City Of Groveland
Lake County
Project Development & Environment (PD&E) Study

Final Report

Prepared for:

City of Groveland
117 North Main Street
Groveland, Florida 34746

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Crittenden Street PD&E Study
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I. SUMMARY

The City of Groveland completed a Project Development and Environmental (PD&E) Study of Crittenden Street from the intersection of SR 50 and SR 33 to SR 19.

1.1 Corridor

The improvements to Crittenden Street will serve as interim improvements to the possible future relocation of SR 50.

1.2 Alignments

There are four alternatives being progressed as part of this PD&E Study. Each alternative follows the existing alignment of Crittenden Street throughout the length of the project with the exception of the east and west ends of the corridor. On the east and west ends of the corridor, the existing alignments will be revised to improve the turning radii for the movement of truck traffic on Crittenden Street.

1.3 Typical Sections

Four alternatives have been considered as part of this PD&E Study. Alternative 1 is the No-Build Alternative. Alternative 2 provides a two-lane typical section consisting of one twelve-foot travel lane in each direction with a four-foot bike lane, two feet of curb and gutter, and a five-foot sidewalk on each side. Alternative 3 provides a three-lane typical section consisting of one twelve-foot travel lane in each direction separated by a twelve-foot continuous two-way left-turn lane. The travel lanes are bounded on each side by a four-foot bike lane, two feet of curb and gutter, and a five-foot sidewalk. Alternative 4 is a four-lane divided typical section. It features two twelve-foot travel lanes in each direction which are separated by a 22-foot raised median. The travel lanes are bounded on each side by a four-foot bike lane, two feet of curb and gutter, and a five-foot sidewalk.

1.4 Design and Construction Phasing

The Crittenden Street project is a corridor that is relatively short in length at less then .25 miles. Both design and construction can be completed in one segment for each phase with no additional phasing recommended.

1.5 Signalization

New signalization is recommended at the intersection of Crittenden Street and SR 19; and modifications to the intersections of SR 50 at SR 19 and SR 33 are also recommended with the implementation of this project.

II. INTRODUCTION

2.1 Purpose

Groveland is a small city located in South Central Lake County. The City's natural, scenic beauty, small-town feel, and prime location west of Orlando continue to make it a highly desirable area for new development. So much so, that this relatively small city's current estimated population of 6,500 is expected to grow by more the two and a half times to 17,000 by the year 2009.

This PD&E Study is intended to investigate alternate traffic design improvements for the section of Crittenden Street between SR 50/SR 33 and SR 19 in order to provide sufficient technical documentation for the City of Groveland and Lake County to reach a decision on the type, design, location, and alignment of improvements to Crittenden Street.

2.2 Project Description

Crittenden Street is located in the south-central portion of Lake County in the City of Groveland, as shown in Figure 1. This roadway is currently a two-lane, undivided city street with no paved shoulders or sidewalks. Crittenden Street serves as an alternative route for truck traffic that desires to bypass SR 50 as SR 50 passes through downtown Groveland. The posted speed limit for the roadway is 25 miles per hour.

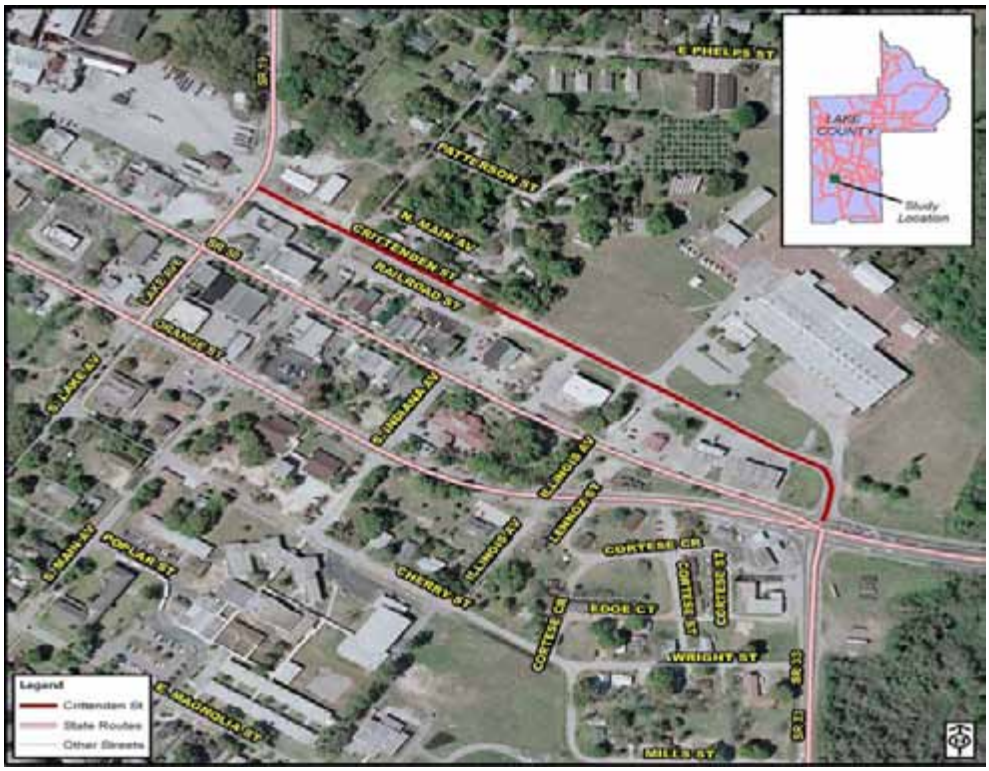


Figure 1. Study Area

III. NEED FOR IMPROVEMENT

3.1 Planned Future Developments

As part of the City of Groveland's long-term plans to re-develop the downtown, City Hall will be moved from its current location on South Lake Avenue to Crittenden Street. A large, vacant tract of land has been purchased by the City for this purpose. This land is located on the north side of Crittenden Street, bounded roughly on the west and east sides by North Main Avenue and Rice Court, respectively. The new municipal complex will house most of the City's Administrative offices and the City Council Chambers. A city park and a parking structure to serve the downtown will also be developed as part of the city hall project.

In addition, the northwest corner of SR 19/SR 50 near Crittenden Street is planned for commercial development.

3.2 Emergency Evacuation

Crittenden Street is not designated by Lake County as an emergency evacuation route. However, an improved Crittenden Street would facilitate traffic to both SR 50 or SR 19 in an emergency evacuation situation.

3.3 Safety

One of the primary purposes of the PD&E Study is to provide an interim and/or longer-term solution for the safe movement of the truck traffic that bypasses downtown Groveland. Such a solution will therefore consider, at a minimum, design of safe turning movements at the east and west end points where Crittenden Street intersects with SR 50/SR 33 and SR 19, respectively. In addition, close attention is given to safety for the pedestrian and bicyclist throughout the study corridor given the corridor's proximity to the downtown and all new development and redevelopment efforts.

For the purpose of this study, crash history for the years 2003, 2004, and 2005 was evaluated for the intersections within the study area to determine the area-wide safety concerns. The results of the crash analysis are provided in Section IV, Subsection 4.1.4, Crash Data.

3.4 Consistency with Transportation Plans

The Crittenden PD&E Study project is consistent with state and local government transportation plans. The future improvement of Crittenden Street has also been identified as a needed project improvement in the Lake-Sumter MPO Year 2025 Long Range Transportation Plan.

3.5 Social/Economic Demands

This PD&E Study project will identify options for future roadway improvement of Crittenden Street. The implementation of roadway improvements to Crittenden Street is a critical component to the initial and interim efforts of economically developing and redeveloping downtown Groveland. An improved Crittenden Street will provide an even more attractive alternate route for safely moving truck and other pass-through traffic that is not interested in going to downtown Groveland. Removing a portion of pass-through traffic supports Groveland's downtown visioning plan to create a community designed first and foremost for the movement of pedestrians as opposed to motor vehicles. The City's efforts to re-develop and revitalize its downtown begins with the creation of a pedestrian orientation, implementation of intense commercial development, and the addition of residential options so that can people can live and work downtown. The envisioned result is a downtown where people congregate, recreate, socialize and shop, and where businesses thrive.

IV. EXISTING CONDITIONS

4.1 Existing Roadways

Crittenden Street, the primary study corridor, is currently a two-lane, undivided local road that is maintained by the City of Groveland. It runs between SR 50/SR 33 on the southeast end and SR 19/Howey Road on the northwest end. Crittenden Street carries a large number of trucks and other vehicles that are bypassing SR 50 through downtown Groveland. Crittenden Street has no paved shoulders or sidewalks and is operating with a posted speed limit of 25 miles per hour.

Currently, SR 50 travels through downtown Groveland as a one-way pair, with Broad Street serving westbound and Orange Street serving eastbound traffic. SR 33 ends at the east end of the downtown with intersection of SR 50 and Crittenden Street. SR 19 starts on the central west end of the downtown with the intersection of West Broad Street (SR 50 westbound).

4.1.1 Right of Way

There is approximately 50 to 60 feet of existing ROW width along Crittenden Street. During the design phase of this project, the right of way evaluation will be refined to provide more definitive right of way width information.

For this PD& E Study, existing rights-of-way, and property parcel boundaries and ownership were carefully researched along both sides of Crittenden Street and also in the vicinity of both study limit intersections. Using GIS shapefiles from Lake County, a parcels map was developed to approximate the available right-of-way along Crittenden Street. The parcels map indicates that six parcels on the south side

conflict with the center line of Crittenden Street. These six parcels are shaded in gray as shown in Figure 2. The parcel details are summarized in Table 1.

Figure 2: Parcels in Conflict with Center Line of Crittenden Street

Table 1: Details of Parcels in Conflict

TOA ID	TAX ID	Area		Owner	Land Use Code Description
		Acres	Sq Ft		
28	170539	3.21	139,653.29	CSX Transportation Inc, Tax Dept J910	Utilities
30	171147	0.81	35,203.91	Martin Roland P	Stores 1 Story
33	170626	0.87	38,022.00	Discount Auto Parts Inc, Advance Auto Parts	Stores 1 Story
38	170066	0.88	38,518.11	CSX Transportation Inc, Tax Dept J910	Utilities
39	169796	0.42	18,093.70	Humayun Mohammed & Shahinoor	Vacant Commercial
40	169784	0.10	4,205.49	Humayun Mohammed & Shahinoor	Vacant Commercial

Detailed parcel information for properties within the study area is included in the Right of Way Technical Memorandum dated September 8, 2006.

4.1.2 Drainage

Drainage data collected and utilized in the South Lake Trail Phases III and IV Preliminary Engineering Report is being used for this PD&E Study. The South Lake Trail Project studied the area immediately adjacent on the north side of the Crittenden Street Corridor. Segment 2 of the South Lake Trail Project goes from the western edge of Mascotte to east of Groveland. Table 2 summarizes the existing drainage structures in this segment; although none of these drainage structures are located along Crittenden Street.

Table 2: Summary of Drainage Structures

Structure Number	Station	Size	Type
S-6A	376+00	48"	RCP - cross drain
S-7	520+80	buried	CMP - side drain
S-8	520+80	buried	CMP - cross drain
S-9	538+50	8"	PVC - outfall from parking lot

Source: South Lake Trail Phases III and IV Preliminary Engineering Report, Table 4.1.5, February 2005.

4.1.3 Geotechnical Data

Based upon the Soil Conservation Service Soil Mapping for Lake County information, the following soil types are known to exist within the study limits: Apopka Sand, Astatula Sand, Lochloosa Sand, Kendrick Sand, Tavares Sand, Ellzey Sand, Wauchula Sand, Sparr Sand, Ioamy Fill Soil and swampy type soil. The majority of these soil types are well-drained and have rapid or moderate permeability. Table 3 summarizes the known soil types existing within the project limits.

Table 3: Summary of Known Soils Types within the Study Area

Soil Series	Hydrologic Soil Group	Consistency	Depth to Seasonal High Water Table (ft)	Drainage	Permeability	AASHTO Classification
Apopka	A	Sandy w/loam	>6.0	Well Drained	Rapid	A-3, A-2,-4
Astatula	A	Sandy	>6.0	Excessively Drained	Rapid	A-3
Ellzey	B/D	Fine Sand	0.5-1.5	Fair	Moderate	A-3
Kendrick	A	Sandy w/clay loam	>6.0	Well Drained	Moderate	A-3, A-2-4, A-2
Lochloosa	C	Sandy loam	2.5-5.0	Well Drained	Moderate	A-2-4, A-2, A-4
Sparr	C	Fine Sand	1.5-3.5	Well Drained	Rapid	A-3, A-2-4
Wauchula	B/D	Fine Sand	0.0-1.0	Very Poor	Slow	A-3, A-2-4

4.1.4 Crash Data

For the purpose of this study, crash history was evaluated for the intersections within the study area to determine the area-wide safety concerns. According to the crash records database, a total of 44 crashes were reported at the 10 study intersections between 2003 and 2005. There are a total of three injuries but no reported fatalities. Also, there is no predominant crash pattern. There are no pedestrian related crashes. None of the crashes are considered susceptible to correction by a traffic signal. Table 4 summarizes the crash history.

Table 4: Crash History Summary

On Street	Cross Street	Crashes	Fatalities	Injuries
SR 50	SR 33	32	0	3
SR 50 WB (E Broad St)	Illinois Ave	2	0	0
SR 50 WB (E Broad St)	S Indiana Ave	0	0	0
SR 50 WB (E Broad St)	S Main Ave	0	0	0
SR 50 WB (W Broad St)	N Lake Ave	1	0	0
SR 50 EB (W Orange St)	S Lake Ave	0	0	0
SR 50 EB (E Orange St)	S Main Ave	2	0	0
SR 50 EB (E Orange St)	S Indiana Ave	0	0	0
SR 50 EB (E Orange St)	Illinois Ave	2	0	0
Crittenden St, Railroad St	N Main Ave	3	0	0
Crittenden St	SR 19/N Lake Ave/Howey Rd	2	0	0
	Total	**44**		

At the intersection of SR 50 and SR 33, 15 out of 32 crashes occurred due to rear-end collisions, followed by three right-turn and two left-turn related collisions.

4.1.5 Intersections and Signalization

Crittenden Street was reviewed within the project limits for intersections and signalization. The following traffic control devices exist on the study corridor: a traffic signal on the southeast end at SR 50/ SR 33, a 4-Way Stop sign at North Main Avenue, and a stop sign on the northwest end at SR 19. Traffic is free flow for SR 19 northbound and southbound.

4.1.6 Utilities

The following entities are known to have utilities located within or adjacent to the project corridor: Bright House Network, the City of Groveland, Lake Apopka Gas District, and Embarq (Sprint, Winter Garden). The following entities did not respond to a request for utility location information within the project study area: the City of Leesburg, Progress Energy, and Sprint, Leesburg.

4.1.7 Transit Service

There is no transit service in the project corridor at this time.

4.2 Existing Bridges

There are no existing bridges in the project corridor.

4.3 Existing Railroads

There are no existing railroads in the project corridor. However, there is an abandoned railroad right-of-way on the south side of the project corridor. This right-of-way is the planned location for a portion of Segment 2 of the South Lake Trail.

4.4 Social, Cultural, and Environmental Characteristics

4.4.1 Land Use Data

The existing land uses adjacent to the Crittenden Street Corridor are mainly industrial and commercial. There is a large tract of vacant industrial land which is the site of the new Groveland City Hall. Future land uses along the corridor are planned to stay primarily industrial and commercial, with the future land use for the city hall property becoming institutional. All existing and future land uses are consistent with the alternatives for the Crittenden Street PD&E Study.

4.4.2 Cultural Features and Community Services

There are no existing cultural features or community services along the Crittenden Street Corridor. However, the City of Groveland plans to locate its new city hall complex, a city park, and a downtown parking structure in a large vacant tract of land on the north side of Crittenden Street, between North Main Avenue and Rice Court.

4.4.3 Natural and Biological Features

There are no significant existing natural and biological features along the Crittenden Street Corridor.

4.4.4 Hazardous Materials

Data gathered in the development of the South Lake Trail Phases III and IV Preliminary Engineering Report was used to identify sites of known or potential hazardous materials contamination for the Crittenden Street PD& E Study. Further investigation is necessary to determine the degree and extent of contamination present at each of the facilities. Moreover, field investigation and additional file review may result in additional sites being identified within and around the project corridor. Sites identified are located one mile or less from the study corridor and are summarized in Table 5 below.

Table 5: Potential Hazardous Materials Sites

Site Name	Site Location	Type of Hazard	Source	Facility ID #
RC Dunn Oil Co	1150 W Broad St Groveland, FL 34736	hazardous materials handler	EPA Envirofacts	8509940
Homeboys Batteries	912 W Broad St Groveland, FL 34736	hazardous materials handler	EPA Envirofacts	FLD984171538
Island Food Store, #313	580 W Broad St Groveland, FL 34736	permitted discharges to water known contaminated facility; storage tank facility	EPA Envirofacts	8841322
B&W Canning Co, Inc/ Florida Select Citrus	305 W Broad St Groveland, FL 34736	discharges to water; toxic releases reported, hazardous materials handler storage tank facility	EPA Envirofacts	8622924
Amoco, #179	112 SR 33 Groveland, FL 34736	known contaminated facility		8509922
Classic ERA Watercraft/ Toyota Marine Sports	300 E Crittenden St Groveland, FL 34736	hazardous materials handler; toxic releases reported, storage tank facility		
Hillary & Sons, Inc	619 SR 50 Groveland, FL 34736	storage tank facility		8737075
Khans Market	1102 W Broad St Groveland, FL 34736	storage tank facility		8510087
Hi Acres Fertilizer	502 SR 50 Groveland, FL 34736	toxic releases reported	EPA Envirofacts	8944203
Star Enterprise/ Texaco Food Mart	477 SR 50 Groveland, FL 34736	hazardous materials handler	EPA Envirofacts	8509958
Sea Vic Oil Co	720 W Broad St Groveland, FL 34736	storage tank facility		8510068
Sprint Florida	133 W Orange Groveland, FL 34736	storage tank facility		9300912
City of Groveland Police & Fire Dept	408 W Orange Ave Groveland, FL 34736	storage tank facility		9201481
Lake Co School Board Groveland Middle School	205 E Magnolia St Groveland, FL 34736	storage tank facility		8841733
FINA-MC's	207 E Broad St Groveland, FL 34736	known contaminated facility; storage tank facility		8510014
Citgo Martin, #61	351 E Broad St Groveland, FL 34736	historically contaminated, storage tank facility		8510011
Clermont Conveyors, Inc	411 S Highway 33 Groveland, FL 34736	historically contaminated, storage tank facility		9045844
Express Mart, #281	1071 E Myers Blvd Groveland, FL 34736 327 Sampey Rd Groveland, FL 34736	hazardous materials handler hazardous materials handler	EPA Envirofacts EPA Envirofacts	8509961
International Sterilization Laboratory	217 Sampey Rd Groveland, FL 34736	air releases reported	EPA Envirofacts	
South Lake Refuse Service	109 Sampey Rd Groveland, FL 34736	storage tank facility		8510094
Fiber World	Sampey Rd Groveland, FL 34736	hazardous materials handler	EPA Envirofacts	
Howard Fertilizer Co, Inc	7205 SR 50 Groveland, FL 34736	toxic releases reported	EPA Envirofacts	86228696
Revis Towing	7130 E SR 50 Groveland, FL 34736	storage tank facility		9700457
Calvin Lee	7330 SR 50 Groveland, FL 34736	storage tank facility		9202616
B Lyon Construction	14642 CR 565A Groveland, FL 34736	storage tank facility		9103470
Hi Acres Fertilizer	7502 SR 50 Groveland, FL 34736			
Hart Property	1151 Florida St Groveland, FL 34736	historically contaminated, storage tank facility		9804632
North Sampey WWTP	1198 N Sampey Rd Groveland, FL 34736		FGDL*	
North Sampey Wells 3A & 5	1153 N Sampey Rd Groveland, FL 34736		FGDL*	
Derrick Rose	829 Oak Dr Groveland, FL 34736	hazardous materials handler		
Sumter Electric Cooperative, Inc	850 Howey Rd Groveland, FL 34736	storage tank facility		8622921
Peterson & Sons Nursery	154 E Anderson Rd Groveland, FL 34736	storage tank facility		8737064
Timber Village Mobile Home Park - WTP & WWTP	15130 Timber Village Rd Groveland, FL 34736			
Toole & Williams Groves, Inc	114 Sunset St Groveland, FL 34736	storage tank facility		8510127
Lennon Grove & Spreader Service, Inc	16104 SR 19 Groveland, FL 34736	toxic releases reported, hazardous materials handler	EPA Envirofacts	

*Florida Geographic Data Library - hazardous materials shapefile.

V. DESIGN CRITERIA

The engineering design of this project will be governed by the criteria of Lake County's Engineering Standards Manual and/or by the criteria of the FDOT Plans Preparation Manual, the FDOT Roadway and Traffic Design Standards, and the AASHTO "A Policy on Geometric Design of Highways and Streets".

VI. TRAFFIC

6.1 Existing Traffic Conditions

To determine existing traffic conditions, observed daily traffic volumes based on 48-hour, bi-directional counts were collected during the last week of May 2006 at the following locations:

Site 1: SR 33, south of SR 50
Site 2: SR 50 EB, between Illinois Avenue and Indiana Avenue (*also Speed Data*)
Site 3: Illinois Avenue, between SR 50 EB and SR 50 WB
Site 4: SR 50 WB, between Illinois Avenue and Indiana Avenue (*also Speed Data*)
Site 5: Main Avenue, between SR 50 EB and SR 50 WB
Site 6: Crittenden Street, between Rice Court and SR 33/SR 50 (*also Speed Data*)
Site 7: SR 19, north of SR 50 WB
Site 8: Rice Court, between Crittenden Street and SR 50 WB

The summary of the 48-hour counts in terms of average daily traffic (ADT) is illustrated in Figure 3 below. Figure 3 also provides the proportion of truck traffic through downtown Groveland and along Crittenden Street. Table 6 provides the details of truck traffic along four key study roads.

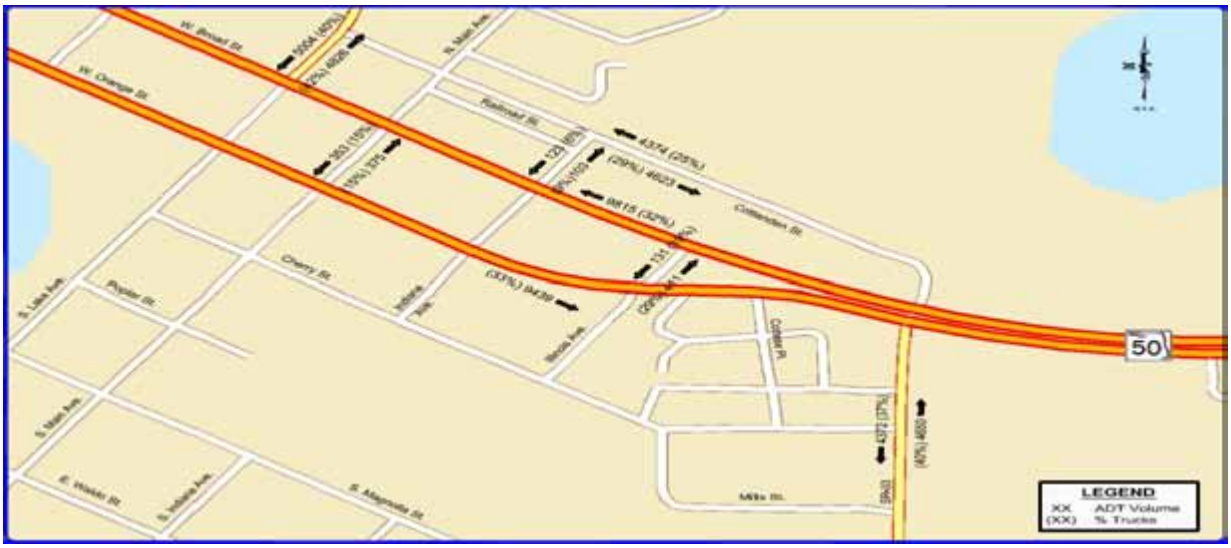


Figure 3: 2006 ADT Data and Truck Volume Percentage

Table 6: 2006 Truck Traffic Data

Site ID#	Roadway	Direction	ADT	Trucks	Truck %
1	SR 33	NB	4650	1860	40%
		SB	4372	1618	37%
		Totals	***9022***	***3478***	***39%***
2 & 4	SR 50	EB	9439	3115	33%
		WB	9815	3141	32%
		Totals	***19254***	***6256***	***32%***
6	Crittenden St	NW Bound	4374	1094	25%
		SE Bound	4623	1341	29%
		Totals	***8997***	***2435***	***27%***
7	SR 19	NB	4826	2027	42%
		SB	5004	2002	40%
		Totals	***9830***	***4029***	***41%***

To analyze issues related to speeds along the study roads, 48-hour "speed-volume" graphs were generated for counts obtained along SR 50 EB, SR 50 WB, and Crittenden Street, respectively. These graphs (illustrated in Figure 4) indicate that speeding is not an issue along these roads.

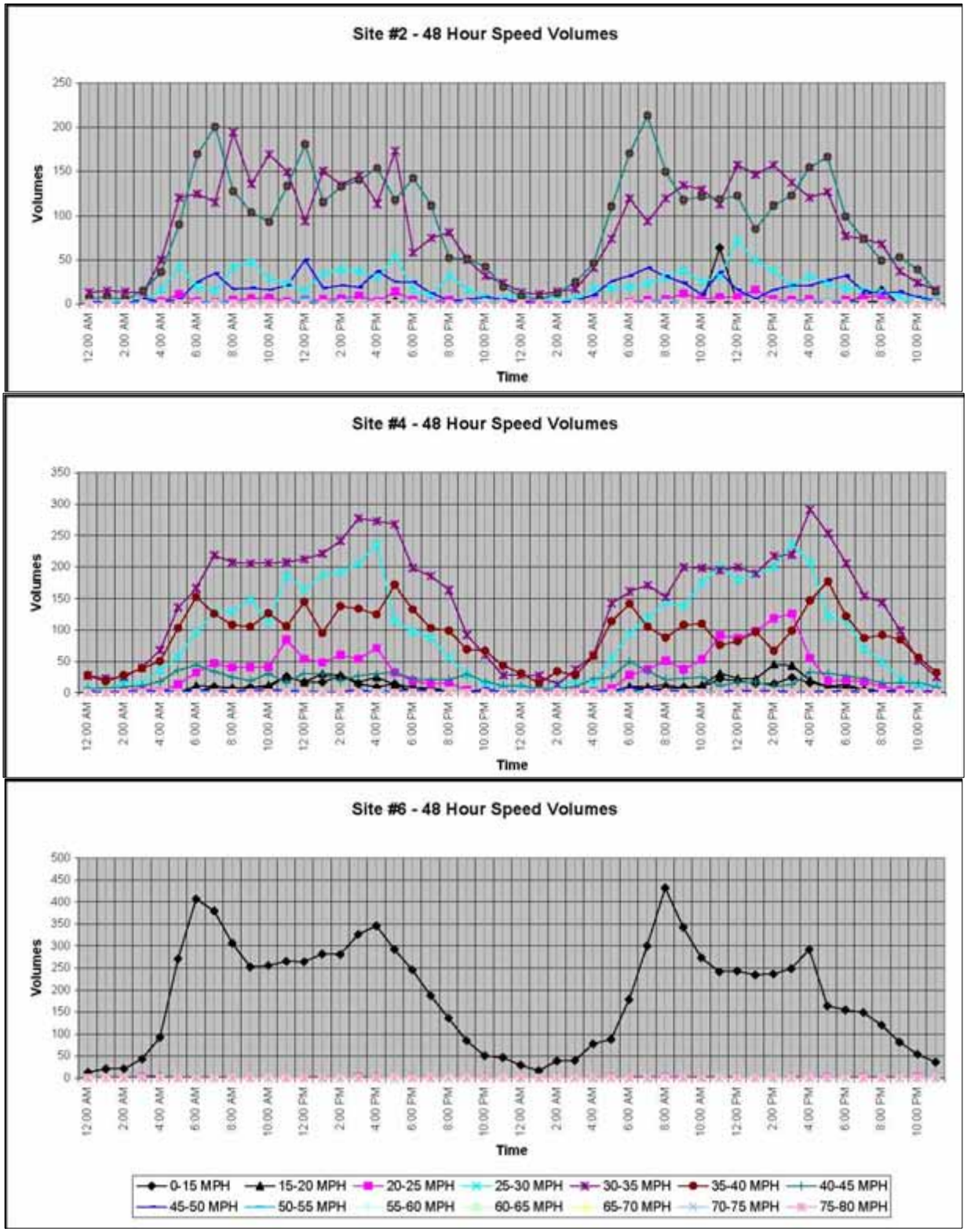


Figure 4: 2006 Speed Volume Graphs

Based on automatic machine traffic counts, peak period hours were identified for the turning movement counts. Two-hour PM peak (4:00 PM – 6:00 PM) vehicle turning movement and pedestrian crossing counts were performed at 10 intersections along SR 50 WB, SR 50 EB, and Crittenden Street at SR 19, Main Street, Indiana Avenue, and SR 33. Turning movement counts for the PM peak hour are shown in Figure 5.

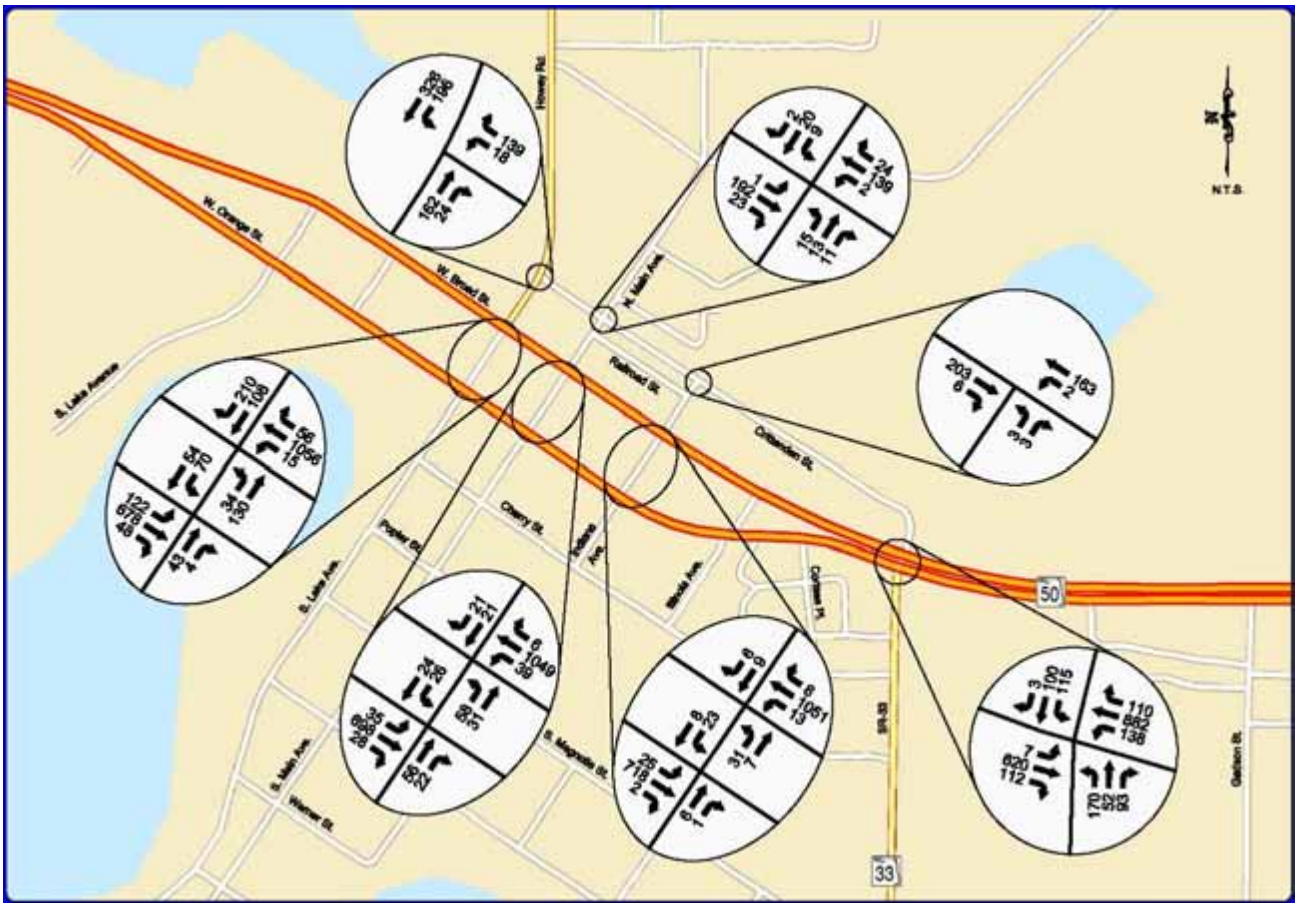


Figure 5: PM Peak Hour Turning Movement Counts

6.2 Multi-Modal Transportation System Considerations

The South Lake Trail is a planned, multi-use trail facility. The portion of the project that runs through the City of Groveland will do so adjacent to Crittenden Street on the north side. As previously mentioned, there is no transit in the project corridor at this time. However, the Crittenden Street project exists within the boundaries of downtown Groveland, an area identified for new development and re-development with an intense pedestrian orientation. Therefore, the selected alternative will at a minimum include five foot sidewalks and four foot bike lanes on both sides of the street. Depending upon the selected alternative, mid-block pedestrian crossings may also be included. Consideration will be given to the possibility of some type of future transit circulator or shuttle service for travel to/from and within the downtown area.

6.3 Traffic Analysis Model

The Central Florida Regional Planning Model Version IV (CFRPM-IV) for the Lake County area was used in this PD&E Study for traffic analysis. The CFRPM-IV is validated to the base Year 2000. Select link analysis was used to determine turn movements. Growth projections provided by the model were used to estimate forecasted demand.

6.4 Existing Traffic Volumes

As previously stated in Section 6.1, observed daily traffic volumes based on 48-hour, bi-directional counts were collected during the last week of May 2006 at eight locations within the study area.

6.5 Traffic Volume Projections

Traffic volume projections for Crittenden Street and for the portions of SR 50 and SR 19 in the study area for the design Year 2025 were determined using regional growth trends with planning estimates of latent demand. Year 2025 Annual Average Daily Traffic (AADT) for the traffic volume projections are as follows:

- Crittenden Street, from SR 50/SR 33 to SR 19 — 10,464
- SR 50 (WB), from SR 33 to N Lake Avenue — 19,287
- SR 50 (WB), from N Lake Avenue to West — 22,622
- SR 50 (EB), from West to S Lake Avenue — 22,666
- SR 50 (EB), from S Lake Avenue to SR 33 — 19,289
- S Lake Avenue, from SR 50 (EB) to SR 50 (WB) — 5,682
- N Lake Avenue, from SR 50 (WB) to Crittenden Street — 11,617
- SR 19, from Crittenden Street to North — 18,645

6.6 Level of Service

Level of Service (LOS) is a qualitative measure used to characterize the operating conditions of a transportation facility as perceived by its users. Roadway levels of service are designated based on the observed or estimated average travel speed of motorists on the facility. Level of service designations range from LOS A (best) to LOS F (worst).

Intersection level of service (LOS) analyses for the existing year (2006) were performed at the 10 intersections, which include five signalized and five unsignalized intersections. The LOS and capacity analyses were performed using *Synchro Version 6.0* software. Table 7 summarizes the existing year PM peak hour LOS analyses results at the 10 intersections.

Table 7: 2006 Intersection Level of Service Summary

Intersection Number	Intersection	Traffic Control	HCM [1] LOS	ICU[2] LOS
1	SR 19 at Crittenden St	STOP	-	B
2	SR 19 at SR 50 WB	SIGNAL	A	-
3	SR 19 at SR 50 EB	SIGNAL	B	-
4	Main Ave at Crittenden St	STOP	-	A
5	Main Ave at SR 50 WB	SIGNAL	B	-
6	Main Ave at SR 50 EB	SIGNAL	A	-
7	SR 50 EB at Indiana Ave	STOP	-	A
8	SR 50 WB at Indiana Ave	STOP	-	A
9	SR 50 at SR 33	SIGNAL	B	-
10	Crittenden St at Rice Ct	STOP	-	A

Notes: 1. HCM – *Highway Capacity Manual* published by Transportation Research Board, 2000.
2. ICU – *Intersection Capacity Utilization* method as defined in Synchro ver 6.0 software.

As shown in Table 7, all of the signalized and unsignalized intersections within the study area are currently estimated to operate at acceptable level of service of 'B' or better.

VII. EVALUATION OF ALTERNATE CORRIDORS

Alternate corridors should be investigated during the PD&E process, whenever reasonable, as consistent with project goals. The primary goal for the Crittenden PD&E Study is to establish the framework for needed future transportation improvements in the Crittenden Street Corridor. In order to achieve this goal, the City of Groveland will participate in the following project activities: (1) follow federal, state, and local procedures, (2) interface with existing plans, (3) provide connectivity with SR 50, SR 19, and SR 33, (4) integrate improvements into the community, (5) anticipate significant regional growth, (6) provide for improved mobility (including the routing of heavy trucks), (7) consider alternative modes of transportation, (8) meet today's design standards, and (9) pursue public input.

The City of Groveland has developed a downtown visioning plan, based upon the historic population growth and future estimates. The City's downtown visioning plan includes expanding the existing downtown through new development and redevelopment activities. New development includes the relocation of the City's municipal complex to a vacant tract of land on the north side of Crittenden Street. The new City complex will include City Hall, a city park and a parking structure to serve the downtown. In order to accommodate the new development, the visioning plan suggests moving the existing SR 50 to an alternate alignment that would be located far north of Crittenden Street and the new municipal complex. Given the proximal location of the existing Crittenden Street to the downtown area, converting and/or up-grading it into a new SR 50 is not consistent with the City's visioning plan. Therefore, the City's long-term future development plans include a new SR 50 alignment far north of Crittenden Street. It is anticipated that, upon approval, this new roadway corridor would take approximately 20 to 30 years to complete.

In order to address the potential traffic-related issues that could develop during the years before the new alignment can be built, the need for interim alternatives (or partial solutions) were evaluated. The following proposed alternatives were developed during this evaluation: (1) create new SR 50 alignment north of Crittenden Street; (2) restrict truck traffic through downtown by designating Crittenden Street as a truck-route; (3) extend the west end of Crittenden Street and merge it with SR 50 westbound on the west end of downtown; (4) upgrade the existing two-lane Crittenden Street to a three-lane and/or four-lane road with varying median treatments and intersection improvements to enhance truck movements and reduce delays; and (5) a combination of one or more above-mentioned alternatives.

These alternatives were presented and discussed for further refinement during a Public Meeting conducted on September 19, 2006 which was attended by public and private property owners along Crittenden Street, and officials from the City of Groveland, Lake County Government, and the Florida Department of Transportation (FDOT). During the public meeting, FDOT officials indicated that certain laws prevent the designation of a

local street (i. e., Crittenden Street) as a truck route for carrying the State's routed traffic. However, FDOT expressed their willingness to explore more into the relevant legal issues and suggested the possibility of utilizing special signage that would *encourage* rather than *require* the use of improved Crittenden Street for truck traffic. Extending the west end of Crittenden Street was the least favorite interim alternative as it is not consistent with the City's downtown visioning plan. Upgrading Crittenden Street as an interim solution to the future relocation of SR 50 was determined to be the most feasible of the alternatives discussed. An upgraded Crittenden Street designed to encourage use by heavy truck traffic by passing downtown Groveland would also help with other growing traffic. It was further determined that improvements evaluated to upgrade Crittenden Street should consider the requisite intersection turning radii necessary to accommodate the truck traffic encouraged to use it.

VIII. ALTERNATIVE ALIGNMENT ANALYSIS

8.1 No-Build Alternative

All major roadway projects should be evaluated against the alternative of not building the project. This review should consider and measure the advantages of the "No-Build" Alternative versus the disadvantages of not proceeding with the project.

There are several important advantages to not proceeding with the improvement of Crittenden Street. These advantages include the following: no construction costs, no right-of-way acquisitions, no displacements, and no community disruptions. However, the decision not to improve Crittenden Street would result in the foregone opportunity to fulfill the project needs as identified in Section 3 of this Report. In addition, the City of Groveland has grown rapidly and this rapid growth is anticipated to continue. Growth brings additional traffic and increases demands on the City's roads. Crittenden Street is located in a key location to improve the circulation of traffic to/from and around the downtown. Currently, SR 50, a major state highway, runs through downtown Groveland via one-way pairs. The City plans to expand and redevelop its downtown. These efforts include relocating City Hall to the north side of Crittenden Street and building a city park and a parking structure to serve the downtown. Additional roadway capacity is needed to serve the traffic wishing to access or bypass the downtown. However, in order to preserve the downtown, SR 50 as it currently exists (through the downtown) cannot be widened. Therefore, Crittenden Street is the best option for improvement to accommodate traffic growth and to provide access to/from and around the downtown.

8.2 Transportation System Management

Transportation System Management or TSM is accomplished through the use of operational strategies (as opposed to capacity projects) employed to improve the capacity, safety, and/or accessibility of a roadway. In a less urbanized area, examples of the operational strategies used to implement TSM include optimization of signal

timing, addition of turning lanes, and use of grade separations, pavement striping, lane assignment changes, signage, and lighting.

With the respect to the Crittenden PD&E Study, there are no TSM options that could be implemented that would off-set the need for capacity improvement on Crittenden Street. However, use of TSM should be incorporated to the greatest extent possible into the final design of the Crittenden Street improvement and will probably be most evident in the design decisions made for the major intersections of Crittenden Street at SR 19 and at SR 50/SR 33.

8.3 Study Alternatives

Consideration of alternate alignments and alternate typical sections within the project corridor are required where such consideration would potentially provide other solutions capable of mitigating social, economic, environmental, and engineering issues. Study alternatives should consider community and environmental impacts, safety, roadway operations, hazardous material sites, multimodal transportation options, and right-of-way and construction costs. Alternates are then compared and evaluated, and a preferred alternate is identified.

8.3.1 Alternate Alignments

There are four alternatives being progressed as part of this PD&E Study. Each alternative follows the existing alignment of Crittenden Street throughout the length of the project with the exception of the east and west ends of the corridor. On the east and west ends of the corridor, the existing alignments will be revised to improve the turning radii for the movement of truck traffic on Crittenden Street.

8.3.2 Alternate Typical Sections

Four alternate typical sections have been considered as part of this PD&E Study. Alternative #1 is the No-Build Alternative. Alternative #2 provides a two-lane typical section consisting of one twelve-foot travel lane in each direction with a four-foot bike lane, two feet of curb and gutter, and a five-foot sidewalk on each side. Alternative #3 provides a three-lane typical section consisting of one twelve-foot travel lane in each direction separated by a twelve-foot continuous two-way left-turn lane. The travel lanes are bounded on each side by a four-foot bike lane, two feet of curb and gutter, and a five-foot sidewalk. Alternative #4 is a four-lane divided typical section. It features two twelve-foot travel lanes in each direction which are separated by a 22-foot raised median. The travel lanes are bounded on each side by a four-foot bike lane, two feet of curb and gutter, and a five-foot sidewalk.

8.3.3 Evaluation of Alternate Alignments

Evaluation of the four typical section alternates considers all of the characteristics identified in Section IV of this report, as well as the community input provided through the public involvement process:

a. Roadway and Engineering Characteristics
b. Social, Cultural, and Environmental Characteristics
c. Construction and Right-of-Way Cost
d. Reduction of Truck Traffic through the Downtown Area

Of these characteristics, the only characteristics/impacts that are significantly different amongst the four alternates are cost, right-of-way, truck traffic diversion, and the intersection configuration at SR 19/Crittenden Street.

Alternative #1 is the No-Build Alternate and will have no direct impacts along the corridor, other than the continuation of the existing truck travel through the downtown area.

Alternative #2 (Two-Lanes) is the least expensive of the three "build" alternates and remains within the existing right-of-way except for the northeast corner of the SR 19/Crittenden Street intersection and the west side of SR 19 between Crittenden Street and SR 50 westbound. Alternative #2 will do little to reduce the volume of trucks passing through the downtown area, but will significantly improve the condition and serviceability of existing Crittenden Street.

Alternative #3 (Three-Lanes) is the mid-range cost of the three Build alternates and is similar to Alternative #2 with respect to right-of-way impacts (although the extent of impact at SR 19 is greater). This Alternative will divert a greater percentage of trucks onto Crittenden Street (compared to Alternative #2) as a result of the following improvements:

1. The center turn-lane on Crittenden Street will remove left-turning vehicles from the through lanes, thereby facilitating through travel for both trucks and automobiles.
2. The intersection geometry at both the east and west ends of Crittenden Street has been designed to facilitate truck turning movements, thereby reducing the volume of through trucks on westbound SR 50 in the downtown area.
3. The intersection at SR 19 has been moved further north which allows for new traffic signals to improve traffic operations and safety.
4. Eastbound trucks on SR 50 that now turn left to proceed north on SR 19 will be diverted easterly to an improved left-turn at SR 50/SR 33/Crittenden Street.

Alternative #4 (Four-Lanes) is the most expensive of the three "build" alternates and has the greatest right-of-way impact as well, making it the least context-sensitive for a downtown area with future plans for extensive redevelopment.

Alternative #4 was developed to provide the greatest diversion of truck traffic from the downtown area. This was accomplished with the following features:

1. The two lanes in each direction on Crittenden Street will remove left-turning vehicles from the through right-lanes, thereby facilitating through travel for both trucks and automobiles.
2. The intersection geometry at both the east and west ends of Crittenden Street has been designed to facilitate truck turning movements, thereby reducing the volume of through trucks on westbound SR 50 in the downtown area. This is especially true at SR 19 where through westbound trucks will have a very smooth connection back onto SR 50.
3. The intersection at SR 19 has been significantly modified which allows for new traffic signals to improve traffic operations and safety (the existing signals at SR 19/Broad Street will be removed).
4. Eastbound trucks on SR 50 that now turn left to proceed north on SR 19 will be diverted easterly to an improved left-turn at SR 50/SR 33/Crittenden Street.

With respect to the Downtown Visioning Plan recently completed by the City of Groveland, Alternatives 1 and 2 rely totally on the future SR 50 Bypass to mitigate the high volume of trucks passing through the downtown area. Alternative #3 (Three-Lanes) will provide an interim measure of mitigation to the truck issue; however, it too, relies on the future SR 50 Bypass to fully mitigate the truck issue. Alternative #4 (Four-Lanes) will also provide an interim measure of mitigation (similar to Alternative 3), but best diverts the trucks away from SR 50 westbound (Broad Street). None of the four Build alternatives reduces the volume of trucks along SR 50 eastbound (Orange Street).

8.4 Alignment Evaluation Matrix

CRITERIA	ALTERNATIVES			
	Alt. 1 (No-Build)	Alt. 2 (Two-Lanes)	Alt. 3 (Three-Lanes)	Alt. 4 (Four-Lanes)
Construction Cost	0	$2.5 m	$3.0 m	$3.9 m
R/W Cost	0	$0.5 m	$1.0 m	$1.5 m
Total Cost	0	$3.0 m	$4.0 m	$5.4 m
# Parcels Impacted	0	2	3	6
Truck Diversion				
Broad St (SR 50 WB)	None	None	Moderate	Major
Orange St. (SR 50 EB)	None	None	None	None

8.5 Selection of Viable Alternate Alignment

Based on all of the analysis and information received during this study, Alternative #3 (Three-Lanes) was identified as the "Preliminary Preferred Alternative". This preliminary selection was presented at a legally advertised Public Hearing conducted on August 20, 2007 by the City of Groveland City Council. After the public hearing, the City provided a two-week public comment period. The City Council then moved forward with its decision making process to finalize the selection of a Recommended Alternative. This process is described below in Section IX Determination of Preferred Alternative.

IX. DETERMINATION OF PREFERRED ALTERNATIVE

9.1 Summary of Public Involvement Process

This PD&E Study was developed in accordance with all Florida Department of Transportation (FDOT) requirements for public involvement. The FDOT prescribed format for public involvement includes the following public meetings: one Public Project Kick-Off Meeting, two Public Workshops (one of which was the Alternatives Public Meeting), and one Public Hearing. The Crittenden Street PD&E Study was developed in accordance with all FDOT procedures for public involvement and included additional meetings beyond FDOT requirements. The following summarizes the public meetings conducted throughout the development of this project:

1. ***September 19, 2006: Project Kick-Off Public Meeting.*** The Project Kick-Off Public Meeting was held on September 19, 2006. It was attended by local government staff members, local elected officials, members of the public, and members of the project consultant team. At the Project Kick-Off Public Meeting, the Project Engineer provided the public with a project presentation. This presentation identified the project and summarized the purpose of the project, the proposed project schedule, and the immediate next steps in project development. In addition, the Project Engineer answered questions from members of the public.

2. ***March 1, 2007: Public Workshop.*** The first Project Public Workshop was held on March 1, 2007. It was attended by local government staff members, local elected officials, members of the public, and members of the project consultant team. At the Public Workshop, the Project Engineer provided the public with a project presentation that summarized the study findings to date and reviewed possible roadway alternatives. In addition, the Project Engineer answered

questions from members of the public, and provided them with an update of the project schedule and immediate next steps.

3. ***May 21, 2007: City Council Update.*** A project status presentation to the City of Groveland City Council was made on May 21, 2007. The Project Engineer summarized the study findings to date for the City Council members. The Project Engineer also summarized the issues that were discussed at the March 1, 2007 Public Workshop and updated the City Council on the project schedule and next steps.

4. ***June 1, 2007: Project Consultant Meeting with City of Groveland Staff.*** A meeting was held on June 1, 2007 between the project consultant and members of the City of Groveland staff. The purpose of this meeting was to review the four corridor alternatives for Crittenden Street: Alternative #1 (No-Build), Alternative #2 (Two-Lanes), Alternative #3 (Three-Lanes), and Alternative #4 (Four-Lanes) in preparation for the upcoming public workshop scheduled for July 2007.

5. ***July 9, 2007: Public Workshop.*** The second Project Public Workshop was conducted on July 9, 2007. It was attended by local government staff members, local elected officials, members of the public, and members of the project consultant team. At this meeting, the Project Engineer presented four corridor alternatives for Crittenden Street. The four alternatives for Crittenden Street included: Alternative #1 (No-Build), Alternative #2 (Two-Lanes), Alternative #3 (Three-Lanes), and Alternative #4 (Four-Lanes). In addition, the Project Engineer answered questions from members of the public, and provided them with an update of the project schedule and immediate next steps.

6. ***August 20, 2007: City of Groveland City Council Public Hearing.*** The City of Groveland scheduled and conducted a Public Hearing on the Crittenden Street PD&E Study as part of its regularly scheduled City Council meeting held on August 20, 2007. The purpose of this Public Hearing was to allow all members of the public to provide their comments and questions about the project to the City Council. In addition, the Project Engineer presented four project alternatives to the City Council; Alternative #1 (No-Build), Alternative #2 (Two-Lanes), Alternative #3 (Three-Lanes), and Alternative #4 (Four-Lanes). The Project Engineer identified Alternative #3 as the Preliminary Preferred Alternative for Crittenden Street. The City Council was scheduled to take action on the project by selecting a recommended alternative for the corridor. However, during the meeting, the City Council determined that it was not ready to make a decision regarding the selection of a recommended alternative for Crittenden Street and voted to table this action item for a future City Council Meeting.

7. ***September 5, 2007: City Council Meeting.*** The City of Groveland City Council was scheduled to revisit the issue of selecting a recommended corridor alternative at its regularly scheduled City Council Meeting held on September 5,

2007. However, during the meeting, the City Council determined that it was still not ready to make a decision regarding the selection of a corridor alternative for Crittenden Street and voted to table this action item for a future City Council Meeting.

8. ***October 1, 2007: City Council Meeting.*** The City of Groveland City Council was scheduled to revisit the issue of selecting a recommended corridor alternative at its regularly scheduled City Council Meeting held on October 1, 2007. At this meeting, the City Council voted four to one in favor of selecting Alternative #1 (No-Build) as the Recommended Alternative for Crittenden Street.

9.2 Selection of Recommended Alternative

It was the responsibility of the City of Groveland City Council to select a recommended alternative for Crittenden Street. The City Council recommendation would then be forwarded to Lake County and the Florida Department of Transportation (FDOT) for their use and consideration for inclusion in future plans and funding programs.

The City Council had many factors to consider in making their decision. These factors included cost of the proposed improvements, impact of the proposed improvements, and overall public benefit. With regard to project cost, the City Council had to consider the difficulty of obtaining funding for future improvements, and determine which, if any of the alternatives could actually be afforded by the City even with possible funding assistance from FDOT and/or Lake County. With regard to impact of the proposed alternative, the City Council had to weigh the benefit of the proposed alternatives versus potential impacts and conflicts with the City's existing development and the Downtown Visioning Plan. With regard overall public benefit, the City Council had to consider the costs and impacts of each alternative versus the potential improvement each alternative could achieve in terms of reduced traffic through the downtown and/or improved safety and traffic flow.

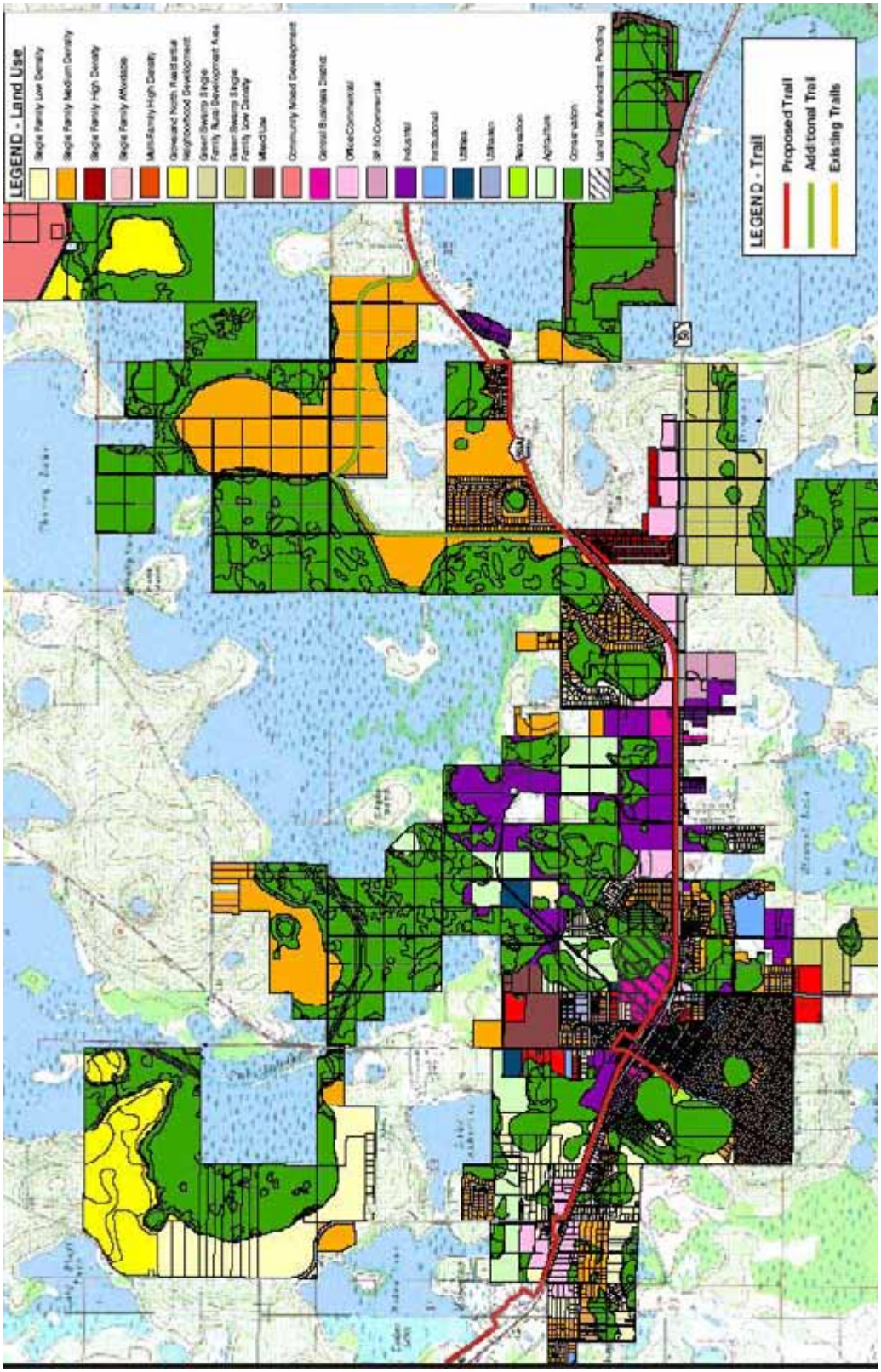
As described in detail in Section XIII, Subsection 8.3, Part 8.3.3, there were four corridor alternates for the City of Groveland to consider for future improvements to Crittenden Street. These alternates included Alternative #1 (No-Build), Alternative #2 (Two-Lanes), Alternative #3 (Three-Lanes), and Alternative #4 (Four-Lanes).

Based upon all data collection, technical evaluation, and consideration of the City's future plans as compiled and analyzed throughout the development of this PD&E Study, the Project Engineer identified Alternative #3 as the Preliminary Preferred Alternative. Alternative #3 provided a viable interim solution to many of the existing traffic problems through Downtown Groveland. This Alternative mitigated truck traffic through the Downtown for a ten-year timeframe, and was compatible with both the City's Downtown Visioning Plan and the long-term option of relocating SR 50 north of Crittenden Street. Alternative #1 did not address the City's existing truck traffic problems. Alternative #2 did not provide a capacity improvement and would

not qualify for federal funding. Alternative #4 was too expensive, created too much of an impact on existing development, and was not compatible with the City's plans for redevelopment of the Downtown.

At its regularly scheduled City Council Meeting held on October 1, 2007, the City of Groveland City Council considered all study alternates. Alternatives #2 and #4 were the first alternates to be eliminated from consideration. Ultimately, the City Council selected Alternative #1 as the Recommended Alternative. The City Council believed that the no-build alternate was in the City's best interest due to the fact that the future plans to relocate SR 50 are very unlikely to occur because of a lack of funding. Alternative #3 only provided interim improvement and would create a situation that would need to be revisited within ten years. The City Council has also decided to incorporate minor transportation system management (TSM) improvements along the corridor, and will coordinate with FDOT and Lake County to achieve these improvements.

APPENDIX A
City of Groveland Future Land Use Map



APPENDIX B
Conceptual Design Plans