestrians and bicyclists in the City
Transportation Demand Management	Persons participating in ridesharing or vanpooling programs	3% annual increase of participants
Transportation	Number of	3% annual increase

<b>Mobility Strategy</b>	<b>Performance Measure*</b>	<b>Target*</b>
Demand Management	businesses/employers offering flexible work schedules	of participants
Transportation Demand Management	Implementation of transit pass programs and number of participants (businesses and individual)	5% annual increase after implementation
Transportation Demand Management	Number of bus turn-out facilities (at locations desired by LYNX)	1 per 3 years as coordinated with LYNX
Transportation Demand Management	Number of improved and/or new bus shelters on LYNX routes within the City	1 improved and/or new shelter each year
Transportation network connectivity	Amount of sidewalks added and/or expanded to the network in the City	500 linear feet of sidewalk per year
Transportation network connectivity	Linear feet of streetscaping/landscaping which enhances the pedestrian environment	500 feet per year
Transportation network connectivity	Number of crosswalks in the City	1 per project generating > 5,000 net new daily trips
Transportation network connectivity	Traffic counts and queue lengths at SIS and FIHS ramps located in or near the City	The City shall coordinate with FDOT to monitor traffic counts and queue lengths at SIS and FIHS ramps located in or near the City annually.
SIS and FIHS Facilities	Number of bicycle stalls/lockers and related amenities for projects within the City	1 bicycle stall/locker for every 100 vehicle parking spaces provided within the City for redevelopment and new development
Bicycle Facilities Enhancement	Linear feet of bicycle lanes and related facilities in the City	Bicycle lanes and related facilities including bicycle

<b>Mobility Strategy</b>	<b>Performance Measure*</b>	<b>Target*</b>
		provisions at intersections as part of programmed street resurfacing and/or rehabilitation (where feasible)
Multi-Modal Transportation	Change in ridership, including boardings/alightings for LYNX routes within the City	1% annual increase
Multi-Modal Transportation	Change in headways for LYNX routes within the City	10-minute minimum headway decrease every 5 years
Multi-Modal Transportation	Commuter Rail ridership (change in ridership will be reported in subsequent years after the implementation of the service)	3% annual increase each year after implementation
Multi-Modal Transportation	Apopka Commuter Rail Station boardings/alightings	3% annual increase each year after implementation
Multi-Modal Transportation	Proposed trip generation from redevelopment/new developments versus actual traffic counts on adjacent roadways	Achieve a 5% reduction in actual traffic counts versus trip generation projections
Multi-Modal Transportation	Change in daily and peak hour traffic volumes on US 441	Achieve less than 1% annual increase

\* Performance measures and targets may be subject to further consideration (i.e., if these performance measures and targets cannot be supported by reasonably available data or additional measures are identified that may also be appropriate).