TRAFFIC REPORT

COBB ROAD (CR 485) / US 98 PD&E STUDY

From SR 50 to Suncoast Parkway in Hernando County, Florida

WPI Nos. 257299 1 & 405017 1; FAP Nos: 2891 007 P & 2891 008 P

Florida Department of Transportation

District Seven

April 2003

TRAFFIC REPORT

Cobb Road (CR 485) / US 98
Project Development and Environment Study

Cobb Road (CR 485), from SR 50 to US 98
and
US 98, from Cobb Road to Suncoast Parkway
Hernando County, Florida

WPI Segment Nos.: 257299 1 & 405017 1
FAP Nos.: 2891 007 P & 2891 008 P

This proposed action consists of capacity and safety improvements to Cobb Road (CR 485), a two-lane undivided arterial, from SR 50 to US 98 and US 98, a two-lane undivided arterial, from Cobb Road to Suncoast Parkway

FLORIDA DEPARTMENT OF TRANSPORTATION
District Seven

Prepared By

H. W. Lochner, Inc.

April 2003

TABLE OF CONTENTS

Page

TABLE OF CONTENTS ii
LIST OF TABLES iv
LIST OF EXHIBITS vi
1. INTRODUCTION 1
1.1 Purpose 1
1.2 Project Description 1
1.3 Scope of Work 3
2. EXISTING CONDITIONS 4
2.1 Roadway and Intersection Characteristics 4
2.2 Collection of Traffic Data 4
2.3 Traffic Parameters 10
2.4 Intersection Level of Service Analysis 12
2.5 Highway Segment Level of Service Analysis 15
2.6 Transit Considerations 15
2.7 Safety Considerations 16
2.7.1 US 98 Segment 16
2.7.2 Cobb Road Segment 20
2.7.3 Other Safety Considerations 23
3. DEVELOPMENT OF FUTURE TRAFFIC 24
3.1 1999 Model Validation 24
3.2 Future Year 2025 Model Review 28
3.2.1 Historical Traffic Growth along the Corridor 28
3.2.2 Future Year 2025 Volumes 28
4. FUTURE CONDITIONS 32
4.1 Planned Improvements 32
4.2 No-Build 2025 AADT Volumes and Capacity Analysis 32
4.3 Build Alternative 35
4.4 2025 AADT Volumes and Capacity Analysis for the Preliminary Design Alternative 36
4.5 2025 Design Hour Volumes 38
4.6 Intersection Level of Service Analysis 41
4.7 Highway Segment Level of Service Analysis 46
4.8 Determination of Storage Lengths 48

5. TRAFFIC DATA FOR NOISE AND AIR STUDIES 50
5.1 Traffic Data for Air Quality Study.....50
5.2 Traffic Data for Noise Study..... 50
6. SUMMARY 52

Appendix A - Level Of Service Of Intersections For The Existing 2001 Conditions
Appendix B - Level Of Service Of Highway Segments For The Existing 2001 Conditions
Appendix C - Level Of Service Of Intersections For The No-Build 2025 Conditions
Appendix D - Level Of Service Of Intersections The Build 2025 Conditions
Appendix E - Level Of Service Of Highway Segments For The No-Build 2025 Conditions
Appendix F - Level Of Service Of Highway Segments For The Build 2025 Conditions
Appendix G - Air and Noise Traffic data Forms

LIST OF TABLES

Table No. | Title | Page

1. Traffic Characteristics For the Cobb Road & US 98 Study Area 10
2. Comparison of Site Specific Data with State and National Data For Rural Arterials 11
3. Existing Year 2001 Levels Of Service At Signalized Intersections 12
4. Existing Year 2001 Levels Of Service At Unsignalized Intersections 14
5. Existing Year 2001 Level Of Service On Highway Segments 15
6. Crash History Overview – US 98 Segment 17
7. Average Daily Traffic And Crash Rates – US 98 Segment 17
8. Crash Diagnostics – US 98 Segment 18
9. Crashes by Harmful Event – US 98 Segment 19
10. Crash Cost Analysis – US 98 Segment 20
11. Crash History Overview – Cobb Road Segment 20
12. Crash Diagnostics – Cobb Road Segment 21
13. Crashes by Harmful Event – Cobb Road Segment 22
14. Crash Cost Analysis – Cobb Road Segment 23
15. 1999 AADT Comparison of TBRPM Forecast Volumes with 1999 Observed Traffic Counts 25
16. 1999 AADT Comparison of Revised TBRPM Forecast Volumes with 1999 Observed Traffic Counts 27
17. 1986 – 2001 Historical Traffic Growth Rates at the FDOT Count Stations 29
18. 1999 and 2025 AADT Comparison of the Revised TBRPM Forecast Volumes 30
19. Comparison of No-Build Alternatives: 2025 AADT Volumes and Level of Service 35
20. Comparison of Build And No-Build Alternative 1: 2025 AADT Volumes and Level of Service 38
21. Design Year 2025 Levels of Service at Signalized Intersections–No-Build Alternative 41
22. Design Year 2025 Levels of Service at Unsignalized Intersections–No-Build Alternative 42
23. Design Year Levels of Service at Signalized Intersections–Build Alternative 43

24. Design Year 2025 Levels of Service at Unsignalized Intersections–Build Alternative . 45

25. Design Year 2025 Level Of Service On Highway Segments – No-Build Alternative ... 46

26. Design Year 2025 Level Of Service On Highway Segments – Build Alternative 48

27. Recommended Design Year 2025 Storage Lengths 49

LIST OF EXHIBITS

Exhibit No. Title Page

1. Project Location Map 2
2. Existing Year (2001) Lane Arrangements 5
3. Field Data (June 2001) Peak Hour Turning Volumes 7
4. Existing Year (2001) Peak Hour Factors 8
5. Existing Year (2001) AADT Volumes 9
6. Existing Year (2001) Design Hour Turning Volumes 13
7. Design Year No-Build (2025) AADT Volumes 34
8. Design Year (2025) Build and No-Build AADT Volumes 37
9. Design Year (2025) Turning Volumes - No-Build Alternative 39
10. Design Year (2025) Turning Volumes – Build Alternative 40
11. Design Year (2025) Build Alternative Lane Arrangements 44

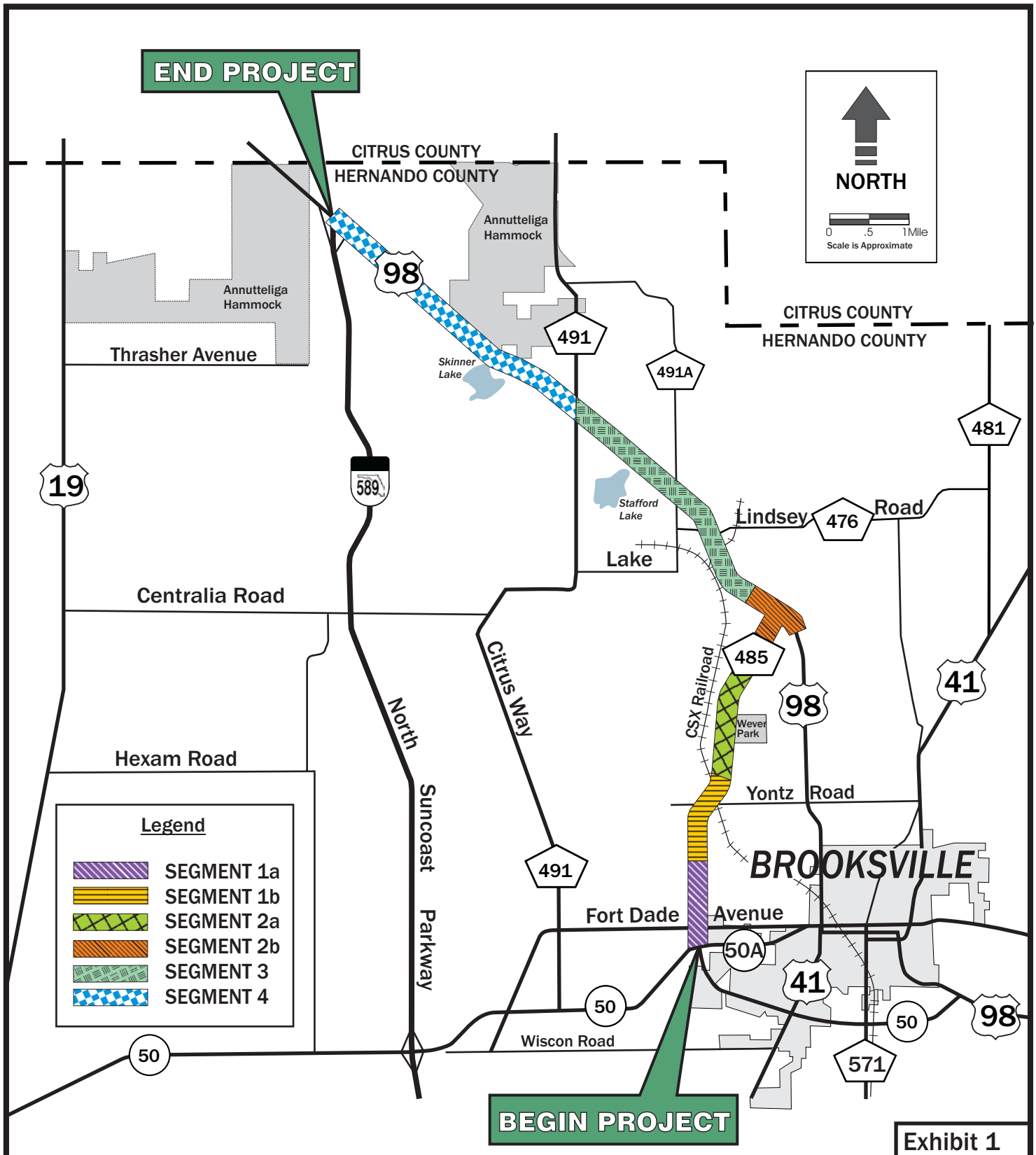
1. INTRODUCTION

1.1 Purpose

This *Traffic Report* has been prepared as part of a Florida Department of Transportation (FDOT) Project Development and Environment (PD&E) Study for the planned improvements to Cobb Road (CR 485) and US 98 located in Hernando County. The objective of the PD&E Study is to provide documented environmental and engineering analyses that will assist the FDOT and the Federal Highway Administration (FHWA) in reaching a decision on the location and conceptual design for improvements to Cobb Road and US 98. The No-Build Alternative remained a viable alternative throughout the duration of the PD&E Study. This particular report documents the existing traffic conditions; validation of the 1999 Tampa Bay Regional Planning Model (TBRPM) for use in the corridor study area; the development of the design year 2025 projected annual average daily traffic (AADT); the development of traffic parameters for the estimation of design hour volumes (DHV) and capacity and Level of Service (LOS) analysis of the design alternatives for the Cobb Road (CR 485) / US 98 PD&E Study in Hernando County, Florida.

1.2 Project Description

The planned project will improve the capacity and safety of the existing two-lane Cobb Road (CR 485) and a portion of US 98 in Hernando County, Florida. The project study area begins on Cobb Road at SR 50 in the City of Brooksville and extends northward 4.5 miles to US 98. The study area then proceeds 7 miles westward along US 98 to the Suncoast Parkway. These segments of Cobb Road and US 98 are currently two-lane undivided rural arterials. The total length of the planned project is approximately 11.5 miles. The project has been divided into six segments (Segments 1a, 1b, 2a, 2b, 3 and 4) for purposes of analysis throughout this study. The project segmentation is shown on the Project Location Map in Exhibit 1.



Project Location Map

Cobb Road (CR 485) / US 98 PD&E Study

WPI Segment Nos: 257299 1 & 405017 1
FAP Nos: 2891 007 P & 2891 008 P

The existing Cobb Road / US 98 corridor provides traffic flow around the west side of the City of Brooksville, ultimately connecting SR 50 with the Suncoast Parkway (SR 589). Traffic growth in Hernando County and in the vicinity of the City of Brooksville will cause Cobb Road and US 98 to become congested if traffic capacity is not added to the system. The need to provide a safer designated bypass route around the City of Brooksville is vital, particularly for the large volume of truck traffic associated with three major rock mines and other industrial facilities situated along the project corridor. The Cobb Road / US 98 corridor also serves as a school bus route for Parrott Middle School.

Capacity and safety improvements to Cobb Road and US 98, along with the designation of Cobb Road as US 98, represents a long-standing goal of the City of Brooksville and Hernando County. This goal has been incorporated into the Hernando County Metropolitan Planning Organization (MPO) *2025 Long Range Transportation Plan (LRTP)*, which calls for widening the existing roadways to a continuous four-lane divided, controlled access facility.

1.3 Scope of Work

The traffic analysis conducted for this Cobb Road and US 98 PD&E Study included existing traffic analysis, the modeling effort for the development of design traffic for the alternatives, traffic data for the screening of preliminary alternatives and the evaluation of viable alternatives. The existing traffic analysis included the collection of traffic count data and the level of service analysis of roadway segments and intersections. Design alternatives were developed for the study corridor to serve the projected traffic.

Projected design hour traffic volumes were developed for existing year (2001) opening year (2005) and design year (2025) for the design alternatives. Design hour volumes for the viable alternatives were developed utilizing FDOT's 1996 Traffic Design Handbook and approved methodologies. Traffic operational analyses of each viable alternative, including mainline and intersections, were conducted and evaluated using appropriate methods.

2. EXISTING CONDITIONS

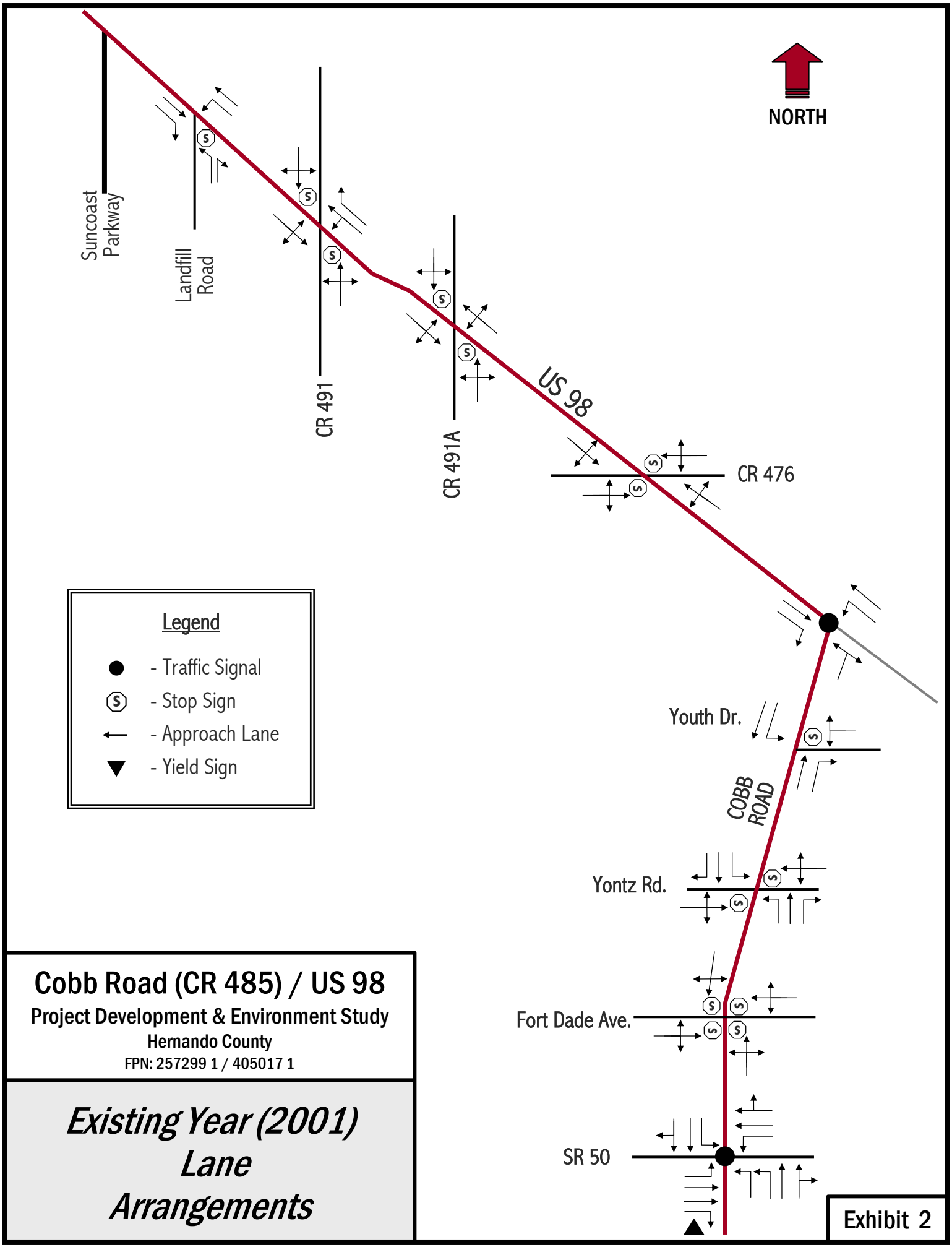
Existing roadway and intersection characteristics of Cobb Road and the US 98 corridor, historical traffic data from FDOT count stations, traffic data from Hernando County count stations and 2001 field daily traffic counts and 8-hour turning movement counts at various corridor locations and intersections were collected.

2.1 Roadway and Intersection Characteristics

The existing Cobb Road at the SR 50 intersection is a 4-lane divided facility, with a 24 foot (ft.) raised median, 12-ft. inside lanes, 14-ft. outside lanes, and 5-ft. sidewalks. From north of SR 50 to US 98, the existing Cobb Road is a 2-lane rural facility with 12-ft. lanes and 10-ft. shoulders, 4 feet of which are paved. The existing US 98 from Cobb Road to the Suncoast Parkway is a 2-lane rural facility with 12-ft lanes and 8-ft. shoulders, 4 feet of which are paved. Both Cobb Road and US 98 have open drainage ditches. The existing laneage and type of traffic control at major study area intersections are shown in Exhibit 2. The speed limit on Cobb Road is 35 mph between SR 50 and Fort Dade Avenue, and 55 mph between Fort Dade Avenue and US 98. In the vicinity of the Yontz Road intersection the speed limit is 45 mph. The speed limit on US 98 is 60 mph.

2.2 Collection of Traffic Data

Field traffic counts collected for this project include 7-day tube counts, 72-hour intersection approach tube counts and 8-hour manual turning movement counts. The counts were conducted during June 2001. The 8-hour manual turning movement counts were conducted for AM, PM and Mid-Day peak hours. Intersection peak hours were selected based on 72-hour intersection approach tube counts. Traffic count data collected was used in evaluating the existing level of service, and adjustment of traffic projections. Counts were made at the following locations for this project:



Cobb Road (CR 485) / US 98

Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Existing Year (2001) Lane Arrangements

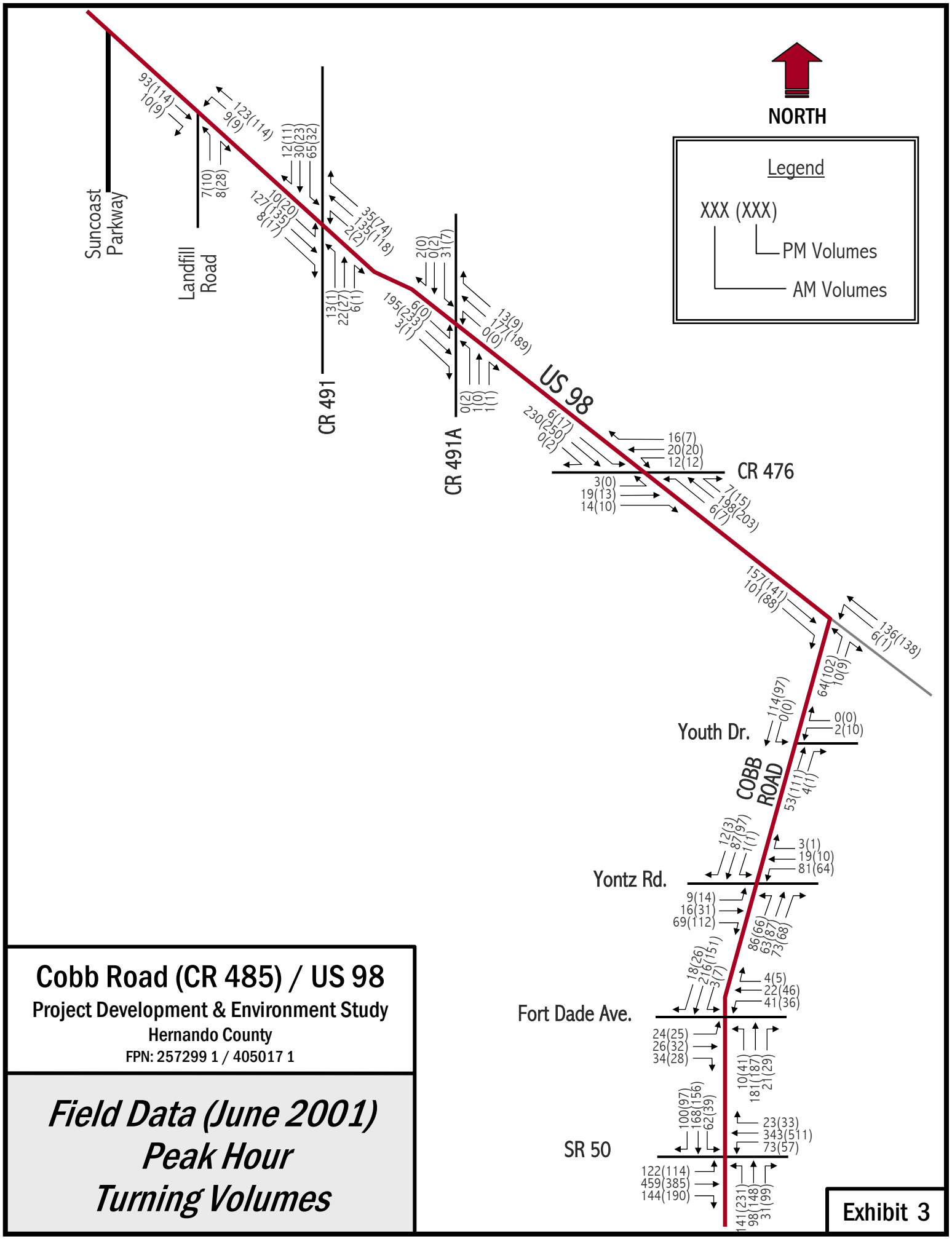
Exhibit 2

- 7-Day Tube Counts (in 15-minute increments):
    1. On SR 50 – South of SR 50A.
    2. On US 98 – East of Cobb Road.
    3. On US 98 – West of Suncoast Parkway.
- 8-Hour Manual Turning Movement Counts and 72-Hour Intersection Approach Tube Counts (in 15-minute increments):
    1. SR 50 with Cobb Road.
    2. Fort Dade Avenue with Cobb Road.
    3. Yontz Road with Cobb Road.
    4. Youth Drive with Cobb Road.
    5. Cobb Road with US 98.
    6. Lake Lindsey Road (CR 476) with US 98.
    7. Brittle Road (CR 491A) with US 98.
    8. Citrus Way (CR 491) with US 98.
    9. Landfill Road with US 98.

Additional data collected for use in the traffic analysis includes:

- Year 1999, 2025 Tampa Bay Regional Planning Model Data
- Year 1999, 2000 Florida Department of Transportation Traffic Information
- Year 1999 Hernando County Traffic Information

The AM peak and PM peak hour manual turning movement count data collected at intersections within the study area during June 2001 are shown in Exhibit 3. These volumes represent the peak hour volume at each intersection, which is not necessarily the same peak hour for all intersections. The estimated peak hour factors at intersection approaches are shown in Exhibit 4. The estimated existing year (2001) average annual daily traffic (AADT) at roadway segments are shown in Exhibit 5. The existing year AADT was estimated by multiplying the collected tube counts by the axle factor of 0.92 and by the historical seasonal factor of 1.1 for the Hernando County area.



Cobb Road (CR 485) / US 98

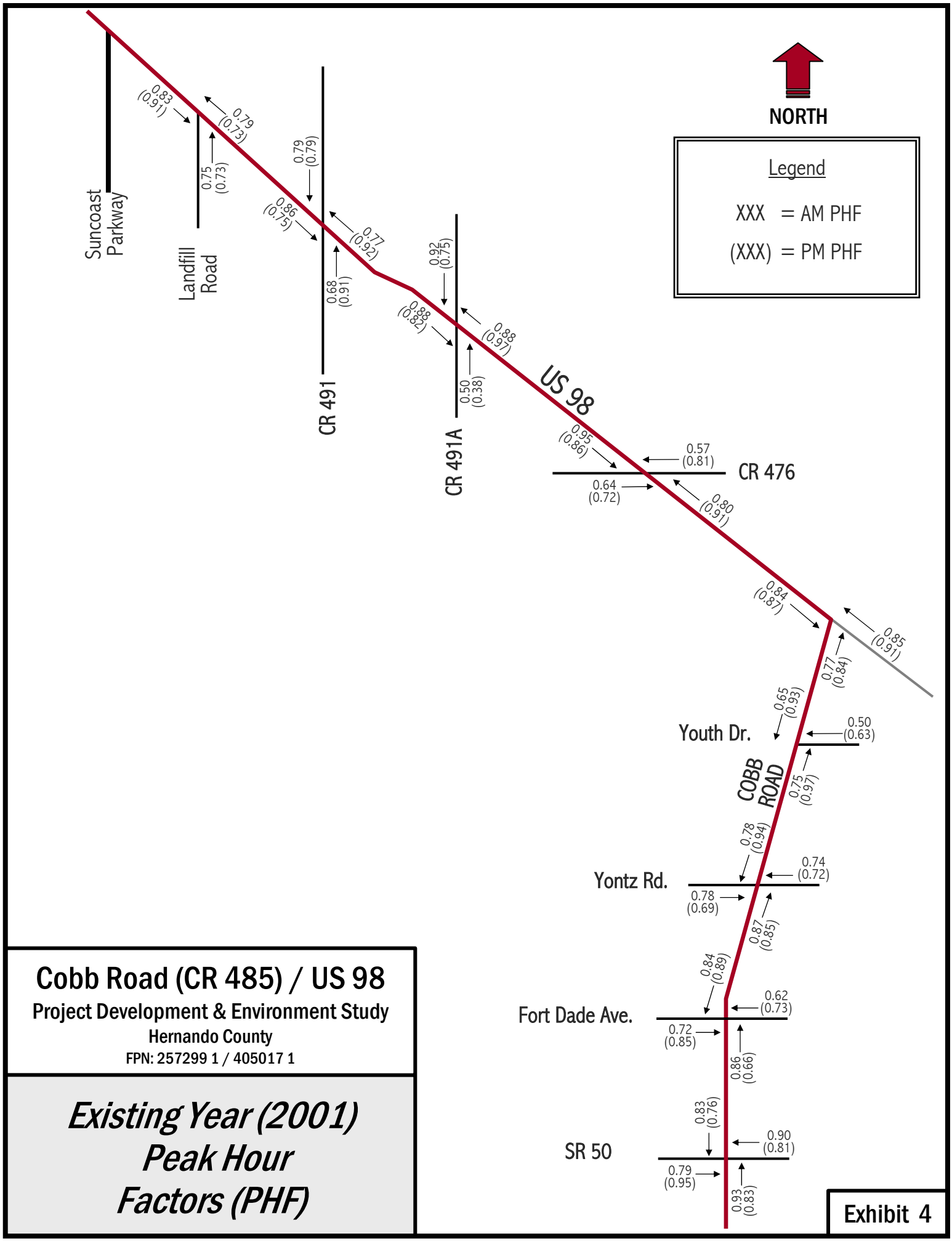
Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Field Data (June 2001) Peak Hour Turning Volumes

Exhibit 3



Cobb Road (CR 485) / US 98

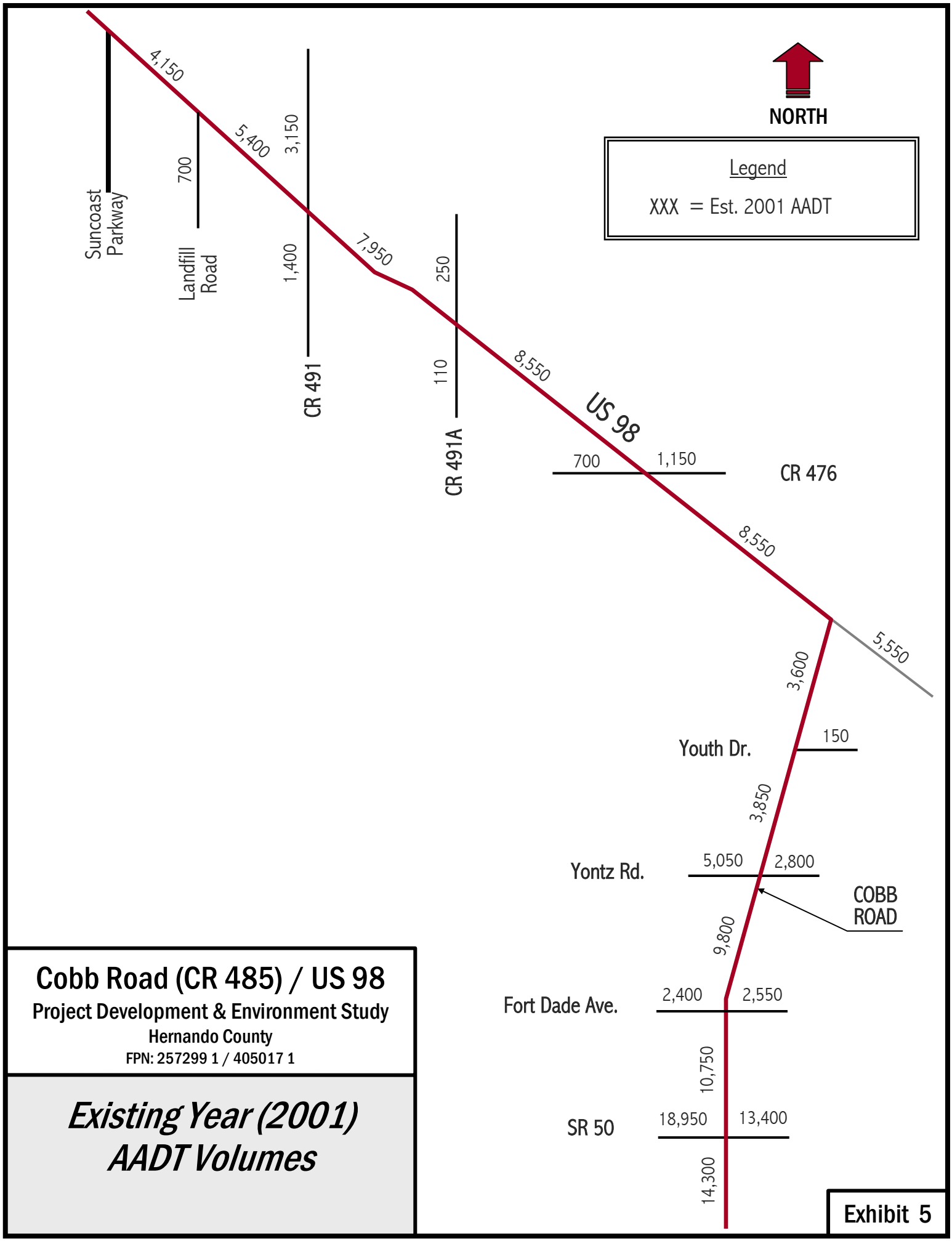
Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Existing Year (2001) Peak Hour Factors (PHF)

Exhibit 4



Cobb Road (CR 485) / US 98

Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Existing Year (2001) AADT Volumes

Exhibit 5

2.3 Traffic Parameters

The existing year (2001), opening year (2005) and design year (2025) design hour volumes were estimated in sections 2.4 and 4.1 respectively, using the 30th highest hour K and D (K_{30} and D_{30}) factors. The K, D, and T factors were estimated based on the procedure outlined in the FDOT's Design Traffic Handbook, 1996. The K, D, and T traffic factors collected during the past three years from FDOT count stations in the Cobb Road & US 98 study area are shown in Table 1.

Table 1

TRAFFIC CHARACTERISTICS FOR THE COBB ROAD & US 98 STUDY AREA

Count Station	Location	Facility Type	Year	K30	D30	Daily Truck %	Design Hour Truck %
0011	SR 700/US 98,	Rural	2000	9.85	53.34	31.58	15.79
	Southeast of CR 491	Arterial	1999	9.95	53.49	31.05	15.52
			1998	9.73	57.07	8.12	4.06
5308	SR 700/US 98,	Rural	2000	9.85	53.34	22.51	11.25
	South of Citrus County	Arterial	1999	9.95	53.49	20.79	10.39
			1998	9.73	57.07	15.01	7.50
0010	SR 700/US 98,	Rural	2000	9.85	53.34	6.15	3.08
	North of CR 485B/Yontz Rd	Arterial	1999	9.95	53.49	24.60	12.30
			1998	9.73	57.07	15.81	7.90
0047	SR 50/Cortez Blvd,	Rural	2000	9.85	53.34	13.58	6.79
	West of CR 485/Cobb Road	Arterial	1999	9.95	53.49	10.33	5.16
			1998	9.73	57.07	20.50	10.25

All the FDOT count stations in the study area give the same traffic factors for the past three years. These factors are compared with the State and National data in Table 2.

Table 2: Comparison of Site Specific Data with State and National Data For Rural \ Arterials

	FDOT SITE DATA		STATE DATA*		NATIONAL DATA*	
	K_{30}	D_{30}	K_{30}	D_{30}	K_{30}	D_{30}
Observed Minimum	9.73	53.34	15.0	51.1	9.4	54.0
Observed Maximum	9.95	57.07	20.0	79.6	15.6	62.0

* Source: FDOT Design Traffic Handbook, 1996.

Based on the these data the following K and D factors are recommended to develop the design hour traffic characteristics in the level of service analyses for existing year (2001), opening year (2005) and design year (2025).

- K = 9.9 percent
- D = 54 percent

As shown in Table 1, the daily (24-hour) truck factor and design hour truck factor varies widely with respect to count station and year. At Count Station 0011, nearest to the project site, the daily truck factor ranged from 8 percent in 1998 to over 31 percent in both 1999 and 2000. Truck factors also vary widely throughout the corridor with variation on individual approaches ranging from less than 15 percent to more than 50 percent based on the existing year (2001) field counts. Much of this variation, as well as the high truck percentages, can be attributed to the quarry operations proximate to the study corridor. In order to estimate a single truck factor representative of the corridor, truck percentages and overall volumes were reviewed at each major intersection. A "weighted" average was then developed for a total of 18 locations along the corridor. These results, ranging from 30.6 percent to 36.4 percent were then averaged, resulting in a percentage of 33.5 percent. Based on the above data and this analysis, the following truck factors are recommended for the level of service (LOS) analysis for the existing year (2001), opening year (2005) and design year (2025).

- Daily Truck Factor = 33.5 percent
- Design Hour Truck Factor = 16.75 percent

Based on the existing field traffic counts the peak hour factors (PHF), as shown in Exhibit 4, along Cobb Road and US 98 during the AM peak hour ranged from 0.65 to 0.95 and during the PM peak hour ranged from 0.66 to 0.97. For the existing year (2001), opening year (2005) and design year (2025) operational analysis, the following peak hour factor is recommended.

- PHF = 90 percent

The recommended Traffic Parameters K, D and T were approved by FDOT on October 17, 2001.

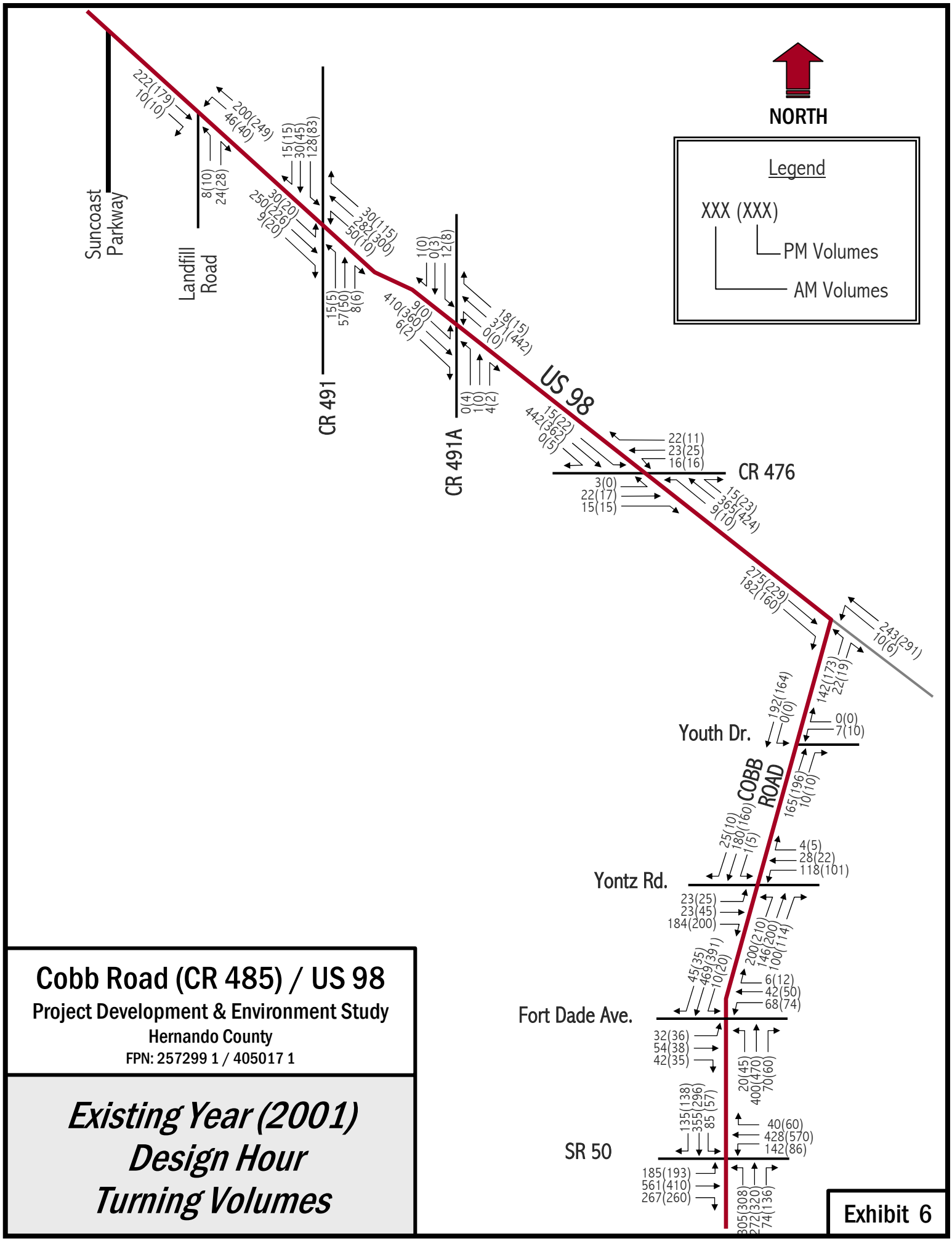
2.4 Intersection Level of Service Analysis

Intersection levels of service were estimated using the Highway Capacity Software (HCS) 2000. In the analysis, existing year (2001) geometric conditions and design hour turning movement traffic volumes with respect to individual intersections were used. Design hour turning movement traffic volumes were developed by applying the K and D factors developed in section 2.2 to the existing year average annual daily traffic (AADT) and balancing the turning movement volumes at each intersection. The developed existing year (2001) design hour turning movement traffic volumes are shown in Exhibit 6. The analysis results for signalized and unsignalized intersections are shown in Table 3 and Table 4, respectively.

Table 3

EXISTING YEAR 2001 LEVELS OF SERVICE AT SIGNALIZED INTERSECTIONS

Intersections	Level of Service	
	AM Peak	*PM Peak*
SR 50 with Cobb Road	**C**	**C**
NB Approach - SR 50	C	C
SB Approach - Cobb Road	C	C
EB Approach - SR 50	C	B
WB Approach - SR 50A	C	C
Cobb Road with US 98	**A**	**A**
NB Approach - Cobb Road	B	B
EB Approach – US 98	A	A
WB Approach – US 98	A	A



Cobb Road (CR 485) / US 98

Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Existing Year (2001) Design Hour Turning Volumes

Exhibit 6

Table 4

EXISTING YEAR 2001 LEVELS OF SERVICE AT UNSIGNALIZED INTERSECTIONS

Intersections	Level of Service	
	AM Peak	*PM Peak*
Fort Dade Avenue with Cobb Road (All Way Stop)	**F**	**F**
NB Approach - Cobb Road	F	F
SB Approach - Cobb Road	F	E
EB Approach - Fort Dade Avenue	B	B
WB Approach - Fort Dade Avenue	B	B
Yontz Road with Cobb Road (Two Way Stop)		
NB Approach - Cobb Road Left Turn	A	A
SB Approach - Cobb Road Left Turn	A	A
EB Approach - Yontz Road	C	D
WB Approach - Yontz Road	D	D
Youth Drive with Cobb Road (Two Way Stop)		
SB Approach - Cobb Road Left Turn	A	A
WB Approach - Youth Drive	A	A
CR 476 with US 98 (Two Way Stop)		
NB Approach - US 98 Left Turn	A	A
SB Approach - US 98 Left Turn	A	A
EB Approach - CR 476	A	A
WB Approach - CR 476	A	A
CR 491A with US 98 (Two Way Stop)		
NB Approach - CR 491A	A	A
SB Approach - CR 491A	A	A
EB Approach - US 98 Left Turn	A	A
WB Approach - US 98 Left Turn	A	A
CR 491 with US 98 (Two Way Stop)		
NB Approach - CR 491	B	A
SB Approach - CR 491	B	B
EB Approach - US 98 Left Turn	A	A
WB Approach - US 98 Left Turn	A	A
Land fill Road with US 98 (Two Way Stop)		
NB Approach – Landfill Road	B	B
WB Approach - US 98 Left Turn	A	A

Note: LOS ratings for Two Way stop controlled intersections reflect the minor street approach LOS and major street left turning movement LOS only.

The HCS intersection LOS analysis sheets for the existing conditions are included in Appendix A.

2.5 Highway Segment Level of Service Analysis

The existing year (2001) highway segment level of service analyses for Cobb Road and US 98 roadway segments within the study area were conducted using the estimated existing year (2001) design hour volumes. The level of service analysis was conducted using the Highway Capacity Software (HCS) 2000. In the analysis, existing geometric conditions and traffic characteristics with respect to individual road segments were used. The results of this roadway segment level of service analysis for the existing conditions are summarized in Table 5. The HCS Two-way Two-lane highway segment LOS analysis sheets for the existing conditions are included in Appendix B.

Table 5

EXISTING YEAR 2001 LEVEL OF SERVICE ON HIGHWAY SEGMENTS

Arterial Segments	Design Hour LOS
Cobb Road	
SR 50 to Fort Dade Avenue	E
Fort Dade Avenue to Yontz Road	D
Yontz Road to Youth Drive	C
Youth Drive to US 98	C
US 98	
Cobb Road to CR 476	C
CR 476 to CR 491A	C
CR 491A to CR 491	C
CR 491 to Landfill Road	C
Landfill Road to Suncoast Parkway	C

2.6 Transit Considerations

Review of available data indicated that no regularly scheduled public transit service currently exists within the project corridor. The Hernando County MPO 2025 Cost Affordable Plan proposes only limited transit service in the Brooksville area and does not include any transit

service along the Cobb Road and US 98 corridor. Local bus service is proposed along US 98 between SR 50 in downtown Brooksville and the area of the existing US 98 and Cobb Road intersection.

2.7 Safety Considerations

Crash data was analyzed for the corridor in two segments: US 98 and Cobb Road. This was done as a consequence of data coming from two different data bases containing two somewhat different levels of detail. For US 98, the state FDOT crash record system was accessed. For Cobb Road, Hernando County's CARS 2000 (Computerized Accident Record System 2000) was utilized.

2.7.1 US 98 Segment - Summary crash data was obtained from the FDOT for the 5-year period of 1995 to 1999. It should be noted that only the crashes which involve injuries, fatalities, or major property damage on roadways with a designated state and/or U.S. route number, are included in the FDOT crash database. The detailed FDOT crash data contains different information on each crash reported such as location, date, time, contributing causes, harmful events, fatalities, injuries, etc. The crash data in summary format for a roadway segment includes total fatalities, injuries, day of week analysis, actual crash ratio, critical crash ratio, safety ratio, economic loss, etc.

The crash records indicated that 48 crashes occurred within the US 98 portion (Suncoast Parkway to Cobb Road) of the project area over the five-year period between 1995 and 1999. This accounts for approximately 10 crashes per year. In addition, during the five-year period, there were two fatalities and 68 injuries. The total crashes for the five-year period accounted for an economic loss of approximately $10,240,400. By far, the highest frequency of crashes during the five-year period was by influence of an intersection (64.6%). More crashes occurred northwest bound (54.2%) than southeast bound (37.5%), although directions for 8.3% of crashes were not reported. Tables 6 through 10 summarize the crash data.

Table 6

CRASH HISTORY OVERVIEW - US 98 SEGMENT

Years	1995	1996	1997	1998	1999	5 Year Total	Average Per Year
Number of Fatalities	1	0	0	1	0	2	0.4
Number of Injuries	25	10	10	13	10	68	13.6
Property Damage Only	2	1	3	3	4	13	2.6
Total Crashes	12	9	8	10	9	48	9.6

As indicated in Table 6, the number of crashes per year, as well as by severity, have held relatively constant over the five-year study period. The one exception, the 25 injuries in 1995, reflects 2 crashes involving 5 and 6 injuries respectively.

Table 7

AVERAGE DAILY TRAFFIC AND CRASH RATES – US 98 SEGMENT

Years	1995	1996	1997	1998	1999	5 Year Total	Average Per Year
ADT	5525	5467	4800	4170	6300	n/a	5252
Actual Crash Rate	.829	.587	.680	.855	.509	n/a	.692
Critical Crash Rate	1.03	1.09	1.12	1.11	.996	n/a	n/a
A/C Ratio	.805	.541	.604	.768	.511	n/a	n/a

Table 7 shows that the average / critical crash rate ratio has remained consistently below one. This indicates that the section of highway has a crash rate somewhat below the statewide average for similar highway types and volumes.

Table 8

CRASH DIAGNOSTICS – US 98 SEGMENT

Years	1995	1996	1997	1998	1999	5 Year Total	Percent of 5 Year Total Crashes
Wet or Slippery	1	1	0	0	2	4	8.3%
Careless Driving	2	3	2	4	2	13	27.1%
Failed to Yield ROW	2	3	3	2	3	13	27.1%
Improper Lane Change	0	0	0	0	0	0	0%
Under the Influence (alcohol/drugs)	0	0	0	1	2	3	6.3%
Disregarded Safety Signal	2	0	1	1	1	5	10.4%
Other	6	3	2	2	1	14	29.2%
Truck	1	1	2	1	1	6	12.5%
At/Infl'd by Intersection	6	6	6	6	7	31	64.6%
Daylight	7	7	5	4	5	28	58.3%
Dusk/Dawn	1	1	0	1	0	3	6.3%
Dark (w/ & w/o street lights)	4	1	3	5	4	17	35.4%
7:00 a.m. to 9:59 a.m.	1	1	2	0	2	6	12.5%
Other a.m.	3	1	2	5	4	15	31.3%
3:00 p.m. to 5:59 p.m.	0	3	3	1	0	7	14.6%
Other p.m.	8	4	1	4	3	20	41.7%
Resident of County	8	8	3	8	6	33	35.5%
Non-Resident of County	18	8	11	11	12	60	64.5%
Direction Northwest bound	6	6	6	2	6	26	54.2%
Direction Southeast bound	6	3	2	5	2	18	37.5%
Direction not Stated	0	0	0	3	1	4	8.3%

Table 8 indicates nearly 65 percent of crashes occurring at or near intersections. Further review found the highest concentrations of crashes to be at the Lake Lindsey Road (CR 476) and Brittle Road (CR 491A) intersections, at the two most significant curves in the study section. Drivers whose residence was outside of Hernando County were represented disproportionably compared to local drivers (65% to 35%). This suggests that local drivers may be more aware of problem areas and adjust their driving accordingly, while more non-local drivers are unfamiliar with, for example, the two intersections located on curves.

Table 9

CRASHES BY HARMFUL EVENT – US 98 SEGMENT

Years	1995	1996	1997	1998	1999	5 Year Total	Percent of 5 Year Total Crashes
Rear End	1	3	0	1	1	6	12.5%
Head On	3	1	0	0	1	5	10.4%
Angle	5	3	5	3	3	19	39.6%
Left Turn	0	0	0	0	1	1	2.1%
Right Turn	0	0	0	0	0	0	0%
Sideswipe	0	0	0	0	0	0	0%
Backed Into	0	0	0	0	0	0	0%
Parked Car	0	0	0	0	0	0	0%
MV Other Road	0	0	0	0	0	0	0%
Pedestrian	0	0	0	0	0	0	0%
Bicycle	0	0	0	0	0	0	0%
Moped	0	0	0	0	0	0	0%
Train	0	0	0	0	0	0	0%
Animal	0	1	0	1	0	2	4.2%
Sign	2	0	0	0	1	3	6.3%
Utility Pole	0	0	0	1	0	1	2.1%
Guardrail	0	0	0	0	0	0	0%
Fence	0	0	0	0	0	0	0%
Bridge/Barrier Wall	0	0	0	0	0	0	0%
Tree/Shrub	0	0	0	1	0	1	2.1%
Const Barricade/Sign	0	0	0	0	0	0	0%
Traffic Gate	0	0	0	0	0	0	0%
Attenuator	0	0	0	0	0	0	0%
Other Fixed Object	0	0	1	0	0	1	2.1%
Ran Into Ditch	0	1	0	1	1	3	6.3%
Ran Off Road	0	0	0	0	0	0	0%
Overturned	1	0	2	1	1	5	10.4%
All Others	0	0	0	1	0	1	2.1%
Total of Overturned and All Run Off Road Types	1	1	2	3	2	9	18.8%

Angle crashes are clearly the most predominant crash type (as shown in Table 9) with 39.6 percent of all crashes. This statistic is consistent with the crash concentration at the two unsignalized intersections. Economic losses associated with these crashes are summarized in Table 10.

Table 10

CRASH COST ANALYSIS – US 98 SEGMENT

Year	Economic Loss
1995	$2,493,400
1996	$1,970,100
1997	$1,684,500
1998	$2,189,000
1999	$1,903,400
AVERAGE CRASH $ LOST PER YEAR	$2,048,000
AVERAGE COST / CRASH	$ 213,300

2.7.2 Cobb Road Segment – Crash records from Hernando County indicate that 53 crashes occurred within the Cobb Road portion of the project study area over the five-year period between 1995 and 1999. This accounts for approximately 10 crashes per year. In addition, during the five-year period, there were 12 injuries and no fatalities. Table 11 indicates that the predominant crashes on Cobb Road involve only property damage (PDO).

Table 11

CRASH HISTORY OVERVIEW – COBB ROAD SEGMENT

Years	1995	1996	1997	1998	1999	5 Year Total	Average Per Year
Number of Fatalities	0	0	0	0	0	0	0
Number of Injuries	3	3	0	2	4	12	2.4
Property Damage Only	12	8	7	8	6	41	8.2
Total Crashes	15	11	7	10	10	53	10.6

Table 12

CRASH DIAGNOSTICS – COBB ROAD SEGMENT

Years	1995	1996	1997	1998	1999	3 Year Total (27)	Percent of 3 Year Total Crashes
No Improper Driving Action	0	0	2	1	1	4	14.8 %
Careless Driving	0	0	2	3	4	9	33.3 %
Failed to Yield Right-of-Way	0	0	0	1	4	5	18.5 %
Improper Backing	0	0	0	0	1	1	3.7 %
Improper Turn	0	0	1	1	0	2	7.4 %
Disregarded Stop Sign	0	0	0	1	0	1	3.7 %
Failed to Maintain Equipment / Vehicle	0	0	1	0	0	1	3.7 %
Unknown	15	11	1	3	0	4	14.8 %
Daylight	0	0	3	6	8	17	63.0 %
Dark (Street Light)	0	0	0	0	1	1	3.7 %
Dark (No Street Light)	0	0	3	1	1	5	18.5 %
Unknown	15	11	1	3	0	4	14.8 %
Dry	0	0	6	7	7	20	37.7 %
Wet	0	0	0	0	3	3	5.7 %
Unknown	15	11	1	3	0	4	14.8 %

Many unknowns were reported for Contributing Cause, Lighting Condition and Roadway Surface Condition in the years 1995 and 1996. Therefore, a three-year average (1997, 1998 and 1999) was used for those parameters, based on a total of 27 crashes. Based on the three-year averages, crashes on Cobb Road are most frequently a result of careless driving in the daylight and in dry conditions.

Table 13

CRASHES BY HARMFUL EVENT – COBB ROAD SEGMENT

Years	1995	1996	1997	1998	1999	5 Year Total	Percent of 5 Year Total Crashes
Rear End Collision	2	1	0	3	1	7	13.2 %
Right Angle Collision	9	5	1	4	2	21	39.6 %
Left Turn Collision	0	0	1	0	1	2	3.8 %
Right Turn Collision	0	0	0	1	1	2	3.8 %
Sideswipe Collision	0	0	0	1	0	1	1.9 %
Backed into Collision	0	0	1	0	1	2	3.8 %
Collision w/ Pedestrian	0	0	0	0	1	1	1.9 %
Collision w/ Animal	1	1	0	0	0	2	3.8 %
MV Hit Utility / Light Pole	0	0	0	0	1	1	1.9 %
MV Hit Fence	1	0	1	0	0	2	3.8 %
MV Hit Crash Attenuator	0	0	0	0	1	1	1.9 %
MV Hit Other Fixed Object	1	0	0	0	0	1	1.9 %
MV Hit Movable Object in Road	0	0	1	0	0	1	1.9 %
MV Ran Into Ditch / Culvert	0	0	1	0	0	1	1.9 %
MV Overturned	0	1	1	0	1	3	5.7 %
All Other…	1	3	0	1	0	5	9.4 %

Table 13 shows the most significant crash type to be right angles followed by rear end crashes. Further review of the crash detail lists found that, of the 53 total crashes, 39 occurred at 3 locations: Yontz Road (13), SR 50 Road (13) and Fort Dade Road (13). No other crash type stands out as significant.

Economic losses associated with these crashes along Cobb Road for the analysis period are shown in Table 14.

Table 14

CRASH COST ANALYSIS – COBB ROAD SEGMENT

Year	Economic Loss
1995	$35,700
1996	$31,180
1997	$21,450
1998	$56,875
1999	$39,250
AVERAGE CRASH $ LOST PER YEAR	$36,891
AVERAGE COST / CRASH	$ 3,480

Comparison of Tables 10 and 14 shows major differences in economic losses for US 98 and Cobb Road. This is due to the fact that the two crash reporting systems calculated economic loss very differently. The state system is based on statewide averages for types of crashes (PDO, injury and fatalities) including medical and other societal costs, whereas the CARS 2000 system lists only the vehicle damage estimates included in the crash report completed by law enforcement personnel.

2.7.3 Other Safety Considerations

There are two railroad crossings within the project corridor: an abandoned crossing south of Lake Lindsey Road and an active crossing immediately north of Yontz Road. School buses associated with the nearby Parrott Middle School (and potentially others) use this crossing daily.

3. DEVELOPMENT OF FUTURE TRAFFIC

The Tampa Bay Regional Planning Model (TBRPM) Version 4.0 was used as a baseline to forecast travel demand for the Cobb Road (CR 485) / US 98 PD&E Project, from SR 50 to the Suncoast Parkway, Hernando County. The TBRPM is a travel demand model used to forecast long-term travel demand for highways and transit facilities in Hillsborough, Pinellas, Pasco, Hernando, and Citrus Counties. It also includes Lakeland and Port Manatee areas to show the trip interchange between these areas and the Tampa Bay Region. The TBRPM was developed by the FDOT District Seven in cooperation with the Hillsborough County, Pinellas County, Pasco County, and Hernando County MPOs. The model was designed to be sensitive to changes in land use and transportation characteristics.

3.1 1999 Model Validation

At a system level, FDOT has requested that the TBRPM Version 4.0, as validated for use in long range transportation planning, be used for this study to ensure the coordination of this project with other area PD&E projects, such as the Suncoast Parkway Project 2 and the widening of US 19 in Citrus County. FDOT has certified that the TBRPM Version 4.0 is validated for use in long range transportation planning. As a result, there was no need to adjust the systemwide parameters of the model for this study.

The next step in model validation for this corridor project was to review the model performance in the study area. As part of this study, the model performance in Hernando County was reviewed to determine if the model reproduced traffic demand for selected individual roadways in the study area. For this process, 1999 model traffic results were adjusted from peak season (January – April) traffic to annual average daily traffic (AADT) and compared with observed 1999 traffic counts at various FDOT count stations and Hernando County counts.

A comparison of the 1999 TBRPM model results with the observed 1999 AADT counts is presented in Table 15. From a review of this data, one Cobb Road (CR 485) count location has

lower model estimated volumes than the actual counts. However, the 1999 TBRPM seems to slightly overestimate traffic at several other count locations.

Table 15. 1999 AADT Comparison of TBRPM Forecast Volumes with 1999 Observed Traffic Counts

Road Count Location	Number of Lanes	Model 1999 Volumes	1999 Traffic Counts	Volume Difference	Model Volume/Count Ratio
US 98 / SR 700					
South of Citrus County Line	2	4,250	3,400	850	1.25
SE of CR 491/Citrus Way	2	8,700	6,100	2,600	1.43
North of Yontz Road	2	6,200	5,700	500	1.09
Cobb Road / CR 485					
North of Yontz Road[1]	2	3,350	3,100	250	1.08
North of Ft. Dade Ave.[1]	2	5,500	7,100	(1,600)	0.77
SR 50 / Cortez Blvd.					
West of Cobb Road/CR 485	2	15,700	14,500	1,200	1.08
Citrus Way / CR 491					
North of US 98[1]	2	5,050	3,700	1,350	1.36
South of US 98[1]	2	1,900	1,000	900	1.90
Lake Lindsey Road / CR 476					
West of US 98	2	1,250	700	550	1.79
East of US 98[1]	2	1,900	1,250	650	1.52
Yontz Road					
Cobb Road to US 98[1]	2	2,600	2,750	(150)	0.95
Fort Dade Avenue					
Citrus Way to Cobb Road[1]	2	2,700	2,300	400	1.17

Note: [1] 1999 County count volumes were estimated based on actual 1998 and 2000 counts.

Based on this comparison, the model volumes compare reasonable well. Although some percentages seem high, the absolute volume differences are generally less 1,600 trips a day or less than 160 trips during the peak hour.

There are some minor network adjustments needed to better match existing conditions and centroid loadings. As part of this refinement, network adjustments from the 2025 long range plan in Hernando County were reviewed as well as centroid locations and loading points. Based on these reviews, the following adjustments to the base 1999 model network were made:

- The centroid connector for traffic analysis zone (TAZ) 1822 from the mining area west of Cobb Road is moved to the Yontz Road node to represent the main access point to this area. The connector to CR 476 is also relocated to reflect existing access locations.
- A new centroid connector for TAZ 1834 from the rock mine northeast of US 98 is added and connected to the Brittle Road / US 98 intersection to better represent access from this centroid.
- The centroid for TAZ 1816, located west of CR 491 and south of US 98, and its centroid connectors are relocated to better reflect existing access to US 98, CR 491 and Centralia Road for area businesses and residents.
- The centroid for TAZ 1823, located east of Cobb Road, west of US 98 and north of Yontz Road is relocated to better reflect loadings from the Dolores S. Parrott Middle School, the Pasco-Hernando Community College and area businesses and residents.
- The area type (AT) on Cobb Road south of the Dolores S. Parrott Middle School and Yontz Road is changed from AT 52 (undeveloped rural areas) to AT 51 (developed rural areas).
- The facility type (FT) on Cobb Road from US 98 to SR 50 is changed from FT 43 (Collector – Major Local Undivided) to FT 32 (Undivided Arterial Bays Urban Class 1a) to reflect the truck route nature on the existing roadway.
- CR 491A and CR 476 in the vicinity of US 98 were relocated to better match existing alignment and the 2025 network.

By applying these network changes, the revised 1999 TBRPM reasonably matched the 1999 observed traffic counts. A comparison of the revised 1999 model results with the observed 1999 traffic counts is presented in Table 16. This table shows that although some percentage differences seem high, the absolute volume differences again are generally less than 1,600 trips a day or less than 160 trips during the peak hour. Also from a review of the 1997 to 2001 traffic data along US 98 near CR 491, the traffic volumes vary by about 2,000 vehicles per day with counts of 8,100 vehicles in 1998, 6,100 vehicles in 1999, 6,400 vehicles in 2000 and estimated at 7,900 vehicles in 2001. Similarly for US 98 north of Yontz Road, there is a 1,500 vehicles difference between the 1998 volume count of 7,200 vehicles and a 1999 volume count of 5,700

vehicles. Based on this review, the modified 1999 model seems to reasonably reflect existing conditions.

Table 16. 1999 AADT Comparison of the Revised TBRPM Forecast Volumes with the 1999 Observed Traffic Counts

Road Count Location	Number of Lanes	Revised 1999 Model Volumes	1999 Traffic Counts	Volume Difference	Model Volume/Count Ratio
US 98 / SR 700					
South of Citrus County Line	2	4,400	3,400	1,000	1.29
SE of CR 491/Citrus Way	2	8,900	6,100	2,800	1.46
North of Yontz Road	2	7,300	5,700	1,600	1.28
Cobb Road / CR 485					
North of Yontz Road[1]	2	2,550	3,100	500	0.82
North of Ft. Dade Ave.[1]	2	6,850	7,100	(250)	0.96
SR 50 / Cortez Blvd.					
West of Cobb Road/CR 485	2	16,000	14,500	1,500	1.10
Citrus Way / CR 491					
North of US 98[1]	2	4,950	3,700	1,250	1.34
South of US 98[1]	2	850	1,000	(150)	0.85
Lake Lindsey Road / CR 476					
West of US 98	2	1,600	700	900	2.29
East of US 98[1]	2	1,850	1,250	600	1.48
Yontz Road					
Cobb Road to US 98[1]	2	2,800	2,750	(50)	1.02
Fort Dade Avenue					
Citrus Way to Cobb Road[1]	2	2,550	2,300	250	1.11

Note: [1] 1999 County count volumes were estimated based on actual 1998 and 2000 counts.

3.2 Future Year 2025 Model Review

The model review process for corridor analysis is not complete without a review of the historical traffic growth along the corridor and a review of the baseline future year model forecasts to ensure that the model will act properly with future year socio-economic activity levels.

3.2.1 Historical Traffic Growth along the Corridor – The historical growth was estimated at the four FDOT count stations within the study area. The 6-year and 12-year average traffic growth rates were calculated by averaging the three-year volumes around 1999, 1993 and 1987 where data is available. The compounded average annual traffic growth rates for each period were also calculated.

The results of this analysis are shown in Table 17. From a review of the data, growth on the state highways in the study area has been fluctuating with increased volumes for some years and decreased volumes in others. Overall, the average traffic growth rates at the count stations have been showing a decrease. However, this historical count data was taken prior to the opening of the Suncoast Parkway Section One. Forecast of socio-economic variables in the area indicate modest area growth in future years that will also add to increased traffic in the area.

3.2.2 Future Year 2025 Volumes - To determine if the model will forecast reliable future year volumes, estimates of the future 2025 traffic volumes were made using the 2025 socio-economic data and the 2025 cost-affordable, long range transportation network. The Hernando County MPO developed this information in conjunction with FDOT.

The 2025 model network was revised to include the same refinements that were made for the 1999 corridor validation effort. In addition, the following refinements were made to reflect the Cobb Road / US 98 no-build conditions in the project area:

- US 98 from the Suncoast Parkway to Cobb Road was changed to reflect existing 1999 conditions.
- Cobb Road from US 98 to SR 50 was changed to reflect existing 1999 conditions.
- The US 98/Suncoast Parkway interchange was revised to reflect current conditions and appropriate turn prohibitors were added.

Table 17. 1986 – 2001 Historical Traffic Growth Rates at the FDOT Count Stations

	Traffic Volumes at FDOT Count Stations							
	US 98 South of Citrus Co. Line (Sta. 5308)				US 98 South of CR 491 (Sta. 11)			
YEAR	ADT	3-year Average	6 / 12 Year Growth	6/12 Year Annual Growth	ADT	3-year Average	6 / 12 Year Growth	6/12 Year Annual Growth
2001	3,700				7,900			
2000	3,500				6,400			
1999	3,400	3,400			6,100	6,900		
1998	3,300				8,100			
1997	3,400				7,900			
1996	3,200		**3.0%**	**0.5%**	6,600		**-9.2%**	**-1.6%**
1995	3,200		1993- 99	1993- 99	6,400		1993- 99	1993- 99
1994	3,500		6-year		7,000		6-year	6-year
1993	3,300	3,300			8,000	7,600		
1992	3,100				7,800			
1991	NA				6,500			
1990	NA				NA		**3.0%**	**0.25%**
1989	NA				NA		1987- 99	1987- 99
1988	NA				6,800		12-year	12-year
1987	NA				6,800	6,700		
1986	NA				6,400			
	US 98 North of Yontz Road (Sta. 10)				SR 50 West of Cobb Road (Sta. 47)			
YEAR	ADT	3-year Average	6 / 12 Year Growth	6/12 Year Annual Growth	ADT	3-year Average	6 / 12 Year Growth	6/12 Year Annual Growth
2000	5,900				15,500			
1999	5,700	6,300			14,500	14,100		
1998	7,200				12,300			
1997	6,600				16,300			
1996	6,200		**-29.2%**	**-5.6%**	16,100		**-2.8%**	**-0.5%**
1995	5,900		1993- 99	1993- 99	15,800		1993- 99	1993- 99
1994	6,900		6-year	6-year	15,000		6-year	6-year
1993	10,000	8,900			14,500	14,500		
1992	9,900				14,000			
1991	12,800				16,900			
1990	NA		**-26.7%**	**-2.6%**	NA		**-16.6%**	**-1.5%**
1989	NA		1987- 99	1987- 99	NA		1987- 99	1987- 99
1988	8,200		12-year	12-year	17,500		12-year	12-year
1987	8,400	8,600			16,600	16,900		
1986	9,300				16,500			

Using these data sets and the validated TBRPM model including the extension of the Suncoast Parkway Phase 2, 2025 traffic assignments were made to the study area highway network. The 2025 volumes were then compared with the revised 1999 model results to determine future year growth. The total traffic growth rate and the average annual traffic growth rate at the various count locations in the study area are shown in Table 18.

Table 18. 1999 and 2025 AADT Comparison of the Revised TBRPM Forecast Volumes

Road Count Location	Number of Lanes	Revised 2025 Model Volumes	Revised 1999 Model Volumes	Model Growth 1999 to 2025	Percent Growth 1999 – 2025	Average Annual Growth 1999 – 2025
US 98 / SR 700						
South of Citrus County Line	2	9,850	4,400	5,450	124%	3.2%
SE of CR 491/Citrus Way	2	10,300	8,900	1,400	16%	0.6%
North of Yontz Road	2	5,650	7,300	-1,650	-23%	-0.1%
Cobb Road / CR 485						
North of Yontz Road	2	6,700	2,550	4,150	163%	3.8%
North of Ft. Dade Ave.	2	10,700	6,850	3,850	56%	1.7%
SR 50 / Cortez Blvd.						
West of Cobb Road/CR 485.	2	27,100	16,000	11,100	69%	2.0%
Citrus Way / CR 491						
North of US 98	2	3,500	4,950	-1,450	-29%	-1.3%
South of US 98	2	1,750	850	900	106%	2.8%
Lake Lindsey Road / CR 476						
West of US 98	2	2,000	1,600	400	25%	0.9%
East of US 98	2	3,300	1,850	1,450	78%	2.2%
Yontz Road						
Cobb Road to US 98	2	3,400	2,800	600	21%	0.7%
Fort Dade Avenue						
Citrus Way to Cobb Road	2	4,800	2,550	2,250	88%	2.5%

From a review of these growth rates, traffic on the primary roadways is expected to grow by about an average of 1.6 percent per year through 2025. The projected average annual growth rates at the various count locations are higher than the historical traffic growth rates for the study area. However, modest growths in population and employment are expected to increase the relatively low existing traffic levels. The larger growth rate of US 98 south of the Citrus County Line is caused by the new interchange of the Suncoast Parkway and access to US 19 and US 41.

4. FUTURE CONDITIONS

The future year traffic conditions were developed and analyzed for the study area along US 98 and Cobb Road in Hernando County. Using the validated travel demand model described in the previous section as well as future year socio-economic data and transportation system, the operational conditions for each alternative including the no-build conditions were analyzed. A summary of this information and analyses is presented below.

4.1 Planned Improvements

The current Cost Affordable *2025 LRTP,* as developed by the Hernando County MPO and FDOT, was used as the future year base transportation network. This network included the various highway and transit improvements that could be implemented by the various jurisdictions and agencies over the next twenty years. These improvements are documented in the *2025 LRTP* for Hernando County.

4.2 No-Build 2025 AADT Volumes and Capacity Analysis

The year 2025 was selected as the design year for future year traffic analysis. The current TBRPM traffic model calculates 2025 peak season traffic volumes. To convert the peak season model results to annual average daily traffic (AADT) volumes, the Hernando countywide model conversion factor (MOCF) of 0.94 was used. Using the current TBRPM traffic model with the 2025 socio-economic data and the base transportation network, the 2025 No-Build Alternative AADT volumes were developed by applying the above adjustment factors.

The base transportation network was developed by including the same refinements that were made for the 1999 corridor validation effort. In addition, the following refinements were made to reflect the no-build conditions along the project corridor:

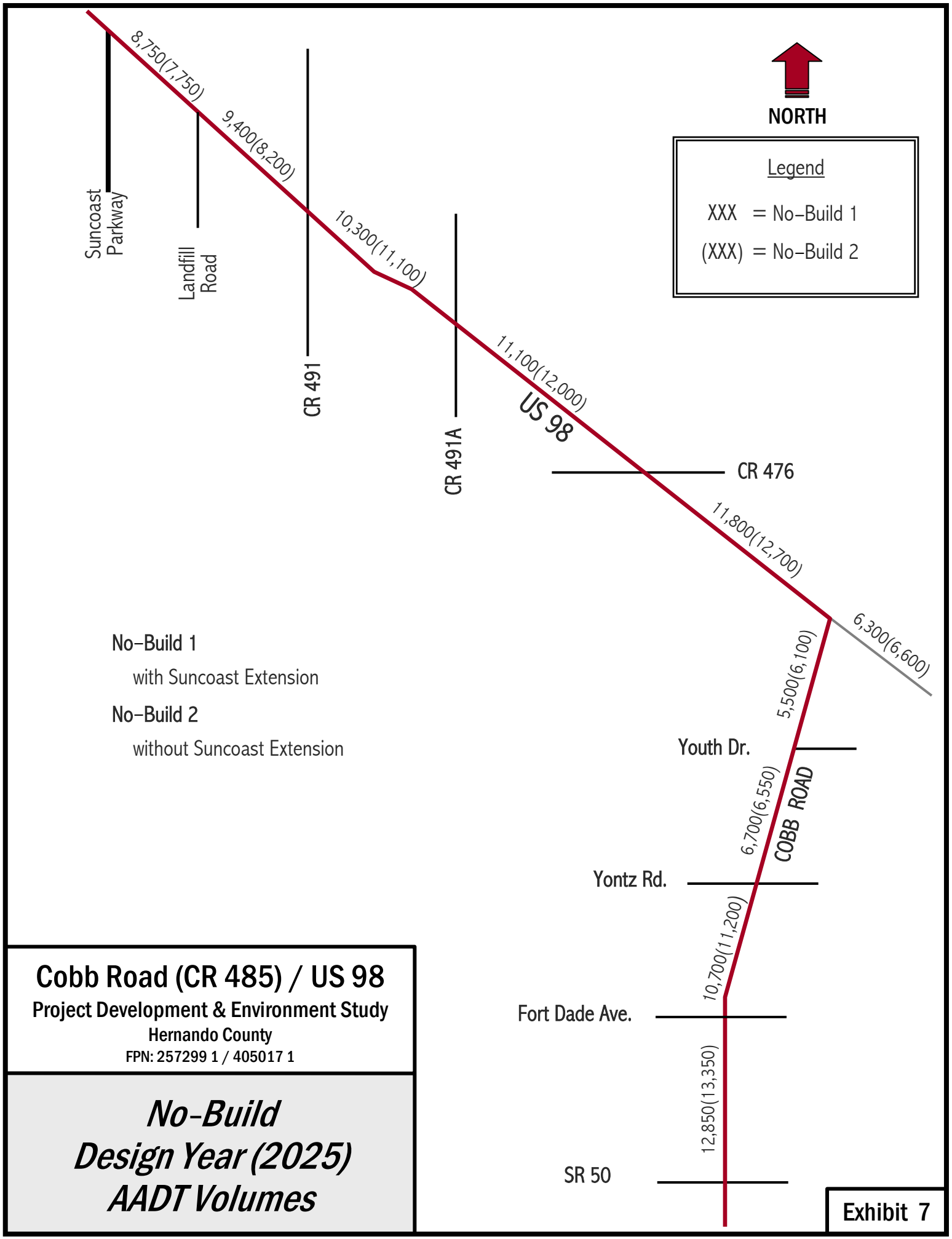
- US 98 from the Suncoast Parkway to Cobb Road was changed to reflect existing 1999 conditions.
- Cobb Road from US 98 to SR 50 was changed to reflect existing 1999 conditions.

- The US 98/Suncoast Parkway interchange was revised to reflect current conditions and appropriate turn prohibitors were added.

To examine the effect of the Suncoast Parkway Phase 2 Extension through Citrus County, a second No-Build Alternative was also analyzed that did not include this extension of the Suncoast Parkway. The 2025 AADT volumes and level of service ratings for the two No-Build Alternatives are shown on Exhibit 7.

The level of service ratings for these volumes were developed by comparing the 2025 AADT volumes with the threshold volumes from Table 4-3 of the 2002 FDOT Level of Service Handbook. However, to account for the high truck percentage on the study area roads either the level of service threshold values should be adjusted or the AADT volumes should be adjusted to equivalent passenger cars. To account for the existing average truck percentage of 16.75 percent, as discussed in Section 2.3, the level of service threshold values were adjusted using FDOT's HIGHPLAN version 1.0.2. These adjusted threshold values were used to estimate the level of service ratings.

The comparison of the AADT volumes and level of service ratings for the two No-Build Alternatives are shown in Table 19.



Cobb Road (CR 485) / US 98

Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

No-Build Design Year (2025) AADT Volumes

Exhibit 7

Table 19. Comparison of No-Build Alternatives: 2025 AADT Volumes and Level of Service

Road Count Location	Number of Lanes	No-Build Alternative 1 (With Suncoast Parkway Project 2)		No-Build Alternative 2 (Without Suncoast Parkway Project 2)	
		Model Volumes	Level of Service	Model Volumes	Level of Service
US 98 / SR 700					
South of Suncoast Pkwy.	2	8,750	D	7,750	C
SE of CR 491/Citrus Way	2	10,300	D	11,100	D
North of Cobb Road	2	11,800	D	12,700	D
Cobb Road / CR 485					
North of Yontz Road	2	6,700	C	6,550	C
North of Ft. Dade Ave	2	10,700	D	11,200	D
North of SR 50.	2	12,850	D	13,350	D

This comparison of the two No-Build Alternatives indicates that the extension of the Suncoast Parkway has minimal impact (less than 1,000 two-way vehicle trip increase per day or less than a 100 two-way vehicle trip increase in the peak hour) on the future 2025 traffic volumes on Cobb Road and US 98 in the study area. As a result of this analysis, future comparisons will use the No-Build Alternative with the Suncoast Parkway Phase 2 extension through Citrus County as its base condition to be consistent with the other area planning studies.

The level of service analysis indicates that Cobb Road and US 98 will be experiencing some increased congestion by 2025, especially as Cobb Road approaches Cortez Boulevard (SR 50) and US 98 approaches Cobb Road.

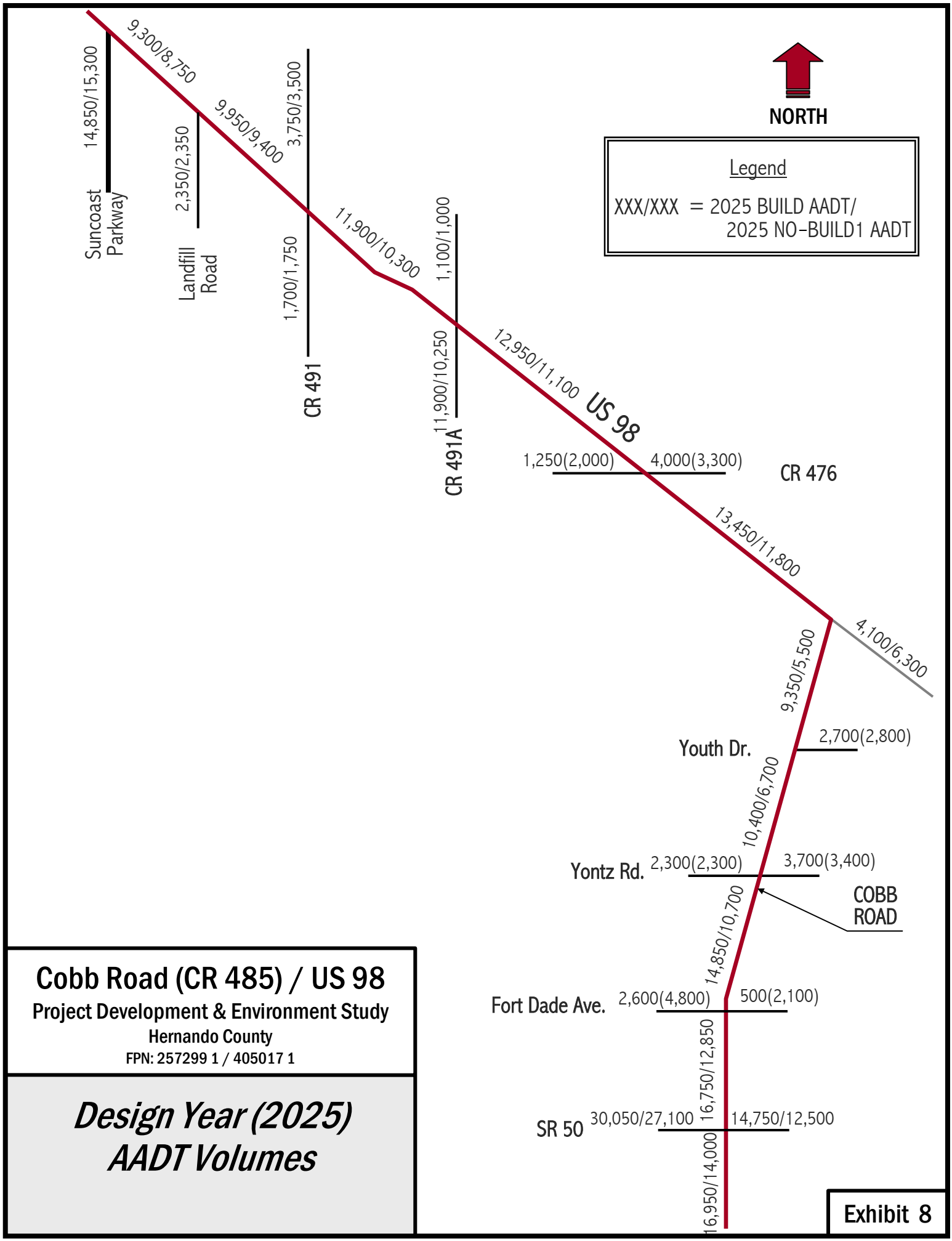
4.3 Build Alternative

Improvements to the existing two-lane rural facilities along US 98 between the Suncoast Parkway and Cobb Road and along Cobb Road from US 98 to SR 50 to a 4-lane divided facility was identified as part of the 2025 Needs Plan in Hernando County. The widening of these

facilities was identified because of the heavy truck activity along the route and increased area development. This Build Alternative also assumes that the Suncoast Parkway will be extended through Citrus County and other planned improvements identified in the County's Cost Affordable Plan have been implemented.

4.4 2025 AADT Volumes and Capacity Analysis for the Preliminary Design Alternative

Using the current TBRPM traffic model with the 2025 socio-economic data, the base transportation network and alternative improvements, the 2025 AADT volumes for the Build Alternative were developed. The 2025 AADT volumes for the Build Alternative are shown in Exhibit 8 and are summarized in Table 20. The No-Build Alternative volumes and level of service ratings are also shown for comparison purposes. The level of service ratings, were developed by comparing the 2025 AADT volumes with the adjusted (to account for the 16.75 percent truck factor) threshold volumes from Table 4-3 of the 2002 FDOT Level of Service Handbook.



Cobb Road (CR 485) / US 98

Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Design Year (2025) AADT Volumes

Exhibit 8

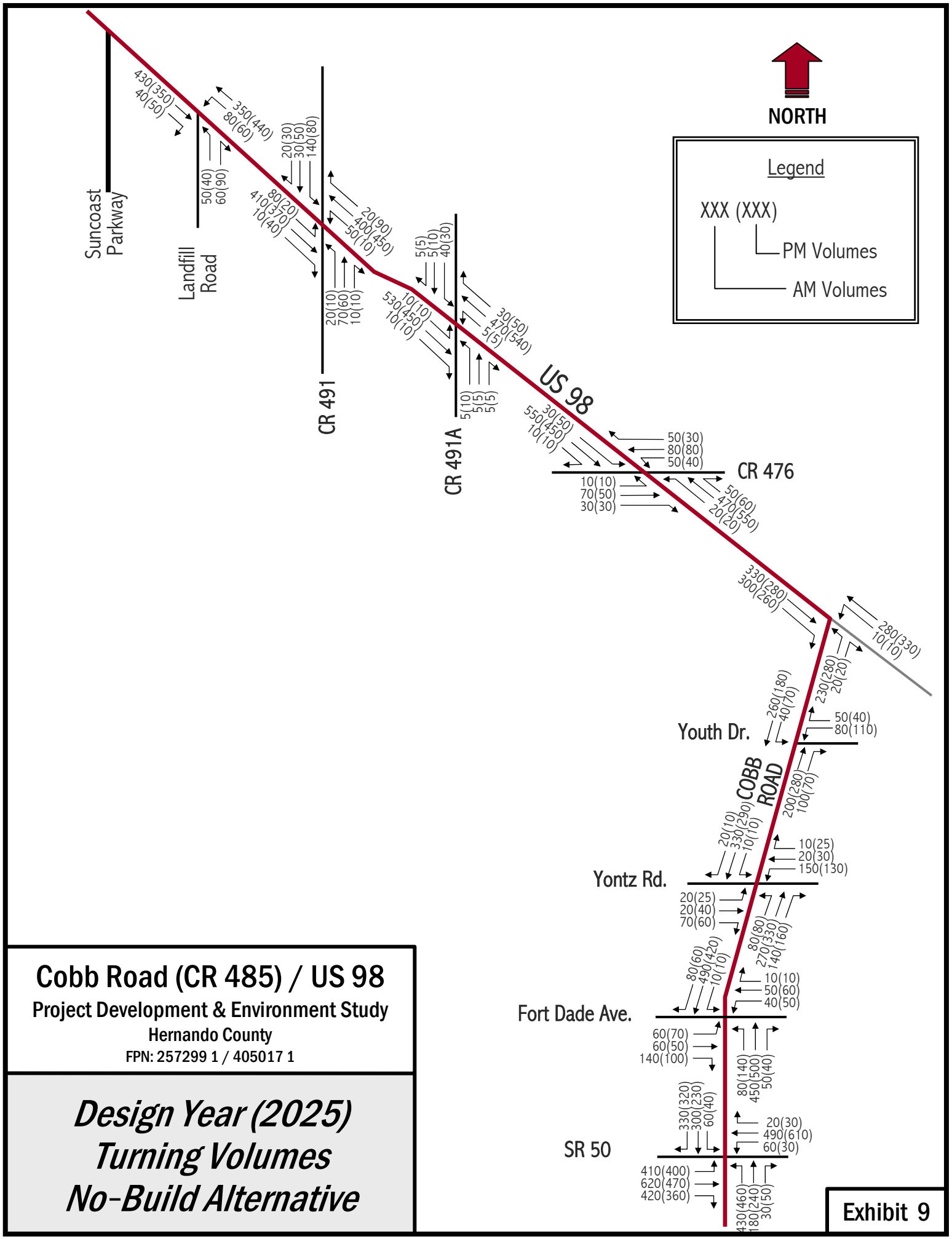
Table 20. Comparison of Build And No-Build Alternative 1: 2025 AADT Volumes and Level of Service

Road Count Location	Number of Lanes Build / No-Build	Build Alternative (With Suncoast Parkway Project 2)		No-Build Alternative 1 (With Suncoast Parkway Project 2)	
		Model Volumes	Level of Service	Model Volumes	Level of Service
US 98 / SR 700					
South of the Suncoast Pkwy	4/ 2	9,300	A	8,750	D
SE of CR 491/Citrus Way	4 / 2	11,900	A	10,300	D
North of Cobb Road	4 / 2	13,450	A	11,800	D
Cobb Road / CR 485					
North of Yontz Road	4/ 2	10,400	A	6,700	C
North of Ft. Dade Ave	4 / 2	14,850	A	10,700	D
North of SR 50.	4 / 2	16,750	B	12,850	D

Based on the generalized level of service analysis, when Cobb Road and US 98 are widened to divided 4-lane facilities, the general daily level of service will be improved.

4.5 2025 Design Hour Volumes

Design year 2025 A.M. and P.M. peak hour volumes were derived by first multiplying the AADT volumes by a K_{30} factor of 9.9 percent and a D_{30} factor of 54 percent and then distributing the peak and off-peak direction link volumes. The existing year (2001) intersection turning movement volumes were used to help derive the 2025 peak hour intersection turning volumes. The developed turning movement volumes were then balanced using Fratar's method to capture the future travel patterns. For Cobb Road and US 98, the peak travel directions in the year 2025 were assumed to be southbound in the A.M. peak hour and northbound in the P.M. peak hour consistent with the existing year (2001) peak hour travel directions. For the cross streets the respective existing year (2001) A.M. and P.M. peak hour directions were assumed to be the same as the year 2025 peak hour directions. The 2025 peak hour volumes developed for the Cobb Road and US 98 corridor No-Build and Build Alternatives are illustrated in Exhibits 9 and 10 respectively.



Cobb Road (CR 485) / US 98

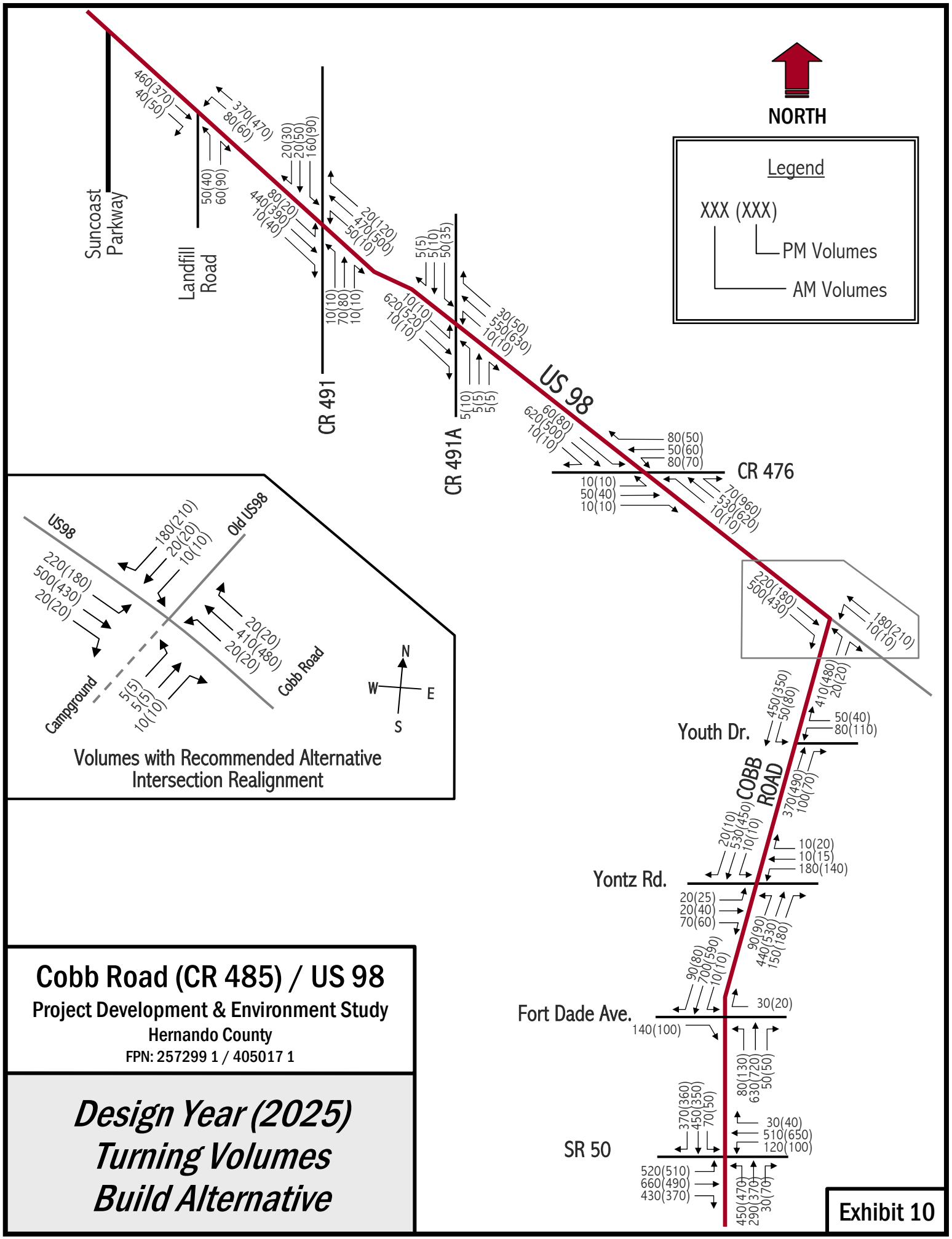
Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Design Year (2025) Turning Volumes No-Build Alternative

Exhibit 9



Cobb Road (CR 485) / US 98

Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Design Year (2025) Turning Volumes Build Alternative

Exhibit 10

4.6 Intersection Level of Service Analysis

Using the 2025 design hour volumes discussed in Section 4.5 of this report, level of service analyses were conducted for both the No-Build and the Build Alternatives. Level of service analyses were conducted for the signalized and unsignalized intersections using the 2000 HCS. No-Build Alternative intersection level of service analysis was conducted with the assumption that no corridor or intersection improvements would be made before the year 2025. The existing year (2001) geometric conditions at the intersections were considered for the analysis. The analysis results for signalized and unsignalized intersections are shown in Table 21 and Table 22 respectively. The HCS intersection LOS analysis sheets for the no-build conditions are included in Appendix C.

Table 21. Design Year 2025 Levels of Service at Signalized Intersections - No-Build Alternative

Intersections	Level of Service	
	AM Peak	***PM Peak***
SR 50 with Cobb Road	**E**	**E**
NB Approach - SR 50	E	D
SB Approach - Cobb Road	E	D
EB Approach - SR 50	E	E
WB Approach - SR 50A	C	E
Cobb Road with US 98	**A**	**A**
NB Approach - Cobb Road	B	B
EB Approach – US 98	A	A
WB Approach – US 98	A	A

Table 22. Design Year 2025 Levels of Service at Unsignalized Intersections - No-Build Alternative

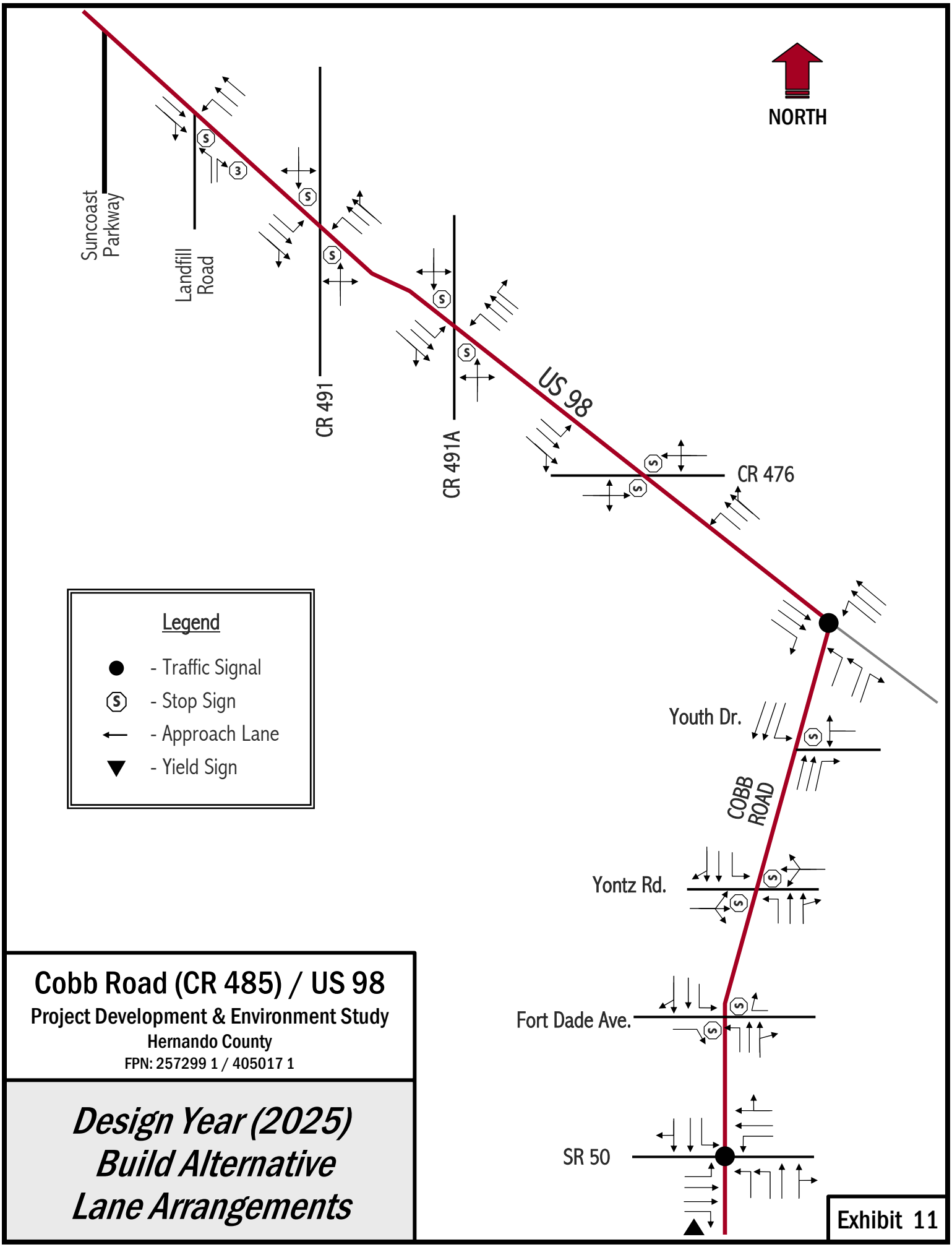
Intersections	Level of Service	
	AM Peak	*PM Peak*
Fort Dade Avenue with Cobb Road (All Way Stop)	**F**	**F**
NB Approach - Cobb Road	F	F
SB Approach - Cobb Road	F	E
EB Approach - Fort Dade Avenue	C	C
WB Approach - Fort Dade Avenue	C	C
Yontz Road with Cobb Road (Two Way Stop)		
NB Approach - Cobb Road Left Turn	A	A
SB Approach - Cobb Road Left Turn	A	A
EB Approach - Yontz Road	C	D
WB Approach - Yontz Road	D	D
Youth Drive with Cobb Road (Two Way Stop)		
SB Approach - Cobb Road Left Turn	A	A
WB Approach - Youth Drive	A	A
CR 476 with US 98 (Two Way Stop)		
NB Approach - US 98 Left Turn	A	A
SB Approach - US 98 Left Turn	A	A
EB Approach - CR 476	C	C
WB Approach - CR 476	E	D
CR 491A with US 98 (Two Way Stop)		
NB Approach - CR 491A	A	A
SB Approach - CR 491A	A	A
EB Approach - US 98 Left Turn	A	A
WB Approach - US 98 Left Turn	A	A
CR 491 with US 98 (Two Way Stop)		
NB Approach - CR 491	B	B
SB Approach - CR 491	F	C
EB Approach - US 98 Left Turn	A	A
WB Approach - US 98 Left Turn	A	A
Land fill Road with US 98 (Two Way Stop)		
NB Approach – Landfill Road	C	C
WB Approach - US 98 Left Turn	A	A

Note: LOS ratings for Two Way stop controlled intersections reflect the minor street approach LOS and major street left turning movement LOS only.

Build Alternative intersection level of service analysis was conducted with intersection improvements planned in addition to widening Cobb Road and US 98 to four lanes under the Build Alternative conditions. The proposed intersection lane arrangements are shown in Exhibit 11. The analysis results for signalized and unsignalized intersections are shown in Table 23 and Table 24 respectively. The HCS intersection LOS analysis sheets for the build conditions are included in Appendix D. As indicated in the tables, all the intersections with exception of the intersection of Cobb Road with SR 50 operate with adequate level of service conditions. The SR 50 intersection with Cobb Road operates with level of service F lower than the no-build condition level of service E. This is due to induced or diverted traffic. However, this level of service condition can be improved to D with the provision of dual left-turn lanes at the eastbound approach of the intersection. Since, the project limit is immediately north of SR 50 intersection, it is suggested that the operation and geometry of this intersection be re-examined as part of the upcoming SR 50 study.

Table 23. Design Year 2025 Levels of Service at Signalized Intersections – Build Alternative

Intersections	Level of Service	
	AM Peak	***PM Peak***
SR 50 with Cobb Road (With Existing Lane Arrangement)	**F**	**F**
NB Approach - SR 50	F	F
SB Approach - Cobb Road	F	F
EB Approach - SR 50	F	F
WB Approach - SR 50A	C	E
SR 50 with Cobb Road (With Dual Eastbound Left-Turn Lanes)	**D**	**D**
NB Approach - SR 50	E	D
SB Approach - Cobb Road	D	D
EB Approach - SR 50	E	C
WB Approach - SR 50A	C	D
Cobb Road with US 98	**A**	**A**
NB Approach - Cobb Road	B	B
EB Approach – US 98	A	A
WB Approach – US 98	A	A



Cobb Road (CR 485) / US 98

Project Development & Environment Study

Hernando County

FPN: 257299 1 / 405017 1

Design Year (2025) Build Alternative Lane Arrangements

Exhibit 11

Table 24. Design Year 2025 Levels of Service at Unsignalized Intersections - Build Alternative

Intersections	Level of Service	
	AM Peak	*PM Peak*
Fort Dade Avenue with Cobb Road (Two Way Stop)		
NB Approach - Cobb Road Left Turn	B	B
SB Approach - Cobb Road Left Turn	A	B
EB Approach - Fort Dade Avenue	B	B
WB Approach - Fort Dade Avenue	B	B
Yontz Road with Cobb Road (Two Way Stop)		
NB Approach - Cobb Road Left Turn	A	A
SB Approach - Cobb Road Left Turn	A	A
EB Approach - Yontz Road	A	A
WB Approach - Yontz Road	E	D
Youth Drive with Cobb Road (Two Way Stop)		
SB Approach - Cobb Road Left Turn	A	A
WB Approach - Youth Drive	A	B
CR 476 with US 98 (Two Way Stop)		
NB Approach - US 98 Left Turn	A	A
SB Approach - US 98 Left Turn	A	B
EB Approach - CR 476	A	A
WB Approach - CR 476	B	B
CR 491A with US 98 (Two Way Stop)		
NB Approach - CR 491A	A	A
SB Approach - CR 491A	A	A
EB Approach - US 98 Left Turn	A	A
WB Approach - US 98 Left Turn	A	A
CR 491 with US 98 (Two Way Stop)		
NB Approach - CR 491	B	B
SB Approach - CR 491	D	B
EB Approach - US 98 Left Turn	A	A
WB Approach - US 98 Left Turn	A	A
Landfill Road with US 98 (Two Way Stop)		
NB Approach – Landfill Road	B	B
WB Approach - US 98 Left Turn	A	A

Note: LOS ratings for Two Way stop controlled intersections reflect the minor street approach LOS and major street left turning movement LOS only.

4.7 Highway Segment Level of Service Analysis

The design year (2025) highway segment level of service analyses for Cobb Road and US 98 roadway segments within the study area were conducted using the projected design year (2025) design hour volumes. The level of service analysis was conducted using the Highway Capacity Software (HCS) 2000 for both No-Build and Build Alternatives. For the No-Build Alternative, Cobb Road and US 98 are defined to be two-lane undivided rural facilities. The roadway segment level of service analyses were conducted using the methodology documented in Chapter 20 of the 2000 Highway Capacity Manual. The HCS Two-way Two-lane highway segment LOS analysis sheets for the No-Build conditions are included in Appendix E. The results of this roadway segment level of service analysis for the No-Build conditions are summarized in Table 25. As indicated in Table 25, the entire two-lane roadway segments of US 98 in the project corridor are projected to operate at level of service D during the design hour. The Cobb Road segments north of Yontz Road are projected to operate at level of service C. The portion of Cobb Road from SR 50 to Fort Dade Avenue is projected to operate at level of service E.

Table 25. Design Year 2025 Levels of Service on Highway Segments - No-Build Alternative

Arterial Segments	Design Hour LOS
Cobb Road	
SR 50 to Fort Dade Avenue	E
Fort Dade Avenue to Yontz Road	D
Yontz Road to Youth Drive	C
Youth Drive to US 98	C
US 98	
Cobb Road to CR 476	D
CR 476 to CR 491A	D
CR 491A to CR 491	D
CR 491 to Landfill Road	D
Landfill Road to Suncoast Parkway	D

The Build Alternative planned is a four-lane Cobb Road and US 98 facility from SR 50 to Suncoast Parkway. Cobb Road segments north of Yontz Road and entire US 98 segments are designed as rural typical sections. The proposed rural alternative typical section is a four lane divided rural roadway with a 46-ft. median. This typical section consists of two 12-ft. lanes, 12-ft. outside shoulders and 8-ft. inside shoulders in each direction. Two alternative design concepts are proposed for Cobb Road segments south of Yontz Road. These alternative design concepts are urban typical section and suburban typical section. The urban typical section consists of two 12-ft lanes in each direction with a 46-ft. median. No shoulder widths are provided for the roadway segments. The suburban typical section is a four lane suburban roadway with a 30-ft. median. This typical section consists of two 12-ft. lanes in each direction with 8-ft outside shoulders and 4-ft. inside shoulders in each direction.

The roadway segment level of service analyses for the Build alternative were conducted using the methodology documented in Chapter 21 – Multilane Highways of the 2000 Highway Capacity Manual. The HCS Multilane highway segment LOS analysis sheets for the Build conditions are included in Appendix F. The results of this roadway segment level of service analysis for the Build conditions are summarized in Table 26. As indicated in Table 26, all of the Cobb Road and US 98 segments with the exception of Cobb Road segment from SR 50 to Fort Dade Avenue (Urban Arterial typical section) are projected to operate at level of service A in the design year during the design hour.

Table 26. Design Year 2025 Levels of Service on Highway Segments - Build Alternative

Arterial Segments	Typical Section	Design Hour LOS
Cobb Road		
SR 50 to Fort Dade Avenue	Urban Arterial	B
SR 50 to Fort Dade Avenue	Sub-Urban Arterial	A
Fort Dade Avenue to Yontz Road	Urban Arterial	A
Fort Dade Avenue to Yontz Road	Sub-Urban Arterial	A
Yontz Road to Youth Drive	Rural Arterial	A
Youth Drive to US 98	Rural Arterial	A
US 98		
Cobb Road to CR 476	Rural Arterial	A
CR 476 to CR 491A	Rural Arterial	A
CR 491A to CR 491	Rural Arterial	A
CR 491 to Landfill Road	Rural Arterial	A
Landfill Road to Suncoast Parkway	Rural Arterial	A

4.8 Determination of Storage Lengths

The required storage lengths for turn lanes recommended along Cobb Road and US 98 were estimated using the results of the signalized and unsignalized intersection HCS analysis for the Build Alternative. Since it is possible that through lane queuing can sometimes block access to right and left turn lanes, turn lane "queuing" requirements were also reviewed against anticipated queues in the through lanes. In some cases, through queues were found to block access to the turn lane; however, in each case, the turn volume was very low. In these cases, turn lanes were not recommended to clear the through queues since the resulting delays were considered minimal. Recommended queue lengths for the relevant intersection during the year 2025 design hour are summarized by individual turn lane in Table 27.

Table 27. Recommended Design Year 2025 Storage Lengths

Intersection	Control	Turn Lane	Storage (ft)
SR 50 with Cobb Road (With Existing Lane Arrangement)	Signal	Northbound Left – Cobb Road	725
		Southbound Left – Cobb Road	100
		Eastbound Left – SR 50	1625
		Eastbound Right – SR 50	800
		Westbound Left – SR 50A	125
SR 50 with Cobb Road (With Dual EB Left Turn Lanes)	Signal	Northbound Left – Cobb Road	550
		Southbound Left – Cobb Road	75
		Eastbound Left – SR 50	600
		Eastbound Right – SR 50	800
		Westbound Left – SR 50A	175
Cobb Road with US 98	Signal	Northbound Left – Cobb Road	200
		Eastbound Right – US 98	300
		Westbound Left – US 98	50
Fort Dade Ave with Cobb Road	Two Way Stop	Northbound Left – Cobb Road	50
		Southbound Left – Cobb Road	50
Yontz Road with Cobb Road	Two Way Stop	Northbound Left – Cobb Road	100 *
		Southbound Left – Cobb Road	50
Youth Drive with Cobb Road	Two Way Stop	Southbound Left – Cobb Road	50
CR 476 with US 98	Two Way Stop	Northbound Left – US 98	50
		Southbound Left – US 98	50
CR 491A with US 98	Two Way Stop	Eastbound Left – US 98	100 *
		Westbound Left – US 98	50
CR 491 with US 98	Two Way Stop	Eastbound Left – US 98	100 *
		Westbound Left – US 98	50
Landfill Road with US 98	Two Way Stop	Westbound Left – US 98	100 *

5. TRAFFIC DATA FOR NOISE AND AIR STUDIES

5.1 Traffic Data for Air Quality Study

Traffic data were developed for the required air quality screening test. The data were based on the forecasted traffic for the opening year 2005 and design year 2025. The methodology for the development of the traffic forecasts is documented in Section 3, Development of Future Traffic.

Forecasted traffic demand for No-Build and Build scenarios are considered to develop traffic data for air quality screening test. The congested intersections in the study corridor under No-Build and Build scenarios are the intersections of Cobb Road with SR 50 and Cobb Road with Yontz Road as demonstrated in Section 4, Future Conditions, of this report.

The opening and design year average cruise speeds are assumed to be 35 mph and 40 mph at the Cobb Road intersections with SR 50 and Yontz Road respectively, lower than the existing posted speed, to both No-Build and Build conditions. Speeds are assumed to be lower due to anticipated increases in congestion at the intersections. The required forms for the air study screening data were completed and are included in Appendix G of this report.

5.2 Traffic Data for Noise Study

Traffic data were developed for the required noise studies. The following receptors were selected for possible analysis.

- Cobb Road Segments
    1. Wheeling Street Receptors: From Fort Dade Avenue to Yontz Road
    2. Youth Drive Receptors: From Yontz Road to Youth Drive
    3. Wever Park (east side) and Intersection Receptors (west side): From Youth Drive to US 98

- US 98 Segments

    1. Ringhaver Receptors: From CR 476 to CR 491A
    2. Deschamps Receptors: From CR 491A to CR 491

The existing Year 2001 AADT traffic volumes are obtained from the collected field traffic counts. The future design year 2025 traffic volumes are based on the forecasted traffic. The methodology for the development of the traffic forecasts is documented in Section 3 of the report. The maximum traffic volume of Level of Service (LOS) "C" for each individual segments were estimated using HCS 2000 software. The average speed corresponding to existing, projected or Level of Service "C" demand for each individual segments were also estimated using HCS 2000 software. The traffic characteristics (K, D and T factors) were estimated from the FDOT traffic count stations. The estimation procedure outlined in the FDOT's Design Traffic Handbook and documented in section 2.3. The required noise traffic data forms were completed and are included in Appendix G of this report.

6. SUMMARY

The Florida Department of Transportation (FDOT) is proposing capacity improvements to the existing two-lane undivided arterials, Cobb Road (CR485) and US 98. The need for this project is based on the needs of Hernando County and the City of Brooksville, upon projected increases in traffic volumes and on anticipated deficiencies in the future transportation system. In addition to the capacity improvements, the project is expected to provide a safe route for truck traffic to use in bypassing downtown Brooksville. This need is outlined in the Hernando County Metropolitan Planning Organization (MPO) *2025 LRTP*.

Existing (2001) and design year (2025) traffic analyses were conducted as part of the Cobb Road / US 98 PD&E study to document the existing levels of service in the corridor as well as the anticipated future levels of service in the corridor. Results of the existing condition level of service analyses indicate the two-lane roadway segments of US 98 in the project corridor operated at level of service C during the 2001 design hour. The Cobb Road segments north of Yontz Road operated at level of service C. The portion of Cobb Road from SR 50 to Fort Dade Avenue is operated at level of service E.

Design year (2025) daily and peak hour traffic projections were developed using the TBRPM Version 4.0. The results of the No-Build Alternative analyses indicate that the entire US 98 segment projected to operate at level of service D and Cobb Road south of Yontz Road is projected to operate at level of service D or E if no improvements are made. The results of the Build Alternative analysis indicate that the proposed widening of Cobb Road and US 98 is projected to significantly improve the level of service for the constrained Cobb Road and US 98 roadway segments. Intersection analyses also were conducted to determine the intersection level of service and the design year intersection geometrics that should be provided throughout the corridor. Acceptable peak hour levels of service are projected to occur at all of the Cobb Road and US 98 intersections in the design year with the recommended geometry.

The results of the traffic analyses, the need for a safe route for truck traffic and the development of a bypass route around Brooksville indicate that widening Cobb Road and US 98 through the study corridor will be needed.

APPENDIX A

LEVEL OF SERVICE OF INTERSECTIONS

FOR THE EXISTING YEAR 2001 CONDITIONS

(HCS 2000 ANALYSIS)

FULL REPORT

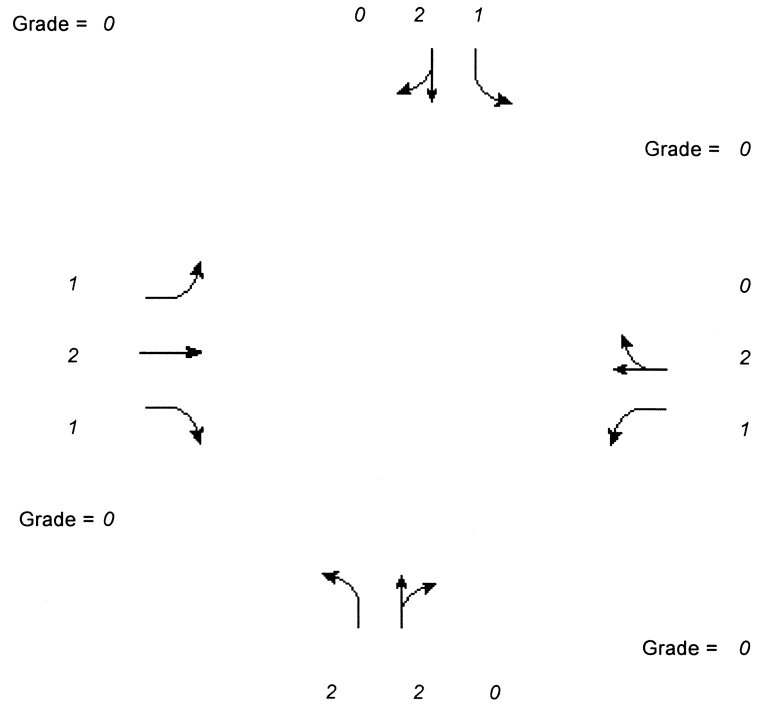
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*1/17/2002*
Time Period	*am peak period*

Site Information

Intersection	*SR 50 with Cobb Road*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2001*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*185*	*561*	*267*	*142*	*428*	*40*	*305*	*272*	*74*	*85*	*355*	*135*
% Heavy veh	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*		*2.0*	*2.0*		*2.0*	*2.0*	
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*		*2.0*	*2.0*		*2.0*	*2.0*	
Arrival type	*3*	*3*	*3*	*3*	*3*		*3*	*3*		*3*	*3*	
Unit Extension	*3.0*	*3.0*	*3.0*	*3.0*	*3.0*		*3.0*	*3.0*		*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*		*25*	*0*		*0*	*0*		*0*	*0*		*0*
Lane Width	*12.0*	*12.0*	*12.0*	*12.0*	*12.0*		*12.0*	*12.0*		*12.0*	*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*		*0*	*0*		*0*	*0*	
Ped timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EW Perm	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = *8.0*	G = *17.0*	G =	G =	G = *11.0*	G = *18.0*	G =	G =
	Y = *4*	Y = *4*	Y =	Y =	Y = *4*	Y = *4*	Y =	Y =

Duration of Analysis (hrs) = *0.25*

Cycle Length C = *70.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	185	561	267	142	428	40	305	272	74	85	355	135
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	206	623	269	158	476	44	339	302	82	94	394	150
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	206	623	269	158	520		339	384		94	544	
Prop. LT or RT	0.000	--		0.000	--	0.085	0.000	--	0.214	0.000	--	0.276

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	1	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.241		--	0.200		--			--	0.360		--
fRT	--	1.000	0.850	--	0.987		--	0.968		--	0.959	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	1543	3085	1380	1543	3046		2993	2987		1543	2958	
Sec. adj. satflow	392		--	325		--			--	585		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	206	623	269	158	520		339	384		94	544	
Satflow rate	1543	3085	1380	1543	3046		2993	2987		1543	2958	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.41	0.24	0.63	0.41	0.24		0.16	0.26		0.47	0.26	
Lane group cap.	310	749	867	301	740		470	768		441	761	
v/c ratio	0.66	0.83	0.31	0.52	0.70		0.72	0.50		0.21	0.71	
Flow ratio		0.20	0.19		0.17		0.11	0.13			0.18	
Crit. lane group	N	Y	N	N	N		Y	N		N	Y	
Sum flow ratios	0.63											
Lost time/cycle	16.00											
Critical v/c ratio	0.81											

Lane Group Capacity, Control Delay, and LOS Determination

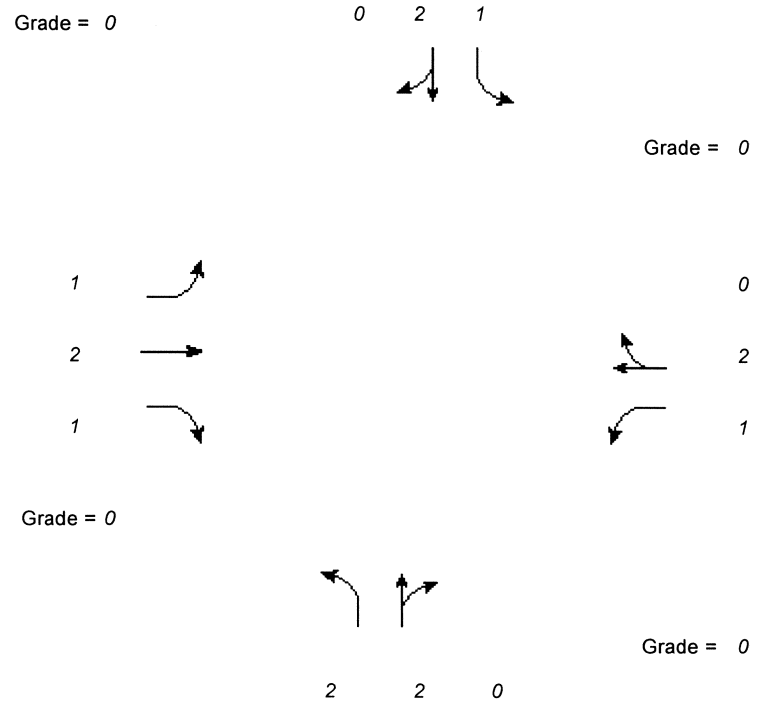
	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	206	623	269	158	520		339	384		94	544	
Lane group cap.	310	749	867	301	740		470	768		441	761	
v/c ratio	0.66	0.83	0.31	0.52	0.70		0.72	0.50		0.21	0.71	
Green ratio	0.41	0.24	0.63	0.41	0.24		0.16	0.26		0.47	0.26	
Unif. delay d1	14.7	25.1	6.0	14.6	24.2		28.0	22.2		10.8	23.7	
Delay factor k	0.24	0.37	0.11	0.13	0.27		0.28	0.11		0.11	0.28	
Increm. delay d2	5.3	7.9	0.2	1.7	3.0		5.4	0.5		0.2	3.2	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	20.0+	33.1	6.2	16.3	27.2		33.4	22.7		11.0	26.9	
Lane group LOS	C	C	A	B	C		C	C		B	C	
Apprch. delay	24.0			24.7			27.7			24.5		
Approach LOS	C			C			C			C		
Intersec. delay	25.1			Intersection LOS						C		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

General Information		Site Information	
Analyst	*Praba*	Intersection	*SR 50 with Cobb Road*
Agency or Co.	*H.W.Lochner, Inc.*	Area Type	*All other areas*
Date Performed	*1/17/2002*	Jurisdiction	
Time Period	*pm peak period*	Analysis Year	*2001*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*193*	*410*	*260*	*86*	*570*	*60*	*308*	*320*	*136*	*57*	*296*	*138*
% Heavy veh	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*
PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Actuated (P/A)	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*	*A*
Startup lost time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*		*2.0*	*2.0*		*2.0*	*2.0*	
Ext. eff. green	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*		*2.0*	*2.0*		*2.0*	*2.0*	
Arrival type	*3*	*3*	*3*	*3*	*3*		*3*	*3*		*3*	*3*	
Unit Extension	*3.0*	*3.0*	*3.0*	*3.0*	*3.0*		*3.0*	*3.0*		*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*		*25*	*0*		*0*	*0*		*0*	*0*		*0*
Lane Width	*12.0*	*12.0*	*12.0*	*12.0*	*12.0*		*12.0*	*12.0*		*12.0*	*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr	*0*	*0*	*0*	*0*	*0*		*0*	*0*		*0*	*0*	
Ped timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EW Perm	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = *8.0*	G = *18.0*	G =	G =	G = *10.4*	G = *15.9*	G =	G =
	Y = *4*	Y = *4*	Y =	Y =	Y = *4*	Y = *4*	Y =	Y =

Duration of Analysis (hrs) = *0.25*

Cycle Length C = *68.3*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	193	410	260	86	570	60	308	320	136	57	296	138
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	214	456	261	96	633	67	342	356	151	63	329	153
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	214	456	261	96	700		342	507		63	482	
Prop. LT or RT	0.000	--		0.000	--	0.096	0.000	--	0.298	0.000	--	0.317

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	1	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.190		--	0.309		--			--	0.241		--
fRT	--	1.000	0.850	--	0.986		--	0.955		--	0.952	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	1543	3085	1380	1543	3041		2993	2948		1543	2939	
Sec. adj. satflow	309		--	502		--			--	391		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	214	456	261	96	700		342	507		63	482	
Satflow rate	1543	3085	1380	1543	3041		2993	2948		1543	2939	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.44	0.26	0.65	0.44	0.26		0.15	0.23		0.44	0.23	
Lane group cap.	308	813	897	357	801		456	686		366	684	
v/c ratio	0.69	0.56	0.29	0.27	0.87		0.75	0.74		0.17	0.70	
Flow ratio		0.15	0.19		0.23		0.11	0.17			0.16	
Crit. lane group	N	N	N	N	Y		Y	Y		N	N	
Sum flow ratios	0.65											
Lost time/cycle	16.00											
Critical v/c ratio	0.85											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	214	456	261	96	700		342	507		63	482	
Lane group cap.	308	813	897	357	801		456	686		366	684	
v/c ratio	0.69	0.56	0.29	0.27	0.87		0.75	0.74		0.17	0.70	
Green ratio	0.44	0.26	0.65	0.44	0.26		0.15	0.23		0.44	0.23	
Unif. delay d1	14.1	21.7	5.2	11.9	24.1		27.7	24.3		11.7	24.0	
Delay factor k	0.26	0.16	0.11	0.11	0.40		0.31	0.30		0.11	0.27	
Increm. delay d2	6.6	0.9	0.2	0.4	10.5		6.8	4.3		0.2	3.3	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	20.8	22.6	5.3	12.4	34.6		34.5	28.5		11.9	27.3	
Lane group LOS	C	C	A	B	C		C	C		B	C	
Apprch. delay	17.4			31.9			30.9			25.6		
Approach LOS	B			C			C			C		
Intersec. delay	26.2			Intersection LOS						C		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

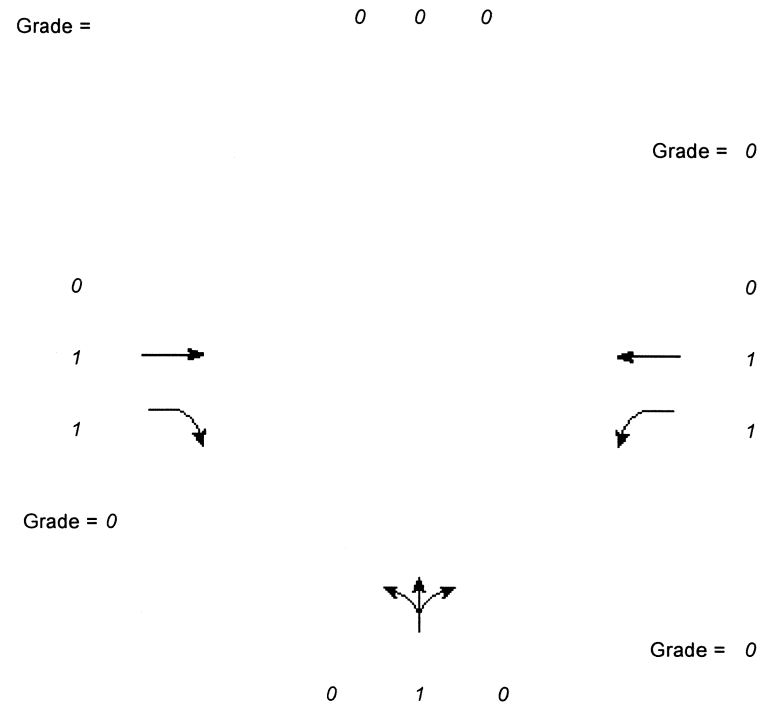
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*1/17/2001*
Time Period	*am peak*

Site Information

Intersection	*Cobb Road with US 98*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2001*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)		275	182	10	243		142	0	22			
% Heavy veh		17	17	17	17		17	17	17			
PHF		0.90	0.90	0.90	0.90		0.90	0.90	0.90			
Actuated (P/A)		A	A	A	A		A	A	A			
Startup lost time		2.0	2.0	2.0	2.0			2.0				
Ext. eff. green		2.0	2.0	2.0	2.0			2.0				
Arrival type		3	3	3	3			3				
Unit Extension		3.0	3.0	3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		0				0		0	0		
Lane Width		12.0	12.0	12.0	12.0			12.0				
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr		0	0	0	0			0				
Ped timing		3.2						3.2			3.2	

	EW Perm	02	03	04	NB Only	06	07	08
Timing	G = 31.0	G =	G =	G =	G = 21.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 60.0

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume		275	182	10	243		142	0	22			
PHF		0.90	0.90	0.90	0.90		0.90	0.90	0.90			
Adj. Flow Rate		306	202	11	270		158	0	24			
Lane Group		T	R	L	T			LTR				
Adj. flow rate		306	202	11	270			182				
Prop. LT or RT	0.000	--		0.000	--	0.000	0.868	--	0.132		--	

Saturation Flow Rate

Base satflow		1900	1900	1900	1900			1900				
Num. of lanes	0	1	1	1	1	0	0	1	0	0	0	0
fW		1.000	1.000	1.000	1.000			1.000				
fHV		0.855	0.855	0.855	0.855			0.855				
fg		1.000			1.000			1.000				
fp		1.000	1.000	1.000	1.000			1.000				
fbb		1.000	1.000	1.000	1.000			1.000				
fa		1.00			1.00			1.00				
fLU		1.00	1.00	1.00	1.00			1.00				
fLT		1.000	--	0.502	1.000	--		0.958	--			--
Secondary fLT			--			--			--			--
fRT	--	1.000	0.850	--	1.000		--	0.982		--		
fLpb		1.000	--	1.000	1.000	--		1.000	--			--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--		
Adj. satflow		1624	1380	814	1624			1529				
Sec. adj. satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		306	202	11	270			182				
Satflow rate		1624	1380	814	1624			1529				
Lost time		2.0	2.0	2.0	2.0			2.0				
Green ratio		0.52	0.52	0.52	0.52			0.35				
Lane group cap.		839	713	421	839			535				
v/c ratio		0.36	0.28	0.03	0.32			0.34				
Flow ratio		0.19	0.15	0.01	0.17			0.12				
Crit. lane group		Y	N	N	N			Y				
Sum flow ratios	0.31											
Lost time/cycle	8.00											
Critical v/c ratio	0.35											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		306	202	11	270			182				
Lane group cap.		839	713	421	839			535				
v/c ratio		0.36	0.28	0.03	0.32			0.34				
Green ratio		0.52	0.52	0.52	0.52			0.35				
Unif. delay d1		8.6	8.2	7.1	8.4			14.4				
Delay factor k		0.11	0.11	0.11	0.11			0.11				
Increm. delay d2		0.3	0.2	0.0	0.2			0.4				
PF factor		1.000	1.000	1.000	1.000			1.000				
Control delay		8.9	8.4	7.1	8.6			14.8				
Lane group LOS		A	A	A	A			B				
Apprch. delay	8.7			8.6			14.8					
Approach LOS	A			A			B					
Intersec. delay	9.8			Intersection LOS						A		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

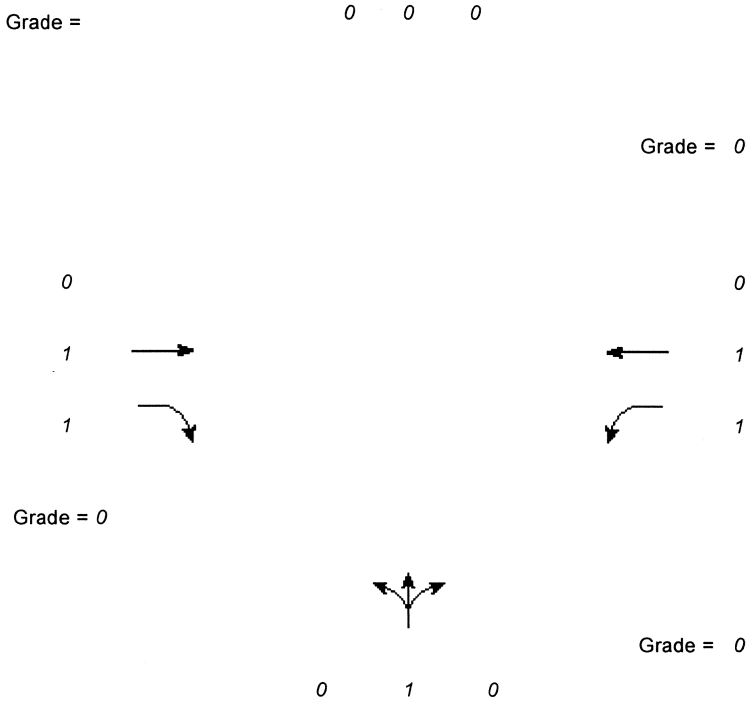
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*1/17/2001*
Time Period	*pm peak*

Site Information

Intersection	*Cobb Road with US 98*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2001*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)		229	160	6	291		173	0	19			
% Heavy veh		17	17	17	17		17	17	17			
PHF		0.90	0.90	0.90	0.90		0.90	0.90	0.90			
Actuated (P/A)		A	A	A	A		A	A	A			
Startup lost time		2.0	2.0	2.0	2.0			2.0				
Ext. eff. green		2.0	2.0	2.0	2.0			2.0				
Arrival type		3	3	3	3			3				
Unit Extension		3.0	3.0	3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		0				0		0	0		
Lane Width		12.0	12.0	12.0	12.0			12.0				
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr		0	0	0	0			0				
Ped timing		3.2						3.2			3.2	

	EW Perm	02	03	04	NB Only	06	07	08
Timing	G = 32.0	G =	G =	G =	G = 20.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0		

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume		229	160	6	291		173	0	19			
PHF		0.90	0.90	0.90	0.90		0.90	0.90	0.90			
Adj. Flow Rate		254	178	7	323		192	0	21			
Lane Group		T	R	L	T			LTR				
Adj. flow rate		254	178	7	323			213				
Prop. LT or RT	0.000	--		0.000	--	0.000	0.901	--	0.099		--	

Saturation Flow Rate

Base satflow		1900	1900	1900	1900			1900				
Num. of lanes	0	1	1	1	1	0	0	1	0	0	0	0
fW		1.000	1.000	1.000	1.000			1.000				
fHV		0.855	0.855	0.855	0.855			0.855				
fg		1.000			1.000			1.000				
fp		1.000	1.000	1.000	1.000			1.000				
fbb		1.000	1.000	1.000	1.000			1.000				
fa		1.00			1.00			1.00				
fLU		1.00	1.00	1.00	1.00			1.00				
fLT		1.000	--	0.553	1.000	--		0.957	--			--
Secondary fLT			--			--			--			--
fRT	--	1.000	0.850	--	1.000		--	0.987		--		
fLpb		1.000	--	1.000	1.000	--		1.000	--			--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--		
Adj. satflow		1624	1380	898	1624			1533				
Sec. adj. satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description

Capacity Analysis

	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		254	178	7	323			213				
Satflow rate		1624	1380	898	1624			1533				
Lost time		2.0	2.0	2.0	2.0			2.0				
Green ratio		0.53	0.53	0.53	0.53			0.33				
Lane group cap.		866	736	479	866			511				
v/c ratio		0.29	0.24	0.01	0.37			0.42				
Flow ratio		0.16	0.13	0.01	0.20			0.14				
Crit. lane group		N	N	N	Y			Y				
Sum flow ratios	0.34											
Lost time/cycle	8.00											
Critical v/c ratio	0.39											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		254	178	7	323			213				
Lane group cap.		866	736	479	866			511				
v/c ratio		0.29	0.24	0.01	0.37			0.42				
Green ratio		0.53	0.53	0.53	0.53			0.33				
Unif. delay d1		7.7	7.5	6.6	8.2			15.5				
Delay factor k		0.11	0.11	0.11	0.11			0.11				
Increm. delay d2		0.2	0.2	0.0	0.3			0.6				
PF factor		1.000	1.000	1.000	1.000			1.000				
Control delay		7.9	7.7	6.6	8.4			16.0				
Lane group LOS		A	A	A	A			B				
Apprch. delay	7.8			8.4			16.0					
Approach LOS	A			A			B					
Intersec. delay	9.8			Intersection LOS						A		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc.
Date Performed	1/17/2002
Analysis Time Period	am peak period

Site Information

Intersection	Fort Dade Avenue with Cobb Rd
Jurisdiction	
Analysis Year	2001

Project ID

East/West Street: Fort Dade Avenue

North/South Street: Cobb Road

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	32	54	42	68	42	6
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	20	400	70	10	469	45
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.90		0.90		0.90		0.90	
Flow Rate	141		127		543		582	
% Heavy Vehicles	17		17		17		17	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		0.6		0.0		0.0	
Prop. Right-Turns	0.3		0.0		0.1		0.1	
Prop. Heavy Vehicle	0.2		0.2		0.2		0.2	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	8.00		8.00		8.00		8.00	

Departure Headway and Service Time

hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.13		0.11		0.48		0.52	
hd, final value	8.00		8.00		8.00		8.00	
x, final value	0.31		0.29		0.97		1.04	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	6.0		6.0		6.0		6.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	391		377		560		582	
Delay	14.61		14.71		55.67		72.93	
LOS	B		B		F		F	
Approach: Delay	14.61		14.71		55.67		72.93	
LOS	B		B		F		F	
Intersection Delay	54.99							
Intersection LOS	F							

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc.
Date Performed	1/17/2002
Analysis Time Period	pm peak period

Site Information

Intersection	Fort Dade Avenue with Cobb Rd
Jurisdiction	
Analysis Year	2001

Project ID

East/West Street: Fort Dade Avenue

North/South Street: Cobb Road

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	36	38	35	74	50	12
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	45	470	60	20	391	35
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	0.90		0.90		0.90		0.90	
Flow Rate	120		150		638		494	
% Heavy Vehicles	17		17		17		17	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.3		0.5		0.1		0.0	
Prop. Right-Turns	0.3		0.1		0.1		0.1	
Prop. Heavy Vehicle	0.2		0.2		0.2		0.2	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	7.99		7.99		7.99		7.99	

Departure Headway and Service Time

hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.11		0.13		0.57		0.44	
hd, final value	7.99		7.99		7.99		7.99	
x, final value	0.27		0.33		1.12		0.88	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	6.0		6.0		6.0		6.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	370		400		638		556	
Delay	13.86		14.95		97.25		40.32	
LOS	B		B		F		E	
Approach: Delay	13.86		14.95		97.25		40.32	
LOS	B		B		F		E	
Intersection Delay	61.25							
Intersection LOS	F							

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Yontz Road with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*am peak*		
Project Description			
East/West Street: *Yontz Road*		North/South Street: *Cobb Road*	
Intersection Orientation: *North-South*		Study Period (hrs): *0.25*	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*200*	*146*	*100*	*1*	*180*	*25*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*222*	*162*	*111*	*1*	*200*	*27*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*1*			*1*
Lanes	*1*	*1*	*1*	*1*	*1*	*1*
Configuration	*L*	*T*	*R*	*L*	*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*118*	*28*	*4*	*23*	*23*	*184*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*131*	*31*	*4*	*25*	*25*	*204*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*N*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*222*	*1*		*166*			*254*	
C (m) (vph)	*1287*	*1331*		*333*			*527*	
v/c	*0.17*	*0.00*		*0.50*			*0.48*	
95% queue length	*0.62*	*0.00*		*2.65*			*2.59*	
Control Delay	*8.4*	*7.7*		*26.1*			*18.0*	
LOS	*A*	*A*		*D*			*C*	
Approach Delay	--	--	*26.1*			*18.0*		
Approach LOS	--	--	*D*			*C*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Yontz Road with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*pm peak*		
Project Description			
East/West Street: *Yontz Road*		North/South Street: *Cobb Road*	
Intersection Orientation: *North-South*		Study Period (hrs): *0.25*	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*210*	*200*	*114*	*5*	*160*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*233*	*222*	*126*	*5*	*177*	*11*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*1*			*1*
Lanes	*1*	*1*	*1*	*1*	*1*	*1*
Configuration	*L*	*T*	*R*	*L*	*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*101*	*22*	*5*	*25*	*45*	*200*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*112*	*24*	*5*	*27*	*50*	*222*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*N*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*233*	*5*		*141*			*299*	
C (m) (vph)	*1313*	*1263*		*286*			*463*	
v/c	*0.18*	*0.00*		*0.49*			*0.65*	
95% queue length	*0.64*	*0.01*		*2.56*			*4.49*	
Control Delay	*8.3*	*7.9*		*29.2*			*25.9*	
LOS	*A*	*A*		*D*			*D*	
Approach Delay	--	--	*29.2*			*25.9*		
Approach LOS	--	--	*D*			*D*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Youth Drive with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*am peak*		
Project Description			
East/West Street: *Youth Drive*		North/South Street: *Cobb Road*	
Intersection Orientation: *North-South*		Study Period (hrs): *0.25*	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*165*	*10*	*1*	*192*	*0*
Peak-Hour Factor, PHF	*0.86*	*0.90*	*0.90*	*0.90*	*0.90*	*0.84*
Hourly Flow Rate, HFR	*0*	*183*	*11*	*1*	*213*	*0*
Percent Heavy Vehicles	*10*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*7*	*0*	*1*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*7*	*0*	*1*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*17*	*17*	*8*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LTR*				
v (vph)		*1*		*8*				
C (m) (vph)		*1294*		*1918*				
v/c		*0.00*		*0.00*				
95% queue length		*0.00*		*0.01*				
Control Delay		*7.8*		*6.9*				
LOS		*A*		*A*				
Approach Delay	--	--	*6.9*					
Approach LOS	--	--	*A*					

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Youth Drive with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*pm peak*		
Project Description			
East/West Street: *Youth Drive*		North/South Street: *Cobb Road*	
Intersection Orientation: *North-South*		Study Period (hrs): *0.25*	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*196*	*10*	*1*	*164*	*0*
Peak-Hour Factor, PHF	*0.86*	*0.90*	*0.90*	*0.90*	*0.90*	*0.84*
Hourly Flow Rate, HFR	*0*	*217*	*11*	*1*	*182*	*0*
Percent Heavy Vehicles	*10*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*0*	*1*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*11*	*0*	*1*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*17*	*17*	*8*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LTR*				
v (vph)		*1*		*12*				
C (m) (vph)		*1257*		*1879*				
v/c		*0.00*		*0.01*				
95% queue length		*0.00*		*0.02*				
Control Delay		*7.9*		*6.9*				
LOS		*A*		*A*				
Approach Delay	--	--	*6.9*					
Approach LOS	--	--	*A*					

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 476 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*am peak*		
Project Description			
East/West Street: *Lake Lindsey Road (CR476)*		North/South Street: *US 98*	
Intersection Orientation: *North-South*		Study Period (hrs): *0.25*	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*9*	*365*	*15*	*15*	*442*	*1*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*10*	*405*	*16*	*16*	*491*	*1*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*16*	*23*	*22*	*3*	*22*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*17*	*25*	*24*	*3*	*24*	*16*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*10*	*16*		*66*			*43*	
C (m) (vph)	*998*	*1062*		*1031*			*964*	
v/c	*0.01*	*0.02*		*0.06*			*0.04*	
95% queue length	*0.03*	*0.05*		*0.20*			*0.14*	
Control Delay	*8.6*	*8.4*		*8.7*			*8.9*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*8.7*			*8.9*		
Approach LOS	--	--	*A*			*A*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 476 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*pm peak*		
Project Description			
East/West Street: *Lake Lindsey Road (CR476)*		North/South Street: *US 98*	
Intersection Orientation: *North-South*		Study Period (hrs): *0.25*	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*424*	*23*	*22*	*362*	*5*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*471*	*25*	*24*	*402*	*5*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*16*	*25*	*11*	*1*	*17*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*17*	*27*	*12*	*1*	*18*	*16*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*11*	*24*		*56*			*35*	
C (m) (vph)	*1075*	*995*		*975*			*1029*	
v/c	*0.01*	*0.02*		*0.06*			*0.03*	
95% queue length	*0.03*	*0.07*		*0.18*			*0.11*	
Control Delay	*8.4*	*8.7*		*8.9*			*8.6*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*8.9*			*8.6*		
Approach LOS	--	--	*A*			*A*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 491A with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*am peak*		

Project Description

East/West Street: *US 98*	North/South Street: *CR 491A*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*9*	*410*	*6*	*1*	*371*	*18*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*10*	*455*	*6*	*1*	*412*	*20*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*1*	*1*	*4*	*12*	*1*	*1*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*1*	*1*	*4*	*13*	*1*	*1*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*10*	*1*		*6*			*15*	
C (m) (vph)	*1052*	*1026*		*1067*			*1096*	
v/c	*0.01*	*0.00*		*0.01*			*0.01*	
95% queue length	*0.03*	*0.00*		*0.02*			*0.04*	
Control Delay	*8.5*	*8.5*		*8.4*			*8.3*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*8.4*			*8.3*		
Approach LOS	--	--	*A*			*A*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*1/17/2002*
Analysis Time Period	*pm peak*

Site Information

Intersection	*CR 491A with US 98*
Jurisdiction	
Analysis Year	*2001*

Project Description

East/West Street: *US 98* | North/South Street: *CR 491A*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*1*	*360*	*2*	*1*	*442*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*1*	*400*	*2*	*1*	*491*	*16*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*4*	*1*	*2*	*8*	*3*	*1*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*4*	*1*	*2*	*8*	*3*	*1*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*1*	*1*		*7*			*12*	
C (m) (vph)	*985*	*1080*		*1115*			*1043*	
v/c	*0.00*	*0.00*		*0.01*			*0.01*	
95% queue length	*0.00*	*0.00*		*0.02*			*0.03*	
Control Delay	*8.7*	*8.3*		*8.2*			*8.5*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*8.2*			*8.5*		
Approach LOS	--	--	*A*			*A*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*1/17/2002*
Analysis Time Period	*am peak*

Site Information

Intersection	*CR 491 with US 98*
Jurisdiction	
Analysis Year	*2001*

Project Description

East/West Street: *US 98* | North/South Street: *CR 491*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*30*	*250*	*9*	*50*	*282*	*30*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*33*	*277*	*10*	*55*	*313*	*33*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LTR*			*LT*		*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*15*	*57*	*8*	*128*	*30*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*16*	*63*	*8*	*142*	*33*	*16*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LT*		*LTR*			*LTR*	
v (vph)	*33*	*55*		*87*			*191*	
C (m) (vph)	*1134*	*1194*		*1228*			*557*	
v/c	*0.03*	*0.05*		*0.07*			*0.34*	
95% queue length	*0.09*	*0.14*		*0.23*			*1.52*	
Control Delay	*8.3*	*8.2*		*8.2*			*14.8*	
LOS	*A*	*A*		*A*			*B*	
Approach Delay	--	--	*8.2*			*14.8*		
Approach LOS	--	--	*A*			*B*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 491 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*1/17/2002*	Analysis Year	*2001*
Analysis Time Period	*pm peak*		

Project Description

East/West Street: *US 98*	North/South Street: *CR 491*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*20*	*226*	*20*	*10*	*300*	*115*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*22*	*251*	*22*	*11*	*333*	*127*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LTR*			*LT*		*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*5*	*50*	*6*	*83*	*45*	*15*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*5*	*55*	*6*	*92*	*50*	*16*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LT*		*LTR*			*LTR*	
v (vph)	*22*	*11*		*66*			*158*	
C (m) (vph)	*1027*	*1208*		*1295*			*811*	
v/c	*0.02*	*0.01*		*0.05*			*0.19*	
95% queue length	*0.07*	*0.03*		*0.16*			*0.72*	
Control Delay	*8.6*	*8.0*		*7.9*			*10.5*	
LOS	*A*	*A*		*A*			*B*	
Approach Delay	--	--	*7.9*			*10.5*		
Approach LOS	--	--	*A*			*B*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*1/17/2002*
Analysis Time Period	*am peak*

Site Information

Intersection	*Landfill Road with US 98*
Jurisdiction	
Analysis Year	*2001*

Project Description

East/West Street: *US 98* | North/South Street: *Landfill Road*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*222*	*10*	*46*	*200*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*246*	*11*	*51*	*222*	*0*
Percent Heavy Vehicles	*15*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*8*	*0*	*24*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*8*	*0*	*26*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*0*	*17*	*25*	*4*	*9*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*1*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*51*	*8*		*26*			
C (m) (vph)		*1225*	*440*		*757*			
v/c		*0.04*	*0.02*		*0.03*			
95% queue length		*0.13*	*0.06*		*0.11*			
Control Delay		*8.1*	*13.3*		*9.9*			
LOS		*A*	*B*		*A*			
Approach Delay	--	--	*10.7*					
Approach LOS	--	--	*B*					

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*1/17/2002*
Analysis Time Period	*pm peak*

Site Information

Intersection	*Landfill Road with US 98*
Jurisdiction	
Analysis Year	*2001*

Project Description

East/West Street: *US 98*

North/South Street: *Landfill Road*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*179*	*10*	*40*	*249*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*198*	*11*	*44*	*276*	*0*
Percent Heavy Vehicles	*15*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*0*	*28*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*0*	*31*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*0*	*17*	*25*	*4*	*9*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*1*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*44*	*11*		*31*			
C (m) (vph)		*1277*	*448*		*806*			
v/c		*0.03*	*0.02*		*0.04*			
95% queue length		*0.11*	*0.08*		*0.12*			
Control Delay		*7.9*	*13.2*		*9.6*			
LOS		*A*	*B*		*A*			
Approach Delay	--	--	*10.6*					
Approach LOS	--	--	*B*					

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

APPENDIX B

LEVEL OF SERVICE OF HIGHWAY SEGMENTS

FOR THE EXISTING YEAR 2001 CONDITIONS

(HCS 2000 ANALYSIS)

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	SR 50 / Fort Dade Avenue
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	0.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	7	/mi
Up/down		%			

Two-way hourly volume, V	1065	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.983	
Two-way flow rate,(note-1) vp	1203	pc/h
Highest directional split proportion (note-2)	650	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	47.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.8	mi/h
Free-flow speed, FFS	45.3	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATS	33.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1183	pc/h
Highest directional split proportion (note-2)	639	
Base percent time-spent-following, BPTSF	64.6	%
Adj.for directional distribution and no-passing zones, fd/np	10.5	
Percent time-spent-following, PTSF	75.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.38	
Peak 15-min vehicle-miles of travel, VMT15	89	veh-mi
Peak-hour vehicle-miles of travel, VMT60	320	veh-mi
Peak 15-min total travel time, TT15	2.6	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	Fort Dade Avenue / Yontz Road
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	38	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V	970	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	1114	pc/h
Highest directional split proportion (note-2)	602	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATS	44.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	1096	pc/h
Highest directional split proportion (note-2)	592	
Base percent time-spent-following, BPTSF	61.8	%
Adj.for directional distribution and no-passing zones, fd/np	8.3	
Percent time-spent-following, PTSF	70.1	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.35	
Peak 15-min vehicle-miles of travel, VMT15	404	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1455	veh-mi
Peak 15-min total travel time, TT15	9.1	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	Yontz Road / Youth Drive
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	54	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	381		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate,(note-1) vp	474	pc/h
Highest directional split proportion (note-2)	256	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	54.8	mi/h
Adjustment for no-passing zones, fnp	3.1	mi/h
Average travel speed, ATS	48.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	431	pc/h
Highest directional split proportion (note-2)	233	
Base percent time-spent-following, BPTSF	31.5	%
Adj.for directional distribution and no-passing zones, fd/np	20.3	
Percent time-spent-following, PTSF	51.8	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.15	
Peak 15-min vehicle-miles of travel, VMT15	116	veh-mi
Peak-hour vehicle-miles of travel, VMT60	419	veh-mi
Peak 15-min total travel time, TT15	2.4	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	Youth Drive / US 98
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	38	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	356		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate,(note-1) vp	443	pc/h
Highest directional split proportion (note-2)	239	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	54.8	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATS	48.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	402	pc/h
Highest directional split proportion (note-2)	217	
Base percent time-spent-following, BPTSF	29.8	%
Adj.for directional distribution and no-passing zones, fd/np	17.3	
Percent time-spent-following, PTSF	47.1	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.14	
Peak 15-min vehicle-miles of travel, VMT15	158	veh-mi
Peak-hour vehicle-miles of travel, VMT60	570	veh-mi
Peak 15-min total travel time, TT15	3.2	veh-h

-

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	Cobb Road / CR476
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	20	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	846		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	972	pc/h
Highest directional split proportion (note-2)	525	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	51.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	956	pc/h
Highest directional split proportion (note-2)	516	
Base percent time-spent-following, BPTSF	56.8	%
Adj.for directional distribution and no-passing zones, fd/np	7.2	
Percent time-spent-following, PTSF	64.0	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	353	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1269	veh-mi
Peak 15-min total travel time, TT15	6.9	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	CR 476 / CR 491A
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	6	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	846		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	972	pc/h
Highest directional split proportion (note-2)	525	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	0.3	mi/h
Average travel speed, ATS	51.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	956	pc/h
Highest directional split proportion (note-2)	516	
Base percent time-spent-following, BPTSF	56.8	%
Adj.for directional distribution and no-passing zones, fd/np	2.2	
Percent time-spent-following, PTSF	59.0	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	129	veh-mi
Peak-hour vehicle-miles of travel, VMT60	465	veh-mi
Peak 15-min total travel time, TT15	2.5	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	CR 491A / CR 491
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	28	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			
Two-way hourly volume, V	787	veh/h			
Directional split	54 / 46	%			

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	904	pc/h
Highest directional split proportion (note-2)	488	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	51.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	889	pc/h
Highest directional split proportion (note-2)	480	
Base percent time-spent-following, BPTSF	54.2	%
Adj.for directional distribution and no-passing zones, fd/np	8.9	
Percent time-spent-following, PTSF	63.1	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.28	
Peak 15-min vehicle-miles of travel, VMT15	350	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1259	veh-mi
Peak 15-min total travel time, TT15	6.8	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	CR 491 / Landfill Road
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	2.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	27	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	535	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	615	pc/h
Highest directional split proportion (note-2)	332	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	1.9	mi/h
Average travel speed, ATS	53.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	605	pc/h
Highest directional split proportion (note-2)	327	
Base percent time-spent-following, BPTSF	41.2	%
Adj.for directional distribution and no-passing zones, fd/np	12.8	
Percent time-spent-following, PTSF	54.0	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.19	
Peak 15-min vehicle-miles of travel, VMT15	386	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1391	veh-mi
Peak 15-min total travel time, TT15	7.3	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	1/17/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	Landfill Road / Sun Coast Pkwy
Jurisdiction	Okaloosa County
Analysis Year	2001
Description	Cobb Road & US 98 PD&E Study

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.2	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	411		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.894	
Two-way flow rate,(note-1) vp	511	pc/h
Highest directional split proportion (note-2)	276	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	4.2	mi/h
Average travel speed, ATS	51.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	464	pc/h
Highest directional split proportion (note-2)	251	
Base percent time-spent-following, BPTSF	33.5	%
Adj.for directional distribution and no-passing zones, fd/np	22.7	
Percent time-spent-following, PTSF	56.2	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.16	
Peak 15-min vehicle-miles of travel, VMT15	137	veh-mi
Peak-hour vehicle-miles of travel, VMT60	493	veh-mi
Peak 15-min total travel time, TT15	2.7	veh-h

APPENDIX C

LEVEL OF SERVICE OF INTERSECTIONS

FOR THE NO-BUILD 2025 CONDITIONS

(HCS 2000 ANALYSIS)

FULL REPORT

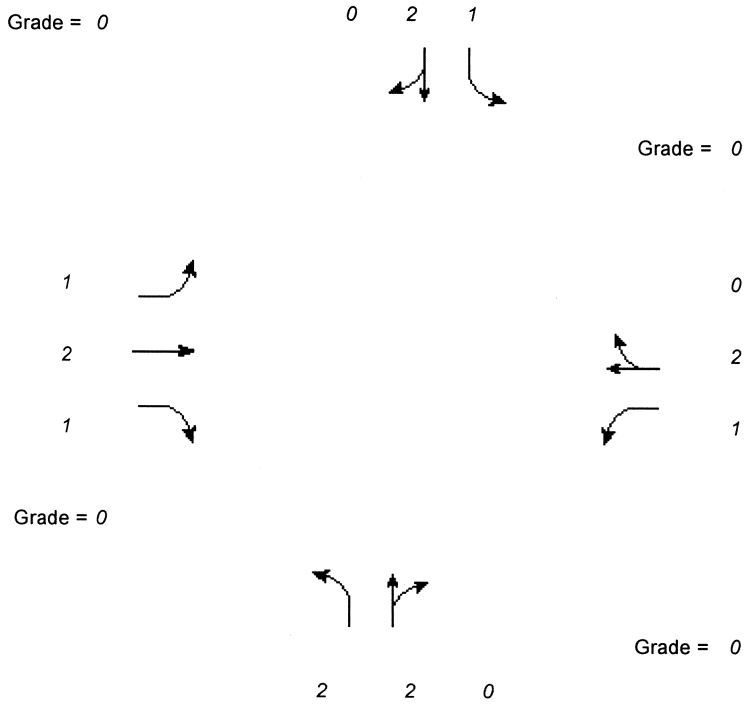
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Time Period	*am peak period*

Site Information

Intersection	*SR 50 with Cobb Road*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	410	620	420	60	490	20	430	180	30	60	300	330
% Heavy veh	17	17	17	17	17	17	17	17	17	17	17	17
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		100	0		0	0		0	0		0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0		0	0		0	0	
Ped timing	3.2			3.2			3.2			3.2		

	Excl. Left	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 11.0	G = 24.0	G =	G =	G = 12.0	G = 19.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 82.0

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	410	620	420	60	490	20	430	180	30	60	300	330
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	456	689	356	67	544	22	478	200	33	67	333	367
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	456	689	356	67	566		478	233		67	700	
Prop. LT or RT	0.000	--		0.000	--	0.039	0.000	--	0.142	0.000	--	0.524

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	1	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.252		--	0.178		--			--	0.480		--
fRT	--	1.000	0.850	--	0.994		--	0.979		--	0.921	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	1543	3085	1380	1543	3067		2993	3020		1543	2843	
Sec. adj. satflow	410		--	290		--			--	779		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	456	689	356	67	566		478	233		67	700	
Satflow rate	1543	3085	1380	1543	3067		2993	3020		1543	2843	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.48	0.29	0.29	0.48	0.29		0.15	0.23		0.43	0.23	
Lane group cap.	361	903	404	321	898		438	700		454	659	
v/c ratio	1.26	0.76	0.88	0.21	0.63		1.09	0.33		0.15	1.06	
Flow ratio		0.22	0.26		0.18		0.16	0.08			0.23	
Crit. lane group	N	N	N	N	N		Y	N		N	Y	
Sum flow ratios	1.10											
Lost time/cycle	12.00											
Critical v/c ratio	1.29											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	456	689	356	67	566		478	233		67	700	
Lane group cap.	361	903	404	321	898		438	700		454	659	
v/c ratio	1.26	0.76	0.88	0.21	0.63		1.09	0.33		0.15	1.06	
Green ratio	0.48	0.29	0.29	0.48	0.29		0.15	0.23		0.43	0.23	
Unif. delay d1	29.3	26.4	27.6	13.2	25.2		35.0	26.2		14.2	31.5	
Delay factor k	0.50	0.32	0.41	0.11	0.21		0.50	0.11		0.11	0.50	
Increm. delay d2	138.8	3.9	19.7	0.3	1.4		69.9	0.3		0.2	52.7	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	168.2	30.3	47.3	13.6	26.6		104.9	26.5		14.4	84.2	
Lane group LOS	F	C	D	B	C		F	C		B	F	
Apprch. delay	76.2			25.2			79.2			78.1		
Approach LOS	E			C			E			E		
Intersec. delay	68.3			Intersection LOS						E		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

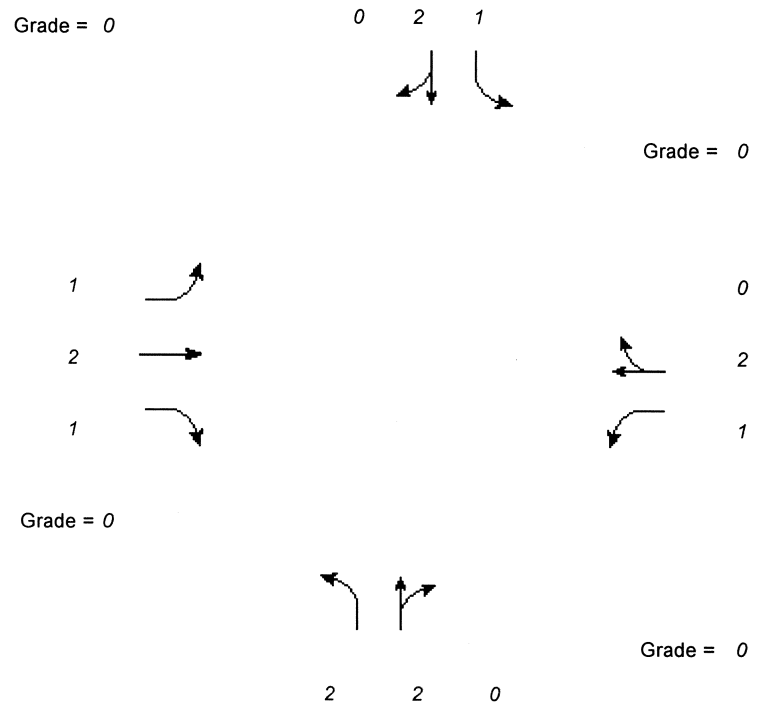
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Time Period	*pm peak period*

Site Information

Intersection	*SR 50 with Cobb Road*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	400	470	360	30	610	30	460	240	50	40	230	320
% Heavy veh	17	17	17	17	17	17	17	17	17	17	17	17
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		100	0		0	0		0	0		0
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0		0	0		0	0	
Ped timing	3.2			3.2			3.2			3.2		

	Excl. Left	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 14.0	G = 18.0	G =	G =	G = 14.0	G = 18.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 80.0			

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	400	470	360	30	610	30	460	240	50	40	230	320
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	444	522	289	33	678	33	511	267	56	44	256	356
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	444	522	289	33	711		511	323		44	612	
Prop. LT or RT	0.000	--		0.000	--	0.046	0.000	--	0.173	0.000	--	0.582

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	1	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.190		--	0.215		--			--	0.385		--
fRT	--	1.000	0.850	--	0.993		--	0.974		--	0.913	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	1543	3085	1380	1543	3064		2993	3005		1543	2816	
Sec. adj. satflow	309		--	349		--			--	625		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	444	522	289	33	711		511	323		44	612	
Satflow rate	1543	3085	1380	1543	3064		2993	3005		1543	2816	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.45	0.22	0.22	0.45	0.22		0.17	0.22		0.45	0.22	
Lane group cap.	379	694	310	381	689		524	676		453	634	
v/c ratio	1.17	0.75	0.93	0.09	1.03		0.98	0.48		0.10	0.97	
Flow ratio		0.17	0.21		0.22		0.17	0.11			0.22	
Crit. lane group	N	N	N	N	N		Y	N		N	Y	
Sum flow ratios	1.08											
Lost time/cycle	12.00											
Critical v/c ratio	1.27											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	444	522	289	33	711		511	323		44	612	
Lane group cap.	379	694	310	381	689		524	676		453	634	
v/c ratio	1.17	0.75	0.93	0.09	1.03		0.98	0.48		0.10	0.97	
Green ratio	0.45	0.22	0.22	0.45	0.22		0.17	0.22		0.45	0.22	
Unif. delay d1	21.1	28.9	30.4	13.2	31.0		32.8	26.9		12.7	30.7	
Delay factor k	0.50	0.31	0.45	0.11	0.50		0.48	0.11		0.11	0.47	
Increm. delay d2	101.8	4.6	33.9	0.1	42.7		32.9	0.5		0.1	27.2	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	122.9	33.6	64.3	13.3	73.7		65.7	27.5		12.8	57.9	
Lane group LOS	F	C	E	B	E		E	C		B	E	
Apprch. delay	72.2			71.1			50.9			54.9		
Approach LOS	E			E			D			D		
Intersec. delay	63.6			Intersection LOS						E		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

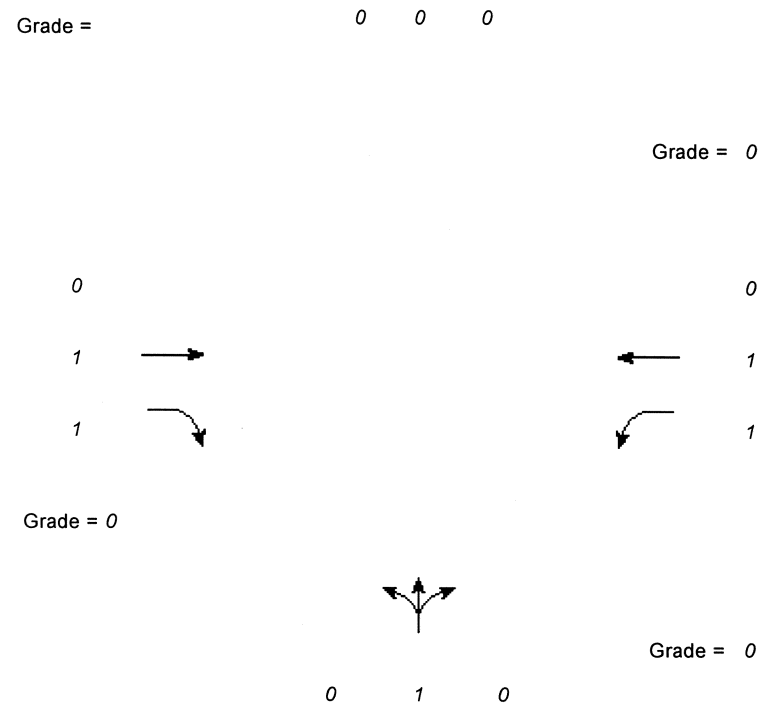
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2001*
Time Period	*am peak*

Site Information

Intersection	*Cobb Road with US 98*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)		330	300	10	280		230	0	20			
% Heavy veh		17	17	17	17		17	17	17			
PHF		0.90	0.90	0.90	0.90		0.90	0.90	0.90			
Actuated (P/A)		A	A	A	A		A	A	A			
Startup lost time		2.0	2.0	2.0	2.0			2.0				
Ext. eff. green		2.0	2.0	2.0	2.0			2.0				
Arrival type		3	3	3	3			3				
Unit Extension		3.0	3.0	3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		100				0		10	0		
Lane Width		12.0	12.0	12.0	12.0			12.0				
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr		0	0	0	0			0				
Ped timing		3.2						3.2			3.2	

	EW Perm	02	03	04	NB Only	06	07	08
Timing	G = 32.0	G =	G =	G =	G = 18.0	G =	G =	G =
	Y = 4	Y =	Y =	Y =	Y = 4	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 58.0		

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume		330	300	10	280		230	0	20			
PHF		0.90	0.90	0.90	0.90		0.90	0.90	0.90			
Adj. Flow Rate		367	222	11	311		256	0	11			
Lane Group		T	R	L	T			LTR				
Adj. flow rate		367	222	11	311			267				
Prop. LT or RT	0.000	--		0.000	--	0.000	0.959	--	0.041		--	

Saturation Flow Rate

Base satflow		1900	1900	1900	1900			1900				
Num. of lanes	0	1	1	1	1	0	0	1	0	0	0	0
fW		1.000	1.000	1.000	1.000			1.000				
fHV		0.855	0.855	0.855	0.855			0.855				
fg		1.000			1.000			1.000				
fp		1.000	1.000	1.000	1.000			1.000				
fbb		1.000	1.000	1.000	1.000			1.000				
fa		1.00			1.00			1.00				
fLU		1.00	1.00	1.00	1.00			1.00				
fLT		1.000	--	0.472	1.000	--		0.954	--			--
Secondary fLT			--			--			--			--
fRT	--	1.000	0.850	--	1.000		--	0.994		--		
fLpb		1.000	--	1.000	1.000	--		1.000	--			--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--		
Adj. satflow		1624	1380	766	1624			1541				
Sec. adj. satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		367	222	11	311			267				
Satflow rate		1624	1380	766	1624			1541				
Lost time		2.0	2.0	2.0	2.0			2.0				
Green ratio		0.55	0.55	0.55	0.55			0.31				
Lane group cap.		896	761	423	896			478				
v/c ratio		0.41	0.29	0.03	0.35			0.56				
Flow ratio		0.23	0.16	0.01	0.19			0.17				
Crit. lane group		Y	N	N	N			Y				
Sum flow ratios	0.40											
Lost time/cycle	8.00											
Critical v/c ratio	0.46											

Lane Group Capacity, Control Delay, and LOS Determination

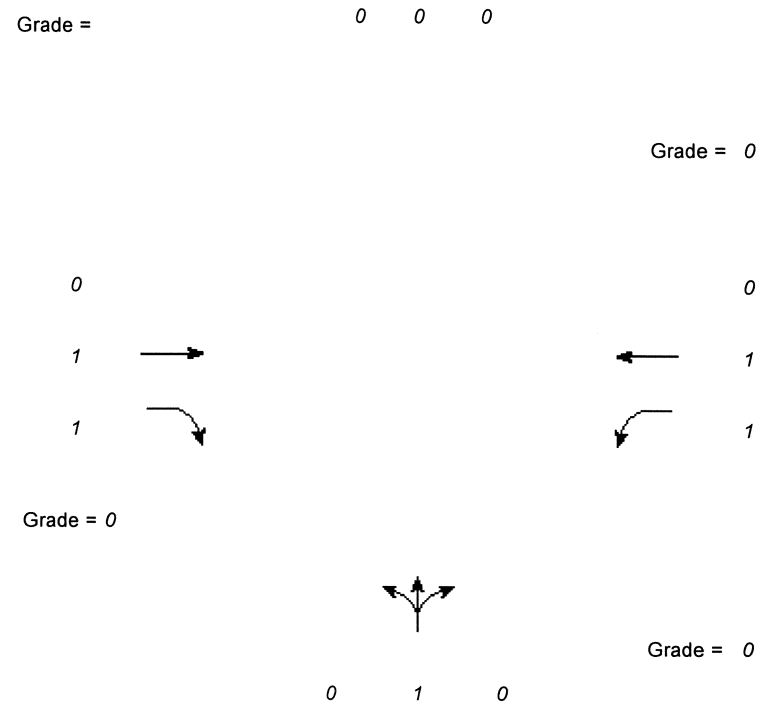
	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		367	222	11	311			267				
Lane group cap.		896	761	423	896			478				
v/c ratio		0.41	0.29	0.03	0.35			0.56				
Green ratio		0.55	0.55	0.55	0.55			0.31				
Unif. delay d1		7.5	6.9	5.9	7.2			16.7				
Delay factor k		0.11	0.11	0.11	0.11			0.16				
Increm. delay d2		0.3	0.2	0.0	0.2			1.5				
PF factor		1.000	1.000	1.000	1.000			1.000				
Control delay		7.8	7.2	5.9	7.4			18.2				
Lane group LOS		A	A	A	A			B				
Apprch. delay	7.6			7.4			18.2					
Approach LOS	A			A			B					
Intersec. delay	9.9			Intersection LOS						A		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

General Information		Site Information	
Analyst	*Praba*	Intersection	*Cobb Road with US 98*
Agency or Co.	*H.W.Lochner, Inc.*	Area Type	*All other areas*
Date Performed	*4/17/2001*	Jurisdiction	
Time Period	*pm peak*	Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)		*280*	*260*	*10*	*330*		*280*	*0*	*20*			
% Heavy veh		*17*	*17*	*17*	*17*		*17*	*17*	*17*			
PHF		*0.90*	*0.90*	*0.90*	*0.90*		*0.90*	*0.90*	*0.90*			
Actuated (P/A)		*A*	*A*	*A*	*A*		*A*	*A*	*A*			
Startup lost time		*2.0*	*2.0*	*2.0*	*2.0*			*2.0*				
Ext. eff. green		*2.0*	*2.0*	*2.0*	*2.0*			*2.0*				
Arrival type		*3*	*3*	*3*	*3*			*3*				
Unit Extension		*3.0*	*3.0*	*3.0*	*3.0*			*3.0*				
Ped/Bike/RTOR Volume	*0*		*80*				*0*		*10*	*0*		
Lane Width		*12.0*	*12.0*	*12.0*	*12.0*			*12.0*				
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr		*0*	*0*	*0*	*0*			*0*				
Ped timing		*3.2*						*3.2*			*3.2*	

	EW Perm	02	03	04	NB Only	06	07	08
Timing	G = *22.0*	G =	G =	G =	G = *17.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =
Duration of Analysis (hrs) = *0.25*					Cycle Length C = *47.0*			

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume		280	260	10	330		280	0	20			
PHF		0.90	0.90	0.90	0.90		0.90	0.90	0.90			
Adj. Flow Rate		311	200	11	367		311	0	11			
Lane Group		T	R	L	T			LTR				
Adj. flow rate		311	200	11	367			322				
Prop. LT or RT	0.000	--		0.000	--	0.000	0.966	--	0.034		--	

Saturation Flow Rate

Base satflow		1900	1900	1900	1900			1900				
Num. of lanes	0	1	1	1	1	0	0	1	0	0	0	0
fW		1.000	1.000	1.000	1.000			1.000				
fHV		0.855	0.855	0.855	0.855			0.855				
fg		1.000			1.000			1.000				
fp		1.000	1.000	1.000	1.000			1.000				
fbb		1.000	1.000	1.000	1.000			1.000				
fa		1.00			1.00			1.00				
fLU		1.00	1.00	1.00	1.00			1.00				
fLT		1.000	--	0.484	1.000	--		0.954	--			--
Secondary fLT			--			--			--			--
fRT	--	1.000	0.850	--	1.000		--	0.995		--		
fLpb		1.000	--	1.000	1.000	--		1.000	--			--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--		
Adj. satflow		1624	1380	786	1624			1542				
Sec. adj. satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *NO-BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		311	200	11	367			322				
Satflow rate		1624	1380	786	1624			1542				
Lost time		2.0	2.0	2.0	2.0			2.0				
Green ratio		0.47	0.47	0.47	0.47			0.36				
Lane group cap.		760	646	368	760			558				
v/c ratio		0.41	0.31	0.03	0.48			0.58				
Flow ratio		0.19	0.14	0.01	0.23			0.21				
Crit. lane group		N	N	N	Y			Y				
Sum flow ratios	0.43											
Lost time/cycle	8.00											
Critical v/c ratio	0.52											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group		T	R	L	T			LTR				
Adj. flow rate		311	200	11	367			322				
Lane group cap.		760	646	368	760			558				
v/c ratio		0.41	0.31	0.03	0.48			0.58				
Green ratio		0.47	0.47	0.47	0.47			0.36				
Unif. delay d1		8.2	7.8	6.7	8.6			12.1				
Delay factor k		0.11	0.11	0.11	0.11			0.17				
Increm. delay d2		0.4	0.3	0.0	0.5			1.5				
PF factor		1.000	1.000	1.000	1.000			1.000				
Control delay		8.6	8.1	6.8	9.1			13.6				
Lane group LOS		A	A	A	A			B				
Apprch. delay	8.4			9.0			13.6					
Approach LOS	A			A			B					
Intersec. delay	10.0-			Intersection LOS						A		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/16/2002*
Analysis Time Period	*am peak period*

Site Information

Intersection	*Fort Dade Avenue with Cobb Rd*
Jurisdiction	
Analysis Year	*2025*

Project ID *NO-BUILD ALTERNATIVE*

East/West Street: *Fort Dade Avenue*

North/South Street: *Cobb Road*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	*60*	*60*	*140*	*40*	*50*	*10*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	*80*	*450*	*50*	*10*	*490*	*80*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.90*		*0.90*		*0.90*		*0.90*	
Flow Rate	*287*		*110*		*643*		*643*	
% Heavy Vehicles	*17*		*17*		*17*		*17*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.2*		*0.4*		*0.1*		*0.0*	
Prop. Right-Turns	*0.5*		*0.1*		*0.1*		*0.1*	
Prop. Heavy Vehicle	*0.2*		*0.2*		0.2		*0.2*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*7.88*		*7.88*		*7.88*		*7.88*	

Departure Headway and Service Time

hd, initial value	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.26*		*0.10*		*0.57*		*0.57*	
hd, final value	*7.88*		*7.88*		*7.88*		*7.88*	
x, final value	*0.63*		*0.28*		*1.29*		*1.28*	
Move-up time, m	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time	*5.9*		*5.9*		*5.9*		*5.9*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	*452*		*360*		*643*		*643*	
Delay	*23.30*		*15.64*		*167.54*		*163.26*	
LOS	*C*		*C*		*F*		*F*	
Approach: Delay	*23.30*		*15.64*		*167.54*		*163.26*	
LOS	*C*		*C*		*F*		*F*	
Intersection Delay	*131.38*							
Intersection LOS	*F*							

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/16/2002*
Analysis Time Period	*pm peak period*

Site Information

Intersection	*Fort Dade Avenue with Cobb Rd*
Jurisdiction	
Analysis Year	*2025*

Project ID *NO-BUILD ALTERNATIVE*

East/West Street: *Fort Dade Avenue*

North/South Street: *Cobb Road*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	*70*	*50*	*100*	*50*	*60*	*10*
%Thrus Left Lane	*50*			*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	*140*	*500*	*40*	*10*	*420*	*60*
%Thrus Left Lane	*50*			*50*		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LTR*		*LTR*		*LTR*	
PHF	*0.90*		*0.90*		*0.90*		*0.90*	
Flow Rate	*243*		*132*		*754*		*543*	
% Heavy Vehicles	*17*		*17*		*17*		*17*	
No. Lanes	*1*		*1*		*1*		*1*	
Geometry Group	*1*		*1*		*1*		*1*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.3*		*0.4*		*0.2*		*0.0*	
Prop. Right-Turns	*0.5*		*0.1*		*0.1*		*0.1*	
Prop. Heavy Vehicle	*0.2*		*0.2*		0.2		*0.2*	
hLT-adj	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
hRT-adj	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.6*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*8.08*		*8.08*		*8.08*		*8.08*	

Departure Headway and Service Time

hd, initial value	*3.20*		*3.20*		*3.20*		*3.20*	
x, initial	*0.22*		*0.12*		*0.67*		*0.48*	
hd, final value	*8.08*		*8.08*		*8.08*		*8.08*	
x, final value	*0.55*		*0.33*		*1.50*		*1.07*	
Move-up time, m	*2.0*		*2.0*		*2.0*		*2.0*	
Service Time	*6.1*		*6.1*		*6.1*		*6.1*	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	*439*		*382*		*754*		*543*	
Delay	*20.37*		*16.21*		*255.90*		*86.44*	
LOS	*C*		*C*		*F*		*F*	
Approach: Delay	*20.37*		*16.21*		*255.90*		*86.44*	
LOS	*C*		*C*		*F*		*F*	
Intersection Delay	*147.71*							
Intersection LOS	*F*							

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Yontz Road with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/16/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		
Project Description	*NO-BUILD ALTERNATIVE*		
East/West Street:	*Yontz Road*	North/South Street:	*Cobb Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*270*	*140*	*10*	*330*	*20*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*300*	*155*	*11*	*366*	*22*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*1*			*1*
Lanes	*1*	*1*	*1*	*1*	*1*	*1*
Configuration	*L*	*T*	*R*	*L*	*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*150*	*20*	*10*	*20*	*20*	*70*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*166*	*22*	*11*	*22*	*22*	*77*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*N*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*88*	*11*		*199*			*121*	
C (m) (vph)	*1114*	*1180*		*351*			*376*	
v/c	*0.08*	*0.01*		*0.57*			*0.32*	
95% queue length	*0.26*	*0.03*		*3.34*			*1.37*	
Control Delay	*8.5*	*8.1*		*27.9*			*19.1*	
LOS	*A*	*A*		*D*			*C*	
Approach Delay	--	--	*27.9*			*19.1*		
Approach LOS	--	--	*D*			*C*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Yontz Road with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/16/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		
Project Description	*NO-BUILD ALTERNATIVE*		
East/West Street:	*Yontz Road*	North/South Street:	*Cobb Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*330*	*160*	*10*	*290*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*366*	*177*	*11*	*322*	*11*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*1*			*1*
Lanes	*1*	*1*	*1*	*1*	*1*	*1*
Configuration	*L*	*T*	*R*	*L*	*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*130*	*30*	*25*	*25*	*40*	*60*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*144*	*33*	*27*	*27*	*44*	*66*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*N*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*88*	*11*		*204*			*137*	
C (m) (vph)	*1158*	*1114*		*368*			*313*	
v/c	*0.08*	*0.01*		*0.55*			*0.44*	
95% queue length	*0.25*	*0.03*		*3.22*			*2.13*	
Control Delay	*8.4*	*8.3*		*26.3*			*25.2*	
LOS	*A*	*A*		*D*			*D*	
Approach Delay	--	--	*26.3*			*25.2*		
Approach LOS	--	--	*D*			*D*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Youth Drive with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/17/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		
Project Description	*NO-BUILD ALTERNATIVE*		
East/West Street:	*Youth Drive*	North/South Street:	*Cobb Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*200*	*100*	*40*	*260*	*0*
Peak-Hour Factor, PHF	*0.86*	*0.90*	*0.90*	*0.90*	*0.90*	*0.84*
Hourly Flow Rate, HFR	*0*	*222*	*111*	*44*	*288*	*0*
Percent Heavy Vehicles	*10*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*80*	*0*	*50*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*88*	*0*	*55*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*17*	*17*	*8*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LTR*				
v (vph)		*44*		*143*				
C (m) (vph)		*1147*		*1586*				
v/c		*0.04*		*0.09*				
95% queue length		*0.12*		*0.30*				
Control Delay		*8.3*		*7.5*				
LOS		*A*		*A*				
Approach Delay	--	--	*7.5*					
Approach LOS	--	--	*A*					

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Youth Drive with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/17/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *Youth Drive*	North/South Street: *Cobb Road*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*280*	*70*	*70*	*180*	*0*
Peak-Hour Factor, PHF	*0.86*	*0.90*	*0.90*	*0.90*	*0.90*	*0.84*
Hourly Flow Rate, HFR	*0*	*311*	*77*	*77*	*200*	*0*
Percent Heavy Vehicles	*10*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*110*	*0*	*40*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*122*	*0*	*44*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*17*	*17*	*8*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LTR*				
v (vph)		*77*		*166*				
C (m) (vph)		*1093*		*916*				
v/c		*0.07*		*0.18*				
95% queue length		*0.23*		*0.66*				
Control Delay		*8.5*		*9.8*				
LOS		*A*		*A*				
Approach Delay	--	--	*9.8*					
Approach LOS	--	--	*A*					

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 476 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/17/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *Lake Lindsey Road (CR476)*	North/South Street: *US 98*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*20*	*470*	*50*	*30*	*550*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*22*	*522*	*55*	*33*	*611*	*11*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*50*	*80*	*50*	*10*	*70*	*30*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*55*	*88*	*55*	*11*	*77*	*33*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*22*	*33*		*198*			*121*	
C (m) (vph)	*890*	*926*		*266*			*396*	
v/c	*0.02*	*0.04*		*0.74*			*0.31*	
95% queue length	*0.08*	*0.11*		*5.36*			*1.27*	
Control Delay	*9.1*	*9.0*		*49.6*			*18.0*	
LOS	*A*	*A*		*E*			*C*	
Approach Delay	--	--	*49.6*			*18.0*		
Approach LOS	--	--	*E*			*C*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 476 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/17/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		
Project Description	*NO-BUILD ALTERNATIVE*		
East/West Street:	*Lake Lindsey Road (CR476)*	North/South Street:	*US 98*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*20*	*550*	*60*	*50*	*450*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*22*	*611*	*66*	*55*	*500*	*11*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*40*	*80*	*30*	*10*	*50*	*30*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*44*	*88*	*33*	*11*	*55*	*33*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*22*	*55*		*165*			*99*	
C (m) (vph)	*982*	*848*		*293*			*420*	
v/c	*0.02*	*0.06*		*0.56*			*0.24*	
95% queue length	*0.07*	*0.21*		*3.22*			*0.90*	
Control Delay	*8.7*	*9.5*		*32.0*			*16.2*	
LOS	*A*	*A*		*D*			*C*	
Approach Delay	--	--	*32.0*			*16.2*		
Approach LOS	--	--	*D*			*C*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Analysis Time Period	*am peak*

Site Information

Intersection	*CR 491A with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *US 98*

North/South Street: *CR 491A*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*530*	*10*	*5*	*470*	*30*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*588*	*11*	*5*	*522*	*33*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*5*	*5*	*5*	*40*	*5*	*5*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*5*	*5*	*5*	*44*	*5*	*5*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*11*	*5*		*15*			*54*	
C (m) (vph)	*944*	*909*		*802*			*842*	
v/c	*0.01*	*0.01*		*0.02*			*0.06*	
95% queue length	*0.04*	*0.02*		*0.06*			*0.21*	
Control Delay	*8.9*	*9.0*		*9.6*			*9.6*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*9.6*			*9.6*		
Approach LOS	--	--	*A*			*A*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Analysis Time Period	*pm peak*

Site Information

Intersection	*CR 491A with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *US 98*

North/South Street: *CR 491A*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*450*	*10*	*5*	*540*	*50*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*500*	*11*	*5*	*600*	*55*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration	*LTR*			*LTR*		
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*5*	*5*	*30*	*10*	*5*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*5*	*5*	*33*	*11*	*5*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LTR*		*LTR*			*LTR*	
v (vph)	*11*	*5*		*21*			*49*	
C (m) (vph)	*865*	*982*		*854*			*784*	
v/c	*0.01*	*0.01*		*0.02*			*0.06*	
95% queue length	*0.04*	*0.02*		*0.08*			*0.20*	
Control Delay	*9.2*	*8.7*		*9.3*			*9.9*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*9.3*			*9.9*		
Approach LOS	--	--	*A*			*A*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Analysis Time Period	*am peak*

Site Information

Intersection	*CR 491 with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *US 98*

North/South Street: *CR 491*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*410*	*10*	*50*	*400*	*20*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*455*	*11*	*55*	*444*	*22*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LTR*			*LT*		*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*20*	*70*	*10*	*140*	*30*	*20*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*22*	*77*	*11*	*155*	*33*	*22*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LT*		*LTR*			*LTR*	
v (vph)	*88*	*55*		*110*			*210*	
C (m) (vph)	*1021*	*1021*		*473*			*106*	
v/c	*0.09*	*0.05*		*0.23*			*1.98*	
95% queue length	*0.28*	*0.17*		*0.89*			*17.50*	
Control Delay	*8.9*	*8.7*		*14.9*			*540.8*	
LOS	*A*	*A*		*B*			*F*	
Approach Delay	--	--	*14.9*			*540.8*		
Approach LOS	--	--	*B*			*F*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Analysis Time Period	*pm peak*

Site Information

Intersection	*CR 491 with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *US 98* | North/South Street: *CR 491*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*20*	*370*	*40*	*10*	*450*	*90*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*22*	*411*	*44*	*11*	*500*	*100*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LTR*			*LT*		*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*60*	*10*	*80*	*50*	*30*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*66*	*11*	*88*	*55*	*33*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LTR*	*LT*		*LTR*			*LTR*	
v (vph)	*22*	*11*		*88*			*176*	
C (m) (vph)	*908*	*1031*		*554*			*418*	
v/c	*0.02*	*0.01*		*0.16*			*0.42*	
95% queue length	*0.07*	*0.03*		*0.56*			*2.04*	
Control Delay	*9.1*	*8.5*		*12.7*			*19.7*	
LOS	*A*	*A*		*B*			*C*	
Approach Delay	--	--	*12.7*			*19.7*		
Approach LOS	--	--	*B*			*C*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Analysis Time Period	*am peak*

Site Information

Intersection	*Landfill Road with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *US 98*

North/South Street: *Landfill Road*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*430*	*40*	*80*	*350*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*477*	*44*	*88*	*388*	*0*
Percent Heavy Vehicles	*15*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*50*	*0*	*60*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*55*	*0*	*66*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*0*	*17*	*25*	*4*	*9*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*1*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*88*	*55*		*66*			
C (m) (vph)		*973*	*217*		*559*			
v/c		*0.09*	*0.25*		*0.12*			
95% queue length		*0.30*	*0.97*		*0.40*			
Control Delay		*9.1*	*27.1*		*12.3*			
LOS		*A*	*D*		*B*			
Approach Delay	--	--	*19.0*					
Approach LOS	--	--	*C*					

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/17/2002*
Analysis Time Period	*pm peak*

Site Information

Intersection	*Landfill Road with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *NO-BUILD ALTERNATIVE*

East/West Street: *US 98*

North/South Street: *Landfill Road*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*350*	*50*	*60*	*440*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*388*	*55*	*66*	*488*	*0*
Percent Heavy Vehicles	*15*	--	--	*17*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*40*	*0*	*90*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*44*	*0*	*100*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*0*	*17*	*25*	*4*	*9*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*1*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*66*	*44*		*100*			
C (m) (vph)		*1042*	*234*		*628*			
v/c		*0.06*	*0.19*		*0.16*			
95% queue length		*0.20*	*0.68*		*0.56*			
Control Delay		*8.7*	*23.9*		*11.8*			
LOS		*A*	*C*		*B*			
Approach Delay	--	--	*15.5*					
Approach LOS	--	--	*C*					

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

APPENDIX D

LEVEL OF SERVICE OF INTERSECTIONS

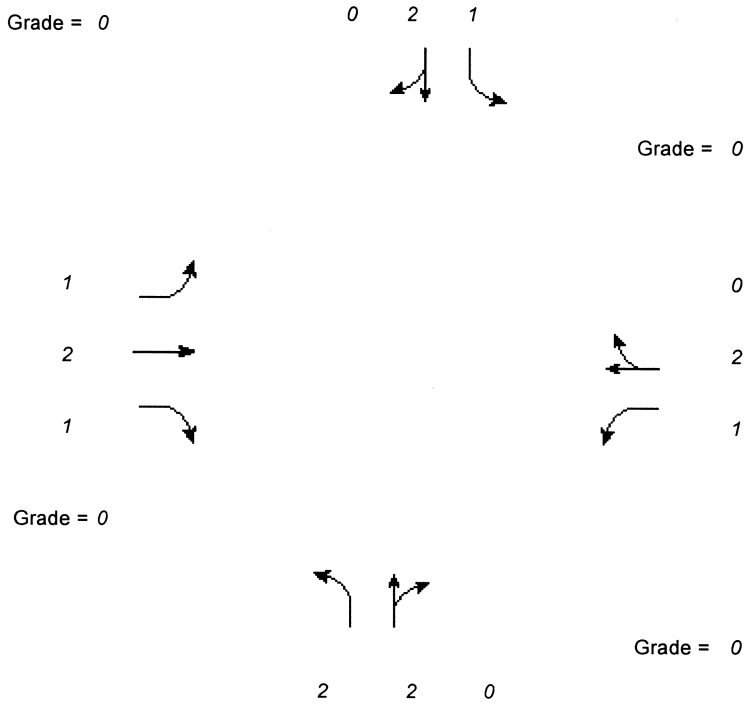
FOR THE BUILD 2025 CONDITIONS

(HCS 2000 ANALYSIS)

FULL REPORT

General Information		Site Information	
Analyst	*Praba*	Intersection	*SR 50 with Cobb Road*
Agency or Co.	*H.W.Lochner, Inc.*	Area Type	*All other areas*
Date Performed	*4/18/2002*	Jurisdiction	
Time Period	*am peak period*	Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	520	660	430	120	510	30	450	290	30	70	450	370
% Heavy veh	17	17	17	17	17	17	17	17	17	17	17	17
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		80	0		5	0		5	0		35
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0		0	0		0	0	
Ped timing	3.2			3.2			3.2			3.2		

	Excl. Left	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 15.0	G = 24.0	G =	G =	G = 12.0	G = 24.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 91.0			

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	520	660	430	120	510	30	450	290	30	70	450	370
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	578	733	389	133	567	28	500	322	28	78	500	372
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	578	733	389	133	595		500	350		78	872	
Prop. LT or RT	0.000	--		0.000	--	0.047	0.000	--	0.080	0.000	--	0.427

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	1	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.204		--	0.148		--			--	0.389		--
fRT	--	1.000	0.850	--	0.993		--	0.988		--	0.936	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	1543	3085	1380	1543	3064		2993	3048		1543	2888	
Sec. adj. satflow	331		--	241		--			--	631		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	578	733	389	133	595		500	350		78	872	
Satflow rate	1543	3085	1380	1543	3064		2993	3048		1543	2888	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.47	0.26	0.26	0.47	0.26		0.13	0.26		0.44	0.26	
Lane group cap.	369	814	364	350	808		395	804		407	762	
v/c ratio	1.57	0.90	1.07	0.38	0.74		1.27	0.44		0.19	1.14	
Flow ratio		0.24	0.28		0.19		0.17	0.11			0.26	
Crit. lane group	N	N	N	N	N		Y	N		N	Y	
Sum flow ratios	1.53											
Lost time/cycle	12.00											
Critical v/c ratio	1.77											

Lane Group Capacity, Control Delay, and LOS Determination

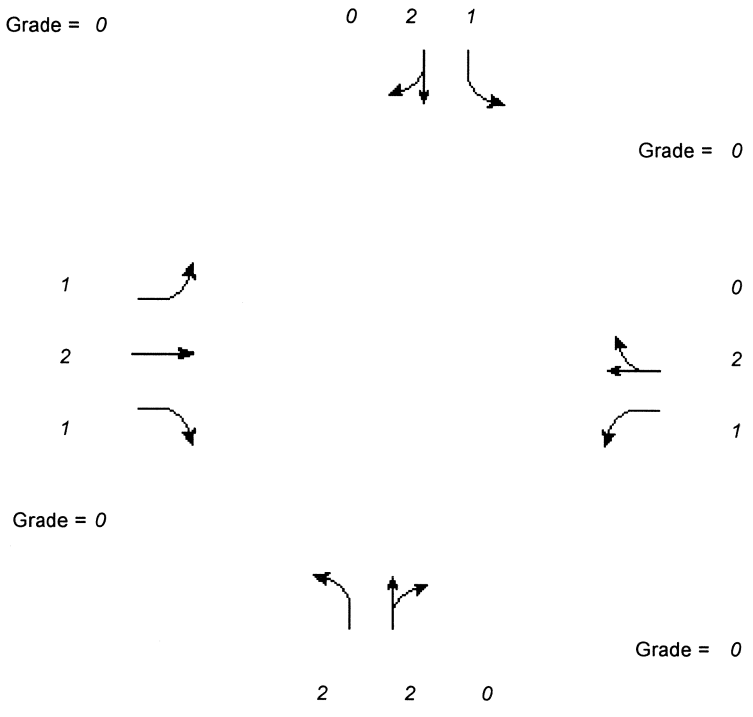
	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	578	733	389	133	595		500	350		78	872	
Lane group cap.	369	814	364	350	808		395	804		407	762	
v/c ratio	1.57	0.90	1.07	0.38	0.74		1.27	0.44		0.19	1.14	
Green ratio	0.47	0.26	0.26	0.47	0.26		0.13	0.26		0.44	0.26	
Unif. delay d1	20.9	32.3	33.5	16.1	30.6		39.5	27.9		15.4	33.5	
Delay factor k	0.50	0.42	0.50	0.11	0.29		0.50	0.11		0.11	0.50	
Increm. delay d2	267.7	13.1	66.6	0.7	3.6		138.4	0.4		0.2	80.1	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	288.6	45.4	100.1	16.8	34.2		177.9	28.2		15.6	113.6	
Lane group LOS	F	D	F	B	C		F	C		B	F	
Apprch. delay	140.6			31.0			116.3			105.6		
Approach LOS	F			C			F			F		
Intersec. delay	109.0			Intersection LOS						F		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

General Information		Site Information	
Analyst	*Praba*	Intersection	*SR 50 with Cobb Road*
Agency or Co.	*H.W.Lochner, Inc.*	Area Type	*All other areas*
Date Performed	*4/18/2002*	Jurisdiction	
Time Period	*pm peak period*	Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	510	490	370	100	650	40	470	370	70	50	350	360
% Heavy veh	17	17	17	17	17	17	17	17	17	17	17	17
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		75	0		5	0		5	0		35
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0		0	0		0	0	
Ped timing	3.2			3.2			3.2			3.2		

	Excl. Left	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 18.0	G = 24.0	G =	G =	G = 15.0	G = 24.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 97.0		

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	510	490	370	100	650	40	470	370	70	50	350	360
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	567	544	328	111	722	39	522	411	72	56	389	361
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	567	544	328	111	761		522	483		56	750	
Prop. LT or RT	0.000	--		0.000	--	0.051	0.000	--	0.149	0.000	--	0.481

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	1	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	1.00	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.148		--	0.219		--			--	0.265		--
fRT	--	1.000	0.850	--	0.992		--	0.978		--	0.928	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	1543	3085	1380	1543	3062		2993	3016		1543	2863	
Sec. adj. satflow	241		--	356		--			--	430		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	567	544	328	111	761		522	483		56	750	
Satflow rate	1543	3085	1380	1543	3062		2993	3016		1543	2863	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.47	0.25	0.25	0.47	0.25		0.15	0.25		0.44	0.25	
Lane group cap.	376	763	341	401	758		463	746		375	708	
v/c ratio	1.51	0.71	0.96	0.28	1.00		1.13	0.65		0.15	1.06	
Flow ratio		0.18	0.24		0.25		0.17	0.16			0.25	
Crit. lane group	N	N	N	N	N		Y	N		N	Y	
Sum flow ratios	1.72											
Lost time/cycle	12.00											
Critical v/c ratio	1.96											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	567	544	328	111	761		522	483		56	750	
Lane group cap.	376	763	341	401	758		463	746		375	708	
v/c ratio	1.51	0.71	0.96	0.28	1.00		1.13	0.65		0.15	1.06	
Green ratio	0.47	0.25	0.25	0.47	0.25		0.15	0.25		0.44	0.25	
Unif. delay d1	27.8	33.4	36.0	15.6	36.5		41.0	32.7		16.4	36.5	
Delay factor k	0.50	0.28	0.47	0.11	0.50		0.50	0.23		0.11	0.50	
Increm. delay d2	242.0	3.2	38.6	0.4	33.7		81.5	2.0		0.2	50.6	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	269.8	36.5	74.6	16.0	70.2		122.5	34.7		16.6	87.1	
Lane group LOS	F	D	E	B	E		F	C		B	F	
Apprch. delay	137.1			63.3			80.3			82.2		
Approach LOS	F			E			F			F		
Intersec. delay	96.9			Intersection LOS						F		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

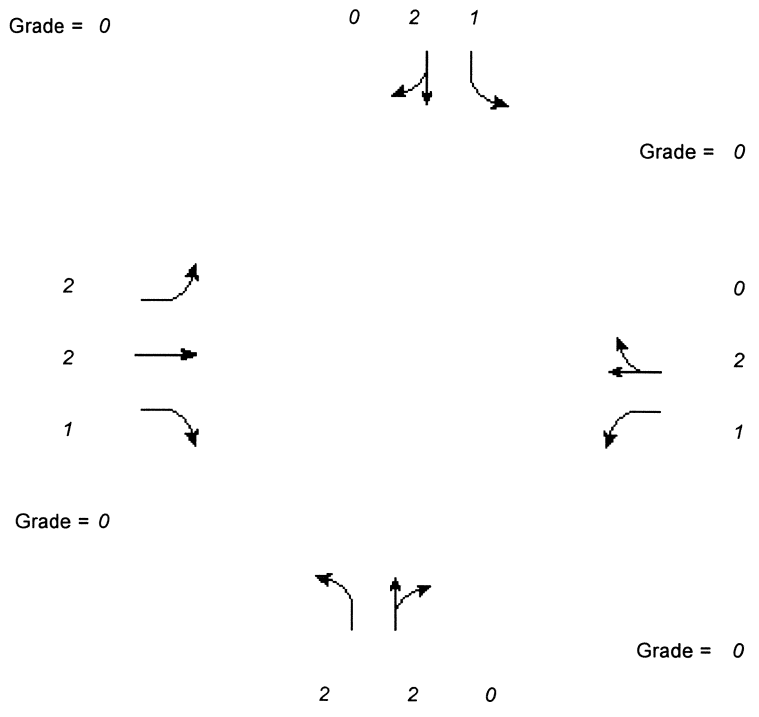
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*4/18/2002*
Time Period	*am peak period*

Site Information

Intersection	*SR 50 with Cobb Road*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	520	660	430	120	510	30	450	290	30	70	450	370
% Heavy veh	17	17	17	17	17	17	17	17	17	17	17	17
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		80	0		5	0		5	0		35
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0		0	0		0	0	
Ped timing	3.2			3.2			3.2			3.2		

	Excl. Left	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 8.0	G = 23.0	G =	G =	G = 14.0	G = 27.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 88.0		

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	520	660	430	120	510	30	450	290	30	70	450	370
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	578	733	389	133	567	28	500	322	28	78	500	372
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	578	733	389	133	595		500	350		78	872	
Prop. LT or RT	0.000	--		0.000	--	0.047	0.000	--	0.080	0.000	--	0.427

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	2	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.364		--	0.154		--			--	0.416		--
fRT	--	1.000	0.850	--	0.993		--	0.988		--	0.936	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	2993	3085	1380	1543	3064		2993	3048		1543	2888	
Sec. adj. satflow	1148		--	250		--			--	676		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	578	733	389	133	595		500	350		78	872	
Satflow rate	2993	3085	1380	1543	3064		2993	3048		1543	2888	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.40	0.26	0.26	0.40	0.26		0.16	0.31		0.51	0.31	
Lane group cap.	645	806	361	240	801		476	935		493	886	
v/c ratio	0.90	0.91	1.08	0.55	0.74		1.05	0.37		0.16	0.98	
Flow ratio		0.24	0.28		0.19		0.17	0.11			0.30	
Crit. lane group	N	N	Y	N	N		Y	N		N	Y	
Sum flow ratios	0.85											
Lost time/cycle	16.00											
Critical v/c ratio	1.04											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	578	733	389	133	595		500	350		78	872	
Lane group cap.	645	806	361	240	801		476	935		493	886	
v/c ratio	0.90	0.91	1.08	0.55	0.74		1.05	0.37		0.16	0.98	
Green ratio	0.40	0.26	0.26	0.40	0.26		0.16	0.31		0.51	0.31	
Unif. delay d1	26.2	31.5	32.5	19.6	29.8		37.0	23.9		11.4	30.3	
Delay factor k	0.42	0.43	0.50	0.15	0.30		0.50	0.11		0.11	0.49	
Increm. delay d2	15.2	14.3	69.6	2.8	3.8		55.1	0.3		0.2	26.3	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	41.4	45.8	102.1	22.4	33.6		92.1	24.1		11.5	56.6	
Lane group LOS	D	D	F	C	C		F	C		B	E	
Apprch. delay	57.2			31.5			64.1			52.9		
Approach LOS	E			C			E			D		
Intersec. delay	53.2			Intersection LOS						D		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

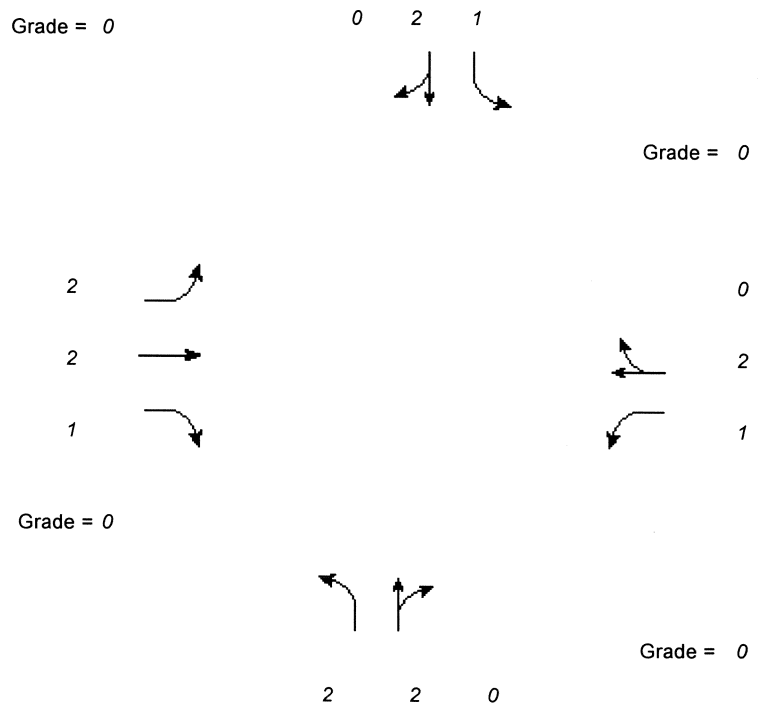
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*4/18/2002*
Time Period	*pm peak period*

Site Information

Intersection	*SR 50 with Cobb Road*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	510	490	370	100	650	40	470	370	70	50	350	360
% Heavy veh	17	17	17	17	17	17	17	17	17	17	17	17
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Ext. eff. green	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Arrival type	3	3	3	3	3		3	3		3	3	
Unit Extension	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	0		75	0		5	0		5	0		35
Lane Width	12.0	12.0	12.0	12.0	12.0		12.0	12.0		12.0	12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0		0	0		0	0	
Ped timing	3.2			3.2			3.2			3.2		

	Excl. Left	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 8.0	G = 24.0	G =	G =	G = 15.0	G = 24.0	G =	G =
	Y = 4	Y = 4	Y =	Y =	Y = 4	Y = 4	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 87.0		

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	510	490	370	100	650	40	470	370	70	50	350	360
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow Rate	567	544	328	111	722	39	522	411	72	56	389	361
Lane Group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	567	544	328	111	761		522	483		56	750	
Prop. LT or RT	0.000	--		0.000	--	0.051	0.000	--	0.149	0.000	--	0.481

Saturation Flow Rate

Base satflow	1900	1900	1900	1900	1900		1900	1900		1900	1900	
Num. of lanes	2	2	1	1	2	0	2	2	0	1	2	0
fW	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fHV	0.855	0.855	0.855	0.855	0.855		0.855	0.855		0.855	0.855	
fg	1.000			1.000			1.000			1.000		
fp	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fbb	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
fa	1.00			1.00			1.00			1.00		
fLU	0.97	0.95	1.00	1.00	0.95		0.97	0.95		1.00	0.95	
fLT	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--	0.950	1.000	--
Secondary fLT	0.415		--	0.251		--			--	0.294		--
fRT	--	1.000	0.850	--	0.992		--	0.978		--	0.928	
fLpb	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--	1.000	1.000	--
fRpb	--	1.000	1.000	--	1.000		--	1.000		--	1.000	
Adj. satflow	2993	3085	1380	1543	3062		2993	3016		1543	2863	
Sec. adj. satflow	1307		--	407		--			--	477		--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	567	544	328	111	761		522	483		56	750	
Satflow rate	2993	3085	1380	1543	3062		2993	3016		1543	2863	
Lost time	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Green ratio	0.41	0.28	0.28	0.41	0.28		0.17	0.28		0.49	0.28	
Lane group cap.	716	851	381	286	845		516	832		432	790	
v/c ratio	0.79	0.64	0.86	0.39	0.90		1.01	0.58		0.13	0.95	
Flow ratio		0.18	0.24		0.25		0.17	0.16			0.26	
Crit. lane group	N	N	N	N	Y		Y	N		N	Y	
Sum flow ratios	0.79											
Lost time/cycle	16.00											
Critical v/c ratio	0.97											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group	L	T	R	L	TR		L	TR		L	TR	
Adj. flow rate	567	544	328	111	761		522	483		56	750	
Lane group cap.	716	851	381	286	845		516	832		432	790	
v/c ratio	0.79	0.64	0.86	0.39	0.90		1.01	0.58		0.13	0.95	
Green ratio	0.41	0.28	0.28	0.41	0.28		0.17	0.28		0.49	0.28	
Unif. delay d1	21.4	27.7	29.9	17.1	30.4		36.0	27.2		12.2	30.9	
Delay factor k	0.34	0.22	0.39	0.11	0.42		0.50	0.17		0.11	0.46	
Increm. delay d2	6.1	1.6	17.8	0.9	12.7		42.6	1.0		0.1	20.6	
PF factor	1.000	1.000	1.000	1.000	1.000		1.000	1.000		1.000	1.000	
Control delay	27.4	29.3	47.7	17.9	43.1		78.6	28.2		12.3	51.5	
Lane group LOS	C	C	D	B	D		E	C		B	D	
Apprch. delay	32.8			39.9			54.3			48.8		
Approach LOS	C			D			D			D		
Intersec. delay	42.7			Intersection LOS						D		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

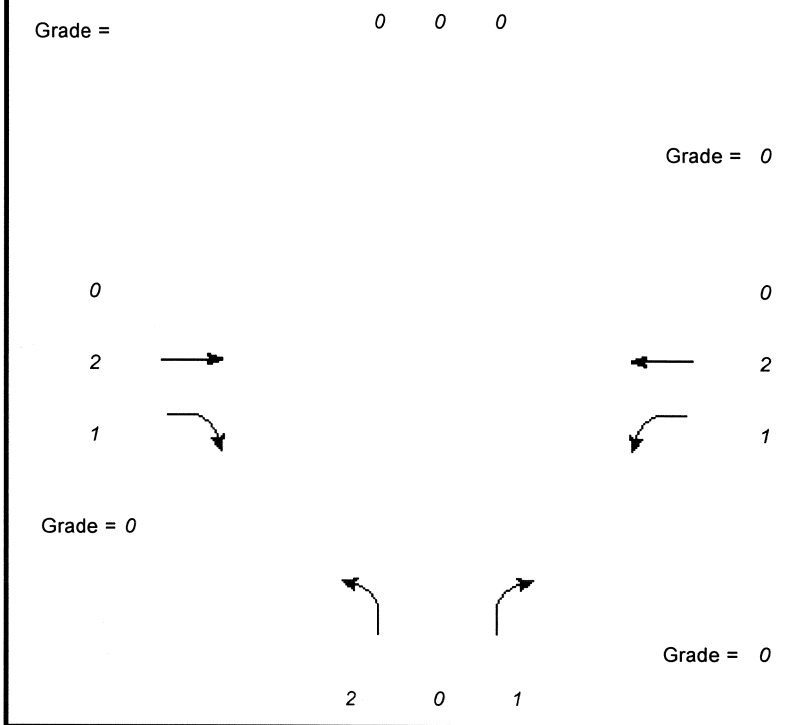
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*4/18/2001*
Time Period	*am peak*

Site Information

Intersection	*Cobb Road with US 98*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)		*220*	*500*	*10*	*180*		*410*		*20*			
% Heavy veh		*17*	*17*	*17*	*17*		*17*		*17*			
PHF		*0.90*	*0.90*	*0.90*	*0.90*		*0.90*		*0.90*			
Actuated (P/A)		*A*	*A*	*A*	*A*		*A*		*A*			
Startup lost time		*2.0*	*2.0*	*2.0*	*2.0*		*2.0*		*2.0*			
Ext. eff. green		*2.0*	*2.0*	*2.0*	*2.0*		*2.0*		*2.0*			
Arrival type		*3*	*3*	*3*	*3*		*3*		*3*			
Unit Extension		*3.0*	*3.0*	*3.0*	*3.0*		*3.0*		*3.0*			
Ped/Bike/RTOR Volume	*0*		*100*				*0*		*10*	*0*		
Lane Width		*12.0*	*12.0*	*12.0*	*12.0*		*12.0*		*12.0*			
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr		*0*	*0*	*0*	*0*		*0*		*0*			
Ped timing		*3.2*						*3.2*			*3.2*	

	EW Perm	02	03	04	NB Only	06	07	08
Timing	G = *27.0*	G =	G =	G =	G = *15.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =

Duration of Analysis (hrs) = *0.25*

Cycle Length C = *50.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume		220	500	10	180		410		20			
PHF		0.90	0.90	0.90	0.90		0.90		0.90			
Adj. Flow Rate		244	444	11	200		456		11			
Lane Group		T	R	L	T		L		R			
Adj. flow rate		244	444	11	200		456		11			
Prop. LT or RT	0.000	--		0.000	--	0.000		--			--	

Saturation Flow Rate

Base satflow		1900	1900	1900	1900		1900		1900			
Num. of lanes	0	2	1	1	2	0	2	0	1	0	0	0
fW		1.000	1.000	1.000	1.000		1.000		1.000			
fHV		0.855	0.855	0.855	0.855		0.855		0.855			
fg		1.000			1.000							
fp		1.000	1.000	1.000	1.000		1.000		1.000			
fbb		1.000	1.000	1.000	1.000		1.000		1.000			
fa		1.00			1.00							
fLU		0.95	1.00	1.00	0.95		0.97		1.00			
fLT		1.000	--	0.600	1.000	--	0.950		--			--
Secondary fLT			--			--			--			--
fRT	--	1.000	0.850	--	1.000		--		0.850	--		
fLpb		1.000	--	1.000	1.000	--	1.000		--			--
fRpb	--	1.000	1.000	--	1.000		--		1.000	--		
Adj. satflow		3085	1380	975	3085		2993		1380			
Sec. adj. satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Capacity Analysis

	EB			WB			NB			SB		
Lane group		T	R	L	T		L		R			
Adj. flow rate		244	444	11	200		456		11			
Satflow rate		3085	1380	975	3085		2993		1380			
Lost time		2.0	2.0	2.0	2.0		2.0		2.0			
Green ratio		0.54	0.54	0.54	0.54		0.30		0.30			
Lane group cap.		1666	745	527	1666		898		414			
v/c ratio		0.15	0.60	0.02	0.12		0.51		0.03			
Flow ratio		0.08	0.32	0.01	0.06		0.15		0.01			
Crit. lane group		N	Y	N	N		Y		N			
Sum flow ratios	0.47											
Lost time/cycle	8.00											
Critical v/c ratio	0.56											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group		T	R	L	T		L		R			
Adj. flow rate		244	444	11	200		456		11			
Lane group cap.		1666	745	527	1666		898		414			
v/c ratio		0.15	0.60	0.02	0.12		0.51		0.03			
Green ratio		0.54	0.54	0.54	0.54		0.30		0.30			
Unif. delay d1		5.7	7.8	5.4	5.7		14.5		12.3			
Delay factor k		0.11	0.18	0.11	0.11		0.12		0.11			
Increm. delay d2		0.0	1.3	0.0	0.0		0.5		0.0			
PF factor		1.000	1.000	1.000	1.000		1.000		1.000			
Control delay		5.8	9.1	5.4	5.7		14.9		12.4			
Lane group LOS		A	A	A	A		B		B			
Apprch. delay	7.9			5.7			14.9					
Approach LOS	A			A			B					
Intersec. delay	10.0-			Intersection LOS						A		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

FULL REPORT

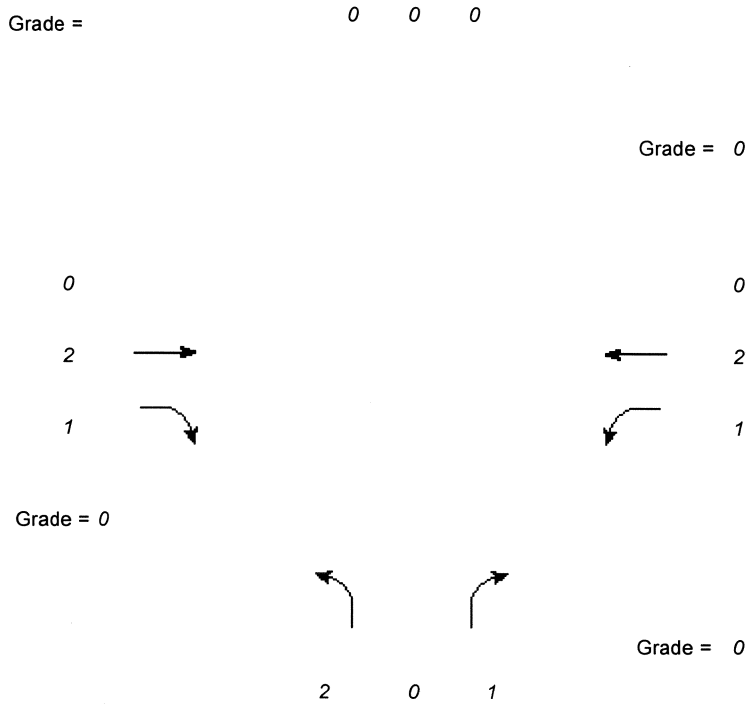
General Information

Analyst	*Praba*
Agency or Co.	*H.W.Lochner, Inc.*
Date Performed	*4/18/2001*
Time Period	*pm peak*

Site Information

Intersection	*Cobb Road with US 98*
Area Type	*All other areas*
Jurisdiction	
Analysis Year	*2025*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)		*180*	*430*	*10*	*210*		*480*		*20*			
% Heavy veh		*17*	*17*	*17*	*17*		*17*		*17*			
PHF		*0.90*	*0.90*	*0.90*	*0.90*		*0.90*		*0.90*			
Actuated (P/A)		*A*	*A*	*A*	*A*		*A*		*A*			
Startup lost time		*2.0*	*2.0*	*2.0*	*2.0*		*2.0*		*2.0*			
Ext. eff. green		*2.0*	*2.0*	*2.0*	*2.0*		*2.0*		*2.0*			
Arrival type		*3*	*3*	*3*	*3*		*3*		*3*			
Unit Extension		*3.0*	*3.0*	*3.0*	*3.0*		*3.0*		*3.0*			
Ped/Bike/RTOR Volume	*0*		*80*				*0*		*10*	*0*		
Lane Width		*12.0*	*12.0*	*12.0*	*12.0*		*12.0*		*12.0*			
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/hr												
Bus stops/hr		*0*	*0*	*0*	*0*		*0*		*0*			
Ped timing		*3.2*						*3.2*			*3.2*	

	EW Perm	02	03	04	NB Only	06	07	08
Timing	G = *22.0*	G =	G =	G =	G = *15.0*	G =	G =	G =
	Y = *4*	Y =	Y =	Y =	Y = *4*	Y =	Y =	Y =

Duration of Analysis (hrs) = *0.25*

Cycle Length C = *45.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume		180	430	10	210		480		20			
PHF		0.90	0.90	0.90	0.90		0.90		0.90			
Adj. Flow Rate		200	389	11	233		533		11			
Lane Group		T	R	L	T		L		R			
Adj. flow rate		200	389	11	233		533		11			
Prop. LT or RT	0.000	--		0.000	--	0.000		--			--	

Saturation Flow Rate

Base satflow		1900	1900	1900	1900		1900		1900			
Num. of lanes	0	2	1	1	2	0	2	0	1	0	0	0
fW		1.000	1.000	1.000	1.000		1.000		1.000			
fHV		0.855	0.855	0.855	0.855		0.855		0.855			
fg		1.000			1.000							
fp		1.000	1.000	1.000	1.000		1.000		1.000			
fbb		1.000	1.000	1.000	1.000		1.000		1.000			
fa		1.00			1.00							
fLU		0.95	1.00	1.00	0.95		0.97		1.00			
fLT		1.000	--	0.626	1.000	--	0.950		--			--
Secondary fLT			--			--			--			--
fRT	--	1.000	0.850	--	1.000		--		0.850	--		
fLpb		1.000	--	1.000	1.000	--	1.000		--			--
fRpb	--	1.000	1.000	--	1.000		--		1.000	--		
Adj. satflow		3085	1380	1017	3085		2993		1380			
Sec. adj. satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *BUILD ALTERNATIVE*

Capacity Analysis

	EB		WB			NB		SB			
Lane group		T	R	L	T		L		R			
Adj. flow rate		200	389	11	233		533		11			
Satflow rate		3085	1380	1017	3085		2993		1380			
Lost time		2.0	2.0	2.0	2.0		2.0		2.0			
Green ratio		0.49	0.49	0.49	0.49		0.33		0.33			
Lane group cap.		1508	675	497	1508		998		460			
v/c ratio		0.13	0.58	0.02	0.15		0.53		0.02			
Flow ratio		0.06	0.28	0.01	0.08		0.18		0.01			
Crit. lane group		N	Y	N	N		Y		N			
Sum flow ratios	0.46											
Lost time/cycle	8.00											
Critical v/c ratio	0.56											

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB			NB		SB			
Lane group		T	R	L	T		L		R			
Adj. flow rate		200	389	11	233		533		11			
Lane group cap.		1508	675	497	1508		998		460			
v/c ratio		0.13	0.58	0.02	0.15		0.53		0.02			
Green ratio		0.49	0.49	0.49	0.49		0.33		0.33			
Unif. delay d1		6.3	8.2	5.9	6.4		12.2		10.1			
Delay factor k		0.11	0.17	0.11	0.11		0.14		0.11			
Increm. delay d2		0.0	1.2	0.0	0.0		0.6		0.0			
PF factor		1.000	1.000	1.000	1.000		1.000		1.000			
Control delay		6.3	9.4	6.0	6.4		12.7		10.1			
Lane group LOS		A	A	A	A		B		B			
Apprch. delay	8.4			6.4			12.7					
Approach LOS	A			A			B					
Intersec. delay	9.7			Intersection LOS					A			

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Fort Dade Ave. with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		

Project Description *BUILD ALTERNATIVE*

East/West Street: *Fort Dade Avenue*	North/South Street: *Cobb Road*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*630*	*50*	*10*	*700*	*90*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*700*	*55*	*11*	*777*	*100*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*150*	*20*	*30*	*20*	*20*	*140*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*33*	*0*	*0*	*155*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*N*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*0*	*1*
Configuration			*R*			*R*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*			*R*			*R*
v (vph)	*88*	*11*			*33*			*155*
C (m) (vph)	*678*	*760*			*579*			*527*
v/c	*0.13*	*0.01*			*0.06*			*0.29*
95% queue length	*0.44*	*0.04*			*0.18*			*1.22*
Control Delay	*11.1*	*9.8*			*11.6*			*14.7*
LOS	*B*	*A*			*B*			*B*
Approach Delay	--	--	*11.6*			*14.7*		
Approach LOS	--	--	*B*			*B*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Fort Dade Ave. with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		

Project Description *BUILD ALTERNATIVE*

East/West Street: *Fort Dade Avenue*	North/South Street: *Cobb Road*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*130*	*720*	*50*	*10*	*590*	*80*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*144*	*800*	*55*	*11*	*655*	*88*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*150*	*20*	*20*	*20*	*20*	*100*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*0*	*22*	*0*	*0*	*111*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*N*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*0*	*1*
Configuration			*R*			*R*

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*			*R*			*R*
v (vph)	*144*	*11*			*22*			*111*
C (m) (vph)	*768*	*692*			*535*			*584*
v/c	*0.19*	*0.02*			*0.04*			*0.19*
95% queue length	*0.69*	*0.05*			*0.13*			*0.70*
Control Delay	*10.8*	*10.3*			*12.0*			*12.6*
LOS	*B*	*B*			*B*			*B*
Approach Delay	--	--	*12.0*			*12.6*		
Approach LOS	--	--	*B*			*B*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Yontz Road with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		

Project Description	*BUILD ALTERNATIVE*
East/West Street:	*Yontz Road*
North/South Street:	*Cobb Road*
Intersection Orientation:	*North-South*
Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*90*	*440*	*150*	*10*	*530*	*20*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*100*	*488*	*166*	*11*	*588*	*22*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*180*	*10*	*10*	*20*	*10*	*70*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*200*	*11*	*11*	*22*	*11*	*77*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*100*	*11*		*222*			*110*	
C (m) (vph)	*869*	*834*		*331*			*1097*	
v/c	*0.12*	*0.01*		*0.67*			*0.10*	
95% queue length	*0.39*	*0.04*		*4.57*			*0.33*	
Control Delay	*9.7*	*9.4*		*35.4*			*8.6*	
LOS	*A*	*A*		*E*			*A*	
Approach Delay	--	--	*35.4*			*8.6*		
Approach LOS	--	--	*E*			*A*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Yontz Road with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		
Project Description	*BUILD ALTERNATIVE*		
East/West Street:	*Yontz Road*	North/South Street:	*Cobb Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*90*	*530*	*180*	*10*	*450*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*100*	*588*	*200*	*11*	*500*	*11*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*140*	*15*	*20*	*25*	*40*	*60*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*155*	*16*	*22*	*27*	*44*	*66*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*100*	*11*		*193*			*137*	
C (m) (vph)	*952*	*737*		*345*			*1138*	
v/c	*0.11*	*0.01*		*0.56*			*0.12*	
95% queue length	*0.35*	*0.05*		*3.25*			*0.41*	
Control Delay	*9.2*	*10.0-*		*27.9*			*8.6*	
LOS	*A*	*A*		*D*			*A*	
Approach Delay	--	--	*27.9*			*8.6*		
Approach LOS	--	--	*D*			*A*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Youth Drive with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		
Project Description	*BUILD ALTERNATIVE*		
East/West Street:	*Youth Drive*	North/South Street:	*Cobb Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*370*	*100*	*50*	*450*	*0*
Peak-Hour Factor, PHF	*0.86*	*0.90*	*0.90*	*0.90*	*0.90*	*0.84*
Hourly Flow Rate, HFR	*0*	*411*	*111*	*55*	*500*	*0*
Percent Heavy Vehicles	*10*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*1*	*1*	*2*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*80*	*0*	*50*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*88*	*0*	*55*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*17*	*17*	*8*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LTR*				
v (vph)		*55*		*143*				
C (m) (vph)		*943*		*1468*				
v/c		*0.06*		*0.10*				
95% queue length		*0.19*		*0.32*				
Control Delay		*9.1*		*7.7*				
LOS		*A*		*A*				
Approach Delay	--	--	*7.7*					
Approach LOS	--	--	*A*					

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Youth Drive with Cobb Road*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		
Project Description	*BUILD ALTERNATIVE*		
East/West Street:	*Youth Drive*	North/South Street:	*Cobb Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*490*	*70*	*80*	*350*	*0*
Peak-Hour Factor, PHF	*0.86*	*0.90*	*0.90*	*0.90*	*0.90*	*0.84*
Hourly Flow Rate, HFR	*0*	*544*	*77*	*88*	*388*	*0*
Percent Heavy Vehicles	*10*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*1*	*1*	*2*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*110*	*0*	*40*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.72*	*0.72*	*0.72*
Hourly Flow Rate, HFR	*122*	*0*	*44*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*17*	*17*	*8*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration		*LTR*				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*		*LTR*				
v (vph)		*88*		*166*				
C (m) (vph)		*860*		*851*				
v/c		*0.10*		*0.20*				
95% queue length		*0.34*		*0.72*				
Control Delay		*9.7*		*10.3*				
LOS		*A*		*B*				
Approach Delay	--	--	*10.3*					
Approach LOS	--	--	*B*					

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 476 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		
Project Description	*BUILD ALTERNATIVE*		
East/West Street:	*Lake Lindsey Road (CR476)*	North/South Street:	*US 98*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*530*	*70*	*60*	*620*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*588*	*77*	*66*	*688*	*11*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*80*	*50*	*80*	*10*	*50*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*55*	*88*	*11*	*55*	*11*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*11*	*66*		*231*			*77*	
C (m) (vph)	*800*	*826*		*661*			*981*	
v/c	*0.01*	*0.08*		*0.35*			*0.08*	
95% queue length	*0.04*	*0.26*		*1.57*			*0.25*	
Control Delay	*9.6*	*9.7*		*13.3*			*9.0*	
LOS	*A*	*A*		*B*			*A*	
Approach Delay	--	--	*13.3*			*9.0*		
Approach LOS	--	--	*B*			*A*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 476 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		
Project Description	*BUILD ALTERNATIVE*		
East/West Street:	*Lake Lindsey Road (CR476)*	North/South Street:	*US 98*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*620*	*90*	*80*	*500*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*688*	*100*	*88*	*555*	*11*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*70*	*60*	*50*	*10*	*40*	*10*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*77*	*66*	*55*	*11*	*44*	*11*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*11*	*88*		*198*			*66*	
C (m) (vph)	*905*	*737*		*602*			*1027*	
v/c	*0.01*	*0.12*		*0.33*			*0.06*	
95% queue length	*0.04*	*0.40*		*1.43*			*0.21*	
Control Delay	*9.0*	*10.5*		*13.9*			*8.7*	
LOS	*A*	*B*		*B*			*A*	
Approach Delay	--	--	*13.9*			*8.7*		
Approach LOS	--	--	*B*			*A*		

>

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 491A with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		

Project Description *BUILD ALTERNATIVE*

East/West Street: *US 98*	North/South Street: *CR 491A*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*620*	*10*	*10*	*550*	*30*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*688*	*11*	*11*	*611*	*33*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*1*
Configuration	*L*	*T*	*TR*	*L*	*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*5*	*5*	*5*	*50*	*5*	*5*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*5*	*5*	*5*	*55*	*5*	*5*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*11*	*11*		*15*			*65*	
C (m) (vph)	*842*	*800*		*1106*			*1173*	
v/c	*0.01*	*0.01*		*0.01*			*0.06*	
95% queue length	*0.04*	*0.04*		*0.04*			*0.18*	
Control Delay	*9.3*	*9.6*		*8.3*			*8.2*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*8.3*			*8.2*		
Approach LOS	--	--	*A*			*A*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/18/2002*
Analysis Time Period	*pm peak*

Site Information

Intersection	*CR 491A with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *BUILD ALTERNATIVE*

East/West Street: *US 98* | North/South Street: *CR 491A*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*10*	*520*	*10*	*10*	*630*	*50*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*577*	*11*	*11*	*700*	*55*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*1*
Configuration	*L*	*T*	*TR*	*L*	*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*5*	*5*	*35*	*10*	*5*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*5*	*5*	*38*	*11*	*5*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*11*	*11*		*21*			*54*	
C (m) (vph)	*760*	*887*		*1184*			*1117*	
v/c	*0.01*	*0.01*		*0.02*			*0.05*	
95% queue length	*0.04*	*0.04*		*0.05*			*0.15*	
Control Delay	*9.8*	*9.1*		*8.1*			*8.4*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay	--	--	*8.1*			*8.4*		
Approach LOS	--	--	*A*			*A*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/18/2002*
Analysis Time Period	*am peak*

Site Information

Intersection	*CR 491 with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *BUILD ALTERNATIVE*

East/West Street: *US 98*	North/South Street: *CR 491*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*80*	*440*	*10*	*50*	*470*	*20*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*88*	*488*	*11*	*55*	*522*	*22*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*70*	*10*	*160*	*20*	*20*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*77*	*11*	*177*	*22*	*22*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*88*	*55*		*99*			*221*	
C (m) (vph)	*924*	*963*		*686*			*389*	
v/c	*0.10*	*0.06*		*0.14*			*0.57*	
95% queue length	*0.31*	*0.18*		*0.50*			*3.40*	
Control Delay	*9.3*	*9.0*		*11.1*			*25.7*	
LOS	*A*	*A*		*B*			*D*	
Approach Delay	--	--	*11.1*			*25.7*		
Approach LOS	--	--	*B*			*D*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*CR 491 with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*pm peak*		

Project Description *BUILD ALTERNATIVE*

East/West Street: *US 98* | North/South Street: *CR 491*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*20*	*390*	*40*	*10*	*500*	*120*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*22*	*433*	*44*	*11*	*555*	*133*
Percent Heavy Vehicles	*17*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*10*	*80*	*10*	*90*	*50*	*30*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*11*	*88*	*11*	*100*	*55*	*33*
Percent Heavy Vehicles	*17*	*17*	*17*	*17*	*17*	*17*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*22*	*11*		*110*			*188*	
C (m) (vph)	*809*	*983*		*786*			*722*	
v/c	*0.03*	*0.01*		*0.14*			*0.26*	
95% queue length	*0.08*	*0.03*		*0.49*			*1.04*	
Control Delay	*9.6*	*8.7*		*10.3*			*11.7*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay	--	--	*10.3*			*11.7*		
Approach LOS	--	--	*B*			*B*		

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Praba*	Intersection	*Landfill Road with US 98*
Agency/Co.	*H.W.Lochner, Inc.*	Jurisdiction	
Date Performed	*4/18/2002*	Analysis Year	*2025*
Analysis Time Period	*am peak*		

Project Description *BUILD ALTERNATIVE*

East/West Street: *US 98*	North/South Street: *Landfill Road*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*460*	*40*	*80*	*370*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*511*	*44*	*88*	*411*	*0*
Percent Heavy Vehicles	*15*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*50*	*0*	*60*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*55*	*0*	*66*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*0*	*17*	*25*	*4*	*9*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*88*	*55*		*66*			
C (m) (vph)		*915*	*345*		*676*			
v/c		*0.10*	*0.16*		*0.10*			
95% queue length		*0.32*	*0.56*		*0.32*			
Control Delay		*9.4*	*17.4*		*10.9*			
LOS		*A*	*C*		*B*			
Approach Delay	--	--	*13.9*					
Approach LOS	--	--	*B*					

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Praba*
Agency/Co.	*H.W.Lochner, Inc.*
Date Performed	*4/18/2002*
Analysis Time Period	*pm peak*

Site Information

Intersection	*Landfill Road with US 98*
Jurisdiction	
Analysis Year	*2025*

Project Description *BUILD ALTERNATIVE*

East/West Street: *US 98*

North/South Street: *Landfill Road*

Intersection Orientation: *East-West*

Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*0*	*370*	*50*	*60*	*470*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*0*	*411*	*55*	*66*	*522*	*0*
Percent Heavy Vehicles	*15*	--	--	*17*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*40*	*0*	*90*	*0*	*0*	*0*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR	*44*	*0*	*100*	*0*	*0*	*0*
Percent Heavy Vehicles	*17*	*0*	*17*	*25*	*4*	*9*
Percent Grade (%)		*0*			*0*	
Flared Approach		*Y*			*Y*	
Storage		*1*			*1*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (vph)		*66*	*44*		*100*			
C (m) (vph)		*993*	*380*		*725*			
v/c		*0.07*	*0.12*		*0.14*			
95% queue length		*0.21*	*0.39*		*0.48*			
Control Delay		*8.9*	*15.7*		*10.8*			
LOS		*A*	*C*		*B*			
Approach Delay	--	--	*12.3*					
Approach LOS	--	--	*B*					

HCS2000™ Copyright© 2000 University of Florida, All Rights Reserved Version 4.1b

APPENDIX E

LEVEL OF SERVICE OF HIGHWAY SEGMENTS

FOR THE NO-BUILD 2025 CONDITIONS

(HCS 2000 ANALYSIS)

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	SR 50 / Fort Dade Avenue
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	0.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	7	/mi
Up/down		%			

Two-way hourly volume, V	1270	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.983	
Two-way flow rate,(note-1) vp	1435	pc/h
Highest directional split proportion (note-2)	775	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	47.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.8	mi/h
Free-flow speed, FFS	45.3	mi/h
Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATS	32.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1411	pc/h
Highest directional split proportion (note-2)	762	
Base percent time-spent-following, BPTSF	71.1	%
Adj.for directional distribution and no-passing zones, fd/np	7.9	
Percent time-spent-following, PTSF	79.0	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.45	
Peak 15-min vehicle-miles of travel, VMT15	106	veh-mi
Peak-hour vehicle-miles of travel, VMT60	381	veh-mi
Peak 15-min total travel time, TT15	3.3	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	Fort Dade Avenue / Yontz Road
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	38	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V	1060	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.983	
Two-way flow rate,(note-1) vp	1198	pc/h
Highest directional split proportion (note-2)	647	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	1.2	mi/h
Average travel speed, ATS	44.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	1198	pc/h
Highest directional split proportion (note-2)	647	
Base percent time-spent-following, BPTSF	65.1	%
Adj.for directional distribution and no-passing zones, fd/np	7.3	
Percent time-spent-following, PTSF	72.4	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.37	
Peak 15-min vehicle-miles of travel, VMT15	442	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1590	veh-mi
Peak 15-min total travel time, TT15	10.0	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	Yontz Road / Youth Drive
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	54	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	665	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	764	pc/h
Highest directional split proportion (note-2)	413	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	54.8	mi/h
Adjustment for no-passing zones, fnp	2.4	mi/h
Average travel speed, ATS	46.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	751	pc/h
Highest directional split proportion (note-2)	406	
Base percent time-spent-following, BPTSF	48.3	%
Adj.for directional distribution and no-passing zones, fd/np	14.2	
Percent time-spent-following, PTSF	62.5	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	203	veh-mi
Peak-hour vehicle-miles of travel, VMT60	732	veh-mi
Peak 15-min total travel time, TT15	4.4	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	Cobb Road
From/To	Youth Drive / US 98
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	38	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	545	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	626	pc/h
Highest directional split proportion (note-2)	338	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	54.8	mi/h
Adjustment for no-passing zones, fnp	2.3	mi/h
Average travel speed, ATS	47.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	616	pc/h
Highest directional split proportion (note-2)	333	
Base percent time-spent-following, BPTSF	41.8	%
Adj.for directional distribution and no-passing zones, fd/np	14.9	
Percent time-spent-following, PTSF	56.7	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	242	veh-mi
Peak-hour vehicle-miles of travel, VMT60	872	veh-mi
Peak 15-min total travel time, TT15	5.1	veh-h

-

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	Cobb Road / CR476
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	20	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	1170	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.983	
Two-way flow rate,(note-1) vp	1322	pc/h
Highest directional split proportion (note-2)	714	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATS	48.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1300	pc/h
Highest directional split proportion (note-2)	702	
Base percent time-spent-following, BPTSF	68.1	%
Adj.for directional distribution and no-passing zones, fd/np	4.4	
Percent time-spent-following, PTSF	72.5	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.41	
Peak 15-min vehicle-miles of travel, VMT15	488	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1755	veh-mi
Peak 15-min total travel time, TT15	10.0	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	CR 476 / CR 491A
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	6	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	1100	veh/h	
Directional split	54 / 46	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.983	
Two-way flow rate,(note-1) vp	1243	pc/h
Highest directional split proportion (note-2)	671	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	0.2	mi/h
Average travel speed, ATS	49.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1222	pc/h
Highest directional split proportion (note-2)	660	
Base percent time-spent-following, BPTSF	65.8	%
Adj.for directional distribution and no-passing zones, fd/np	1.5	
Percent time-spent-following, PTSF	67.4	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.39	
Peak 15-min vehicle-miles of travel, VMT15	168	veh-mi
Peak-hour vehicle-miles of travel, VMT60	605	veh-mi
Peak 15-min total travel time, TT15	3.4	veh-h

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	CR 491A / CR 491
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	28	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	1020		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	1172	pc/h
Highest directional split proportion (note-2)	633	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATS	49.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	1153	pc/h
Highest directional split proportion (note-2)	623	
Base percent time-spent-following, BPTSF	63.7	%
Adj.for directional distribution and no-passing zones, fd/np	6.5	
Percent time-spent-following, PTSF	70.3	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.37	
Peak 15-min vehicle-miles of travel, VMT15	453	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1632	veh-mi
Peak 15-min total travel time, TT15	9.1	veh-h

-

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	CR 491 / Landfill Road
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	2.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	27	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	930		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	1068	pc/h
Highest directional split proportion (note-2)	577	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	1.2	mi/h
Average travel speed, ATS	50.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	1051	pc/h
Highest directional split proportion (note-2)	568	
Base percent time-spent-following, BPTSF	60.3	%
Adj.for directional distribution and no-passing zones, fd/np	7.3	
Percent time-spent-following, PTSF	67.6	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.33	
Peak 15-min vehicle-miles of travel, VMT15	672	veh-mi
Peak-hour vehicle-miles of travel, VMT60	2418	veh-mi
Peak 15-min total travel time, TT15	13.4	veh-h

-

Two-Way Two-Lane Highway Segment Analysis

Analyst	Praba
Agency/Co.	H.W.Lochner, Inc
Date Performed	4/16/2002
Analysis Time Period	Design Hour
Highway	US 98
From/To	Landfill Road / Sun Coast Pkwy
Jurisdiction	Okaloosa County
Analysis Year	2025
Description	Cobb Road & US 98 PD&E Study - NO-BUILD ALTERNATIVE

Input Data

Highway class	Class 1				
Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	17	%
Segment length	1.2	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	1	/mi
Up/down		%			

Two-way hourly volume, V	865		veh/h
Directional split	54	/ 46	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.967	
Two-way flow rate,(note-1) vp	994	pc/h
Highest directional split proportion (note-2)	537	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.3	mi/h
Free-flow speed, FFS	59.8	mi/h
Adjustment for no-passing zones, fnp	2.6	mi/h
Average travel speed, ATS	49.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.983	
Two-way flow rate,(note-1) vp	977	pc/h
Highest directional split proportion (note-2)	528	
Base percent time-spent-following, BPTSF	57.6	%
Adj.for directional distribution and no-passing zones, fd/np	12.9	
Percent time-spent-following, PTSF	70.6	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.31	
Peak 15-min vehicle-miles of travel, VMT15	288	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1038	veh-mi
Peak 15-min total travel time, TT15	5.8	veh-h

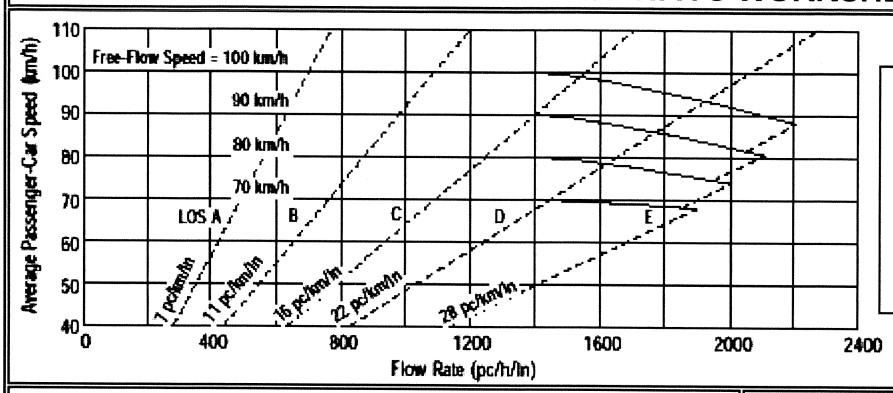
APPENDIX F

LEVEL OF SERVICE OF HIGHWAY SEGMENTS

FOR THE BUILD 2025 CONDITIONS

(HCS 2000 ANALYSIS)

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	SR 50 / Fort Dade Avenue
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Urban Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	895	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	0.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	55.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	5.4
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	47.8

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	539
Speed, S (mi/h)	47.8
D (pc/mi/ln)	11.3
LOS	B

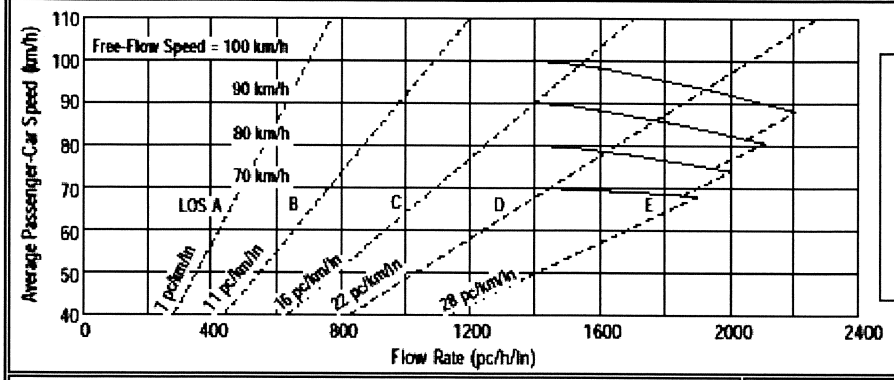
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	SR 50 / Fort Dade Avenue
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Sub-Urban Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	895	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	10.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	55.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.4
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	52.8

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	539
Speed, S (mi/h)	52.8
D (pc/mi/ln)	10.2
LOS	A

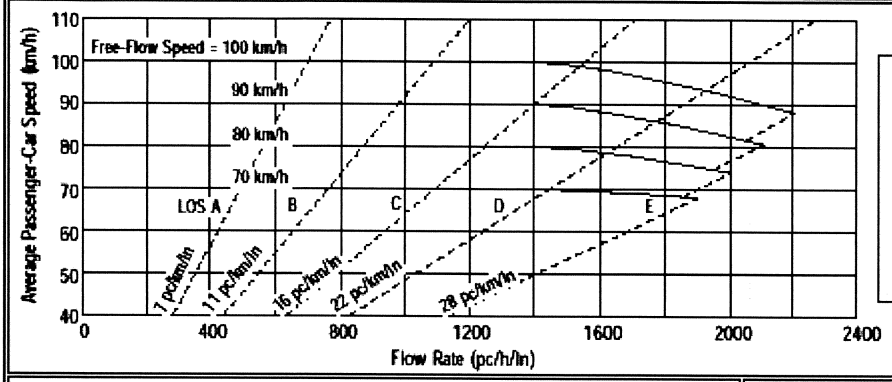
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	Fort Dade Avenue / Yontz Road
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Urban Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	794	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	0.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	55.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	5.4
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	47.8

Operations

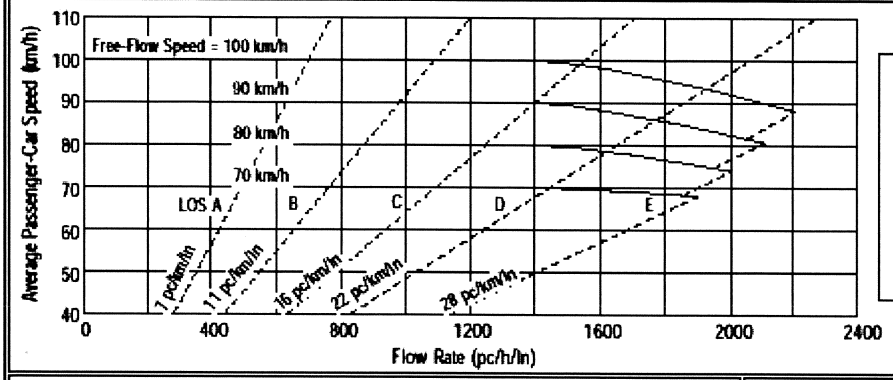
Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	478
Speed, S (mi/h)	47.8
D (pc/mi/ln)	10.0
LOS	A

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	Fort Dade Avenue / Yontz Road
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Sub-Urban Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	794	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	10.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	55.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.4
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	52.8

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	478
Speed, S (mi/h)	52.8
D (pc/mi/ln)	9.0
LOS	A

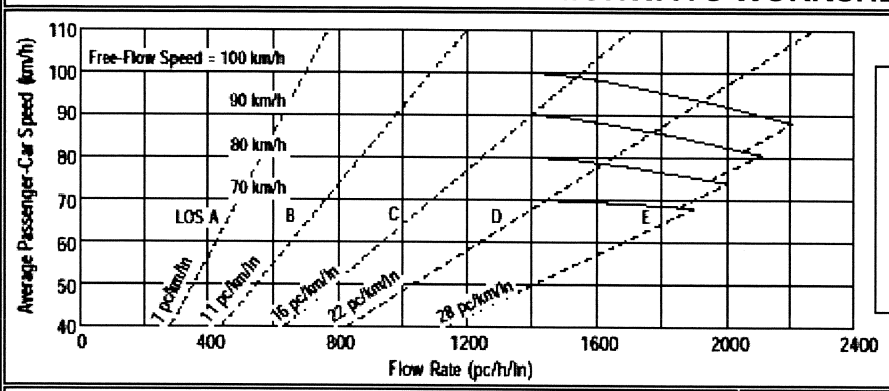
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	Yontz Road / Youth Drive
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Rural Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	556	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	12.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	58.3

Operations

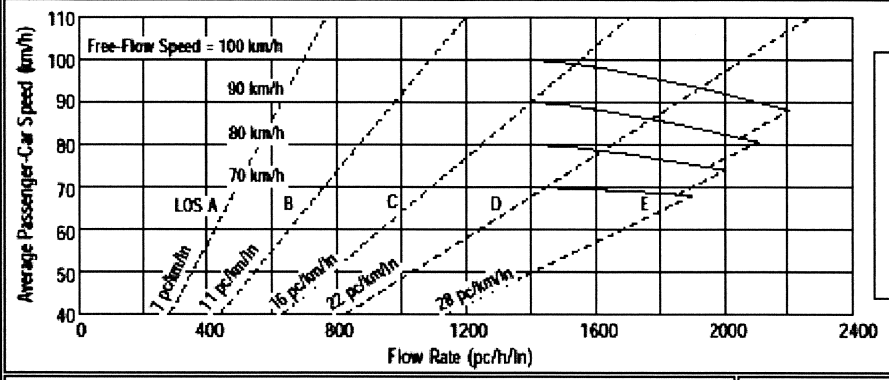
Operational (LOS)	
Flow Rate, v_p (pc/h/ln)	335
Speed, S (mi/h)	58.3
D (pc/mi/ln)	5.8
LOS	A

Design

Design (N)	
Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	Youth Drive / US 98
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Rural Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	500	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	12.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	58.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	301
Speed, S (mi/h)	58.3
D (pc/mi/ln)	5.2
LOS	A

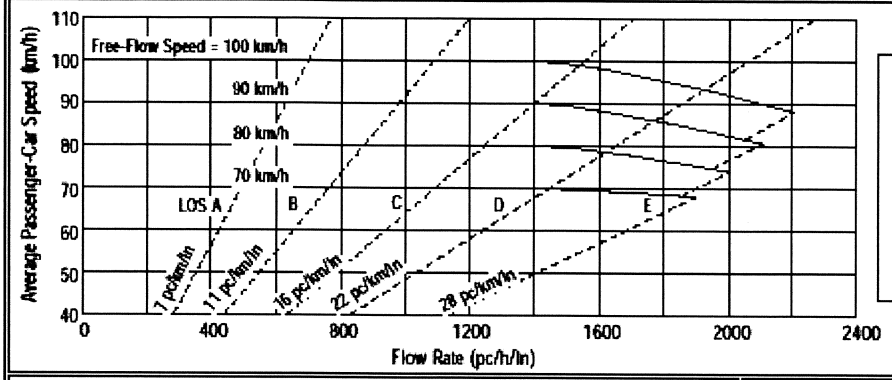
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	Cobb Road / CR 476
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Rural Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	719	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	12.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	58.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	433
Speed, S (mi/h)	58.3
D (pc/mi/ln)	7.4
LOS	A

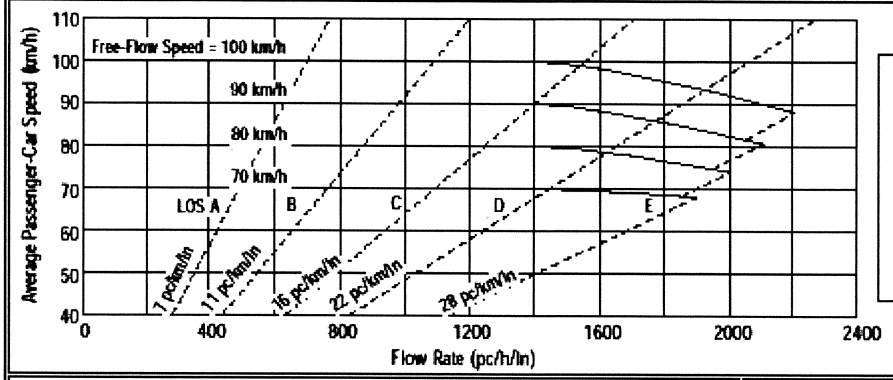
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	CR 476 / CR 491A
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Rural Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	692	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	12.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	58.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	417
Speed, S (mi/h)	58.3
D (pc/mi/ln)	7.2
LOS	A

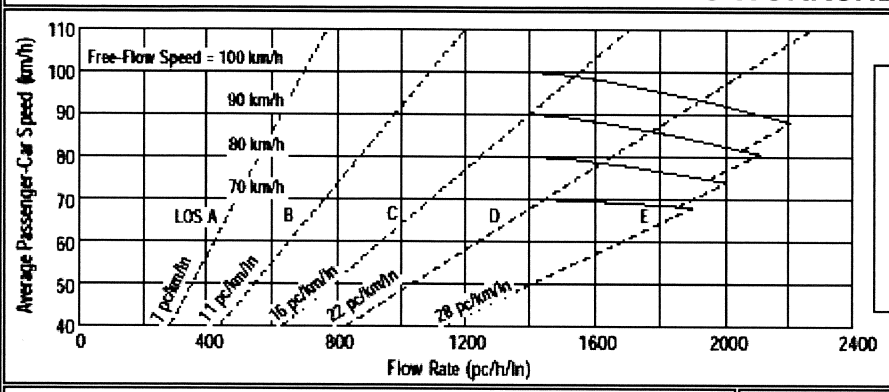
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	CR 491A / CR 491
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Rural Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	636	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	12.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	58.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	383
Speed, S (mi/h)	58.3
D (pc/mi/ln)	6.6
LOS	A

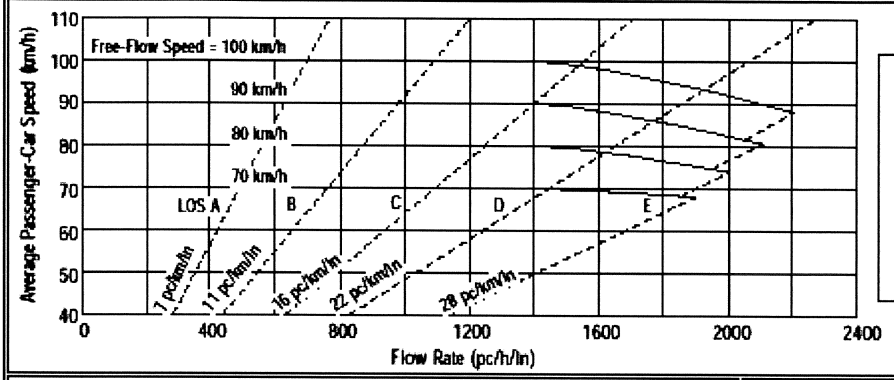
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	CR 491 / Landfill Road
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Rural Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	532	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	12.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	58.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	320
Speed, S (mi/h)	58.3
D (pc/mi/ln)	5.5
LOS	A

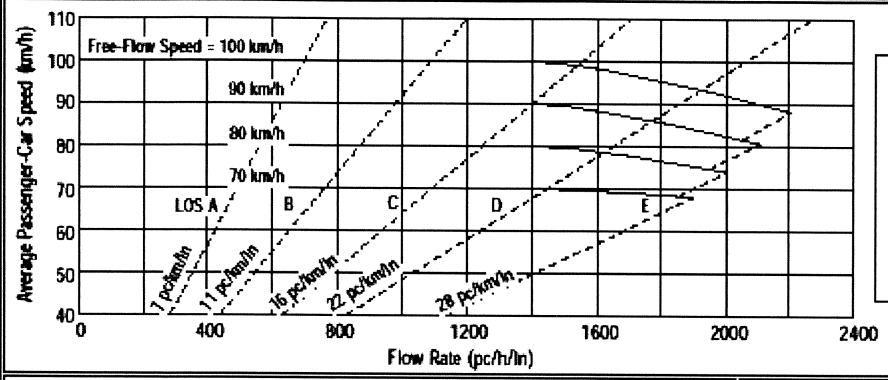
Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

MULTILANE HIGHWAYS WORKSHEET(Direction 1)



Application	Input	Output
Oper. (LOS)	FFS, N, v_p	LOS, S, D
Des. (N)	FFS, LOS, v_p	N, S, D
Des. (v_p)	FFS, LOS, N	v_p, S, D
Plan. (LOS)	FFS, N, AADT	LOS, S, D
Plan. (N)	FFS, LOS, AADT	N, S, D
Plan. (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	Praba
Agency or Company	H.W.Lochner, Inc
Date Performed	4/17/2002
Analysis Time Period	Design Hour

Site Information

Highway/Direction to Travel	Cobb Road
From/To	Landfill Road / Suncoast
Jurisdiction	Okaloosa County
Analysis Year	2025

Project Description Build Alternative - Rural Arterial

☑ Oper.(LOS) ☐ Des. (N) ☐ Plan. (vp)

Flow Inputs

Volume, V (veh/h)	497	Peak-Hour Factor, PHF	0.90
AADT(veh/h)		%Trucks and Buses, P_T	17
Peak-Hour Prop of AADT (veh/d)		%RVs, P_R	0
Peak-Hour Direction Prop, D		General Terrain:	Level
DDHV (veh/h)		Grade Length (mi)	0.00
Driver Type Adjustment	1.00	Up/Down %	0.00
		Number of Lanes	2

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	f_{HV}	0.922

Speed Inputs

Lane Width, LW (ft)	12.0
Total Lateral Clearence, LC (ft)	12.0
Access Points, A (A/mi)	7
Median Type, M	Divided
FFS (measured)	
Base Free-Flow Speed, BFFS	60.0

Calc Speed Adj and FFS

f_{LW} (mi/h)	0.0
f_{LC} (mi/h)	0.0
f_A (mi/h)	1.8
f_M (mi/h)	0.0
FFS (mi/h)	58.3

Operations

Operational (LOS)

Flow Rate, v_p (pc/h/ln)	299
Speed, S (mi/h)	58.3
D (pc/mi/ln)	5.1
LOS	A

Design

Design (N)

Required Number of Lanes, N	
Flow Rate, v_p (pc/h)	
Max Service Flow Rate (pc/h/ln)	
Design LOS	

Copyright© 2000 University of Florida, All Rights Reserved

APPENDIX G

AIR AND NOISE TRAFFIC DATA FORMS

DISTRICT 7 PD&E
TRAFFIC DATA FOR AIR STUDY SCREENING TEST

DATE: 4/23/02
PREPARED BY: N. Prabaharan

Financial Project Number(s):
Work Program Item No.: 257299 1, 405017 1
Federal Aid Number(s): 2891 007 P & 2891 008 P
Project Description Cobb Road / US 98 PD&E Study

NOTE: The most congested intersection with the highest total volume and lowest departure speeds and it could be two different intersections based on the "Build" vs. "No-Build" alternatives. The traffic volumes are to be the vph of the most congested leg approaching the intersection. The speeds are to be the approach speed for the most congested leg no closer than 152.4 m (500') from the intersection.

Intersection: Cobb Road and SR 50

OPENING YEAR: 2005

"Build"	"No-Build"
Signalized Intersection:	Signalized Intersection:
Intersection: Cobb Road and SR 50	Intersection: Cobb Road and SR 50
Design or Peak Hour Traffic for most congested leg: 1130 vph	Design or Peak Hour Traffic for most congested leg: 1100 vph
Specify leg: West leg (Eastbound SR 50)	Specify leg: West leg (Eastbound SR 50)
Approach Speed: 35 mph	Approach Speed: 35 mph

Intersection: Cobb Road and SR 50

DESIGN YEAR: 2025

"Build"	"No-Build"
Signalized Intersection:	Signalized Intersection:
Intersection: Cobb Road and SR 50	Intersection: Cobb Road and SR 50
Design or Peak Hour Traffic for most congested leg: 1610 vph	Design or Peak Hour Traffic for most congested leg: 1450 vph
Specify leg: West leg (Eastbound SR 50)	Specify leg: West leg (Eastbound SR 50)
Approach Speed: 35 mph	Approach Speed: 35 mph

DISTRICT 7 PD&E
TRAFFIC DATA FOR AIR STUDY SCREENING TEST

DATE: 4/23/02
PREPARED BY: N. Prabaharan

Financial Project Number(s):
Work Program Item No.: 257299 1, 405017 1
Federal Aid Number(s): 2891 007 P & 2891 008 P
Project Description Cobb Road / US 98 PD&E Study

NOTE: The most congested intersection with the highest total volume and lowest departure speeds and it could be two different intersections based on the "Build" vs. "No-Build" alternatives. The traffic volumes are to be the vph of the most congested leg approaching the intersection. The speeds are to be the approach speed for the most congested leg no closer than 152.4 m (500') from the intersection.

Intersection: Cobb Road and Yontz Road

OPENING YEAR: 2005

"Build"	"No-Build"
Signalized Intersection:	Signalized Intersection:
Intersection: Cobb Road and Yontz Road	Intersection: Cobb Road and Yontz Road
Design or Peak Hour Traffic	Design or Peak Hour Traffic
for most congested leg: 575 vph	for most congested leg: 535 vph
Specify leg: South leg (Northbound SR 50)	Specify leg: South leg (Northbound SR 50)
Approach Speed: 40 mph	Approach Speed: 40 mph

Intersection: Cobb Road and Yontz Road

DESIGN YEAR: 2025

"Build"	"No-Build"
Signalized Intersection:	Signalized Intersection:
Intersection: Cobb Road and Yontz Road	Intersection: Cobb Road and Yontz Road
Design or Peak Hour Traffic	Design or Peak Hour Traffic
for most congested leg: 800 vph	for most congested leg: 570 vph
Specify leg: South leg (Northbound SR 50)	Specify leg: South leg (Northbound SR 50)
Approach Speed: 40 mph	Approach Speed: 40 mph

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project: Cobb Road/US98 PD&E Study

Date: 4/22/2002

State Project Number(s):

Prepared By:

Work Program Number(s): 257299 1 & 405017 1

Federal Aid Number(s): 2891 007 P & 2891 008 P

Segment Description: Wheeling Street Receptors: Cobb Road from Fort Dade Avenue to Yontz Road

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2001	Year:	2025	Year:	2025
ADT: LOS (C)	8,080	ADT: LOS (C)	8,080	ADT: LOS (C)	44,000
Demand	9,800	Demand	10,700	Demand	14,850
Speed:	46 mph / 74 kmh	Speed:	46 mph / 74 kmh	Speed:	53 mph / 85 kmh
K=	9.9 %	K=	9.9 %	K=	9.9 %
D=	54 %	D=	54 %	D=	54 %
T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.
T=	16.8 % Design hr	T=	16.8 % Design hr	T=	16.8 % Design hr
3.8	% Medium Trucks DHV		% Medium Trucks DHV	3.8	% Medium Trucks DHV
13.0	% Heavy Trucks DHV		% Heavy Trucks DHV	13.0	% Heavy Trucks DHV
1.0	% Buses DHV		% Buses DHV	1.0	% Buses DHV
0.0	% Motorcycles DHV		% Motorcycles DHV	0.0	% Motorcycles DHV

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:	**LOS (C)**	**No-Build (Design Year) Model:**	**LOS (C)**	**Build (Design Year) Model:**	**Demand**
LOS (C)		LOS (C)		LOS (C)	
Northbound: Autos	355	Northbound: Autos	434	Northbound: Autos	1934
Med Trucks	16	Med Trucks	0	Med Trucks	89
Hvy Trucks	56	Hvy Trucks	0	Hvy Trucks	306
Buses	4	Buses	0	Buses	24
Motorcycles	0	Motorcycles	0	Motorcycles	0
Southbound: Autos	303	Southbound: Autos	365	Southbound: Autos	1647
Med Trucks	14	Med Trucks	0	Med Trucks	76
Hvy Trucks	48	Hvy Trucks	0	Hvy Trucks	260
Buses	4	Buses	0	Buses	20
Motorcycles	0	Motorcycles	0	Motorcycles	0
Demand		Demand		Demand	
Northbound: Autos	431	Northbound: Autos	575	Northbound: Autos	653
Med Trucks	20	Med Trucks	0	Med Trucks	30
Hvy Trucks	68	Hvy Trucks	0	Hvy Trucks	103
Buses	5	Buses	0	Buses	8
Motorcycles	0	Motorcycles	0	Motorcycles	0
Southbound: Autos	367	Southbound: Autos	483	Southbound: Autos	556
Med Trucks	17	Med Trucks	0	Med Trucks	26
Hvy Trucks	58	Hvy Trucks	0	Hvy Trucks	88
Buses	4	Buses	0	Buses	7
Motorcycles	0	Motorcycles	0	Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project: Cobb Road/US98 PD&E Study

Date: 4/22/2002

State Project Number(s):

Prepared By:

Work Program Number(s): 257299 1 & 405017 1

Federal Aid Number(s): 2891 007 P & 2891 008 P

Segment Description: Youth Drive Receptors: Cobb Road from Yontz Road to Youth Drive

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2001	Year:	2025	Year:	2025
ADT: LOS (C)	7,550	ADT: LOS (C)	7,550	ADT: LOS (C)	44,100
Demand	3,850	Demand	6,700	Demand	10,400
Speed:	48 mph / 77 kmh	Speed:	47 mph / 76 kmh	Speed:	58 mph / 93 kmh
K=	9.9 %	K=	9.9 %	K=	9.9 %
D=	54 %	D=	54 %	D=	54 %
T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.
T=	16.8 % Design hr	T=	16.8 % Design hr	T=	16.8 % Design hr
3.8	% Medium Trucks DHV	3.8	% Medium Trucks DHV	3.8	% Medium Trucks DHV
13.0	% Heavy Trucks DHV	13.0	% Heavy Trucks DHV	13.0	% Heavy Trucks DHV
1.0	% Buses DHV	1.0	% Buses DHV	1.0	% Buses DHV
0.0	% Motorcycles DHV	0.0	% Motorcycles DHV	0.0	% Motorcycles DHV

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**Demand**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Northbound:	Autos	332	Northbound:	Autos	332	Northbound:	Autos	1939
	Med Trucks	15		Med Trucks	15		Med Trucks	88
	Hvy Trucks	52		Hvy Trucks	52		Hvy Trucks	306
	Buses	4		Buses	4		Buses	24
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Southbound:	Autos	283	Southbound:	Autos	283	Southbound:	Autos	1652
	Med Trucks	13		Med Trucks	13		Med Trucks	75
	Hvy Trucks	45		Hvy Trucks	45		Hvy Trucks	261
	Buses	3		Buses	3		Buses	20
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Demand			Demand			Demand		
Northbound:	Autos	169	Northbound:	Autos	295	Northbound:	Autos	457
	Med Trucks	8		Med Trucks	13		Med Trucks	21
	Hvy Trucks	27		Hvy Trucks	47		Hvy Trucks	72
	Buses	2		Buses	4		Buses	6
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Southbound:	Autos	144	Southbound:	Autos	251	Southbound:	Autos	390
	Med Trucks	7		Med Trucks	11		Med Trucks	18
	Hvy Trucks	23		Hvy Trucks	40		Hvy Trucks	62
	Buses	2		Buses	3		Buses	5
	Motorcycles	0		Motorcycles	0		Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project: Cobb Road/US98 PD&E Study

Date: 4/22/2002

State Project Number(s):

Prepared By:

Work Program Number(s): 257299 1 & 405017 1

Federal Aid Number(s): 2891 007 P & 2891 008 P

Segment Description: Wever Park Receptors (east side) and Intersection Receptors(west side): Cobb Road from Youth Drive to US 98

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2001		Year:	2025		Year:	2025	
ADT: LOS (C)	8,080		ADT: LOS (C)	8,080		ADT: LOS (C)	44,100	
Demand	3,600		Demand	5,500		Demand	9,350	
Speed:	49	mph	Speed:	48	mph	Speed:	58	mph
	79	kmh		77	kmh		93	kmh
K=	9.9	%	K=	9.9	%	K=	9.9	%
D=	54	%	D=	54	%	D=	54	%
T=	33.5	% for 24 hrs.	T=	33.5	% for 24 hrs.	T=	33.5	% for 24 hrs.
T=	16.8	% Design hr	T=	16.8	% Design hr	T=	16.8	% Design hr
3.8	% Medium Trucks DHV		3.8	% Medium Trucks DHV		3.8	% Medium Trucks DHV	
13.0	% Heavy Trucks DHV		13.0	% Heavy Trucks DHV		13.0	% Heavy Trucks DHV	
1.0	% Buses DHV		1.0	% Buses DHV		1.0	% Buses DHV	
0.0	% Motorcycles DHV		0.0	% Motorcycles DHV		0.0	% Motorcycles DHV	

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		Demand	Build (Design Year) Model:		Demand
LOS (C)			LOS (C)			LOS (C)		
NB (Wever), (Intersection):	SB Autos	355	NB (Wever), (Intersection):	SB Autos	355	NB (Wever), (Intersection):	SB Autos	1939
	Med Trucks	16		Med Trucks	16		Med Trucks	88
	Hvy Trucks	56		Hvy Trucks	56		Hvy Trucks	306
	Buses	4		Buses	4		Buses	24
	Motorcycles	0		Motorcycles	0		Motorcycles	0
SB (Wever), (Intersection):	NB Autos	303	SB (Wever), (Intersection):	NB Autos	303	SB (Wever), (Intersection):	NB Autos	1652
	Med Trucks	14		Med Trucks	14		Med Trucks	75
	Hvy Trucks	48		Hvy Trucks	48		Hvy Trucks	261
	Buses	4		Buses	4		Buses	20
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Demand			Demand			Demand		
NB (Wever), (Intersection):	SB Autos	158	NB (Wever), (Intersection):	SB Autos	242	NB (Wever), (Intersection):	SB Autos	411
	Med Trucks	7		Med Trucks	11		Med Trucks	19
	Hvy Trucks	25		Hvy Trucks	38		Hvy Trucks	65
	Buses	2		Buses	3		Buses	5
	Motorcycles	0		Motorcycles	0		Motorcycles	0
SB (Wever), (Intersection):	NB Autos	135	SB (Wever), (Intersection):	NB Autos	206	SB (Wever), (Intersection):	NB Autos	350
	Med Trucks	6		Med Trucks	9		Med Trucks	16
	Hvy Trucks	21		Hvy Trucks	33		Hvy Trucks	55
	Buses	2		Buses	3		Buses	4
	Motorcycles	0		Motorcycles	0		Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project: Cobb Road/US98 PD&E Study

Date: 4/22/2002

State Project Number(s):

Prepared By:

Work Program Number(s): 257299 1 & 405017 1

Federal Aid Number(s): 2891 007 P & 2891 008 P

Segment Description: Ringhaver Receptors: US98 from CR476 to CR491A

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2001	Year:	2025	Year:	2025
ADT: LOS (C)	10,100	ADT: LOS (C)	10,100	ADT: LOS (C)	47,700
Demand	8,550	Demand	11,100	Demand	12,950
Speed:	52 mph / 84 kmh	Speed:	51 mph / 82 kmh	Speed:	58 mph / 93 kmh
K=	9.9 %	K=	9.9 %	K=	9.9 %
D=	54 %	D=	54 %	D=	54 %
T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.
T=	16.8 % Design hr	T=	16.8 % Design hr	T=	16.8 % Design hr
3.8	% Medium Trucks DHV	3.8	% Medium Trucks DHV	3.8	% Medium Trucks DHV
13.0	% Heavy Trucks DHV	13.0	% Heavy Trucks DHV	13.0	% Heavy Trucks DHV
1.0	% Buses DHV	1.0	% Buses DHV	1.0	% Buses DHV
0.0	% Motorcycles DHV	0.0	% Motorcycles DHV	0.0	% Motorcycles DHV

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:	**Demand**	**No-Build (Design Year) Model:**	**LOS (C)**	**Build (Design Year) Model:**	**Demand**
LOS (C)		LOS (C)		LOS (C)	
Northbound: Autos	444	Northbound: Autos	444	Northbound: Autos	2097
Med Trucks	20	Med Trucks	20	Med Trucks	96
Hvy Trucks	70	Hvy Trucks	70	Hvy Trucks	332
Buses	5	Buses	5	Buses	26
Motorcycles	0	Motorcycles	0	Motorcycles	0
Southbound: Autos	378	Southbound: Autos	378	Southbound: Autos	1787
Med Trucks	17	Med Trucks	17	Med Trucks	81
Hvy Trucks	60	Hvy Trucks	60	Hvy Trucks	282
Buses	5	Buses	5	Buses	22
Motorcycles	0	Motorcycles	0	Motorcycles	0
Demand		Demand		Demand	
Northbound: Autos	376	Northbound: Autos	488	Northbound: Autos	569
Med Trucks	17	Med Trucks	22	Med Trucks	26
Hvy Trucks	59	Hvy Trucks	77	Hvy Trucks	90
Buses	5	Buses	6	Buses	7
Motorcycles	0	Motorcycles	0	Motorcycles	0
Southbound: Autos	320	Southbound: Autos	416	Southbound: Autos	485
Med Trucks	15	Med Trucks	19	Med Trucks	22
Hvy Trucks	51	Hvy Trucks	66	Hvy Trucks	77
Buses	4	Buses	5	Buses	6
Motorcycles	0	Motorcycles	0	Motorcycles	0

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

Project: Cobb Road/US98 PD&E Study

Date: 4/22/2002

State Project Number(s):

Prepared By:

Work Program Number(s): 257299 1 & 405017 1

Federal Aid Number(s): 2891 007 P & 2891 008 P

Segment Description: Deschamps Receptors: US 98 from CR491A to CR491

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2001	Year:	2025	Year:	2025
ADT: LOS (C)	8,480	ADT: LOS (C)	8,480	ADT: LOS (C)	47,700
Demand	7,950	Demand	10,300	Demand	9,950
Speed:	51 mph / 82 kmh	Speed:	51 mph / 82 kmh	Speed:	58 mph / 93 kmh
K=	9.9 %	K=	9.9 %	K=	9.9 %
D=	54 %	D=	54 %	D=	54 %
T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.	T=	33.5 % for 24 hrs.
T=	16.8 % Design hr	T=	16.8 % Design hr	T=	16.8 % Design hr
3.8	% Medium Trucks DHV	3.8	% Medium Trucks DHV	3.8	% Medium Trucks DHV
13.0	% Heavy Trucks DHV	13.0	% Heavy Trucks DHV	13.0	% Heavy Trucks DHV
1.0	% Buses DHV	1.0	% Buses DHV	1.0	% Buses DHV
0.0	% Motorcycles DHV	0.0	% Motorcycles DHV	0.0	% Motorcycles DHV

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		**Demand**	**No-Build (Design Year) Model:**		**LOS (C)**	**Build (Design Year) Model:**		**Demand**
LOS (C)			LOS (C)			LOS (C)		
Northbound:	Autos	373	Northbound:	Autos	373	Northbound:	Autos	2097
	Med Trucks	17		Med Trucks	17		Med Trucks	96
	Hvy Trucks	59		Hvy Trucks	59		Hvy Trucks	332
	Buses	5		Buses	5		Buses	26
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Southbound:	Autos	318	Southbound:	Autos	318	Southbound:	Autos	1787
	Med Trucks	14		Med Trucks	14		Med Trucks	81
	Hvy Trucks	50		Hvy Trucks	50		Hvy Trucks	282
	Buses	4		Buses	4		Buses	22
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Demand			Demand			Demand		
Northbound:	Autos	350	Northbound:	Autos	453	Northbound:	Autos	438
	Med Trucks	16		Med Trucks	21		Med Trucks	20
	Hvy Trucks	55		Hvy Trucks	72		Hvy Trucks	69
	Buses	4		Buses	6		Buses	5
	Motorcycles	0		Motorcycles	0		Motorcycles	0
Southbound:	Autos	298	Southbound:	Autos	386	Southbound:	Autos	373
	Med Trucks	14		Med Trucks	18		Med Trucks	17
	Hvy Trucks	47		Hvy Trucks	61		Hvy Trucks	59
	Buses	4		Buses	5		Buses	5
	Motorcycles	0		Motorcycles	0		Motorcycles	0