2.0 Existing Traffic Conditions

This section describes the existing traffic characteristics in the study area and includes an analysis of traffic flow operating conditions at the study intersections and roadway segments.

In analyzing the existing conditions of the roadway system and intersections, traffic counts were collected and recommended traffic characteristics were established. Also, the existing design hour volumes were developed and a LOS analysis was conducted based on existing roadway and intersection geometry. This LOS analysis served as a base for comparing the future year traffic conditions in the No-Build and Build Scenarios. The following sub-sections describe the overall process used in analyzing the existing traffic conditions within the study area.

2.1 Existing Roadway Network

The existing roadway network and lane configuration within the project area of influence is shown in Figures 2-1A (Orange and Lake Counties) and 2-1B (Seminole County). The area of influence includes a road network consisting of expressways (limited access facilities), arterials, collectors and intersections in Orange, Lake and Seminole Counties.

2.1.1 Orange County

In Orange County, the project area of influence includes one limited access facility, two arterials and eleven collector roadways.

The SR 429 (Western Beltway) is a four-lane divided, limited access expressway that opened to traffic in 2000, having a southern terminus on I-4 in Osceola County and a northern terminus at US 441 near Apopka. SR 429 links the Apopka area with the rest of the Orlando urban area via the regional expressway system and provides an alternate route to US 441 through the Orlando metro area.

The two arterial facilities are US 441 (Orange Blossom Trail) and SR 436 (Semoran Boulevard). US 441, which connects Orlando with Apopka and Mt. Dora, is a four-lane divided arterial that follows a northwesterly-southeasterly route through the study area. SR 436 is a six-lane divided arterial in the Orlando area that passes through Seminole and Orange Counties beginning at the intersection with US 441 in Apopka and extending east into Seminole County.

Orange County collector roads that follow a north-south route are Round Lake Road, CR 437 (Plymouth Sorrento Road), CR 435 (Rock Springs Road) and Vick Road. Orange County collector roads following an east-west route are Kelly Park Road, Ponkan Road, Sadler Avenue, Ondich Road, Haas Road, and Yothers Road.

SEE FIGURE 2-1B FOR SEMINOLE COUNTY

Figure 2-1A
EXISTING (2005) CONDITIONS
GEOMETRY

LEGEND

2 Lanes | 4 Lanes | 6 Lanes | 8 Lanes

SIGNALIZED INTERSECTIONS

EXPRESSWAY AUTHORITY | WEKIVA PARKWAY Project Development and Environment Study | FLORIDA DEPARTMENT OF TRANSPORTATION | HNTB

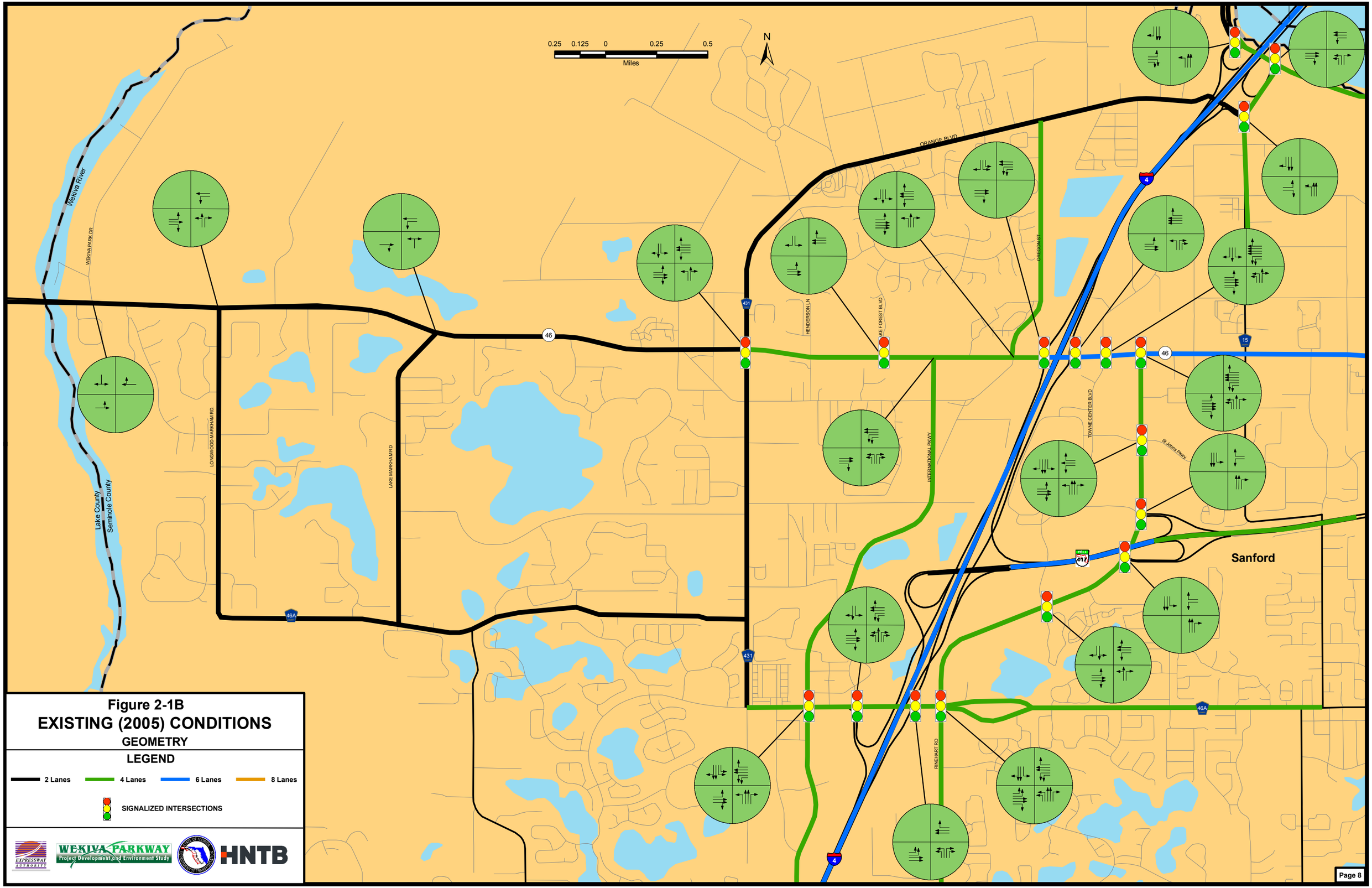

Figure 2-1B
EXISTING (2005) CONDITIONS
GEOMETRY

LEGEND

2 Lanes | 4 Lanes | 6 Lanes | 8 Lanes

SIGNALIZED INTERSECTIONS

WEKIVA PARKWAY
Project Development and Environment Study

2.1.2 Lake County

In Lake County, the project area of influence includes three arterials and five collector roadways.

US 441, SR 46 and SR 44 are arterial facilities in Lake County. US 441 is a four-lane divided arterial that runs north-south from the Orange County Line to Mount Dora in the western portion of the study area. SR 46 is a two-lane undivided arterial that follows an east-west route through the northern portion of the study area. SR 46 connects Sanford and Mt. Dora and contains interchanges with I-4 and US 441. SR 44 is an east-west two-lane undivided arterial that was recently realigned around downtown Eustis, to include what had been CR 44B between US 441 and SR 44 east of Eustis.

Lake County collector roads in the area of influence are CR 46A and Wolf Branch Road. A section of Round Lake Road, CR 437 (Plymouth Sorrento Road)and CR 435 (Rock Springs Road) also extend into Lake County.

2.1.3 Seminole County

In Seminole County, the project area of influence includes two limited access facilities, four arterials and eleven collector roadways.

The limited access facilities are I-4 and SR 417, which are four-lane and six-lane facilities, respectively. I-4 provides a southwest to northeast connection across the central section of Florida, providing access to the metropolitan areas of Tampa-St. Petersburg, Lakeland-Winter Haven, Orlando and Daytona Beach. SR 417, also known as the Central Florida GreeneWay and Seminole Expressway, is a tolled expressway forming the eastern beltway around the city of Orlando. SR 417 is one of the several toll roads that have been constructed over the years to provide alternate routes and relief to I-4.

The three arterial facilities are SR 436, SR 46, US 17/92 and CR 46A. SR 436 functions as a six-lane divided arterial from Orange/Seminole County line to SR 434 and as an eight-lane divided arterial from SR 434 to Palm Springs Road. SR 46 functions as a two-lane undivided arterial from Lake/Seminole County line to CR 431 (Orange Boulevard), a four-lane divided arterial from Orange Boulevard to I-4 and a six-lane divided arterial from I-4 to Rinehart Road. CR 46A is an east-west four-lane divided roadway. Increased growth in commuter traffic has occurred along CR 46A in recent years due to new developments and the opening of the I-4/CR 46A interchange, which is why it is considered an arterial in the traffic analysis. US 17/92 is a four lane major arterial connection between Volusia and Seminole counties. It also provides an alternative to I-4 across the St. John's River.

Seminole County collector roads are CR 431B (Rinehart Road), International Parkway, Longwood-Markham Road, Orange Boulevard and Markham Road. Rinehart Road and International Parkway are four-lane divided roadways. Longwood-Markham Road, Orange Boulevard and Markham Road are two-lane major county roadways. Other collector roads are Wekiva Park Drive, Lake Markham Road, Lake Forest Boulevard, Oregon Avenue and Wayside Drive.

2.2 Existing Traffic Volumes and Level of Service

2.2.1 Traffic Count Information

Figures 2-2A and 2-2B provide the location and type of traffic count information collected for this study. Traffic counts for 75 locations were collected during the months of July and August 2006 and were adjusted to average annual conditions based on the most current FDOT seasonal and axle adjustment factors for Orange, Lake and Seminole Counties. The data included 24-hour directional volume counts at 54 locations and 4-hour (AM/PM) intersection Turning Movement Counts (TMCs) at 21 intersections. Seasonal adjustment factors were applied to the peak hour TMCs to develop the existing PM peak hour volumes.

Additional traffic count data for the study area was obtained from the FDOT, Orange, Lake and Seminole Counties and other data resources available. The recently completed *International Parkway/SR 417 Interchange PD&E* Study, completed in 2006, was also utilized for the existing conditions at Seminole County intersections that overlap between the Wekiva Parkway project study area and the SR 417 Extension study area. The FDOT seasonal adjustment tables are located in Appendix C and copies of all traffic count data are provided in Appendix D.

Table 2.1 identifies the Annual Average Daily Traffic (AADT) year for each location. The existing 2005 or 2006 Annual Average Daily Traffic (AADT) on the roadway network within the project study area is illustrated in Figures 2-3A (Orange and Lake Counties) and 2-3B (Seminole County).

2.2.2 Project Factors

Information from the 2005 Florida Traffic Information (FTI) CD and the OOCEA System's Traffic Data and Statistics Manual were used to determine project traffic characteristics for the limited access facilities and arterials in the project area. These traffic characteristics include the 30th Analysis Hour Factor (K_{30}), the Directional Distribution Factor (D_{30})and the Daily Truck Factor (T_{daily}). The K_{30} factor is the proportion of the AADT occurring during the 30th highest hour of the design year. The D_{30} factor is the proportion of the 30th highest hour traffic that is traveling in the peak direction. The application of the K_{30} and D_{30} factors to the AADT volume produces the Directional Design Hourly Volume (DDHV) which is the traffic volume for which a facility should be designed. The T_{daily} factor is the estimated percentage of the AADT that is truck traffic. The established K_{30}, D_{30} and T_{daily} factors for both limited access facilities and arterials are an average of the K's, D's and T's from all of the similar roadway segments within the project area. All traffic characteristics information included in the FTI CD is shown in Table 2.2.

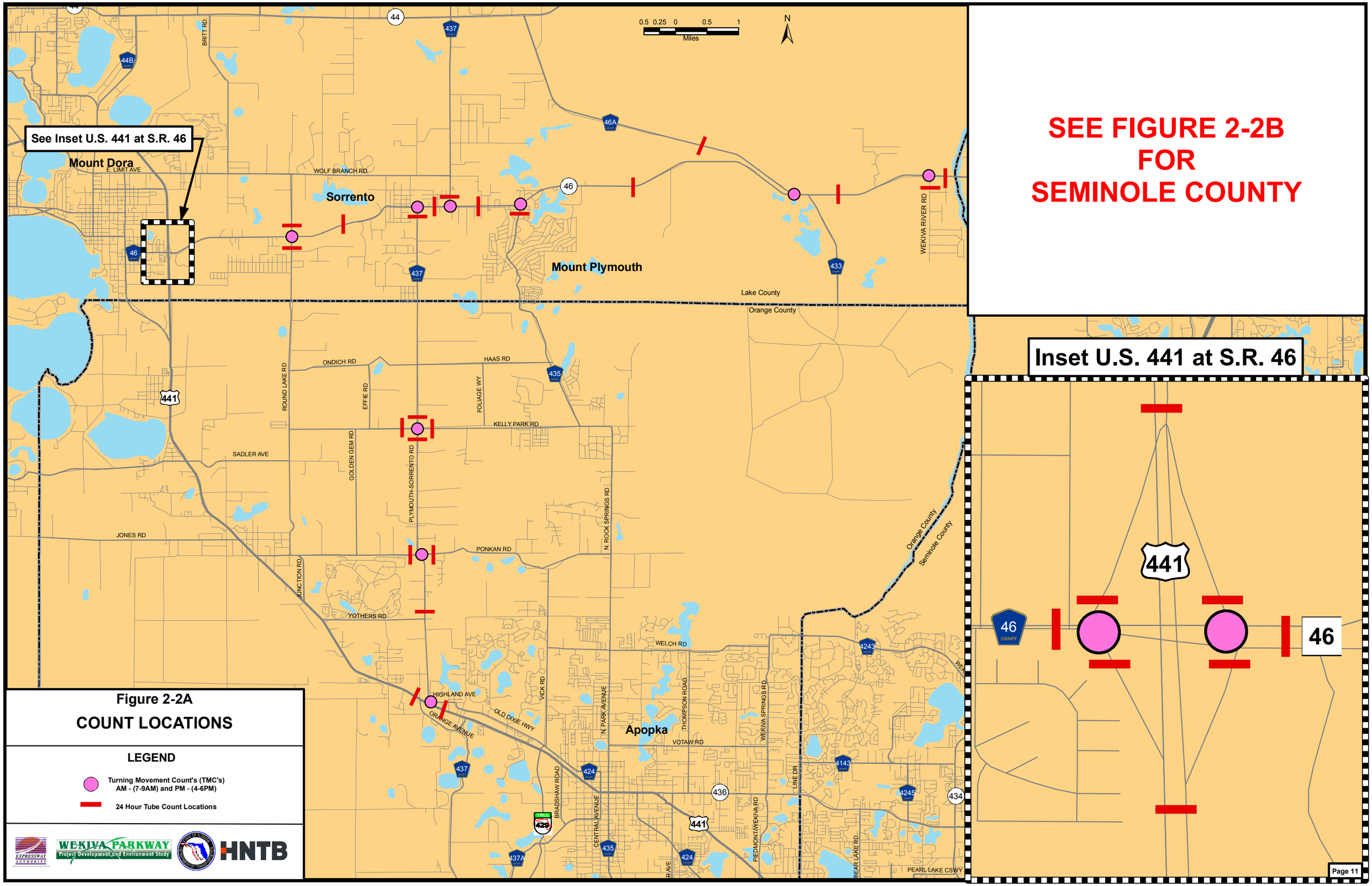

Figure 2-2A

COUNT LOCATIONS

LEGEND

Turning Movement Count's (TMC's)
AM - (7-9AM) and PM - (4-6PM)

24 Hour Tube Count Locations

EXPRESSWAY AUTHORITY

WEKIVA PARKWAY
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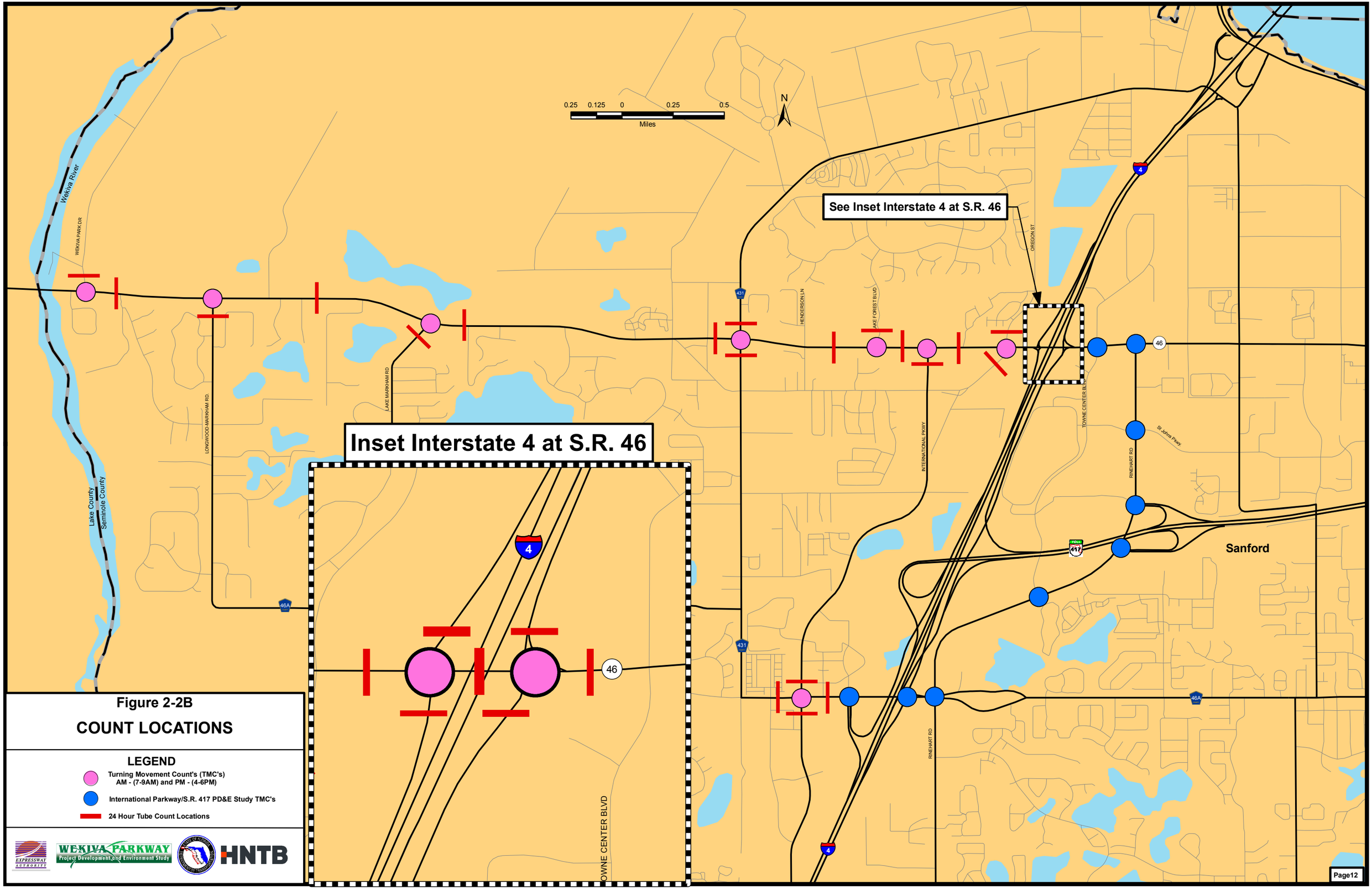

Figure 2-2B

COUNT LOCATIONS

LEGEND

- Turning Movement Count's (TMC's) AM - (7-9AM) and PM - (4-6PM)
- International Parkway/S.R. 417 PD&E Study TMC's
- 24 Hour Tube Count Locations

EXPRESSWAY AUTHORITY · WEKIVA PARKWAY Project Development and Environment Study · HNTB

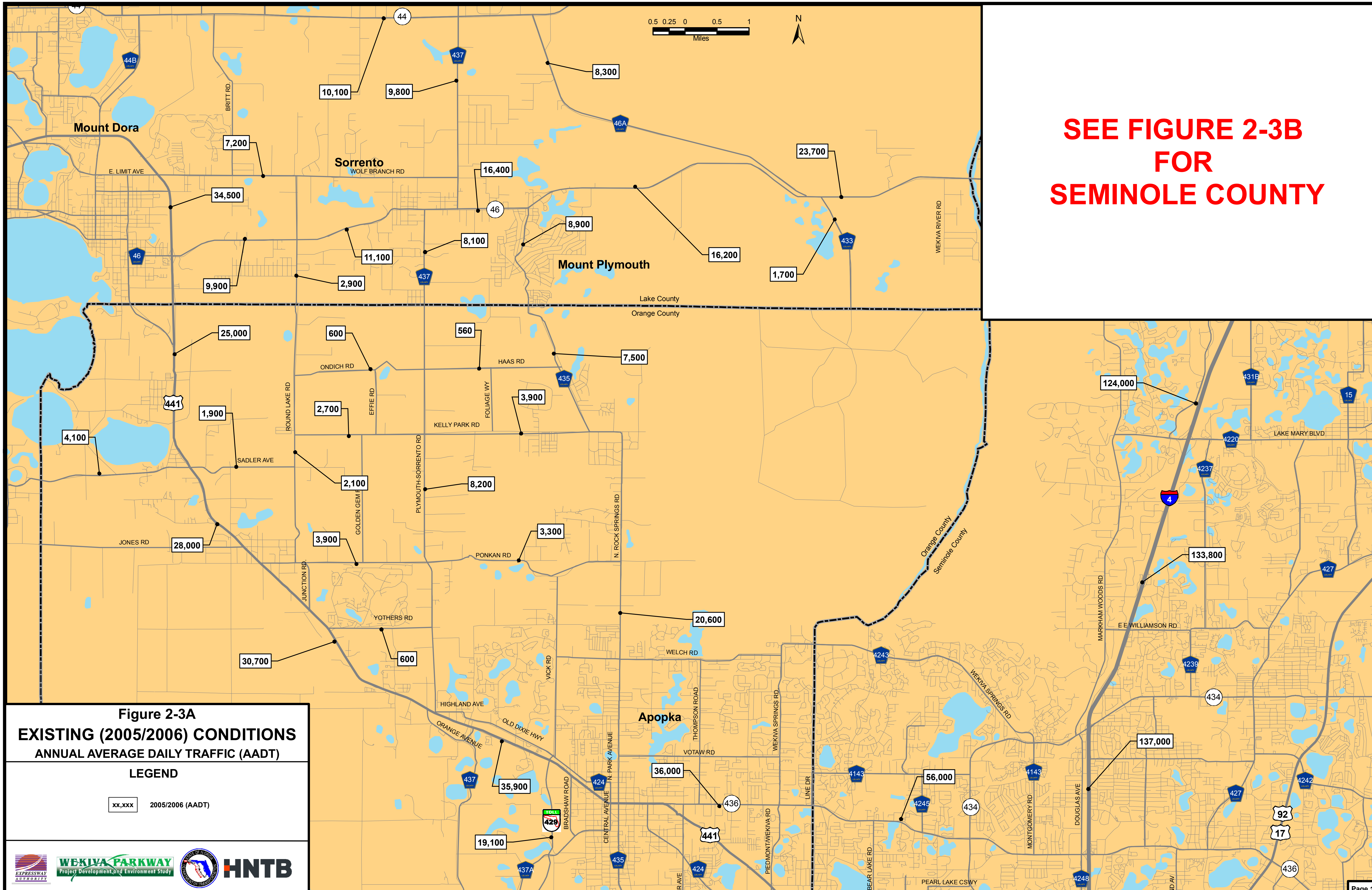
SEE FIGURE 2-3B
FOR
SEMINOLE COUNTY
Mount Dora
Sorrento
Mount Plymouth
Apopka
Lake County
Orange County
Seminole County
E. LIMIT AVE
WOLF BRANCH RD
BRITT RD.
ONDICH RD
HAAS RD
KELLY PARK RD
SADLER AVE
JONES RD
PONKAN RD
YOTHERS RD
HIGHLAND AVE
ORANGE AVENUE
OLD DIXIE HWY
WELCH RD
VOTAW RD
LAKE MARY BLVD
E E WILLIAMSON RD
PEARL LAKE CSWY
ROUND LAKE RD
EFFIE RD
FOLIAGE WY
PLYMOUTH-SORRENTO RD
N. ROCK SPRINGS RD
JUNCTION RD
VICK RD
BRADSHAW ROAD
CENTRAL AVENUE
N. PARK AVENUE
THOMPSON ROAD
WEKIVA SPRINGS RD.
WEKIVA SPRINGS RD
WEKIVA RIVER RD
PIEDMONT/WEKIVA RD
LINE DR
BEAR LAKE RD
MONTGOMERY RD
DOUGLAS AVE
MARKHAM WOODS RD
10,100
9,800
8,300
7,200
23,700
16,400
34,500
8,900
8,100
11,100
16,200
1,700
9,900
2,900
25,000
600
560
7,500
124,000
3,900
2,700
1,900
4,100
2,100
8,200
3,300
133,800
28,000
3,900
20,600
30,700
600
137,000
36,000
56,000
35,900
19,100
0.5 0.25 0 0.5 1
Miles
N

Figure 2-3A

EXISTING (2005/2006) CONDITIONS

ANNUAL AVERAGE DAILY TRAFFIC (AADT)

LEGEND

xx,xxx 2005/2006 (AADT)

WEKIVA PARKWAY Project Development and Environment Study

HNTB

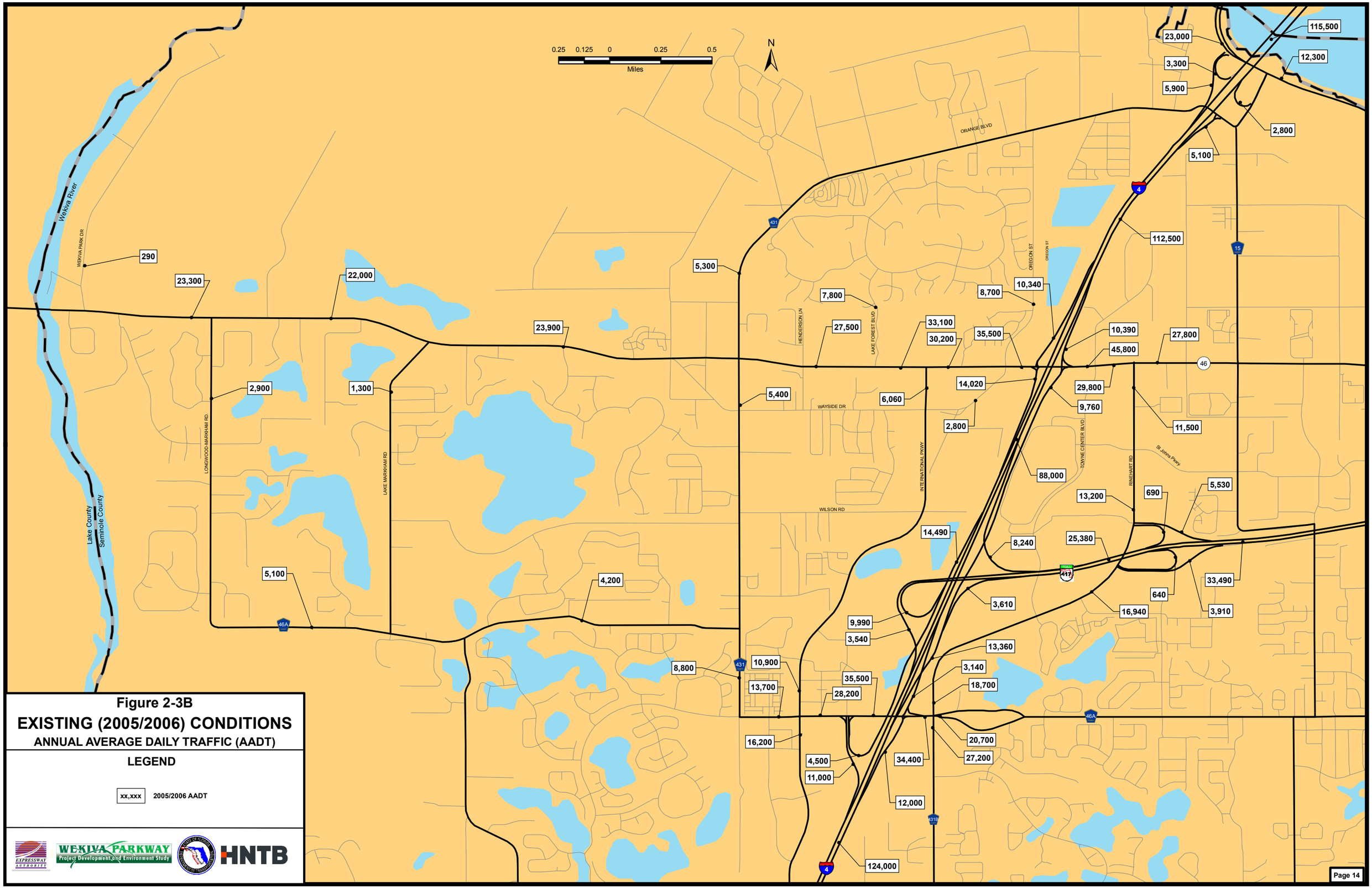

Figure 2-3B

EXISTING (2005/2006) CONDITIONS

ANNUAL AVERAGE DAILY TRAFFIC (AADT)

LEGEND

xx,xxx 2005/2006 AADT

TABLE 2.1 TRAFFIC COUNT INFORMATION

Roadway	From	To	AADT Year
Interstate 4	S.R. 423	U.S. 17/92	2005
U.S. 441	C.R. 424	S.R. 429	2005
	S.R. 429	Ponkan Rd.	2006
	Ponkan Rd.	C.R. 44B	2005
S.R. 46	C.R. 500A	U.S. 441	2006
	U.S. 441	Round Lake Rd.	2005
	Round Lake Rd.	East of Rinehart Rd	2006
S.R. 429	C.R. 437A	U.S. 441	2005
S.R. 436	U.S. 441	Palm Springs Rd.	2005
S.R. 417	North of Interstate I-4	C.R. 46A	2006
US 17/92	North of I-4 WB on Ramps	South of CR 15	2006
S.R. 44	S.R. 19	C.R. 46A	2005
C.R. 435	U.S. 441	Lake County Line	2005
	Lake County Line	S.R. 46	2006
C.R. 437	U.S. 441	S.R. 46	2006
Round Lake Rd.	Ponkan Rd.	Lake County Line	2005
	Lake County Line	Wolf Branch Rd.	2006
Ponkan Rd.	U.S. 441	Round Lake Rd.	2005
	Round Lake Rd.	C.R. 435	2006
Kelly Park Rd.	Round Lake Rd.	C.R. 435	2006
	Lake County Line	Round Lake Rd.	2005
Sadler Ave.	Lake County Line	Round Lake Rd.	2005
Ondich Rd.	Round Lake Rd.	C.R. 437	2005
Haas Rd.	C.R. 437	C.R. 435	2005
Lester Rd.	C.R. 437	C.R. 435	2005
Yothers Rd.	U.S. 441	C.R. 437	2005
N Oregon Street	North of S.R. 46	S.R. 46	2006
Wayside Drive	South of S.R. 46	S.R. 46	2006
Wekiva Park Dr.	North of S.R. 46	S.R. 46	2006
Lake Forest Blvd	SR 46	North of SR 46	2006
International Parkway	Lake Mary Blvd.	S.R. 46	2006
C.R. 431	C.R. 46A	Markham Rd	2005
	Markham Rd	I-4	2006
Lake Markham Rd.	S.R. 46	C.R. 46A	2006
Longwood-Markham Rd.	S.R. 46	C.R. 46A	2006
Wekiva River Rd.	S.R. 46	South of S.R. 46	2006
C.R. 433	S.R. 46	South of S.R. 46	2005
C.R. 46A	Orange Blvd.	Colonial Center Pkwy.	2006
	Colonial Center Pkwy.	East of Rinehart Rd	2005
	S.R. 44	S.R. 46	2006
Rinehart Rd	Anderson Lane	SR 46	2005
Markham Road	Longwood-Markham Rd.	Orange Blvd.	2005
Wolf Branch Rd.	U.S. 441	C.R. 437	2006
C.R. 437	S.R. 46	S.R. 44	2006

TABLE 2.2 ROADWAY TRAFFIC FACTORS

Roadway	From	To	K_{30}	D_{30}	T
I-4	S.R. 423	S.R. 414	7.84%	51.57%	7.00%
	S.R. 414	S.R. 436	7.84%	51.57%	7.91%
	S.R. 436	S.R. 434	8.11%	52.01%	10.30%
	S.R. 434	Lake Mary Blvd.	8.35%	52.63%	7.05%
	Lake Mary Blvd.	C.R. 46A / S.R. 417	8.11%	52.01%	11.80%
	C.R. 46A / S.R. 417	S.R. 46	8.11%	52.01%	12.01%
	S.R. 46	U.S. 17/92	8.11%	52.01%	10.33%
Average			**8.07%**	**51.97%**	**9.49%**
U.S. 441	C.R. 424	S.R. 414	8.61%	54.13%	9.33%
	S.R. 414	S.R. 436	8.61%	54.13%	9.33%
	S.R. 436	C.R. 435	8.61%	54.13%	9.78%
	C.R. 435	S.R. 429	8.61%	54.13%	9.78%
	S.R. 429	C.R. 437	8.61%	54.13%	9.78%
	C.R. 437	Ponkan Rd.	8.61%	54.13%	9.78%
	Ponkan Rd.	Sadler Ave.	8.61%	54.13%	9.78%
	Sadler Ave.	S.R. 46	8.61%	54.13%	9.40%
	S.R. 46	C.R. 44B	10.34%	57.68%	10.38%
Average			**8.80%**	**54.52%**	**9.70%**
S.R. 46	C.R. 500A	U.S. 441	-	-	-
	U.S. 441	Round Lake Rd.	10.34%	57.68%	15.58%
	Round Lake Rd.	C.R. 437	10.34%	57.68%	17.03%
	C.R. 437	C.R. 435	10.34%	57.68%	14.12%
	Lake County Line	C.R. 431	9.06%	52.06%	9.09%
	C.R. 431	International Pkwy.	9.06%	52.06%	10.35%
	International Pkwy.	I-4	9.06%	52.06%	9.26%
	I-4	C.R. 431B	9.06%	52.06%	9.09%
Average			**9.61%**	**54.47%**	**12.07%**
S.R. 429	C.R. 437A	U.S. 441	9.97%	63.39%	11.29%
Average			**9.97%**	**63.39%**	**11.29%**
S.R. 417	I-4	East of I-4	10.38%	57.58%	9.94%
Average			**10.38%**	**57.58%**	**9.94%**

K and D factors for the side streets were considered separately because of the lack of historical traffic data available. Existing travel characteristics and data from the traffic counts were used to develop Traffic Characteristics for the side streets within the project area. Based on 24-hour volume counts, measured $K_{measured}$ and peak traffic direction $D_{measured}$ were evaluated.

Using measured peak-to-daily ratios, an estimated value for K_{30} was developed based on the ratios of the median seasonal factor for the highest 13 weeks (peak season) and the median seasonal factor for the lowest 13 weeks (non-peak season). For this study, adjustment factors of 1.04, 1.13 and 1.06 were used for side streets in Orange, Lake and Seminole Counties, respectively. The average estimated K_{30} from the calculations are 10.13%, 10.83% and 10.55% for Orange, Lake and Seminole Counties, respectively. The average $D_{measured}$ based on the 24-hour volume counts on the side streets are 60.89%, 61.20% and 62.85% for Orange, Lake and Seminole Counties, respectively. A truck percentage of 2 % was used on the minor side streets, however the major side streets utilized the same truck percentage as the intersecting arterial.

The recommended traffic characteristics provided in Table 2.3 represent the current travel patterns throughout the project area and provide the best indication of travel patterns for the future conditions. The recommended K30 and D30 shown for the various facility types are within the acceptable ranges as shown in the FDOT *Project Traffic Forecasting Handbook* with the exception of the I-4 K30. However, the recommended K30 for I-4 was developed based on information from the FTI CD distributed by FDOT and agreed upon by the Project Study Team.

TABLE 2.3 RECOMMENDED TRAFFIC FACTORS

Roadway		K_{30}	D_{30}	T
Interstates	I-4[1]	8.07	51.97	9.49
Expressways	SR 429[2]	9.78	67.42	11.29
	SR 414 (proposed)[2]	9.20	68.00	-
	SR 417 (east of I-4)[1]	10.38	57.58	9.94
	Average	9.79	64.33	10.62
Arterials	US 441[1]	8.80	54.52	9.70
	SR 46 (Seminole)[1]	9.06	52.06	9.45
	SR 46 (Lake)[1]	10.34	57.68	15.58
	Average	9.40	54.75	11.58
Side Streets		Orange	Lake	Seminole
$K_{(Measured)}$		9.74	9.58	9.95
$K_{30(Estimated)}$		10.13	10.83	10.55
$D_{(Measured)}$		60.89	61.20	62.85

Sources:
1. From 2005 FDOT Florida Traffic Information (FTI) CD
2. From OOCEA System's Traffic Data and Statistics Manual

Traffic count information from the FTI CD and OOCEA System's Traffic Data and Statistics Manual as well as the field measured traffic factors are summarized in Appendix C.

2.2.3 Operational Analysis

The existing operational analyses include evaluation of roadway segments, signalized and unsignalized intersections, and the freeway elements (basic freeway segments, ramp merge/diverge junctions and weaving sections).

The FDOT *2002 Quality/Level of Service Handbook*, the Highway Capacity Software (HCS+) Version 5.2 and Synchro/SimTraffic Version 6.0 were utilized to evaluate the existing conditions within the area of influence. The capacities found in the Generalized Level of Service Tables from the *2002 Quality/Level of Service Handbook*, were used to evaluate the roadway segments. The LOS standards were used as a method of measuring roadway segment performance throughout the project study area.

The AADT shown in Figures 2-3A and 2-3B as well as the recommended design characteristics in Table 2.3 were used to develop the DDHVs. The DDHVs were used to determine the roadway segments LOS as well as the freeway elements LOS that are shown in Figures 2-4A and 2-4B. The results of the roadway segment analyses are summarized in Tables 2.4 (Orange County), Table 2.5 (Lake County) and Table 2.6 (Seminole County). The two sections below highlight the roadway segments that operate below the LOS D standard, specifically at LOS E and LOS F. All other roadway segments in the project area operate at LOS D or better for peak hour, peak direction traffic conditions. The roadway characteristics information also used to determine the segment LOS is in Appendix E.

HCS was used to analyze the intersections along US 441, SR 46 and CR 437 in Orange and Lake Counties. For the signalized and unsignalized intersections the delay is used as the measure to determine the intersection LOS. Delay for a signalized intersection is a method to measure the driver's increased travel time. An unsignalized intersection will define the delay as the increased travel time for a vehicle to clear an intersection compared to an intersection where a vehicle would not have to slow down or stop at the intersection. HCS was also utilized primarily to determine LOS along I-4 and SR 417 for basic freeway segments, ramp merge/diverge junctions and weaving segments.

Synchro Version 6.0 traffic analysis software was used to analyze the I-4 interchanges at SR 46, SR 417 and CR 46A and the intersections along SR 46, CR 46A, International Parkway and Rinehart Road in Seminole County. In addition to Synchro analysis, SimTraffic simulation was used to identify potential bottlenecks and/or congestion along arterials in the project area. Intersection signal timing and phasing data was obtained from Orange, Lake and Seminole Counties and was used in analyzing signalized intersections.

The approach to the operational analysis was conservative, in particular, the use of directional design hour volumes at all ramp locations and the higher K and D factors. For existing condition, No-Build and Build operational analysis, the PM peak was assumed to be the peak period for which directional design hourly volumes were developed. However, a review was also conducted to look at the impact of the directional design hour volume at signalized intersection approaches in the "off-peak" direction at an intersection to confirm that all traffic could be accommodated within the recommended intersection geometries.

SEE FIGURE 2-4B FOR SEMINOLE COUNTY

0.5 0.25 0 0.5 1
Miles

N

Mount Dora
Sorrento
Mount Plymouth
Apopka
Lake County
Orange County
Seminole County

E. LIMIT AVE
WOLF BRANCH RD
BRITT RD
ONDICH RD
HAAS RD
KELLY PARK RD
SADLER AVE
JONES RD
PONKAN RD
YOTHERS RD
WELCH RD
HIGHLAND AVE
OLD DIXIE HWY
ORANGE AVENUE
VOTAW RD
ROUND LAKE RD
EFFIE RD
FOLIAGE WY
GOLDEN GEM RD
PLYMOUTH-SORRENTO RD
JUNCTION RD
VICK RD
N. ROCK SPRINGS RD
THOMPSON ROAD
N. PARK AVENUE
CENTRAL AVENUE
BRADSHAW ROAD
WEKIVA SPRINGS RD
LINE DR
PIEDMONT-WEKIVA RD
BEAR LAKE RD
PEARL LAKE CSWY
MONTGOMERY RD
DOUGLAS AVE
MARKHAM WOODS RD
E E WILLIAMSON RD
LAKE MARY BLVD
WEKIVA RIVER RD

520 650 550 480 1,780 840 830 1,220 110 590 540 570 510 190 40 30 470 1,290 240 170 120 130 510 250 1,440 240 210 40 1,580 1,270 1,850 1,200 1,850 2,880 5,740 5,610 5,200

44 46 46A 46 437 437 437 435 424 424 441 441 436 434 434 4220 4237 4239 4242 4243 4143 4245 4248 427 427 431E 15 4 92 17 433 437A 429

Figure 2-4A
EXISTING (2005/2006) CONDITIONS
DIRECTIONAL DESIGN HOURLY VOLUMES (DDHV)

LEGEND

xx,xxx 2005/2006 (DDHV) — LOS A, B, & C — LOS D — LOS E — LOS F

WEKIVA PARKWAY Project Development and Environment Study

HNTB

0.25 0.125 0 0.25 0.5
Miles

N

Wekiva River

WEKIVA PARK DR

ORANGE BLVD

OREGON ST

HENDERSON LN

LAKE FOREST BLVD

WAYSIDE DR

INTERNATIONAL PKWY

TOWNE CENTER BLVD

RINEHART RD

St Johns Pkwy

LONGWOOD-MARKHAM RD.

LAKE MARKHAM RD

WILSON RD

Lake County

Seminole County

Sanford

20
1,200
1,130
1,230
350
520
580
870
4,850
1,420
1,700
1,560
1,830
870
2,360
1,430
190
90
360
400
1,180
1,530
820
760
4,020
880
90
700
1,220
690
1,140
1,600
80
490
340
280
300
1,120
840
300
1,120
580
720
910
260
1,240
2,350
1,870
1,070
1,370
1,800
380
920
2,280
1,010
5,200

Figure 2-4B

EXISTING (2005/2006) CONDITIONS

DIRECTIONAL DESIGN HOURLY VOLUME (DDHV)

LEGEND

xx,xxx 2005/2006 (DDHV)

LOS A, B, & C

LOS D

LOS E

LOS F

EXPRESSWAY AUTHORITY

WEKIVA PARKWAY Project Development and Environment Study

HNTB

2.2.3.1 Roadway Segments Operating at LOS E

The following roadway segments are identified, by county, because they operate at LOS E, which is below the LOS D standard, for peak hour, peak direction traffic conditions:

Orange County
- CR 435 from Ponkan Road to Kelly Park Road

Lake County
- SR 46 from CR 437to CR 46A

Seminole County
- I-4 from SR 436 to Lake Mary Boulevard

2.2.3.2 Roadway Segments Operating at LOS F

The following roadway segments, listed by county, are identified because they operate at LOS F for peak hour peak direction traffic conditions:

Orange County
- US 441 from SR 436 to SR 429
- CR 435 from Welch Road to Ponkan Road

Lake County
- SR 46 from CR 46A to Lake/Seminole County line

Seminole County
- SR 46 from Lake/Seminole County line to CR 431
- SR 46 from Oregon Street/Wayside Drive to I-4
- SR 436 from Orange/Seminole County Line to SR 434
- SR 436 from I-4 to Palm Springs Road
- CR 46A from International Parkway to Rinehart Road
- Rinehart Road from Anderson Lane to CR 46A

TABLE 2.4 EXISTING ROADWAY SEGMENT LOS SUMMARY – ORANGE COUNTY

Roadway	From	To	LOS
S.R. 429	C.R. 437A	U.S. 441	A
U.S. 441	S.R. 436	C.R. 435	F
	C.R. 435	S.R. 429	F
	S.R. 429	C.R. 437	D
	C.R. 437	Ponkan Rd.	C
	Ponkan Rd.	Sadler Ave.	B
	Sadler Ave.	S.R. 46	B
S.R. 436	U.S. 441	Piedmont-Wekiva Rd.	C
	Piedmont-Wekiva Rd.	Seminole County Line	D
C.R. 435	U.S. 441	Votaw Rd.	D
	Votaw Rd.	Welch Rd.	D
	Welch Rd.	Ponkan Rd.	F
	Ponkan Rd.	Kelly Park Rd.	E
	Kelly Park Rd.	Lake County Line	C
C.R. 437	U.S. 441	Ponkan Rd.	D
	Ponkan Rd.	Kelly Park Rd.	D
	Kelly Park Rd.	Lake County Line	D
Round Lake Rd.	Ponkan Rd.	Sadler Ave.	C
	Sadler Ave.	Kelly Park Rd.	C
	Kelly Park Rd.	Ondich Rd.	C
	Ondich Rd.	Lake County Line	C
Ponkan Rd.	U.S. 441	Round Lake Rd.	C
	Round Lake Rd.	C.R. 437	C
	C.R. 437	C.R. 435	C
Kelly Park Rd.	Round Lake Rd.	C.R. 437	C
	C.R. 437	C.R. 435	C
Sadler Ave	Lake County Line	U.S. 441	C
	U.S. 441	Round Lake Rd.	C
Ondich Rd.	Round Lake Rd.	C.R. 437	C
Haas Rd.	C.R. 437	C.R. 435	C
Yothers Rd.	U.S. 441	C.R. 437	C

TABLE 2.5 EXISTING ROADWAY SEGMENT LOS SUMMARY – LAKE COUNTY

Roadway	From	To	LOS
U.S. 441	S.R. 46	C.R. 44B	C
S.R. 46	C.R. 500A	U.S. 441	C
	U.S. 441	Round Lake Rd.	C
	Round Lake Rd.	C.R. 437	C
	C.R. 437	C.R. 435	E
	C.R. 435	C.R. 46A	E
	C.R. 46A	Lake County Line	F
S.R. 44	S.R. 19	C.R. 46A	C
C.R. 437	Lake County Line	S.R. 46	D
	S.R. 46	S.R. 44	D
C.R. 435	Lake County Line	S.R. 46	D
C.R. 46A	S.R. 44	S.R. 46	D
C.R. 433	S.R. 46	South of S.R. 46	C
Round Lake Rd.	Lake County Line	S.R. 46	C
	S.R. 46	Wolf Branch Rd.	C
Wolf Branch Rd.	U.S. 441	Round Lake Rd.	D
	Round Lake Rd.	C.R. 437	D
Wekiva River Rd.	S.R. 46	South of S.R. 46	C

TABLE 2.6 EXISTING ROADWAY SEGMENT LOS SUMMARY – SEMINOLE COUNTY

Roadway	From	To	LOS
Interstate 4	S.R. 436	S.R. 434	E
	S.R. 434	Lake Mary Blvd.	E
	Lake Mary Blvd.	C.R. 46A / S.R. 417	D
	C.R. 46A / S.R. 417	S.R. 46	C
	S.R. 46	U.S. 17/92	D
S.R. 417	North of Interstate I-4	Interstate 4	D
	Interstate 4	Rinehart Rd.	A
	Rinehart Rd.	C.R. 46A	A
S.R. 46	Lake County Line	Longwood Markham Rd.	F
	Longwood-Markham Rd.	Lake Markham Rd.	F
	Lake Markham Rd.	C.R. 431	F
	C.R. 431	Lake Forest Blvd.	D
	Lake Forest Blvd.	International Pkwy.	D
	International Pkwy.	Oregon St/Wayside Dr	D
	Oregon St/Wayside Dr	Interstate 4	F
	Interstate 4	Town Center Blvd	D
	Town Center Blvd	C.R. 431B	C
	C.R. 431B	C.R. 15	C
S.R. 436	Seminole County Line	S.R. 434	F
	S.R. 434	Interstate 4	D
	Interstate 4	Palm Springs Rd.	F

Table 2.6 Existing Roadway Segment LOS Summary – Seminole County (Continued)

Roadway	From	To	LOS
C.R. 46A	Orange Blvd.	International Pkwy.	C
	International Pkwy.	Colonial Center Pkwy.	F
	Colonial Center Pkwy.	I-4	F
	I-4	Rinehart Rd	F
	Rinehart Rd	C.R. 15	D
C.R. 431	C.R. 46A	Markham Rd.	D
	Markham Rd.	S.R. 46	C
	S.R. 46	I-4	C
Rinehart Rd	Anderson Lane	CR 46A	F
	CR 46A	Town Center Blvd	D
	Town Center Blvd	SR 417	C
	SR 417	St Johns Pkwy	C
	St Johns Pkwy	SR 46	C
International Parkway	Lake Mary Blvd.	C.R. 46A	C
	C.R. 46A	Wayside Dr.	C
	Wayside Dr.	S.R. 46	C
Markham Road	Longwood-Markham Rd.	Markham Woods Rd.	C
	Markham Woods Rd.	Orange Blvd.	C
Longwood-Markham Rd.	S.R. 46	C.R. 46A	C
Wekiva Park Dr.	North of S.R. 46	S.R. 46	C
Lake Markham Rd.	S.R. 46	C.R. 46A	C
Lake Forest Blvd	SR 46	Shoreline Circle	D
N Oregon Street	North of S.R. 46	S.R. 46	C
Wayside Drive	South of S.R. 46	S.R. 46	C

2.2.3.3 Ramp Analyses

Table 2.7 identifies the number of lanes for the ramps and CD system as well as the LOS for the facilities. All of the ramps are operating at LOS C or better and the CD systems along I-4 in the WB and EB direction are operating at LOS A. The ramp merge/diverge junctions and PM peak hour intersection analyses are summarized in Table 2.8. Table 2.8 shows that all of the freeway elements along I-4 and SR 417 in the project area operate at LOS D or better during peak hour traffic conditions.

TABLE 2.7 EXISTING RAMP NUMBER OF LANES AND LOS SUMMARY

Interchange Ramps	Ramp Description	Number of lanes	DDHV	LOS
I-4 at SR 46	I-4 EB Off Ramp to SR 46 (through I-4 EB CD)	2	820	B
	I-4 WB On Ramp from SR 46	1	1,180	B
	I-4 EB On Ramp from SR 46	1	870	B
	I-4 WB Off Ramp to SR 46	2	870	A
SR 417 at Rinehart Rd	SR 417 WB off Ramp to Rinehart Rd	1	700	B
	SR 417 EB on Ramp from Rinehart Rd	1	490	B
	SR 417 WB on Ramp from Rinehart Rd	1	90	A
	SR 417 EB off Ramp to Rinehart Rd	1	80	B
I-4 at SR 417	I-4 EB Off Ramp to SR 417 SB	1	300	B
	I-4 WB On Ramp from SR 417 NB	1	300	C
	I-4 EB On Ramp from SR 417 NB	2	690	B
	I-4 WB Off Ramp to SR 417 SB	1	840	B
I-4 at CR 46A	I-4 EB Off Ramp to CR 46A	2	1,010	A
	I-4 WB On Ramp from CR 46A	1	920	B
	I-4 EB On Ramp from CR 46A	1	260	A
	I-4 WB Off Ramp to CR 46A (through I-4 WB CD)	1	380	B
I-4 EB CD System	I-4 EB Off Ramp to EB CD System	2	1,120	A
I-4 WB CD System	I-4 WB Off Ramp to WB CD System	2	1,220	A

TABLE 2.8 EXISTING FREEWAY AND RAMP MERGE/DIVERGE LOS SUMMARY

Interchange	Ramp Description	Volume (vph)	Merge Analysis		Diverge Analysis	
			Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
I-4 at SR 46	I-4 EB Off Ramp to SR 46	820	-	-	10.5	B
	I-4 WB On Ramp from SR 46	1,180	33.0	D	-	-
	I-4 EB On Ramp from SR 46	870	23.8	C	-	-
	I-4 WB Off Ramp to SR 46	870	-	-	17.8	B
SR 417 at Rinehart Rd	SR 417 WB off Ramp to Rinehart Rd	700	-	-	15.4	B
	SR 417 EB on Ramp from Rinehart Rd	490	15.8	B	-	-
	SR 417 WB on Ramp from Rinehart Rd	90	7.8	A	-	-
	SR 417 EB off Ramp to Rinehart Rd	80	-	-	10.9	B
I-4 at SR 417	I-4 EB Off Ramp to SR 417 SB	300	12.3	B	10.7	B
	I-4 WB On Ramp from SR 417 NB	300	23.6	C	-	-
	I-4 EB On Ramp from SR 417 NB	690	19.9	B	U/C	A
	I-4 WB Off Ramp to SR 417 SB	840	-	-	11.7	B
I-4 at CR 46A	I-4 EB Off Ramp to CR 46A	1,010	-	-	11.3	B
	I-4 WB On Ramp from CR 46A	920	25.2	C	-	-
	I-4 EB On Ramp from CR 46A	260	20.6	C	-	-
	I-4 WB Off Ramp to CR 46A	380	-	-	11.4	B
I-4 EB C-D Rd.	I-4 EB Off Ramp to SR 417 SB and SR 46	1,120	-	-	15.2	B
I-4 WB C-D Rd.	I-4 WB Off Ramp to SR 417 SB and CR 46A	1,220	-	-	14.8	B

U/C = ramp operates under capacity

2.2.3.4 Intersection Analyses

The existing turning movement counts shown in Figures 2-5A and 2-5B were utilized along with the existing geometry illustrated in Figures 2-1A and 2-1B to determine the LOS at the existing intersections within the study area. The existing level of service at the study area signalized and unsignalized intersections are shown Table 2.9 for Orange and Lake Counties and Table 2.10 for Seminole County. Table 2.9 shows that all of the signalized intersections in Orange and Lake Counties are operating at an acceptable LOS C or better for the existing PM peak traffic conditions. The mainline movement is operating at LOS B or better for all of the unsignalized intersections in Orange, Lake and Seminole Counties. In Seminole County, the intersection of Rinehart Road and CR 46A operates at LOS E during the PM peak period due to heavy volumes at the intersection. All other signalized intersections in Seminole County are operating at an acceptable LOS D or better for the existing PM peak traffic conditions. From the Synchro analysis and SimTraffic simulation it was observed that CR 46A is operating close to capacity with heavy volumes during the PM peak period. The intersection level of service is also shown in Figures 2-5A and 2-5B.

TABLE 2.9 EXISTING INTERSECTION LOS SUMMARY - ORANGE AND LAKE COUNTIES

Intersection	Control Type	Delay (sec/veh)	LOS
Orange County			
US 441 and CR 437	Signal	17.9	B
CR 437 and Ponkan Rd	Signal	15.6	B
CR 437 and Kelly Park Rd	Signal	18.3	B
Lake County			
SR 46 and US 441 SB Ramps	Stop Sign	21.6	A/C[1]
SR 46 and US 441 NB Ramps	Stop Sign	14.2	A/C[1]
SR 46 and Round Lake Rd	Signal	14.7	B
SR 46 and CR 437 South	Signal	28.8	C
SR 46 and CR 437 North	Signal	13.2	B
SR 46 and CR 435/Niles St	Signal	18.7	B
SR 46 and CR 46A	Signal	14.7	B
SR 46 and Wekiva River Rd	Stop Sign	87.8	B/F[1]

1. Mainline/Side Street

SEE FIGURE 2-5B FOR SEMINOLE COUNTY

Mount Dora
E. LIMIT AVE
Sorrento
WOLF BRANCH RD
Mount Plymouth
Lake County
Orange County
BRITT RD.
WEKIVA RIVER RD
ONDICH RD
HAAS RD
EFFIE RD
FOLIAGE WY
ROUND LAKE RD
KELLY PARK RD
SADLER AVE
GOLDEN GEM RD
PLYMOUTH-SORRENTO RD
JONES RD
JUNCTION RD
PONKAN RD
YOTHERS RD
N. ROCK SPRINGS RD
Orange County
Seminole County
MARKHAM WOODS RD
E E WILLIAMSON RD
LAKE MARY BLVD
WELCH RD
VICK RD
HIGHLAND AVE
ORANGE AVENUE
OLD DIXIE HWY
BRADSHAW ROAD
CENTRAL AVENUE
N. PARK AVENUE
Apopka
THOMPSON ROAD
WEKIVA SPRINGS RD
VOTAW RD
LINE DR
PIEDMONT/WEKIVA RD
PEARL LAKE RD
PEARL LAKE CSWY
MONTGOMERY RD
DOUGLAS AVE
WEKIVA SPRINGS RD

0.5 0.25 0 0.5 1
Miles

N

Figure 2-5A
EXISTING (2005/2006) CONDITIONS
TURNING MOVEMENT VOLUMES (TMV)

LEGEND

(X) Signalized Intersection Level of Service

X/X Unsignalized Intersection Level of Service (Major/Minor Streets)

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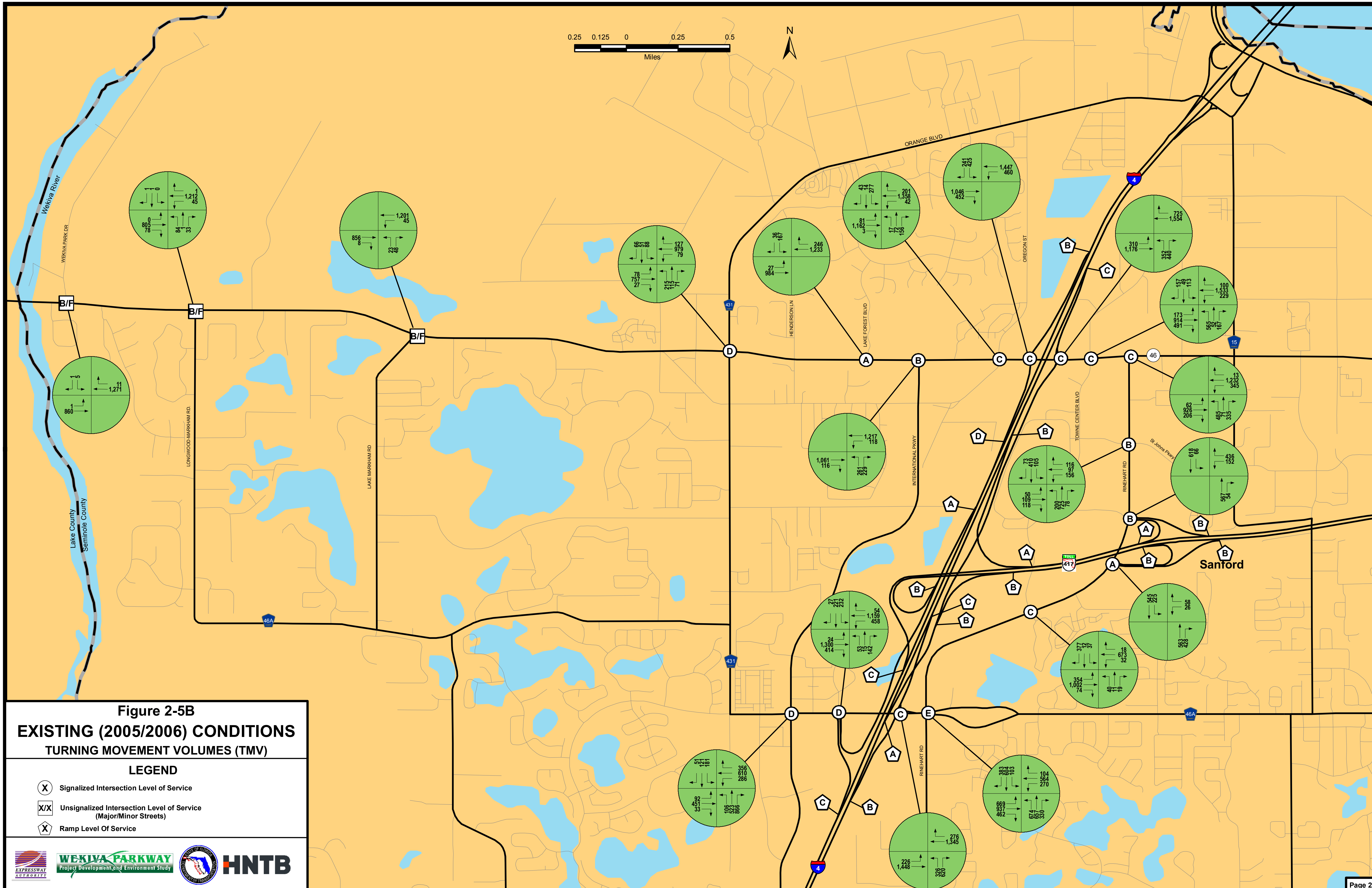

Figure 2-5B

EXISTING (2005/2006) CONDITIONS

TURNING MOVEMENT VOLUMES (TMV)

LEGEND

- (X) Signalized Intersection Level of Service
- X/X Unsignalized Intersection Level of Service (Major/Minor Streets)
- ⬠X Ramp Level Of Service

WEKIVA PARKWAY
Project Development and Environment Study

HNTB

TABLE 2.10 EXISTING INTERSECTION LOS SUMMARY - SEMINOLE COUNTY

Intersection	Control	Delay (sec/veh)	LOS
SR 46 and Wekiva Park Dr	Stop Sign	88.5	B/F[1]
SR 46 and Longwood Markham Rd	Stop Sign	72.9	B/F[1]
SR 46 and Lake Markham Rd	Stop Sign	100.3	B/F[1]
SR 46 and CR 431 (Orange Blvd)	Signal	45.4	D
SR 46 and Lake Forest Blvd	Signal	6.5	A
SR 46 and International Pkwy	Signal	16.8	B
SR 46 and N Oregon Ave/Wayside Dr	Signal	23.6	C
SR 46 and I-4 WB Ramps	Signal	23.2	C
SR 46 and I-4 EB Ramps	Signal	24.7	C
SR 46 and Town Center Blvd	Signal	34.2	C
SR 46 and Rinehart Rd	Signal	31.5	C
CR 46A and International Pkwy	Signal	53.1	D
CR 46A and I-4 WB Ramps	Signal	52.8	D
CR 46A and I-4 EB Ramps	Signal	21.9	C
CR 46A and Rinehart Rd	Signal	66.9	E
Rinehart Rd and St Johns Pkwy	Signal	19.6	B
Rinehart Rd and SR 417 NB Ramps	Signal	12.1	B
Rinehart Rd and SR 417 SB Ramps	Signal	9.6	A
Rinehart Rd and Town Center Blvd	Signal	20.3	C

1. Mainline/Side Street

2.3 Summary

Existing traffic conditions were analyzed on roadway segments within the project study area. Traffic count data was collected from a variety of sources including the FDOT, Orange County, Lake County, Seminole County, and the International Parkway/SR 417 PD&E Study. Additional 24-hour directional counts and turning movement counts were collected by HNTB at 75 locations. This traffic count data was utilized to evaluate the existing traffic conditions on roadway segments within the project study area. While most roadways currently operate acceptably, there were a few significant exceptions. The two-lane section of SR 46 from CR 46A in Lake County to Orange Boulevard in Seminole County and SR 46 at the Interstate 4 interchange currently operate at LOS E and F. Also portions of Rock Springs Road in Orange County as well as CR 46A and Rinehart Road in Seminole County operate at LOS F under PM peak traffic conditions.