



FINAL

TRAFFIC MEMORANDUM

**Park Road and Sam Allen Road
From I-4 to the Alexander St. Extension**

**Work Program Item Number: 257862 1
Federal Aid Project Number: 0295-005**

Hillsborough County, Florida

**This project evaluates adding through lanes on Park Road from I-4 to Sam Allen Road
and Sam Allen Road from Park Road to the proposed Alexander St. extension.
The approximate length of the project is 2.5 miles.**

**Prepared by:
Florida Department of Transportation
District 7
11201 N. McKinley Drive
Tampa, Florida 33612-6403**

December 2004

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
	TABLE OF CONTENTS	i
	LIST OF TABLES	ii
	LIST OF FIGURES	ii
1	EXISTING CONDITIONS	1
	1.1 Existing Access Management	1
2	TRAFFIC ANALYSIS ASSUMPTIONS	3
3	EXISTING TRAFFIC VOLUMES	4
4	TRAFFIC VOLUME PROJECTIONS	5
5	LEVEL OF SERVICE ANALYSIS	6
6	FUTURE ACCESS MANAGEMENT PLAN	8
7	REFERENCES	9

APPENDICES

Appendix A	Traffic Data Memo and Projections
Appendix B	Highway Capacity Analysis Outputs
Appendix C	Traffic Data for Noise Studies

LIST OF TABLES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1	Average Annual Daily Traffic Volumes (AADT)	4
2	Intersection Level of Service (LOS) Summary	7
3	Summary of Median Openings	8

LIST OF FIGURES

<u>Figure Number</u>	<u>Title</u>	<u>Follows Page</u>
1	Project Location Map	1
2	Existing Intersection Lane Configurations	1
3	Proposed Intersection Lane Configurations	6

SECTION 1

EXISTING CONDITIONS

Park and Sam Allen roads are currently two lane rural roadways, with swales to handle stormwater runoff. For a location map, see Figure 1. Park Road transitions from a four lane divided roadway just north of I-4. The Park Road/Sam Allen Road corridor primarily consists of residential and vacant, undeveloped properties. A large plant nursery, mobile home parks, and a produce market are located on the corridor.

There is one existing traffic signal within the project limits: at SR 39 and Sam Allen Road. Turning movement counts were taken at this signalized intersection and also at Park Road and Sam Allen Road to perform a detailed analysis. The existing intersection lane configurations are shown on Figure 2.

There is one railroad crossing within the project limits.

The existing posted speed limit for Park Road is 45 mph. Sam Allen Road is currently posted at 50 mph.

This project is designated for improvement in the Hillsborough County Metropolitan Planning Organization's (MPO's) Long Range Transportation Plan (LRTP)¹. Additional lanes are anticipated to accommodate future traffic conditions along this roadway project. The majority of the existing undeveloped properties along these roads are expected to develop as residential uses on Sam Allen Road, and commercial uses on Park Road.

1.1 Existing Access Management

Park and Sam Allen Roads are categorized as access Class 3 facilities by the Hillsborough County, in their Land Development Code². This Class is assigned to roadway segments where existing land use and roadway sections have not been built out

END PROJECT



Sam Allen Rd

Sam Allen Rd

Alexander St
Extension

39

580

Park Rd

Wilder Rd

400

4

Plant
City

CSX RAILROAD

553

BEGIN PROJECT

PARK RD & SAM ALLEN RD
[From I-4 To Alexander St Extension]
HILLSBOROUGH COUNTY

WPI Seg. No. 257862 1

FAP No. 0295-005

PROJECT LOCATION MAP

LEGEND





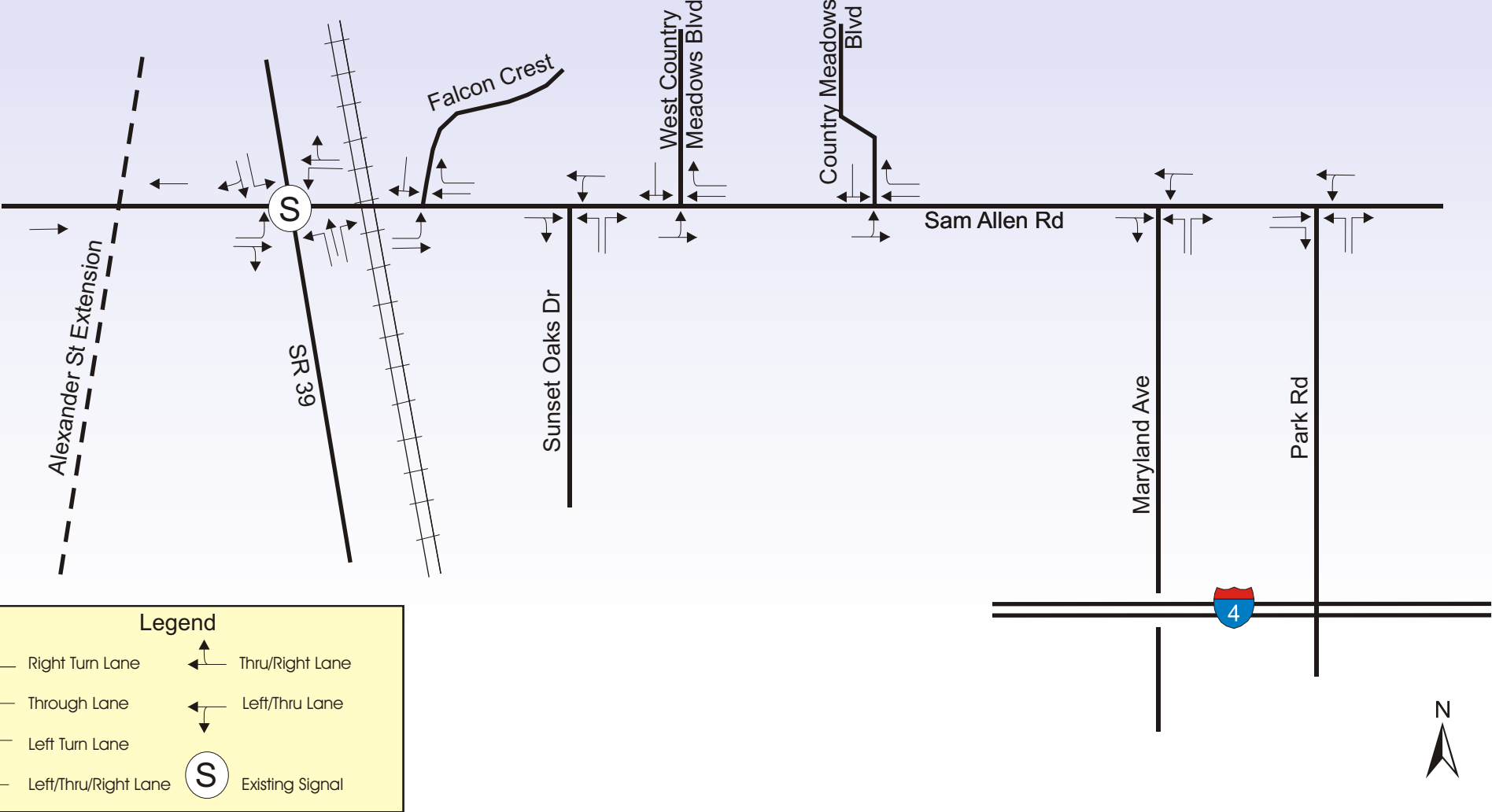
-  PROJECT LIMITS
-  PROPOSED ALEXANDER ST. EXTENSION
-  SIGNALIZED INTERSECTION
-  CITY OF PLANT CITY CITY LIMITS



Figure 1

SAM ALLEN RD

Existing Intersection Lane Configurations



PARK RD / SAM ALLEN RD
From I-4 to Alexander St Extension
PD&E STUDY

WPI SEG 257862 1
FAP NO 0295-005



Figure 2

to the maximum or where the probability of significant land use change in the near future is high. The minimum recommended signal spacing for this classification is 2640 feet. The minimum spacing for median openings is 1320 feet for a directional opening and 2640 feet for a full opening.

SECTION 2

TRAFFIC ANALYSIS ASSUMPTIONS

The design hour traffic (2028) conditions were determined for the existing roadway and for the Build alternatives. The design hour factors used for the highway capacity analysis are a K_{30} factor of 9.65 percent, and a D (Directional factor) of 54.96 percent.

The Highway Capacity Software (HCS-3) was used to determine existing operating conditions within the project limits. Since Park and Sam Allen Roads are currently two lane undivided roadways, the HCS two lane highway options was used to evaluate the existing roadway.

The Highway Capacity Manual³ (HCM) definition for level terrain is any combination of horizontal and vertical alignments that permits heavy vehicles to maintain approximately the same speed as passenger cars. Given the existing characteristics of this roadway facility, the level terrain option was selected as the most appropriate.

The minimum Level of Service for an “Area Transitioning into Urbanized Area” is LOS C, from the 2002 Level of Service Handbook⁴, published by the FDOT Systems Planning Office.

SECTION 3
EXISTING TRAFFIC VOLUMES

There are no traffic count stations on these local roads. The 2002 AADT volumes were derived from tube counts taken in 2002. The AADT volumes are shown in Table 1.

Table 1

Average Annual Daily Traffic Volumes (AADT)			
Road Section	2002 Existing	2025 Regional Model	2028 Projected
Sam Allen Road West of Park Road	6,600	13,200	14,100
Sam Allen Road East of Park Road	3,700	7,400	10,800
Park Road	8,300	16,600	17,700

SECTION 4

TRAFFIC VOLUME PROJECTIONS

The FDOT has developed a Regional Planning Transportation Analysis Model for District Seven to arrive at the projected 2025 traffic.

The following steps were used to develop the 2028 traffic:

- 1) The 2025 Model outputs of the Tampa Bay Regional Model (TBRPM) were reviewed.
- 2) A comparison of the latest 2025 land use forecasts to the 1999 land use base year was completed. The Land Use variables doubled in the area, from Baker St. to the south, Knights-Griffin Road to the north, Charlie Taylor Road to the east and Thonotosassa Road to the west.
- 3) The TBRPM is a regional model and is not always sensitive to minor local roads. Because of this, sketch planning traffic forecasting methodology was used in combination with the TBRPM.
- 4) The 2028 traffic was extrapolated from 2025 traffic.

The AADT volumes are shown in Table 1, see Section 3.

SECTION 5

LEVEL OF SERVICE ANALYSIS

5.1 Arterial Analysis

The Build Alternatives improve Park Road and Sam Allen Road to four lane divided roadways. The Arterial Level of Service for the Recommended Alternative is B, and the No-Build Alternative LOS is D, which does not meet the minimum requirement, LOS C.

5.2 Intersection Analysis

Existing Conditions

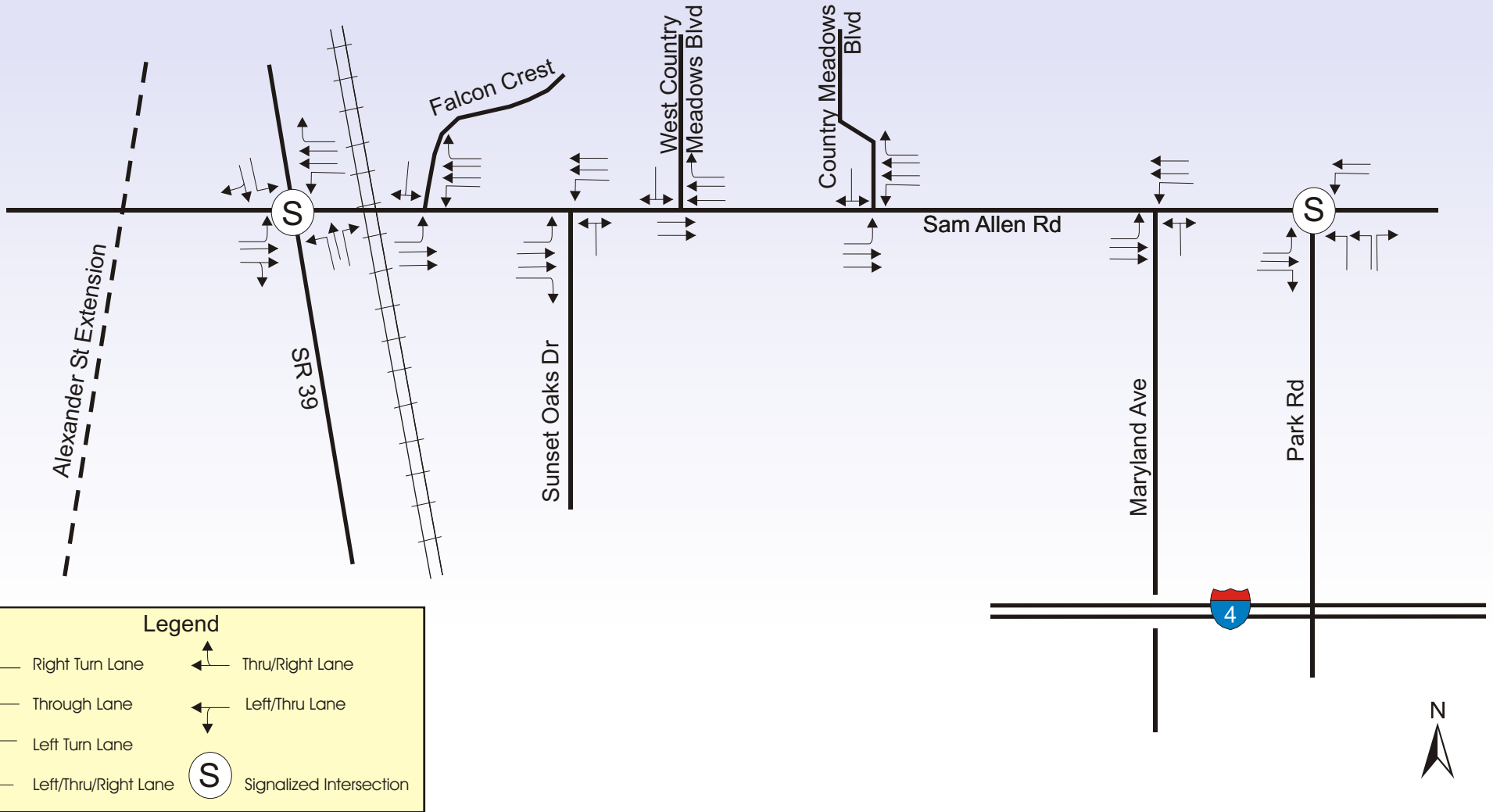
The signalized intersections were analyzed to determine the current Level of Service using the Highway Capacity software program. Turning movement counts taken in January 2002 were used for the intersection analysis. The proposed lane configurations are shown in Figure 3. A summary of the results of the HCS intersection analyses is in Table 2.

Proposed Design

The TURNS 4 program was used to project the 2002 turning movement counts to the 2028 Design Year. The AADT volumes were input into the TURNS 4 program for the projection. The TURNS 4 program uses AADT volumes, K and D factors along with the actual counts to arrive at balanced turning movement volumes.

Two intersections were analyzed: 1) Sam Allen Road/SR 39 (currently has a signal), and 2) the intersection of Park Road with Sam Allen Road. This intersection is not signalized at present, but is anticipated to require signalization due to the projected additional

SAM ALLEN RD Proposed Intersection Lane Configurations



PARK RD / SAM ALLEN RD
From I-4 to Alexander St Extension
PD&E STUDY

WPI SEG 257862 1
FAP NO 0295-005



Figure 3

traffic. The proposed intersection lane configurations are shown on Figure 3.

The intersection LOS summary is shown in Table 2. The Build Alternative had an acceptable LOS in the design year 2028, for both intersections. The No-Build Alternative does not meet the requirement of LOS C in the design year 2028.

Table 2

Intersection LOS Summary			
Intersection	2002 Existing	2028 No-Build	2028 Build
Sam Allen Road & SR 39	C	E	C
Park Road & Sam Allen Road	B	D	B

SECTION 6
FUTURE ACCESS MANAGEMENT PLAN

Since the project involves widening from a two lane section to four lanes with a divided median, median openings are proposed at the locations with the highest turning volumes. The existing access management conditions are discussed in Section 1.1. For these Access Class 3 roads, the minimum recommended spacing for a directional opening is 1320 feet, for a full median opening is 2640 feet. A summary of the proposed median openings is shown below. These locations were reviewed and approved by the Median Review Committee meeting on September 2nd, 2004.

Table 3
Summary of Median Openings

Connection	Median Type	Median Spacing (FT)	Meets Criteria	Remarks
Sam Allen Rd.				
SR 39	F			Existing Traffic Signal
Falcon Crest St. E	F	500	No	(See Note Below)*
		1670	No	
Sunset Oaks Dr.	F			
		1874	Yes	
Country Meadows Blvd.	F			
		2480	No	
Maryland Av.	F			
		1638	No	
Park Rd.	F			Proposed Traffic Signal
Park Rd.				
I-4 Frontage Rd.	F			
		1510	No	
(Proposed Opening)	F			(For U-turns)
		1560	No	
Sam Allen Road	F			Proposed Traffic Signal

Note: "F" means Full median opening.

* Falcon Crest St. median opening may need to be closed in the future when the westbound left turn lane at SR 39 needs extension or when westbound traffic regularly queues past Falcon Crest St.

SECTION 7

REFERENCES

1. 2025 Long Range Transportation Plan; Hillsborough County Metropolitan Planning Organization (MPO); Tampa, FL; Adopted on November 2001.
2. Hillsborough County Land Development Code; 2004.
3. Highway Capacity Manual; Transportation Research Board, Washington, D.C., 2000.
4. Florida's Level of Service Handbook; FDOT Planning Department; Tallahassee, FL; 2000.

Appendix A
Traffic Data Memo and Projections

Appendix B
Highway Capacity Analysis Outputs

Appendix C
Traffic Data for Noise Studies