October 2012
Final

SR 87 Connector PD&E Study
Design Traffic Technical Memorandum

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ATEC
Advanced Transportation Engineering Consultants

METRIC ENGINEERING

STATE OF FLORIDA • DEPARTMENT OF TRANSPORTATION

Engineer's Certification

I, Fadi Emil Nassar, P.E., certify that I currently hold an active Professional Engineer's License in the State of Florida and I am competent through education and experience to provide engineering services in the civil and traffic engineering disciplines contained in this report. I further certify that this report was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. and that all statements, conclusions and recommendations made herein are true and correct to the best of my knowledge and ability.

PROJECT: SR 87 Connector PD&E – Design Traffic Technical Memorandum

LOCATION: San Rosa County, Florida (FDOT District 3)

Fadi Emil Nassar, Ph.D., P.E., PTOE

P.E. 51448

Date 10/17/2012

EXECUTIVE SUMMARY

PROJECT DESCRIPTION

The State of Florida Department of Transportation (FDOT) is conducting a study to evaluate potential options to provide a new roadway facility that will directly link SR87S with SR87N in the vicinity of the City of Milton in Santa Rosa County, Florida. The current connection between SR87S and SR87N is indirect passing through US 90 and the downtown historical district of the City of Milton. This document examines the traffic operational impacts of the new roadway connector between SR87S and SR87N as part of the Project Development and Environment (PD&E) study.

PURPOSE AND NEED

SR 87 Connector will improve local connectivity by providing a direct link between SR87S serving the south end of Santa Rosa County and SR87N serving the north section of the County; as well as a direct connection between the Naval Air Station Whiting Field (NAS Whiting Field) and Eglin Air Force Base (Eglin AFB). SR 87 Connector will also relieve traffic congestion and improve safety along US 90 by redistributing traffic to the new alignment and providing an alternate route for cars and trucks to bypass the congested sections of US 90 that pass through historic downtown Milton. The new 4-lane alignment will significantly reduce evacuation time and increase evacuation capacity in Santa Rosa County by providing a direct route from the coastal area to areas north in Alabama without having to travel through downtown Milton.

ALTERNATIVE ALIGNMENTS

Five potential alignments were evaluated during the preliminary analysis of which two were selected as viable corridors and developed in the PD&E study. **Alignment 1** extends north from the US 90/SR87S intersection crossing the Blackwater River. Once across the river, it runs parallel or adjacent to the power easement, then connects with SR87N just north of the southern split of SR87N and SR 89, utilizing the Manning Lane right-of-way. This alignment is approximately 6.5 miles in length. **Alignment 2** also extends north from the US 90/SR87S intersection crossing the Blackwater River adjacent to the eastern most existing power easement crossing. Once across the river, it continues slightly north of Alignment 1, and runs adjacent to the Clear Water Creek environmental lands, where it proceeds west to connect with SR87N just north of the northern split of SR87N and SR 89. This alignment is approximately 7.2 miles in length.

STUDY METHODOLOGY

The traffic analysis was performed consistent with FDOT guidelines provided in the latest chapters of the PD&E Manual; the FDOT's Project Traffic Forecasting Handbook, 2012; the 2009 FDOT Quality/Level of Service Handbook; FDOT guidance on K factors; and the methodology meeting agreements. The North West Florida Regional Planning Model (NWFRPM) was used to develop future traffic forecasts for the No Build and the two Build Alternatives after a subarea model refinement was performed to improve model traffic forecasts for the year 2010 within the study area. Separate NWFRPM models were developed for the opening, interim and design phases and for each of the No Build and Build Alternatives.

The analysis of future roadway capacity was consistent with the Florida-Alabama TPO Congestion Management Process Plan adopted in January 2012 and the K factors used in the 2009 Generalized LOS Tables. The Standard K factors were used to develop future intersection turning volumes for SR 87 Connector intersections. TMTOOL and the Highway Capacity Manual (HCM) module of SYNCHRO 7 were used for intersection analysis.

STUDY CONCLUSIONS

SR 87 Connector is projected to carry approximately 11,000 daily vehicles in 2015; 15,000 in 2025; and 20,000 in 2035. While these volumes will provide some relief to traffic congestion along US 90, they are well within (and less than half) the daily capacity of a four-lane divided roadway with few signalized intersections. SR 87 Connector is anticipated to provide a comfortable level of service for vehicles and trucks beyond 2035. In addition, it offers a shorter truck route to serve Alabama and the northern parts of the county saving time and fuel. It also maximizes roadway capacity during hurricane evacuation of the beach areas.

The operational performance of both alignments is quite similar, with Alignment 1 carrying approximately 10% more traffic than Alignment 2. Therefore, Alignment 1 provides slightly more relief to US 90, however, it requires the signalization of the intersection formed by the SR87N/SR 89 split to accommodate the additional northbound left turn traffic from Alignment 1 onto SR 89. Furthermore, both alignments may require the signalization of the intersection of SR 87 Connector and Munson Highway to accommodate the southbound left turning traffic from Munson Highway in case the signal warrants are met. All other

intersections located within the study area are anticipated to operate at acceptable levels of service at the 2035 design year.

The SR 87 Connector intersections with US 90 and SR87N for both Alignment 1 and Alignment 2 will operate at LOS C or better by 2025 and LOS D or better by 2035 for both AM and PM peak hours. The intersection of SR 87 connector and Munson Highway will fail as unsignalized, but will operate at LOS B for both alignments in 2035 when signalized.

A sensitivity analysis was performed to evaluate the impacts of a future Wal-Mart store that may be located near the intersection formed by Alignment 1 of SR 87 Connector and SR87N. A traffic concurrency study performed in 2006 to support a land use amendment indicated that the Wal-Mart store will generate up to 315 new directional PM peak hour trips. No updated traffic study was performed since 2006, however, County staff indicated that Wal-Mart requested in January 2012 to extend the development order until November 2014. Wal-Mart proposed location places it in TAZ 519. Zonal data for TAZ 519 was reviewed for the 2006 validated and 2035 Cost Feasible NWFRPM models. Whereas residential units are anticipated to double between 2006 and 2035, employment will only increase by 100 workers for the entire TAZ. Therefore, the Wal-Mart store has not been accounted for in the Cost Feasible model. To examine its future traffic impacts, the net increase in peak hour trips estimated in the 2006 concurrency study were overlaid onto future traffic at the two nearest intersections and in both directions and then a SYNCHRO analysis was performed. The analysis indicated that these intersections would still operate at acceptable LOS D or better in 2035 after accounting for Wal-Mart traffic estimated in the 2006 study. The 2006 traffic concurrency study and the SYNCHRO printouts are provided in the last appendix of this DTTM.

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SR 87 CONNECTOR
DESIGN TRAFFIC TECHNICAL MEMORANDUM (DTTM)

1. PROJECT DESCRIPTION

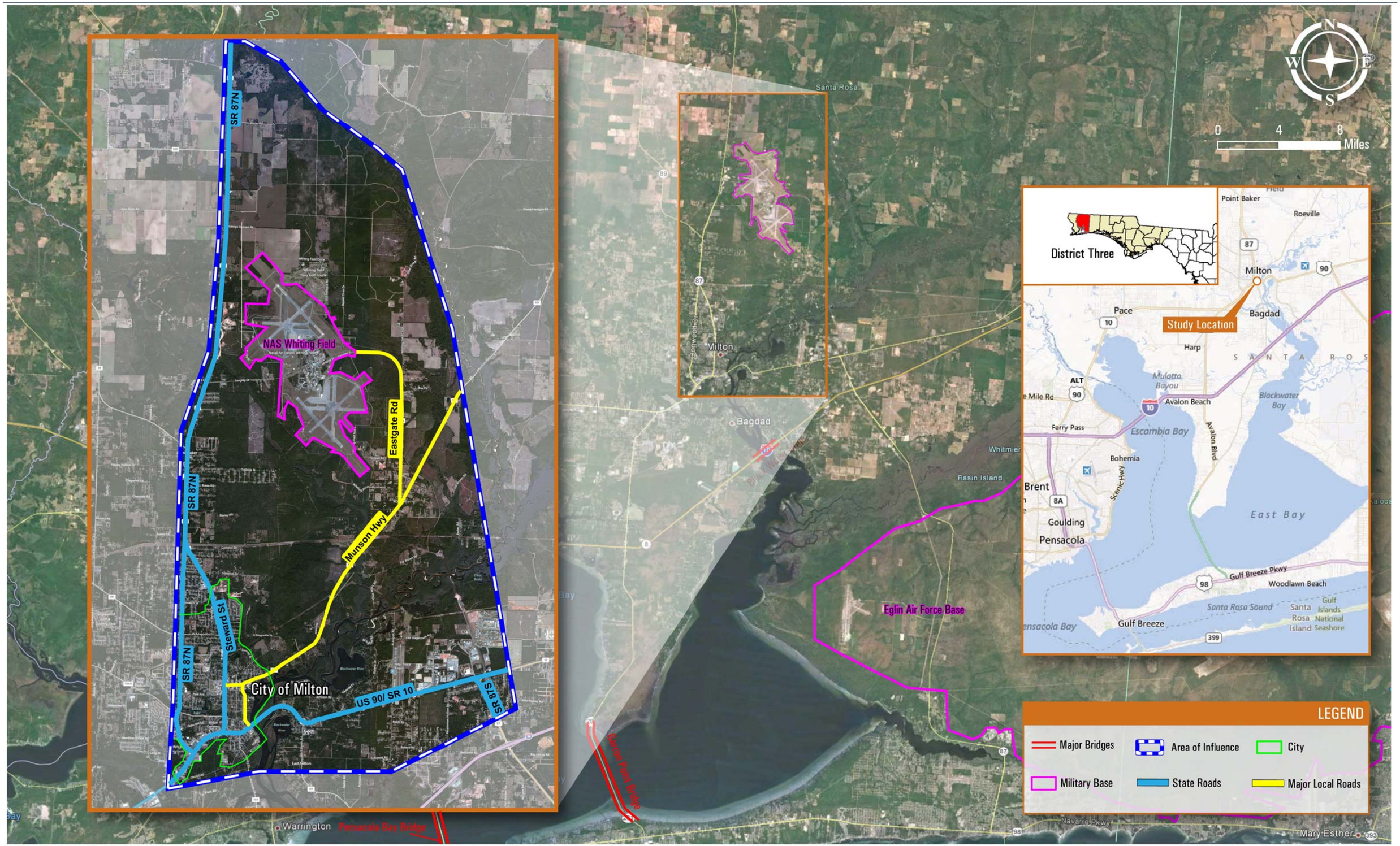
The Florida Department of Transportation (FDOT) is conducting a study to evaluate potential options to provide a new roadway facility that will directly link SR87S with SR87N in the vicinity of the City of Milton in Santa Rosa County, Florida. The project location map is shown in **Figure 1**. The current connection between SR87S and SR87N is indirect passing through US 90 and the downtown historical district of the City of Milton. The proposed connector is in the Project Development and Environment (PD&E) Study phase. This document evaluates the traffic operational impacts of the proposed improvements as required in the PD&E process.

2. PURPOSE AND NEED

The main justifications to construct the SR 87 Connector are as follows: (1) improve local connectivity by providing a direct link between SR87S serving the south end of Santa Rosa County and SR87N serving the north section of the County, (2) provide a direct connection between the Naval Air Station Whiting Field (NAS Whiting Field) and Eglin Air Force Base (Eglin AFB), (3) relieve traffic congestion and improve safety along US 90 by redistributing traffic to the new alignment and providing an alternate route to travelling along a congested portion of US 90 through historic downtown Milton, (4) significantly reduce evacuation time and increase evacuation capacity in Santa Rosa County by providing a direct route from the coastal area into north of the County and Alabama without having to travel through downtown Milton, (5) provide an opportunity for greater bicycle and sidewalk connectivity in the County, and (6) accommodate the projected increase in transportation demand due to anticipated population and employment growth.

3. OBJECTIVES

This Design Traffic Technical Memorandum (DTTM) includes the traffic projections and operational analysis of roadway segments and intersections located within the study area of the SR 87 Connector PD&E Study. Preliminary analyses examined six potential alignments for SR 87 Connector and identified two viable alignments. The DTTM compared the operational performance of the two viable alignments to the No Build Alternative. The analysis was performed for existing traffic collected in year 2010, opening year (2015), interim year (2025) and design year (2035). The project is located in the western section of the Florida's Panhandle in Santa Rosa County within FDOT District 3.


SR 87N
NAS Whiting Field
Eastgate Rd
Munson Hwy
Stewart St
City of Milton
US 90/ SR 10
SR 87S
Santa Rosa
Milton
Bagdad
Whitmer
Basin Island
Eglin Air Force Base
Garcon Point Bridge
Warrington
Pensacola Bay Bridge
Navarre Pkwy
Mary Esther
N
W
E
S
0
4
8
Miles
District Three
Point Baker
Roeville
Milton
Pace
Bagdad
Study Location
Harp
Mulatto Bayou
Avalon Beach
Blackwater Bay
Ferry Pass
Escambia Bay
Bohemia
Brent
Goulding
Pensacola
East Bay
Gulf Breeze Pkwy
Woodlawn Beach
Santa Rosa Sound
Santa Rosa Island
Gulf Islands National Seashore
Gulf Breeze
LEGEND
Major Bridges
Area of Influence
City
Military Base
State Roads
Major Local Roads

The study methodology, assumptions, operational parameters, and analysis results for roadway sections and intersections are provided in the main section of the DTTM report. **Appendix A** of this document includes the methodology meeting memorandums. **Appendix B** includes the model refinement memorandum of the North West Florida Regional Planning Model (NWFRPM). **Appendix C** includes the future daily volume plots from the NWFRPM. **Appendix D** includes intersection turning movement balancing sheets using TMTOOL software. **Appendix E** includes future intersection turning movement volumes. **Appendix F** includes SYNCHRO intersection analysis printouts. **Appendix G** includes the raw traffic data count sheets. **Appendices H and I** depict the SR 87 Connector intersection geometry for Alignment 1 and Alignment 2, respectively. **Appendix J** shows plots of hourly traffic variations. And **Appendix K** is related to Wal-Mart traffic impacts.

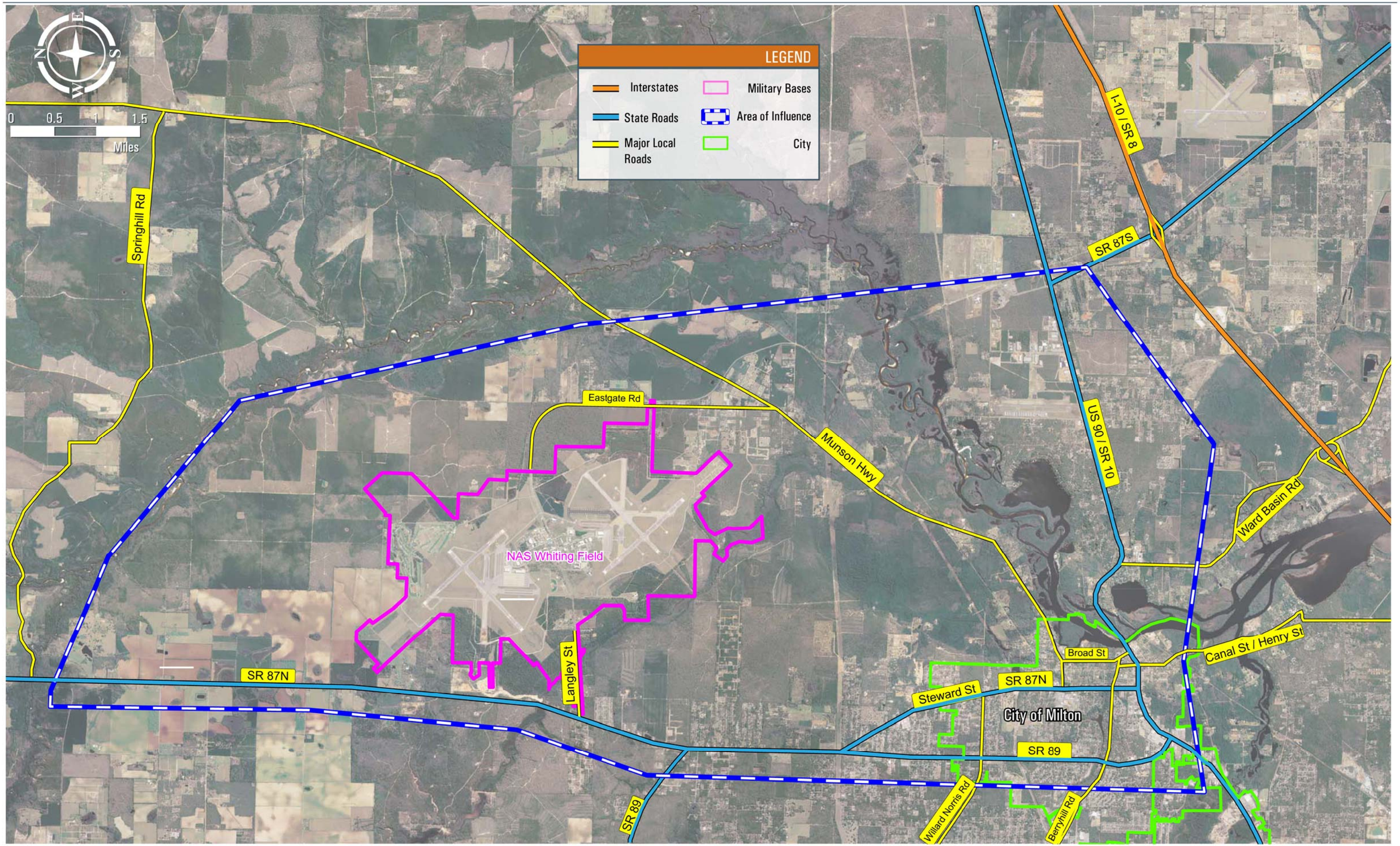
4. INFLUENCE AREA

The project's impact area is located in Santa Rosa County and is generally bordered by SR 89 to the west, SR87S to the east, the intersection of Langley Street and SR87N to the north, and US 90 to the south. Most of the NAS Whiting Field and the City of Milton are located within the study area. The study's area of influence is shown in **Figure 2**.

5. METHODOLOGY

The traffic analysis was performed consistent with FDOT guidelines provided in the latest chapters of the PD&E Manual; the FDOT's Project Traffic Forecasting Handbook, 2012; the 2009 FDOT Quality/Level of Service Handbook; FDOT guidance on K factors; and the methodology meeting memorandums included in **Appendix A**. The analysis of future roadway capacity was consistent with the Florida-Alabama TPO Congestion Management Process Plan adopted in January 2012. This document identified for each state and county roadway segment its functional classification, number of lanes, facility type, number of signals per mile, adopted LOS, daily and peak hour maximum service volume, count station, traffic volume and LOS.

The methodology agreement specified that the adopted NWFRPM should be utilized to develop a separate model for opening (2015), interim (2025) and design (2035) years for the No Build and each of the Build Alternatives. In all, nine separate regional models were developed. Regarding the K factors, FDOT has adopted the Standard K Factors documented in the 2012 FDOT Project Traffic Forecasting Handbook. However, since the Generalized FDOT LOS Tables based on the Standard K Factors have not yet been completed, FDOT Central Office recommended we use the K and D factors specified in the 2009 Generalized


LEGEND
Interstates
State Roads
Major Local Roads
Military Bases
Area of Influence
City
0 0.5 1 1.5
Miles
N
E
S
W
Springhill Rd
I-10 / SR 8
SR 87S
US 90 / SR 10
Eastgate Rd
Munson Hwy
Ward Basin Rd
NAS Whiting Field
Langley St
SR 87N
Broad St
Canal St / Henry St
Steward St
SR 87N
City of Milton
SR 89
SR 89
Willard Norris Rd
Berryhill Rd

LOS Tables for the link analysis since these tables are used in the latest Florida-Alabama TPO Congestion Management Process Plan (TPO CMPP). As for future intersection analysis, FDOT Central Office recommended using the Standard K factors for balancing new intersections created by the new alignment. The peak to daily ratio was maintained for existing intersections to minimize future traffic imbalances during the AM and PM periods along existing alignments. Intersection turning volume balancing was tested using both TURNS5 and TMTOOL. TMTOOL software spreadsheet format provided greater flexibility in achieving a more reasonable and consistent growth and in reducing excessive and unjustifiable turning movement growth rates. TMTOOL was therefore used to balance all intersections for all future analysis phases. The truck factors were based on FDOT FTI count stations, classification counts performed for this project, and county staff recommendations.

6. DATA COLLECTION

The traffic data sources included daily and peak hour traffic volumes obtained from FDOT's 2010 Florida Traffic Information (FTI) DVD as well as eight (8) 24-hour bidirectional hose counts and 13 intersection turning movement counts (TMC) collected by HSA Consulting Group, Inc., (located in Gulf Breeze) between December 7 and December 10, 2010. The TMC were performed from 6:00 AM to 9:00 AM for the AM period; from 11:30 AM to 1:30 PM for the midday period, and from 3:00 PM to 6:00 PM for the PM period and included truck and pedestrian counts. **Figure 3** depicts the location of FDOT traffic count stations within the study area as well as the hose counts and turning movement counts collected for this study. Raw data counts are provided in **Appendix G** and traffic plots in **Appendix J**.

7. EXISTING CONDITIONS

Existing conditions analysis was performed during the preliminary evaluation report for roadway segments located within the study limits. The analysis was performed for daily and directional peak hours. The level of service analysis was based on the 2007 FDOT level of service (LOS) standards in order to be consistent with the Florida-Alabama TPO Congestion Management Process Plan that was applicable in 2010. Existing traffic conditions of roadway segments are summarized in **Table 1. Figure 4** illustrates the functional classification, **Figure 5** the Access Management, **Figures 6 and 7** AADTs and daily LOS, and **Figures 8 and 9** the peak hour volumes and LOS. The 2010 AM and PM intersection analysis results are incorporated into the future intersection analysis summary table for easy comparison. The existing conditions analysis indicates that segments of US 90 operated at a failing level of service as shown in **Table 1**.

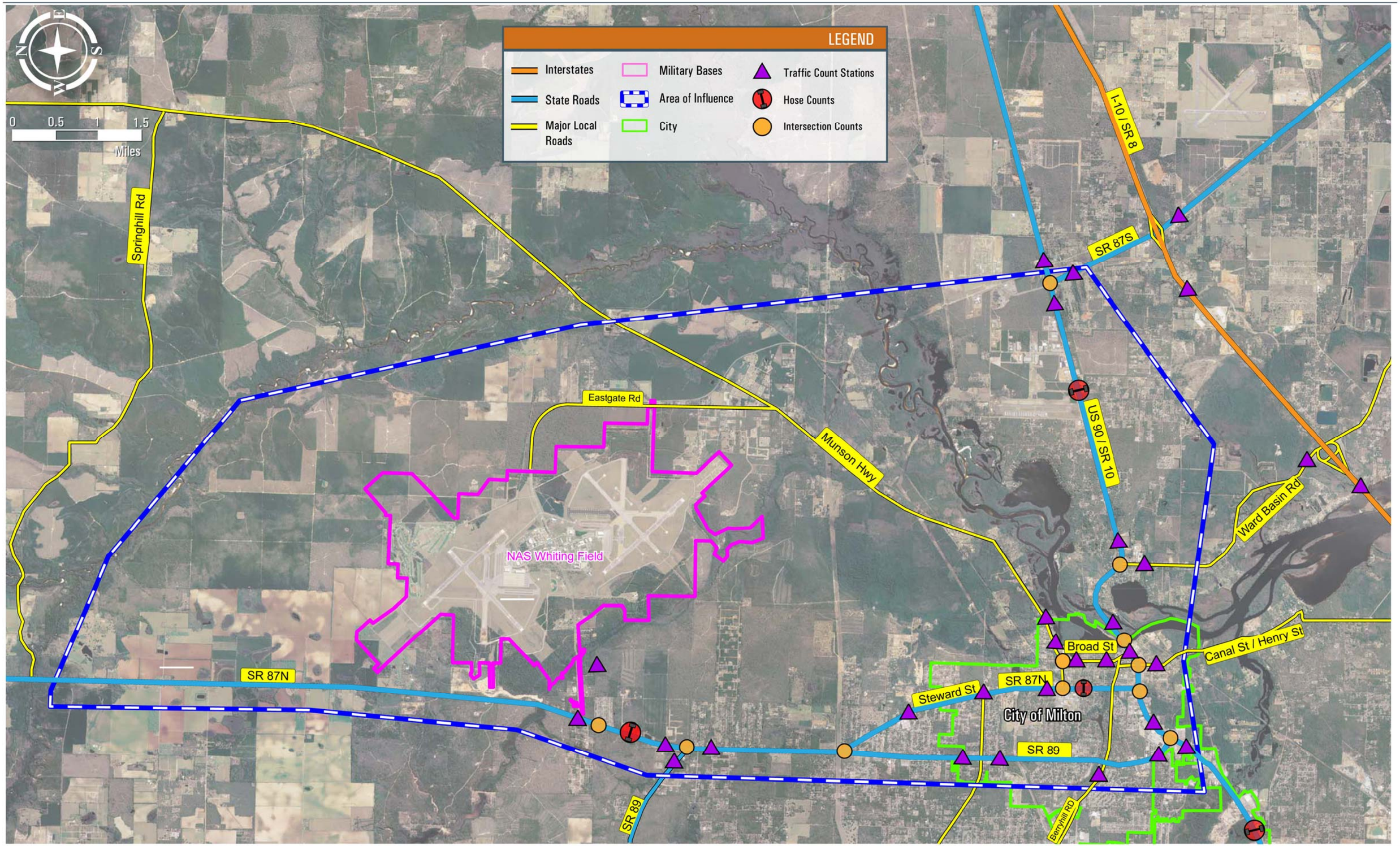

LEGEND
Interstates
State Roads
Major Local Roads
Military Bases
Area of Influence
City
Traffic Count Stations
Hose Counts
Intersection Counts
N
W
E
S
0
0.5
1
1.5
Miles
Springhill Rd
Eastgate Rd
Munson Hwy
I-10 / SR 8
SR 87S
US 90 / SR 10
Ward Basin Rd
NAS Whiting Field
SR 87N
Steward St
Broad St
Canal St / Henry St
City of Milton
SR 89
Berryhill RD

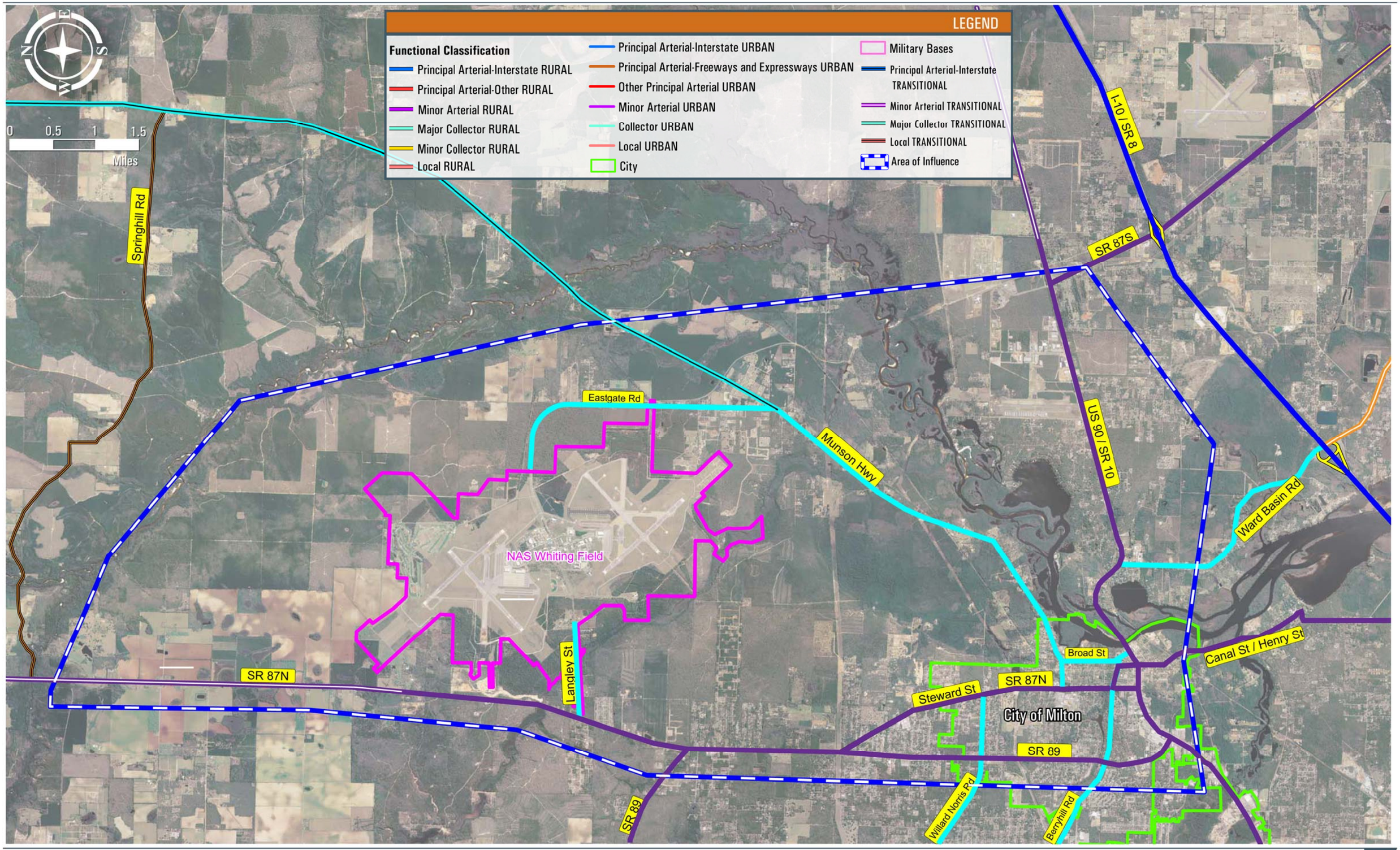
Table 1 – Existing Traffic Conditions

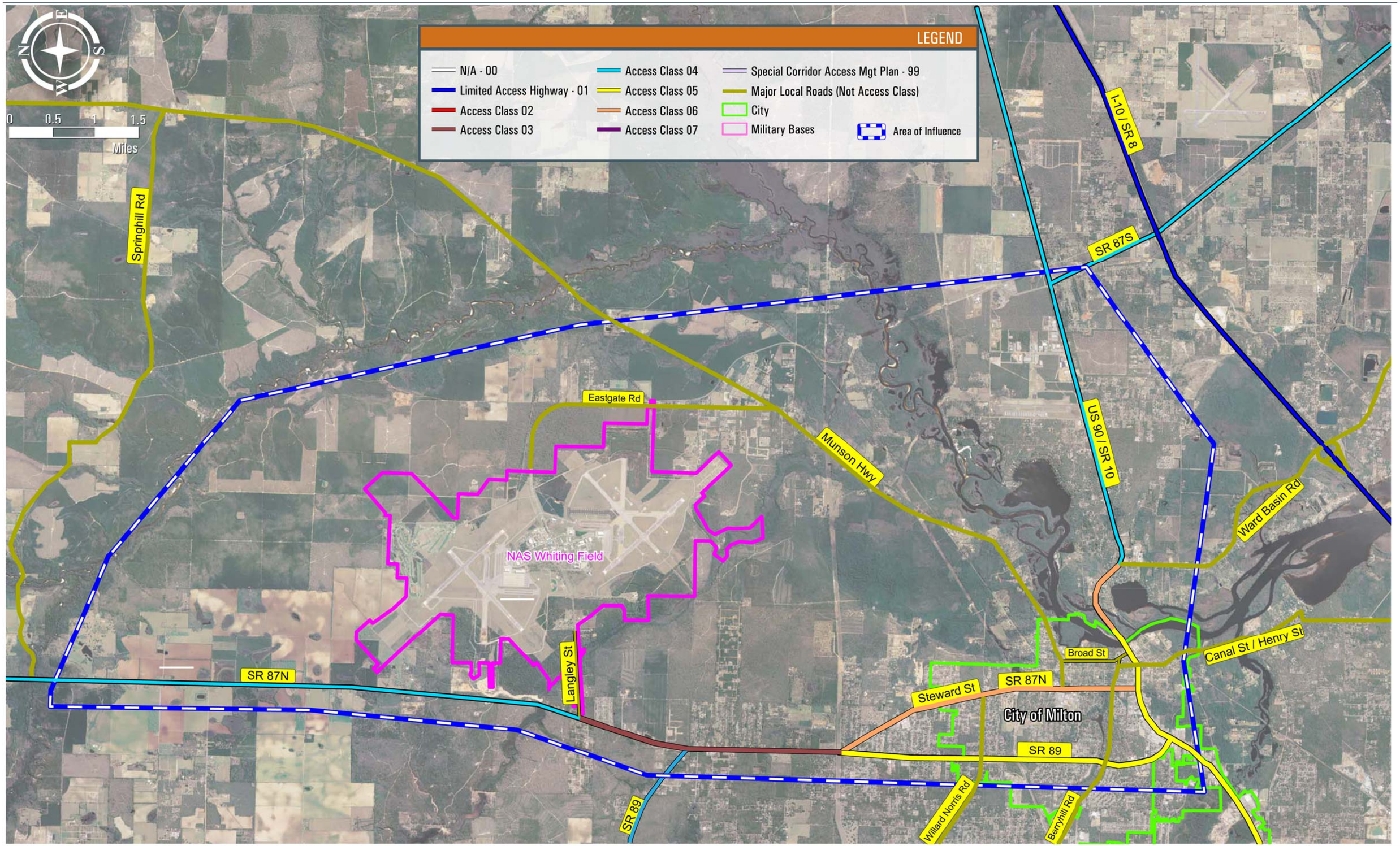
ROADWAY FROM	TO	DIST (Mile)	LANES 2010	POSTED SPEED	ROAD CLASSIFICATION	COUNT STATION	Adopted LOS	MSV 2010	AADT 2010	LOS 2010
I-10 / SR 8	(Road Section 58002000)									
SR 281 / Avalon Blvd	Garcon Point Road	3.92	4	70	Freeway/SIS	2003	C	55200	29,000	B
Garcon Point Road	Ward Basin Road	2.06	4	70	Freeway/SIS	2008	C	55200	29,500	B
Ward Basin Road	SR 87 S / E. Milton Rd	2.78	4	70	Freeway/SIS	2005	C	55200	26,500	B
SR 87 S / E. Milton Rd	Log Lake Road	13.67	4	70	Freeway/SIS	2007	C	55200	22,500	A
US 90 / SR 10	(Road Section 58010000)									
SR 281 / Avalon Blvd	Parkmore Plaza	0.25	4	45	Arterial Class II		D	32700	38,000	F
Parkmore Plaza	Glover Lane	0.74	4	45	Arterial Class II	1502	D	32700	38,000	F
Glover Lane	SR 89 / Dogwood Dr	0.70	4	45	Arterial Class II		D	32700	32,000	D
SR 89 / Dogwood Dr	SR 87N / Stewart Street	0.64	4	35	Arterial Class II	5018	D	32700	26,000	C
SR 87N / Stewart Street	Canal Street	0.27	2	25	Arterial Class I	5011	D	16400	22,000	F
Canal Street	Elmira Street	0.14	2	25	Arterial Class I	5010	D	16400	14,000	D
Elmira Street	Broad Street / Willing St	0.06	2	25	Arterial Class I		D	16400	17,000	F
Broad Street / Willing Street	Johnson Road/Milton Trail	0.69	2	25	Arterial Class I	1507	D	16400	19,700	F
Johnson Road/Milton Trail	Dale St / Ward Basin Rd	0.42	2	35	Arterial Class I		D	16400	17,000	F
Dale St / Ward Basin Rd	Airport Road	1.26	2	55	Arterial Class I	62	D	16400	14,600	D
Airport Road	Industrial Blvd	0.97	2	55	Arterial Class I		D	16400	14,000	D
Industrial Blvd	SR 87 S / E. Milton Rd	0.75	2	55	Arterial Class I	19	D	16400	13,000	C
SR 87 S / E. Milton Rd	S. A. Jones Road	5.83	2	55	Uninterrupted	18	C	14900	5,800	B
SR 281 / AVALON BLVD	(Road Section 58005000)									
I-10	US 90 / SR 10	4.88	2	45 / 55	Arterial Class I	215	D	16500	19,500	F
SR 89 / DOGWOOD DRIVE	(Road Section 58001000)									
US 90 / SR 10	Hamilton Bridge Road	0.53	4	35	Arterial Class II	5017	D	32700	22,500	C
Hamilton Bridge Road	Berryhill Road	0.25	4	35	Arterial Class II		D	32700	20,000	C
Berryhill Road	Park Avenue	0.29	4	35	Arterial Class I		D	35700	19,000	B
Park Avenue	Williard N. Rd/Magnolia St	0.99	4	35	Arterial Class I	5016	D	35700	18,400	B
Williard Norris Rd/Magnolia St	SR 87 N / Stewart Street	1.51	4	45	Arterial Class I	1506	D	35700	16,400	B
SR 87 N / Stewart Street	West	1.81	2	55	Uninterrupted	121	D	21300	2,500	B
SR 87 N / Stewart Street	(Road Section 58050000)									
US 90 / SR 10	Berryhill Road	0.26	4	35	Arterial Class I	5006	D	35700	16,600	B
Berryhill Road	Park Avenue	0.34	4	35	Arterial Class I		D	35700	17,100	B
Park Avenue	Magnolia Street	1.01	4	35	Arterial Class I	5004	D	35700	17,600	B
Magnolia Street	SR 89 S./ Dogwood Drive	1.67	4	45	Arterial Class I	1508	D	35700	10,300	B
SR 89 S./ Dogwood Drive	SR 89 North	1.57	4	45	Arterial Class I	9937	D	35700	12,800	B
SR 89 North	Langley Street	1.20	4	45	Arterial Class I	114	D	35700	11,100	B
Langley Street	Whiting Field Circle	0.45	4	55	Arterial Class I	119	D	35700	4,000	A
Whiting Field Circle	Springhill Rd / Neal K. Rd	5.59	2	55	Uninterrupted		D	21100	4,000	B
ALABAMA ST & HENRY ST (CR 191) / CANAL ST										
South of US 90 / SR 10	US 90 / SR 10	0.41	2	n/a	Non State	5014	D	14600	6,900	C
US 90 / SR 10	North of US 90 / SR 10	0.19	2	n/a	Non State	5022	D	14600	9,600	D
BROAD STREET & WILLING STREET (CR 191)										
US 90 / SR 10	Berryhill Road	0.11	2	35	Non State	5008	D	14600	6,400	C
Berryhill Road	Munson Highway / CR 191	0.63	2	35	Non State	5007	D	14600	2,700	C
WARD BASIN ROAD	(Road Section 58530000)									
I-10	South Airport Road	1.73	2	40	Non State	281	D	14600	4,500	C
US 90 / SR 10	US 90 / SR 10	0.93	2	40	Non State	186	D	14600	5,400	C
AIRPORT ROAD	(Road Section 58519000)									
South of US 90 / SR 10	US 90 / SR 10	0.97	2	n/a	Other Road		D	10000	276	C
US 90 / SR 10	North of US 90 / SR 10	0.85	2	n/a	Other Road		D	10000	664	C
SR 87 S	(Road Section 58040000)									
Hickory Hammock Road	I-10	2.10	4	45	Arterial Class I/SIS	271	C	34700	8,900	B
I-10	US 90 / SR 10	1.24	4	45	Arterial Class I/SIS	20	D	35700	9,700	B
MUNSON HIGHWAY / CR 191	(Road Section 58090000)									
SR 87 N / Stewart Street	Broad Street	0.31	2	30	Other Road	5002,5003	D	10000	4,600	C
Broad Street	Munson Lane	0.45	2	30	Other Road		D	10000	4,500	C
Munson Lane	CR 87 A	1.91	2	45	Non State	1501	D	14600	4,400	C
CR 87 A	Springhill Road	7.39	2	55	Uninterrupted		D	21100	4,400	B
CR 87 A / WHITING FIELD CIRCLE / EAST ENTRANCE										
Munson Highway	NAS Whiting Field	2.47	2	35	Non State	247	D	14600	1,900	C
OLD US 90										
Canal St / Henry Street	US 90 / SR 10	1.03	2	35	Non State		D	14600	782	C

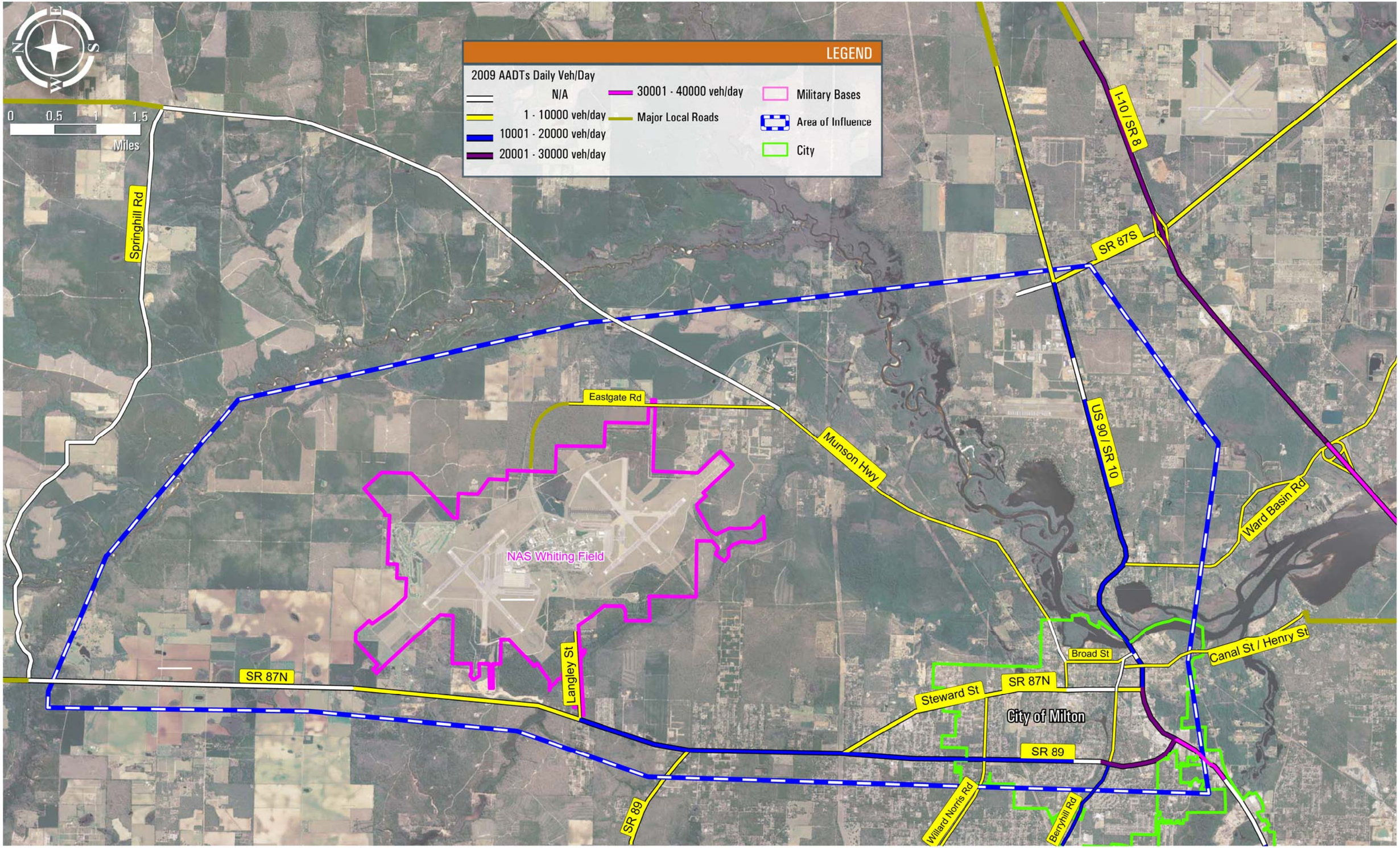
Note: AADT obtained from FDOT 2010 FTI DVD.

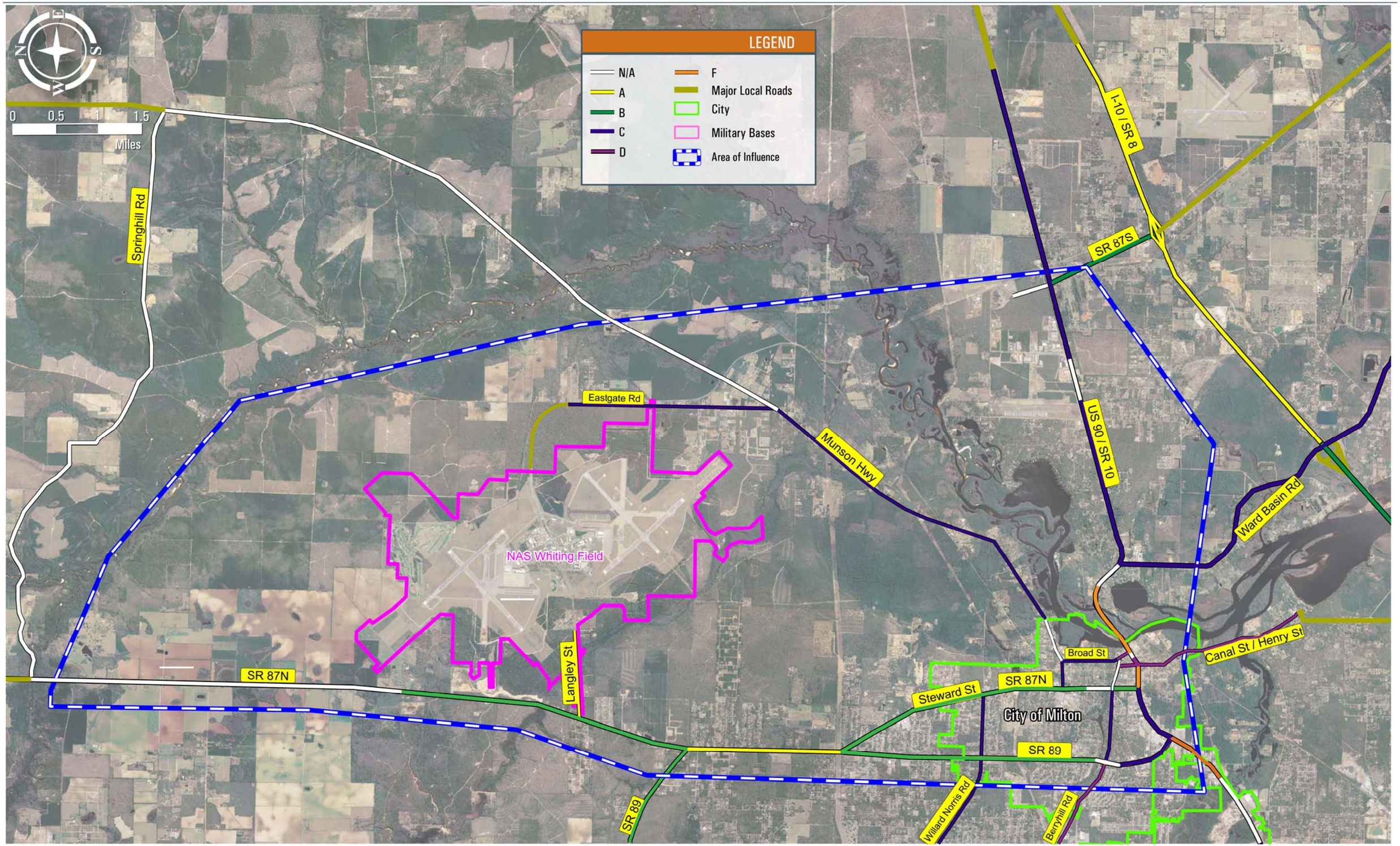
Yellow highlight refers to a failing level of service (LOS F).

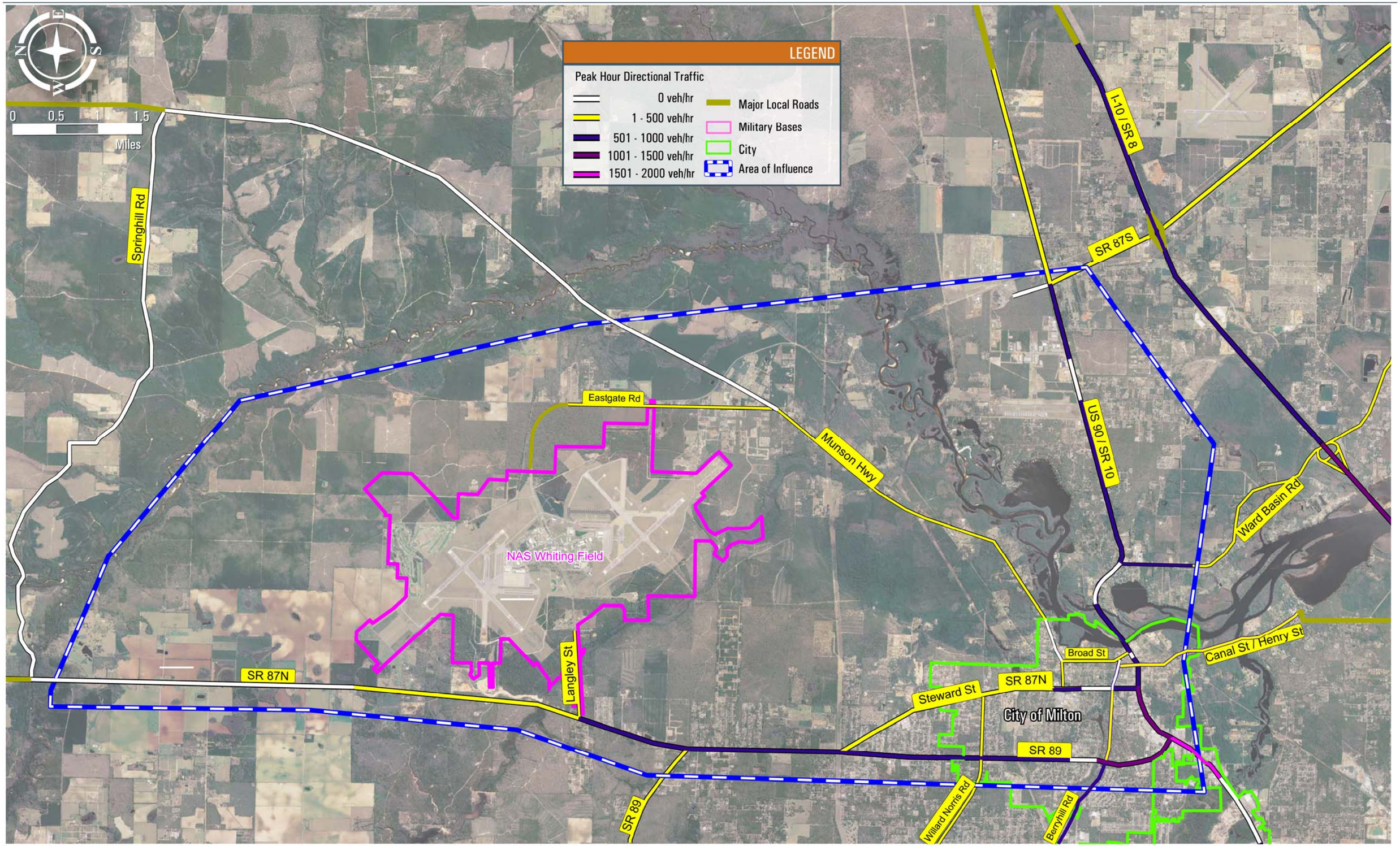
LOS based on FDOT 2007 LOS Tables that were adopted in Santa Rosa County in 2010 for their concurrency management system.

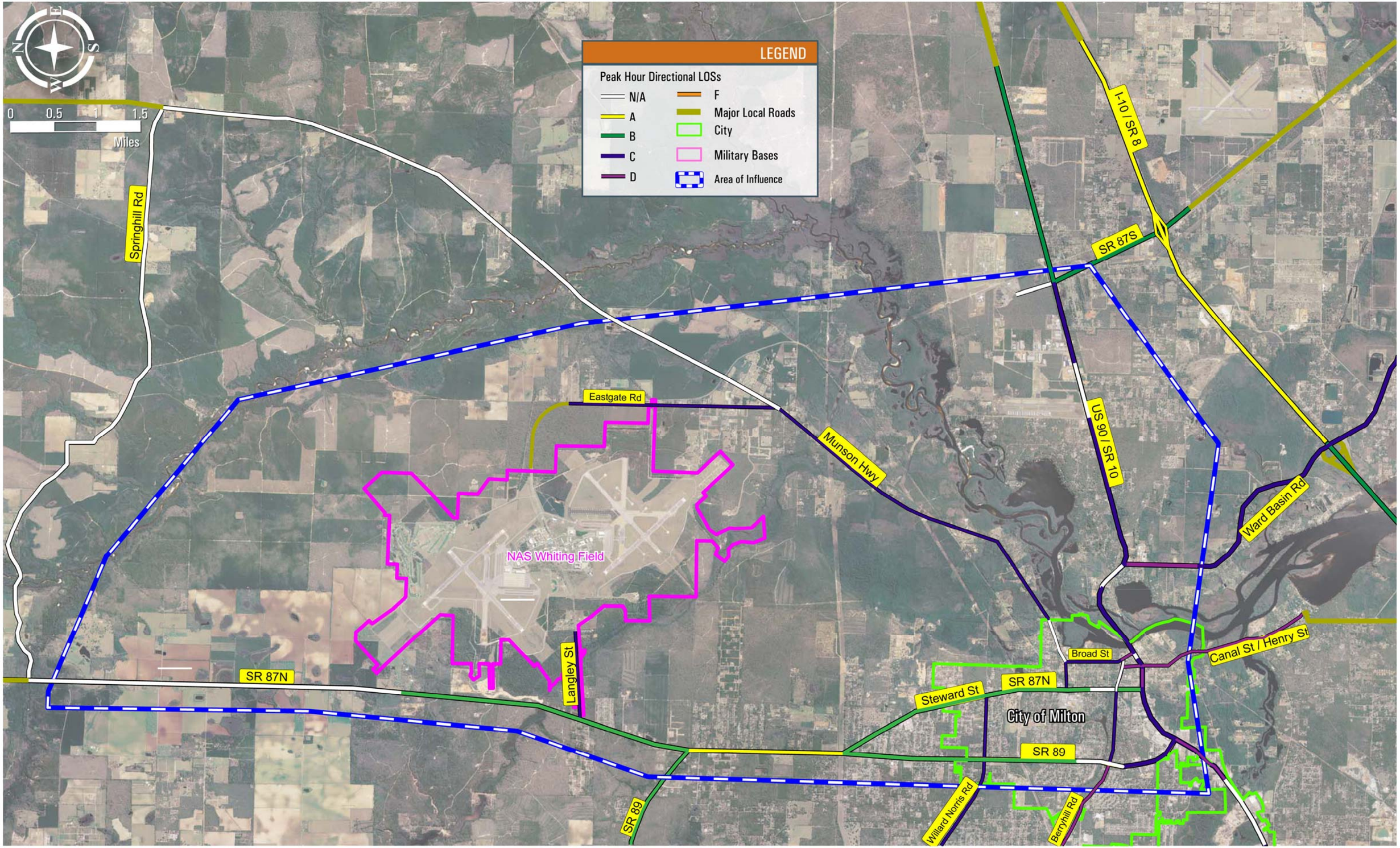

LEGEND
Functional Classification
Principal Arterial-Interstate RURAL
Principal Arterial-Other RURAL
Minor Arterial RURAL
Major Collector RURAL
Minor Collector RURAL
Local RURAL
Principal Arterial-Interstate URBAN
Principal Arterial-Freeways and Expressways URBAN
Other Principal Arterial URBAN
Minor Arterial URBAN
Collector URBAN
Local URBAN
City
Military Bases
Principal Arterial-Interstate TRANSITIONAL
Minor Arterial TRANSITIONAL
Major Collector TRANSITIONAL
Local TRANSITIONAL
Area of Influence
N
E
S
W
0 0.5 1 1.5
Miles
Springhill Rd
Eastgate Rd
Munson Hwy
I-10 / SR 8
SR 87S
US 90 / SR 10
Ward Basin Rd
NAS Whiting Field
Langley St
SR 87N
Steward St
Broad St
Canal St / Henry St
City of Milton
SR 89
Willard Norris Rd
Berryhill Rd


LEGEND
N/A - 00
Limited Access Highway - 01
Access Class 02
Access Class 03
Access Class 04
Access Class 05
Access Class 06
Access Class 07
Special Corridor Access Mgt Plan - 99
Major Local Roads (Not Access Class)
City
Military Bases
Area of Influence
N
E
S
W
0 0.5 1 1.5
Miles
Springhill Rd
Eastgate Rd
Munson Hwy
NAS Whiting Field
Langley St
SR 87N
SR 87S
I-10 / SR 8
US 90 / SR 10
Ward Basin Rd
Canal St / Henry St
Broad St
Steward St
City of Milton
SR 89
Willard Norris Rd
Berryhill Rd


N
E
S
W
0 0.5 1 1.5
Miles
LEGEND
2009 AADTs Daily Veh/Day
N/A
1 - 10000 veh/day
10001 - 20000 veh/day
20001 - 30000 veh/day
30001 - 40000 veh/day
Major Local Roads
Military Bases
Area of Influence
City
Springhill Rd
Eastgate Rd
Munson Hwy
NAS Whiting Field
Langley St
SR 87N
SR 87S
I-10 / SR 8
US 90 / SR 10
Ward Basin Rd
Canal St / Henry St
Broad St
Steward St
City of Milton
SR 89
Willard Norris Rd
Berryhill Rd


LEGEND
N/A
A
B
C
D
F
Major Local Roads
City
Military Bases
Area of Influence
0 0.5 1 1.5
Miles
N
E
S
W
Springhill Rd
Eastgate Rd
Munson Hwy
I-10 / SR 8
SR 87S
US 90 / SR 10
Ward Basin Rd
NAS Whiting Field
Langley St
SR 87N
Broad St
Canal St / Henry St
Steward St
SR 87N
City of Milton
SR 89
SR 89
Willard Norris Rd
Berryhill Rd


LEGEND
Peak Hour Directional Traffic
0 veh/hr
1 - 500 veh/hr
501 - 1000 veh/hr
1001 - 1500 veh/hr
1501 - 2000 veh/hr
Major Local Roads
Military Bases
City
Area of Influence
0 0.5 1 1.5
Miles
N
E
S
W
Springhill Rd
Eastgate Rd
Munson Hwy
NAS Whiting Field
Langley St
SR 87N
SR 87S
I-10 / SR 8
US 90 / SR 10
Ward Basin Rd
Broad St
Canal St / Henry St
Steward St
City of Milton
SR 89
Willard Norris Rd
Berryhill Rd


LEGEND
Peak Hour Directional LOSs
N/A
A
B
C
D
F
Major Local Roads
City
Military Bases
Area of Influence
0 0.5 1 1.5
Miles
N
E
S
W
Springhill Rd
Eastgate Rd
Munson Hwy
NAS Whiting Field
Langley St
SR 87N
SR 87S
I-10 / SR 8
US 90 / SR 10
Ward Basin Rd
Canal St / Henry St
Broad St
Steward St
City of Milton
SR 89
Willard Norris Rd
Berryhill Rd

8. ALTERNATIVE ALIGNMENTS

The preliminary analysis report originally examined five potential new alignments for SR 87 Connector and determined that only two of them were viable. **Figure 10** identifies the viable alignments. A brief description of these alignments is as follows:

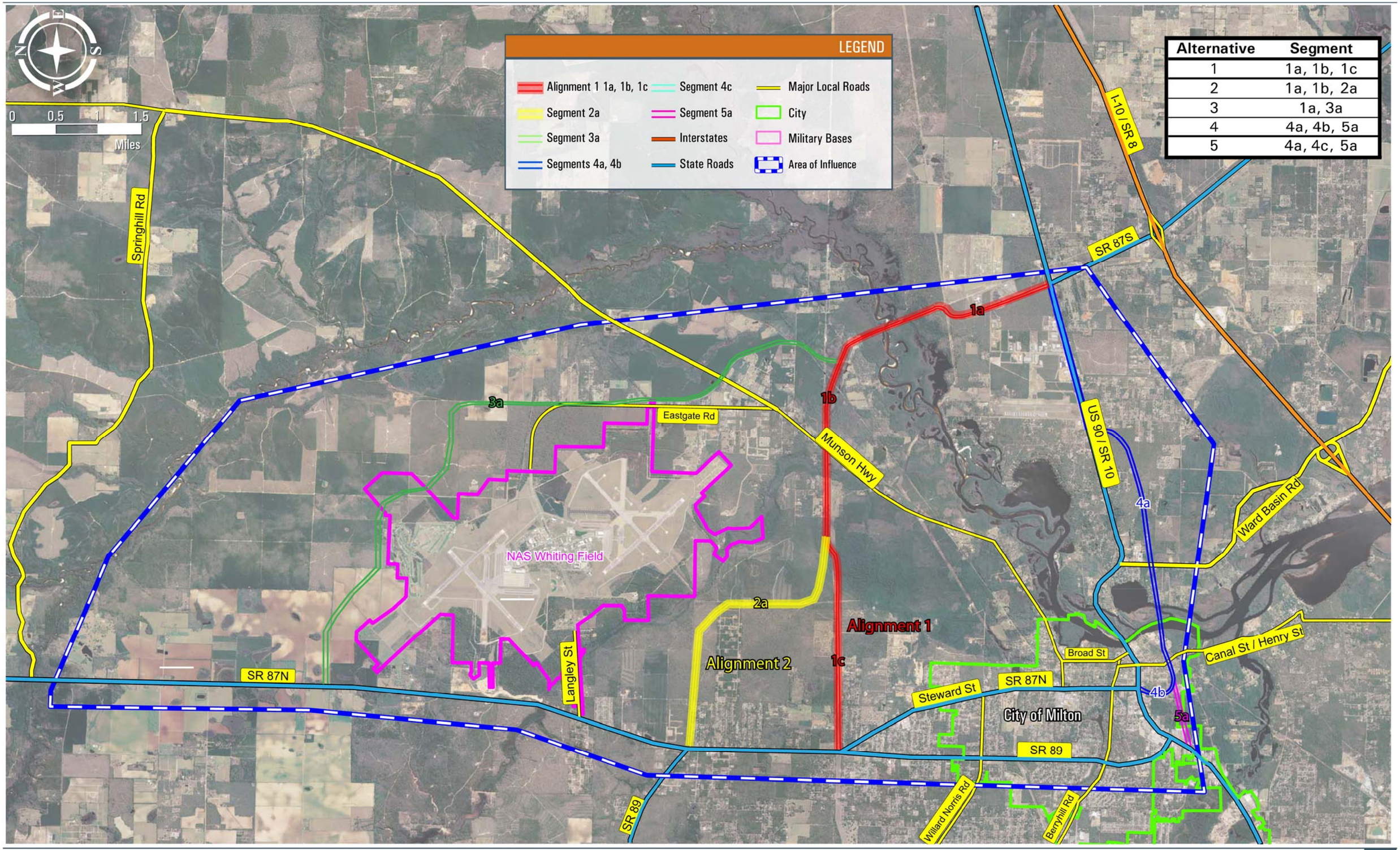
Alignment 1 (segments 1a, 1b and 1c) extends north from the US 90/SR87S intersection crossing the Blackwater River. Once across the river, it runs parallel or adjacent to the power easement, then connects with SR87N just north of the southern split of SR87N and SR 89, utilizing the Manning Lane right-of-way. This alignment is approximately 6.5 miles in length

Alignment 2 (segments 1a, 1b, 2a) also extends north from the US 90/SR87S intersection crossing the Blackwater River adjacent to the eastern most existing power easement crossing. Once across the river, it continues slightly north of Alignment 1, and runs adjacent to the Clear Water Creek environmental lands, where it proceeds west to connect with SR87N just north of the northern split of SR87N and SR 89. This alignment is approximately 7.2 miles in length.

9. TRAFFIC PROJECTIONS

The latest adopted NWFRPM model was used to develop future traffic forecasts for the No Build and the two Build Alternatives. Per methodology agreement, a model refinement was performed to improve model traffic forecasts within the study area for the year 2010. Model enhancements included a refinement of roadway coding and zonal data consisting of residential, employment and school data. This resulted in improved traffic assignments on US 90 and other roadways within the study area. The root mean square error percent was reduced from 60% to 40% for US 90 and from 43% to 38% for the entire roadway network as shown in **Table 2**. A detailed description of the model refinement process is provided in the Model Refinement Technical Memorandum included in **Appendix B**. Model refinement included reviewing BEBR, Census, employment, school and development data. However, traffic growth was negative on most roadways and trend analysis was not useful.

After subarea model refinement, Interim and Design year traffic forecasts were developed using interpolated zonal data and an adjusted roadway network (see Model Refinement Memorandum in **Appendix B**) to reflect programmed improvements for each phase of analysis. Model coding refinements were also transferred to future models. The daily volumes plots obtained from the NWFRPM future models are provided in **Appendix C**.



Alternative	Segment
1	1a, 1b, 1c
2	1a, 1b, 2a
3	1a, 3a
4	4a, 4b, 5a
5	4a, 4c, 5a

Table 2: NWFRPM Subarea Model Refinement

SUBAREA MODEL REFINEMENT		FDOT COUNTS		NWFRPM 2006 VALIDATED			NWFRPM 2006 REFINED		
Road Section	Location	FDOT Count Station	Count Station Volume	NWFRPM VAL 2006 Volume	Difference (Count - Forecast)	Count / Val 2006 Ratio	NWFRPM Run 06R Volume	Difference (Count - Forecast)	Count / Run 8c Ratio
US 90	East of SR 87 S	58-0018	5500	7400	-1900	0.74	6,200	-700	0.89
	West of SR 87 S	58-0019	10700	12200	-1500	0.88	13,200	-2500	0.81
	East of Ward Basin Rd	58-0062	15000	12500	2500	1.20	13,300	1700	1.13
	East of Bridge	58-1507	18900	18600	300	1.02	18,700	200	1.01
	West of Bridge	58-5010	16100	8600	7500	1.87	15,300	800	1.05
	East of SR 87 N	58-5011	24000	12000	12000	2.00	18,000	6000	1.33
	East of SR 89	58-5018	33300	13300	20000	2.50	16,600	16700	2.01
	West of SR 89	58-1802	38000	30200	7800	1.26	32,000	6000	1.19
	West of Avalon Blvd	58-0128	34900	28000	6900	1.25	28,100	6800	1.24
I-10	East of SR 87 S	58-2007	27200	20200	7000	1.35	21,200	6000	1.28
	West of SR 87 S	58-2005	26000	27300	-1300	0.95	28,500	-2500	0.91
	West of Ward Basin Rd	58-2008	28800	33000	-4200	0.87	34,100	-5300	0.84
	East of Avalon Blvd	58-2003	28200	39800	-11600	0.71	39,700	-11500	0.71
	West of Avalon Blvd	58-2001	38800	58400	-19600	0.66	58,400	-19600	0.66
SR 87 S	South of I-10	58-0271	8400	14400	-6000	0.58	14,600	-6200	0.58
	South of US 90	58-0020	7500	11000	-3500	0.68	12,400	-4900	0.60
SR 87 N	North of US 90	58-5006	19500	13100	6400	1.49	19,000	500	1.03
	North of Oliver Street	58-5004	17000	15800	1200	1.08	14,300	2700	1.19
	South of SR 89	58-1508	10000	10200	-200	0.98	10,000	0	1.00
	South of Junction (87)	NEW	13000	15800	-2800	0.82	15,400	-2400	0.84
	North of Langley St	580119	3400	7700	-4300	0.44	7,700	-4300	0.44
SR 89	North of US 90	58-5017	20200	21500	-1300	0.94	22,300	-2100	0.91
	S. of Magnolia St	58-5016	14600	17000	-2400	0.86	18,100	-3500	0.81
	N. of Magnolia St	58-1506	15400	9500	5900	1.62	9,300	6100	1.66
	North of split w/SR 89	58-0121	2500	5900	-3400	0.42	5,500	-3000	0.45
	No. of joint w/ SR 89	58-0278	2100	6000	-3900	0.35	5,600	-3500	0.38
Ward Basin Rd	North of I-10	58-0281	4600	4500	100	1.02	4,500	100	1.02
	South of US 90	58-0186	7200	4500	2700	1.60	4,200	3000	1.71
Canal Street	South of US 90	58-5014	7100	7700	-600	0.92	5,800	1300	1.22
Avalon Blvd	South of US 90	58-5014	17200	15200	2000	1.13	15,500	1700	1.11
Munson Hwy	East of SR 87 N	58-1501	4500	3800	700	1.18	3,800	700	1.18
Willing St	North of US 90	58-5008	8400	11800	-3400	0.71	3,700	4700	2.27
Berryhill St /	West of Canal Street	58-5022	8900	10000	-1100	0.89	4,200	4700	2.12
C-184 A	West of SR 87 N	58-5019	6700	5400	1300	1.24	5,700	1000	1.18
	West of SR 89	58-5023	11500	9800	1700	1.17	9,600	1900	1.20
C-191	West of SR 87 N	58-5015	3000	3700	-700	0.81	2,500	500	1.20
	West o SR 89	58-5025	8000	9800	-1800	0.82	9,800	-1800	0.82
%RMSE	(US 90 Only)	N	9		%RMSE	59.8%		%RMSE	39.8%
%RMSE	(all road segments)	N	37		%RMSE	43.4%		%RMSE	38.2%

$$RMSE\ (\%) = \frac{\sqrt{\sum_{i=1}^{N}(Estimated_i - Observed_i)^2/(N-1)}}{\sum_{i=1}^{N} Observed_i/N} \times 100$$

N = Number of samples
Estimated = Model volumes
Observed = Traffic counts

10. TRAFFIC ANALYSIS FOR OPENING, INTERIM AND DESIGN YEARS

The future daily traffic volumes (AADT) for the two Build alignments and the No Build alternative were obtained from NWFRPM models for Opening, Interim and Design years. In order to be consistent with the recently adopted TPO concurrency management program, AADTs were converted to peak hour directional volumes using the same K and D factors used in the FDOT's 2009 Generalized LOS Tables. This procedure was also recommended by FDOT's Central Office because the LOS Tables based on the Standard K Factors are not yet available. However, FDOT recommended using the Standard K Factors for intersection analysis. Therefore, the future turning movement volumes for intersections along the SR 87 Connector were developed using future AADTs and the Standard K factors obtained from the FDOT's 2012 Traffic Forecasting Handbook.

TMTOOL software was used for balancing future intersection volumes because it provided more reasonable turning movements than TURNS5 as explained earlier. TMTOOL printouts are provided in **Appendix D** and the turning movement volumes in **Appendix E** for the Build and No Build Alternatives; and for the Opening, Interim and Design years.

The roadway capacity analyses for all future conditions are summarized in **Tables 3 and 4** for daily and **Tables 5 and 6** for peak hour periods. These tables show forecasted volumes, maximum service volumes, LOS, and volume to capacity (v/c) ratios for all roadway segments and all phases. The analysis indicates that for the **No Build Alternative**, five (5) roadway segments along US 90 will operate at a failing LOS in 2015, nine (9) segments in 2025 and eight (8) segments in 2035 (after widening US 90 from Avalon Boulevard to SR87N). **Both Build Alternatives** will divert traffic from US 90 and reduce the number of failing segments along US 90 to two (2) segments in 2015, five (5) segments in 2025 and three (3) segments in 2035. All other roadway segments will operate at acceptable LOS.

Intersection analysis using SYNCHRO7 was performed for 11 intersections for the No Build alternative, and 13 intersections for the two Build Alternatives. The results are summarized in **Table 7**. In 2035, three (3) intersections fail under No Build, two (2) with **Alignment 1** and one (1) with **Alignment 2**. The analysis indicates that for **Alignment 1** both intersections of SR87N and SR 89/Oriole Street; and SR 87 Connector and Munson Highway should be signalized if the signal warrants are met. **Alignment 2** only requires the signalization of the intersection of SR 87 Connector and Munson Highway because Alignment 2 continues west of SR87N ward and connects with SR 89.

Table 3: Future Daily Traffic Volumes (AADT)

ROADWAY FROM	TO	DIST (Mile)	2-Way Lanes 2015/25/35	Adopted LOS	MSV 2035	Growth 2015 to 2025-NB	Growth 2015 to 2035-NB	2015 No Build AADT	2015 Route 1 AADT	2015 Route 2 AADT	2025 No Build AADT	2025 Route 1 AADT	2025 Route 2 AADT	2035 No Build AADT	2035 Route 1 AADT	2035 Route 2 AADT
I-10 / SR 8																
SR 281 / Avalon Blvd	Garcon Point Road	3.92	4/4/4	C	59,800	14%	25%	45,921	44,467	44,422	50,998	50,699	50,513	56,754	55,793	56,348
Garcon Point Road	Ward Basin Road	2.06	4/4/4	C	59,800	16%	26%	37,508	36,335	36,287	42,959	42,075	41,488	48,996	45,739	45,715
Ward Basin Road	SR 87 S / E. Milton Rd	2.78	4/4/4	C	59,800	14%	28%	32,140	30,009	29,973	38,227	34,195	34,054	43,142	38,491	39,199
SR 87 S / E. Milton Rd	Log Lake Road	13.67	4/4/4	C	59,800	12%	23%	22,256	22,444	22,494	24,529	25,119	25,154	27,004	27,577	27,623
US 90 / SR 10																
SR 281 / Avalon Blvd	Parkmore Plaza	0.25	4/4/6	D	50,300	6%	23%	37,100	37,014	37,037	40,068	39,270	39,195	46,932	45,584	45,357
Parkmore Plaza	Glover Lane	0.74	4/4/6	D	50,300	6%	22%	37,744	37,600	37,618	40,994	40,007	39,958	46,993	45,884	45,635
Glover Lane	SR 89 / Dogwood Dr	0.70	4/4/6	D	50,300	4%	27%	31,559	31,485	31,515	33,147	32,641	32,588	41,030	40,043	39,798
SR 89 / Dogwood Dr	SR 87N / Stewart Street	0.64	4/4/6	D	50,300	9%	32%	16,573	16,672	16,697	18,086	18,166	18,112	21,011	21,972	22,050
SR 87N / Stewart Street	Canal Street	0.27	2/2/2	D	16,500	11%	13%	18,367	15,888	16,081	19,552	17,567	17,686	19,430	17,914	17,834
Canal Street	Elmira Street	0.14	2/2/2	D	16,500	19%	27%	14,733	12,075	12,249	16,777	14,320	14,003	18,506	15,277	15,257
Elmira Street	Broad Street / Willing St	0.06	2/2/2	D	16,500	19%	27%	14,755	12,074	12,244	16,725	14,345	14,026	18,385	15,304	15,280
Broad Street / Willing St	Johnson Road/Milton Trail	0.69	2/2/2	D	16,500	25%	45%	21,237	15,483	15,964	26,266	19,372	19,554	30,345	22,472	23,034
Johnson Road/Milton Trail	Dale St / Ward Basin Rd	0.42	2/2/2	D	16,500	27%	47%	19,668	13,928	14,413	24,396	17,619	17,808	28,126	20,438	20,993
Dale St / Ward Basin Rd	Airport Road	1.26	2/2/2	D	16,500	23%	35%	14,088	9,392	9,878	16,243	11,513	12,129	18,725	12,659	13,034
Airport Road	Industrial Blvd	0.97	2/2/2	D	16,500	25%	41%	15,029	10,389	10,877	17,621	12,986	13,609	20,566	14,645	15,031
Industrial Blvd	SR 87 S / E. Milton Rd	0.75	2/2/2	D	16,500	26%	45%	14,462	10,249	10,673	16,896	12,961	13,532	19,912	14,825	15,058
SR 87 S / E. Milton Rd	S. A. Jones Road	5.83	2/2/2	C	15,100	11%	33%	6,423	6,542	6,535	7,091	7,244	7,239	7,931	8,690	8,692
SR 281 / AVALON BLVD																
I-10	US 90 / SR 10	4.88	4/4/4	D	36,700	4%	19%	16,920	16,939	16,957	18,896	17,629	17,579	22,444	20,075	19,617
SR 89 / DOGWOOD DRIVE																
US 90 / SR 10	Hamilton Bridge Road	0.53	4/4/4	D	33,200	0%	17%	21,894	21,699	21,742	22,298	21,731	21,802	27,072	25,337	25,052
Hamilton Bridge Road	Berryhill Road	0.25	4/4/4	D	33,200	4%	19%	21,520	21,278	21,318	22,619	22,032	22,105	27,120	25,410	25,076
Berryhill Road	Park Avenue	0.29	4/4/4	D	36,700	7%	16%	21,541	21,150	21,378	24,340	22,630	22,709	27,251	24,542	24,453
Park Avenue	Williard N. Rd/Magnolia St	0.99	4/4/4	D	36,700	7%	15%	18,814	18,408	18,639	21,217	19,608	19,663	23,593	21,082	21,029
Williard N. Rd/Magnolia St	SR 87 N / Stewart Street	1.51	4/4/4	D	36,700	8%	41%	8,967	9,453	9,071	11,134	10,248	9,724	13,811	13,299	12,208
SR 87 N / Stewart Street	West	1.81	2/2/2	D	22,200	32%	62%	5,490	7,208	6,387	6,972	9,547	8,343	8,306	11,658	10,063
SR 87 N / Stewart Street																
US 90 / SR 10	Berryhill Road	0.26	4/4/4	D	36,700	6%	10%	18,888	15,230	15,501	20,398	16,098	16,285	22,222	16,688	16,914
Berryhill Road	Park Avenue	0.34	4/4/4	D	36,700	8%	13%	19,087	14,919	15,201	21,104	16,161	16,372	23,394	16,801	16,909
Park Avenue	Magnolia Street	1.01	4/4/4	D	36,700	13%	24%	16,581	10,857	11,228	19,376	12,258	12,968	22,248	13,504	14,181
Magnolia Street	SR 89 S./ Dogwood Drive	1.67	4/4/4	D	36,700	15%	17%	11,287	5,710	5,834	13,424	6,539	6,693	14,818	6,687	6,683
SR 89 S./ Dogwood Drive	SR 89 North	1.57	4/4/4	D	36,700	21%	40%	19,640	21,924	14,393	23,111	26,451	16,310	26,365	30,750	18,039
SR 89 North	Langley Street	1.20	4/4/4	D	36,700	15%	30%	12,707	13,183	12,673	14,534	15,158	14,602	16,333	17,161	16,563
Langley Street	Whiting Field Circle	0.45	4/4/4	D	36,700	10%	20%	8,347	8,475	8,579	9,117	9,315	9,428	9,875	10,157	10,321
Whiting Field Circle	Springhill Rd / Neal K. Rd	5.59	2/2/2	D	21,100	11%	22%	7,269	7,445	7,551	8,023	8,250	8,365	8,754	9,065	9,227
ALABAMA ST & HENRY ST (CR 191) / CANAL ST																
South of US 90 / SR 10	US 90 / SR 10	0.41	2/2/2	D	14,850	20%	0%	8,266	7,525	7,529	9,181	9,020	9,463	8,191	9,071	9,069
US 90 / SR 10	North of US 90 / SR 10	0.19	2/2/2	D	14,850	42%	54%	3,404	2,650	2,642	4,934	3,772	3,793	6,337	4,069	4,137
BROAD STREET & WILLING STREET (CR 191)																
US 90 / SR 10	Berryhill Road	0.11	2/2/2	D	14,850	46%	105%	6,799	3,679	3,983	9,753	5,356	5,857	12,114	7,551	8,138
Berryhill Road	Munson Highway / CR 191	0.63	2/2/2	D	14,850	51%	155%	4,703	1,391	1,436	6,335	2,095	2,515	7,944	3,547	3,903
WARD BASIN ROAD																
I-10	South Airport Road	1.73	2/2/2	D	14,850	47%	96%	4,323	3,281	3,291	6,989	4,832	4,415	8,165	6,420	6,593
US 90 / SR 10	US 90 / SR 10	0.93	2/2/2	D	14,850	53%	110%	3,483	2,465	2,474	5,858	3,779	3,358	6,805	5,165	5,348
AIRPORT ROAD																
South of US 90 / SR 10	US 90 / SR 10	0.97	2/2/2	D	10,700	44%	92%	276	314	314	482	452	454	646	604	606
US 90 / SR 10	North of US 90 / SR 10	0.85	2/2/2	D	10,700	50%	103%	664	682	684	1,064	1,022	1,028	1,423	1,382	1,390
SR 87 S																
Hickory Hammock Road	I-10	2.10	4/4/4	C	35,500	27%	47%	16,056	16,277	16,288	19,707	20,663	20,547	22,773	23,846	23,567
I-10	US 90 / SR 10	1.24	4/4/4	D	36,700	26%	44%	13,295	17,676	17,783	15,117	22,250	22,339	17,877	25,452	25,402
US 90 / SR 10	Correction Facility															
MUNSON HIGHWAY / CR 19																
SR 87 N / Stewart Street	Broad Street	0.31	2/2/2	D	10,700	59%	183%	4,421	1,525	1,589	6,137	2,431	2,888	8,328	4,318	4,764
Broad Street	Munson Lane	0.45	2/2/2	D	10,700	32%	69%	3,446	1,634	1,660	4,701	2,160	2,210	6,013	2,755	2,848
Munson Lane	CR 87 A	1.91	2/2/2	D	14,850	34%	75%	4,076	1,907	2,078	6,046	2,551	2,912	8,088	3,330	4,098
CR 87 A	Springhill Road	7.39	2/2/2	D	21,100	7%	13%	1,744	2,047	2,019	1,938	2,182	2,150	2,126	2,315	2,282
CR 87 A / WHITING FIELD CIR / EAST ENTRANCE																
Munson Highway	NAS Whiting Field	2.47	2/2/2	D	14,850	104%	208%	2,478	2,600	2,594	4,890	5,314	5,290	7,272	8,016	7,972
OLD US 90																
Canal St / Henry Street	US 90 / SR 10	1.03	2/2/2	D	14,850	41%	12%	823	661	659	936	933	928	867	739	750
SR 87 CONNECTOR (ALT 1 or 2)																
US90 / SR 10	CR 191 / Munson Hwy			D	64,300	40%	86%		10,731	10,299		15,015	14,406		19,746	19,138
CR 191 / Munson Hwy	SR 87 N			D	64,300	42%	88%		8,922	8,228		12,834	11,654		17,121	15,470

Note: Yellow highlight refers to additional lanes in 2035.

Table 4: Future Daily LOS and V/C

ROADWAY		Adop-ted	2015						2025						2035					
			No-Build		Route 1		Route 2		No-Build		Route 1		Route 2		No-Build		Route 1		Route 2	
FROM	TO	LOS	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
I-10 / SR 8																				
SR 281 / Avalon Blvd	Garcon Point Road	C	C	0.77	C	0.74	C	0.74	C	0.85	C	0.85	C	0.84	C	0.95	C	0.93	C	0.94
Garcon Point Road	Ward Basin Road	C	B	0.63	B	0.61	B	0.61	B	0.72	B	0.70	B	0.69	C	0.82	C	0.76	C	0.76
Ward Basin Road	SR 87 S / E. Milton Rd	C	B	0.54	B	0.50	B	0.50	B	0.64	B	0.57	B	0.57	B	0.72	B	0.64	B	0.66
SR 87 S / E. Milton Rd	Log Lake Road	C	B	0.37	B	0.38	B	0.38	B	0.41	B	0.42	B	0.42	B	0.45	B	0.46	B	0.46
US 90 / SR 10																				
SR 281 / Avalon Blvd	Parkmore Plaza	D	F	1.12	F	1.11	F	1.12	F	1.21	F	1.18	F	1.18	D	0.93	D	0.91	D	0.90
Parkmore Plaza	Glover Lane	D	F	1.14	F	1.13	F	1.13	F	1.23	F	1.21	F	1.20	D	0.93	D	0.91	D	0.91
Glover Lane	SR 89 / Dogwood Dr	D	D	0.95	D	0.95	D	0.95	D	1.00	D	0.98	D	0.98	D	0.82	D	0.80	D	0.79
SR 89 / Dogwood Dr	SR 87N / Stewart Street	D	C	0.50	C	0.50	C	0.50	C	0.54	C	0.55	C	0.55	C	0.42	C	0.44	C	0.44
SR 87N / Stewart Street	Canal Street	D	F	1.11	D	0.96	D	0.97	F	1.18	F	1.06	F	1.07	F	1.18	F	1.09	F	1.08
Canal Street	Elmira Street	D	C	0.89	C	0.73	C	0.74	F	1.02	C	0.87	C	0.85	F	1.12	C	0.93	C	0.92
Elmira Street	Broad Street / Willing Street	D	C	0.89	C	0.73	C	0.74	F	1.01	C	0.87	C	0.85	F	1.11	C	0.93	C	0.93
Broad Street / Willing Street	Johnson Road/Milton Trail	D	F	1.29	D	0.94	D	0.97	F	1.59	F	1.17	F	1.19	F	1.84	F	1.36	F	1.40
Johnson Road/Milton Trail	Dale St / Ward Basin Rd	D	F	1.19	C	0.84	C	0.87	F	1.48	F	1.07	F	1.08	F	1.70	F	1.24	F	1.27
Dale St / Ward Basin Rd	Airport Road	D	C	0.85	B	0.57	C	0.60	D	0.98	C	0.70	C	0.74	F	1.13	C	0.77	C	0.79
Airport Road	Industrial Blvd	D	C	0.91	C	0.63	C	0.66	F	1.07	C	0.79	C	0.82	F	1.25	C	0.89	C	0.91
Industrial Blvd	SR 87 S / E. Milton Rd	D	C	0.88	C	0.62	C	0.65	F	1.02	C	0.79	C	0.82	F	1.21	C	0.90	C	0.91
SR 87 S / E. Milton Rd	S. A. Jones Road	C	B	0.43	B	0.43	B	0.43	B	0.47	B	0.48	B	0.48	B	0.53	C	0.58	C	0.58
SR 281 / AVALON BLVD																				
I-10	US 90 / SR 10	D	B	0.46	B	0.46	B	0.46	B	0.51	B	0.48	B	0.48	B	0.61	B	0.55	B	0.53
SR 89 / DOGWOOD DRIVE																				
US 90 / SR 10	Hamilton Bridge Road	D	C	0.66	C	0.65	C	0.65	C	0.67	C	0.65	C	0.66	D	0.82	D	0.76	D	0.75
Hamilton Bridge Road	Berryhill Road	D	C	0.65	C	0.64	C	0.64	C	0.68	C	0.66	C	0.67	D	0.82	D	0.77	D	0.76
Berryhill Road	Park Avenue	D	B	0.59	B	0.58	B	0.58	B	0.66	B	0.62	B	0.62	B	0.74	B	0.67	B	0.67
Park Avenue	Williard N. Rd/Magnolia St	D	B	0.51	B	0.50	B	0.51	B	0.58	B	0.53	B	0.54	B	0.64	B	0.57	B	0.57
Williard N. Rd/Magnolia St	SR 87 N / Stewart Street	D	B	0.24	B	0.26	B	0.25	B	0.30	B	0.28	B	0.26	B	0.38	B	0.36	B	0.33
SR 87 N / Stewart Street	West	D	B	0.25	B	0.32	B	0.29	B	0.31	C	0.43	C	0.38	C	0.37	C	0.53	C	0.45
SR 87 N / Stewart Street																				
US 90 / SR 10	Berryhill Road	D	B	0.51	B	0.41	B	0.42	B	0.56	B	0.44	B	0.44	B	0.61	B	0.45	B	0.46
Berryhill Road	Park Avenue	D	B	0.52	B	0.41	B	0.41	B	0.58	B	0.44	B	0.45	B	0.64	B	0.46	B	0.46
Park Avenue	Magnolia Street	D	B	0.45	B	0.30	B	0.31	B	0.53	B	0.33	B	0.35	B	0.61	B	0.37	B	0.39
Magnolia Street	SR 89 / Dogwood Drive	D	B	0.31	B	0.16	B	0.16	B	0.37	B	0.18	B	0.18	B	0.40	B	0.18	B	0.18
SR 89 / Dogwood Drive	SR 89 North	D	B	0.54	B	0.60	B	0.39	B	0.63	B	0.72	B	0.44	B	0.72	C	0.84	B	0.49
SR 89 North	Langley Street	D	B	0.35	B	0.36	B	0.35	B	0.40	B	0.41	B	0.40	B	0.45	B	0.47	B	0.45
Langley Street	Whiting Field Circle	D	B	0.23	B	0.23	B	0.23	B	0.25	B	0.25	B	0.26	B	0.27	B	0.28	B	0.28
Whiting Field Circle	Springhill Rd / Neal K. Rd	D	B	0.34	B	0.35	B	0.36	C	0.38	C	0.39	C	0.40	C	0.41	C	0.43	C	0.44
ALABAMA ST & HENRY ST (CR 191) / CANAL ST																				
South of US 90 / SR 10	US 90 / SR 10	D	B	0.56	B	0.51	B	0.51	C	0.62	C	0.61	C	0.64	B	0.55	C	0.61	C	0.61
US 90 / SR 10	North of US 90 / SR 10	D	B	0.23	B	0.18	B	0.18	B	0.33	B	0.25	B	0.26	B	0.43	B	0.27	B	0.28
BROAD STREET & WILLING STREET (CR 191)																				
US 90 / SR 10	Berryhill Road	D	B	0.46	B	0.25	B	0.27	C	0.66	B	0.36	B	0.39	C	0.82	B	0.51	B	0.55
Berryhill Road	Munson Highway / CR 191	D	B	0.32	B	0.09	B	0.10	B	0.43	B	0.14	B	0.17	B	0.53	B	0.24	B	0.26
WARD BASIN ROAD																				
I-10	South Airport Road	D	B	0.29	B	0.22	B	0.22	B	0.47	B	0.33	B	0.30	B	0.55	B	0.43	B	0.44
US 90 / SR 10	US 90 / SR 10	D	B	0.23	B	0.17	B	0.17	B	0.39	B	0.25	B	0.23	B	0.46	B	0.35	B	0.36
AIRPORT ROAD																				
South of US 90 / SR 10	US 90 / SR 10	D	B	0.03	B	0.03	B	0.03	B	0.05	B	0.04	B	0.04	B	0.06	B	0.06	B	0.06
US 90 / SR 10	North of US 90 / SR 10	D	B	0.06	B	0.06	B	0.06	B	0.10	B	0.10	B	0.10	B	0.13	B	0.13	B	0.13
SR 87 S																				
Hickory Hammock Road	I-10	C	B	0.45	B	0.46	B	0.46	B	0.56	B	0.58	B	0.58	B	0.64	B	0.67	B	0.66
I-10	US 90 / SR 10	D	B	0.36	B	0.48	B	0.48	B	0.41	B	0.61	B	0.61	B	0.49	B	0.69	B	0.69
US 90 / SR 10	Correction Facility	D	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00
MUNSON HIGHWAY / CR 191																				
SR 87 N / Stewart Street	Broad Street	D	B	0.41	B	0.14	B	0.15	B	0.57	B	0.23	B	0.27	C	0.78	B	0.40	B	0.45
Broad Street	Munson Lane	D	B	0.32	B	0.15	B	0.16	B	0.44	B	0.20	B	0.21	B	0.56	B	0.26	B	0.27
Munson Lane	CR 87 A	D	B	0.27	B	0.13	B	0.14	B	0.41	B	0.17	B	0.20	B	0.54	B	0.22	B	0.28
CR 87 A	Springhill Road	D	B	0.08	B	0.10	B	0.10	B	0.09	B	0.10	B	0.10	B	0.10	B	0.11	B	0.11
CR 87 A / WHITING FIELD CIRCLE / EAST ENTRANCE																				
Munson Highway	NAS Whiting Field	D	B	0.17	B	0.18	B	0.17	B	0.33	B	0.36	B	0.36	B	0.49	B	0.54	B	0.54
OLD US 90																				
Canal St / Henry Street	US 90 / SR 10	D	B	0.06	B	0.04	B	0.04	B	0.06	B	0.06	B	0.06	B	0.06	B	0.05	B	0.05
SR 87 CONNECTOR (ALT 1 & 2)																				
US90 / SR 10	CR 191 / Munson Hwy	D			B	0.17	B	0.16			B	0.23	B	0.22			B	0.31	B	0.30
CR 191 / Munson Hwy	SR 87 N	D			B	0.14	B	0.13			B	0.20	B	0.18			B	0.27	B	0.24

Note: Yellow highlight refers to additional lanes in 2035.
Orange highlight refers to failing LOS.

Table 5: Future Peak Hour Directional Traffic Volumes

ROADWAY FROM	TO	DIST (Mile)	2-WAY LANES 2015/25/35	Adopted LOS	MSV 2035	LOS C MSV (NOISE)	2015 No Build DHV	2015 Route 1 DHV	2015 Route 2 DHV	2025 No Build DHV	2025 Route 1 DHV	2025 Route 2 DHV	2035 No Build DHV	2035 Route 1 DHV	2035 Route 2 DHV
I-10 / SR 8															
SR 281 / Avalon Blvd	Garcon Point Road	3.92	4/4/4	C	3,020	3,020	2,324	2,250	2,248	2,580	2,565	2,556	2,872	2,823	2,851
Garcon Point Road	Ward Basin Road	2.06	4/4/4	C	3,020	3,020	1,898	1,839	1,836	2,174	2,129	2,099	2,479	2,314	2,313
Ward Basin Road	SR 87 S / E. Milton Rd	2.78	4/4/4	C	3,020	3,020	1,626	1,518	1,517	1,934	1,730	1,723	2,183	1,948	1,983
SR 87 S / E. Milton Rd	Log Lake Road	13.67	4/4/4	C	3,020	3,020	1,126	1,136	1,138	1,241	1,271	1,273	1,366	1,395	1,398
US 90 / SR 10															
SR 281 / Avalon Blvd	Parkmore Plaza	0.25	4/4/6	D	2,680	1,330	1,979	1,975	1,976	2,138	2,095	2,091	2,504	2,432	2,420
Parkmore Plaza	Glover Lane	0.74	4/4/6	D	2,680	1,330	2,014	2,006	2,007	2,187	2,134	2,132	2,507	2,448	2,435
Glover Lane	SR 89 / Dogwood Dr	0.70	4/4/6	D	2,680	1,330	1,684	1,680	1,681	1,768	1,741	1,739	2,189	2,136	2,123
SR 89 / Dogwood Dr	SR 87N / Stewart Street	0.64	4/4/6	D	2,680	1,330	884	889	891	965	969	966	1,121	1,172	1,176
SR 87N / Stewart Street	Canal Street	0.27	2/2/2	D	880	820	980	848	858	1,043	937	944	1,037	956	951
Canal Street	Elmira Street	0.14	2/2/2	D	880	820	786	644	653	895	764	747	987	815	814
Elmira Street	Broad Street / Willing St	0.06	2/2/2	D	880	820	787	644	653	892	765	748	981	816	815
Broad Street / Willing Street	Johnson Road/Milton Trail	0.69	2/2/2	D	880	820	1,133	826	852	1,401	1,033	1,043	1,619	1,199	1,229
Johnson Road/Milton Trail	Dale St / Ward Basin Rd	0.42	2/2/2	D	880	820	1,049	743	769	1,302	940	950	1,501	1,090	1,120
Dale St / Ward Basin Rd	Airport Road	1.26	2/2/2	D	880	820	752	501	527	867	614	647	999	675	695
Airport Road	Industrial Blvd	0.97	2/2/2	D	880	820	802	554	580	940	693	726	1,097	781	802
Industrial Blvd	SR 87 S / E. Milton Rd	0.75	2/2/2	D	880	820	772	547	569	901	691	722	1,062	791	803
SR 87 S / E. Milton Rd	S. A. Jones Road	5.83	2/2/2	C	800	800	343	349	349	378	386	386	423	464	464
SR 281 / AVALON BLVD															
I-10	US 90 / SR 10	4.88	4/4/4	D	1,960	820	903	904	905	1,008	941	938	1,197	1,071	1,047
SR 89 / DOGWOOD DRIVE															
US 90 / SR 10	Hamilton Bridge Road	0.53	4/4/4	D	1,770	1,330	1,168	1,158	1,160	1,190	1,159	1,163	1,444	1,352	1,337
Hamilton Bridge Road	Berryhill Road	0.25	4/4/4	D	1,770	1,330	1,148	1,135	1,137	1,207	1,175	1,179	1,447	1,356	1,338
Berryhill Road	Park Avenue	0.29	4/4/4	D	1,960	1,890	1,149	1,128	1,141	1,299	1,207	1,212	1,454	1,309	1,305
Park Avenue	Williard N. Rd/Magnolia St	0.99	4/4/4	D	1,960	1,890	1,004	982	994	1,132	1,046	1,049	1,259	1,125	1,122
Williard N. Rd/Magnolia St	SR 87 N / Stewart Street	1.51	4/4/4	D	1,960	1,890	478	504	484	594	547	519	737	710	651
SR 87 N / Stewart Street	West	1.81	2/2/2	D	1,140	800	284	373	330	360	494	431	429	603	520
SR 87 N / Stewart Street															
US 90 / SR 10	Berryhill Road	0.26	4/4/4	D	1,960	1,890	1,008	813	827	1,088	859	869	1,186	890	902
Berryhill Road	Park Avenue	0.34	4/4/4	D	1,960	1,890	1,018	796	811	1,126	862	873	1,248	896	902
Park Avenue	Magnolia Street	1.01	4/4/4	D	1,960	1,890	885	579	599	1,034	654	692	1,187	720	757
Magnolia Street	SR 89 S./ Dogwood Drive	1.67	4/4/4	D	1,960	1,890	602	305	311	716	349	357	791	357	357
SR 89 S./ Dogwood Drive	SR 89 North	1.57	4/4/4	D	1,960	1,890	1,048	1,170	768	1,233	1,411	870	1,407	1,641	962
SR 89 North	Langley Street	1.20	4/4/4	D	1,960	1,890	678	703	676	775	809	779	871	916	884
Langley Street	Whiting Field Circle	0.45	4/4/4	D	1,960	1,890	445	452	458	486	497	503	527	542	551
Whiting Field Circle	Springhill Rd / Neal K. Rd	5.59	2/2/2	D	1,120	800	388	397	403	428	440	446	467	484	492
ALABAMA ST & HENRY ST (CR 191) / CANAL ST															
South of US 90 / SR 10	US 90 / SR 10	0.41	2/2/2	D	790	740	441	401	402	490	481	505	437	484	484
US 90 / SR 10	North of US 90 / SR 10	0.19	2/2/2	D	790	740	182	141	141	263	201	202	338	217	221
BROAD STREET & WILLING STREET (CR 191)															
US 90 / SR 10	Berryhill Road	0.11	2/2/2	D	790	740	363	196	212	520	286	312	646	403	434
Berryhill Road	Munson Highway / CR 191	0.63	2/2/2	D	790	740	251	74	77	338	112	134	424	189	208
WARD BASIN ROAD															
I-10	South Airport Road	1.73	2/2/2	D	790	740	231	175	176	373	258	236	436	343	352
US 90 / SR 10	US 90 / SR 10	0.93	2/2/2	D	790	740	186	132	132	313	202	179	363	276	285
AIRPORT ROAD															
South of US 90 / SR 10	US 90 / SR 10	0.97	2/2/2	D	570	530	15	17	17	26	24	24	34	32	32
US 90 / SR 10	North of US 90 / SR 10	0.85	2/2/2	D	570	530	35	36	36	57	55	55	76	74	74
SR 87 S															
Hickory Hammock Road	I-10	2.10	4/4/4	C	1,890	1,890	857	868	869	1,051	1,102	1,096	1,215	1,272	1,257
I-10	US 90 / SR 10	1.24	4/4/4	D	1,960	1,890	709	943	949	806	1,187	1,192	954	1,358	1,355
US 90 / SR 10	Correction Facility														
MUNSON HIGHWAY / CR 191															
SR 87 N / Stewart Street	Broad Street	0.31	2/2/2	D	570	530	236	81	85	327	130	154	444	230	254
Broad Street	Munson Lane	0.45	2/2/2	D	570	530	184	87	89	251	115	118	321	147	152
Munson Lane	CR 87 A	1.91	2/2/2	D	790	740	217	102	111	323	136	155	431	178	219
CR 87 A	Springhill Road	7.39	2/2/2	D	1,120	800	93	109	108	103	116	115	113	124	122
CR 87 A / WHITING FIELD CIRCLE / EAST ENTRANCE															
Munson Highway	NAS Whiting Field	2.47	2/2/2	D	790	740	132	139	138	261	284	282	388	428	425
OLD US 90															
Canal St / Henry Street	US 90 / SR 10	1.03	2/2/2	D	790	740	44	35	35	50	50	50	46	39	40
SR 87 CONNECTOR (ALT 1 or 2)															
US90 / SR 10	CR 191 / Munson Hwy			D		2,560		555	532		776	745		1,021	989
CR 191 / Munson Hwy	SR 87 N			D		2,560		461	425		664	603		885	800

Note: Yellow highlight refers to additional lanes in 2035.

Table 6: Future Peak Hour LOS and V/C

ROADWAY		Adop-	2015						2025						2035					
		ted	No-Build		Route 1		Route 2		No-Build		Route 1		Route 2		No-Build		Route 1		Route 2	
FROM	TO	LOS	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
I-10 / SR 8																				
SR 281 / Avalon Blvd	Garcon Point Road	C	C	0.77	C	0.75	C	0.74	C	0.85	C	0.85	C	0.85	C	0.95	C	0.93	C	0.94
Garcon Point Road	Ward Basin Road	C	B	0.63	B	0.61	B	0.61	B	0.72	B	0.70	B	0.70	C	0.82	C	0.77	C	0.77
Ward Basin Road	SR 87 S / E. Milton Rd	C	B	0.54	B	0.50	B	0.50	B	0.64	B	0.57	B	0.57	B	0.72	B	0.64	B	0.66
SR 87 S / E. Milton Rd	Log Lake Road	C	B	0.37	B	0.38	B	0.38	B	0.41	B	0.42	B	0.42	B	0.45	B	0.46	B	0.46
US 90 / SR 10																				
SR 281 / Avalon Blvd	Parkmore Plaza	D	F	1.12	F	1.12	F	1.12	F	1.21	F	1.18	F	1.18	D	0.93	D	0.91	D	0.90
Parkmore Plaza	Glover Lane	D	F	1.14	F	1.13	F	1.13	F	1.24	F	1.21	F	1.20	D	0.94	D	0.91	D	0.91
Glover Lane	SR 89 / Dogwood Dr	D	D	0.95	D	0.95	D	0.95	D	1.00	D	0.98	D	0.98	D	0.82	D	0.80	D	0.79
SR 89 / Dogwood Dr	SR 87N / Stewart Street	D	C	0.50	C	0.50	C	0.50	C	0.55	C	0.55	C	0.55	C	0.42	C	0.44	C	0.44
SR 87N / Stewart Street	Canal Street	D	F	1.11	D	0.96	D	0.97	F	1.19	F	1.06	F	1.07	F	1.18	F	1.09	F	1.08
Canal Street	Elmira Street	D	C	0.89	C	0.73	C	0.74	F	1.02	C	0.87	C	0.85	F	1.12	C	0.93	C	0.92
Elmira Street	Broad Street / Willing Street	D	C	0.89	C	0.73	C	0.74	F	1.01	C	0.87	C	0.85	F	1.11	C	0.93	C	0.93
Broad Street / Willing Street	Johnson Road/Milton Trail	D	F	1.29	D	0.94	D	0.97	F	1.59	F	1.17	F	1.19	F	1.84	F	1.36	F	1.40
Johnson Road/Milton Trail	Dale St / Ward Basin Rd	D	F	1.19	C	0.84	C	0.87	F	1.48	F	1.07	F	1.08	F	1.71	F	1.24	F	1.27
Dale St / Ward Basin Rd	Airport Road	D	C	0.85	B	0.57	C	0.60	D	0.98	C	0.70	C	0.74	F	1.14	C	0.77	C	0.79
Airport Road	Industrial Blvd	D	C	0.91	C	0.63	C	0.66	F	1.07	C	0.79	C	0.83	F	1.25	C	0.89	C	0.91
Industrial Blvd	SR 87 S / E. Milton Rd	D	C	0.88	C	0.62	C	0.65	F	1.02	C	0.79	C	0.82	F	1.21	C	0.90	C	0.91
SR 87 S / E. Milton Rd	S. A. Jones Road	C	B	0.43	B	0.44	B	0.44	B	0.47	B	0.48	B	0.48	C	0.53	C	0.58	C	0.58
SR 281 / AVALON BLVD																				
I-10	US 90 / SR 10	D	B	0.46	B	0.46	B	0.46	B	0.51	B	0.48	B	0.48	B	0.61	B	0.55	B	0.53
SR 89 / DOGWOOD DRIVE																				
US 90 / SR 10	Hamilton Bridge Road	D	C	0.66	C	0.65	C	0.66	C	0.67	C	0.65	C	0.66	D	0.82	D	0.76	D	0.76
Hamilton Bridge Road	Berryhill Road	D	C	0.65	C	0.64	C	0.64	C	0.68	C	0.66	C	0.67	D	0.82	D	0.77	D	0.76
Berryhill Road	Park Avenue	D	B	0.59	B	0.58	B	0.58	B	0.66	B	0.62	B	0.62	B	0.74	B	0.67	B	0.67
Park Avenue	Williard N. Rd/Magnolia St	D	B	0.51	B	0.50	B	0.51	B	0.58	B	0.53	B	0.54	B	0.64	B	0.57	B	0.57
Williard Norris Rd/Magnolia St	SR 87 N / Stewart Street	D	B	0.24	B	0.26	B	0.25	B	0.30	B	0.28	B	0.26	B	0.38	B	0.36	B	0.33
SR 87 N / Stewart Street	West	D	B	0.25	B	0.33	B	0.29	B	0.32	C	0.43	C	0.38	C	0.38	C	0.53	C	0.46
SR 87 N / Stewart Street																				
US 90 / SR 10	Berryhill Road	D	B	0.51	B	0.41	B	0.42	B	0.56	B	0.44	B	0.44	B	0.60	B	0.45	B	0.46
Berryhill Road	Park Avenue	D	B	0.52	B	0.41	B	0.41	B	0.57	B	0.44	B	0.45	B	0.64	B	0.46	B	0.46
Park Avenue	Magnolia Street	D	B	0.45	B	0.30	B	0.31	B	0.53	B	0.33	B	0.35	B	0.61	B	0.37	B	0.39
Magnolia Street	SR 89 / Dogwood Drive	D	B	0.31	B	0.16	B	0.16	B	0.37	B	0.18	B	0.18	B	0.40	B	0.18	B	0.18
SR 89 / Dogwood Drive	SR 89 North	D	B	0.53	B	0.60	B	0.39	B	0.63	B	0.72	B	0.44	B	0.72	C	0.84	B	0.49
SR 89 North	Langley Street	D	B	0.35	B	0.36	B	0.34	B	0.40	B	0.41	B	0.40	B	0.44	B	0.47	B	0.45
Langley Street	Whiting Field Circle	D	B	0.23	B	0.23	B	0.23	B	0.25	B	0.25	B	0.26	B	0.27	B	0.28	B	0.28
Whiting Field Circle	Springhill Rd / Neal K. Rd	D	B	0.35	B	0.35	B	0.36	C	0.38	C	0.39	C	0.40	C	0.42	C	0.43	C	0.44
ALABAMA ST & HENRY ST (CR 191) / CANAL ST																				
South of US 90 / SR 10	US 90 / SR 10	D	B	0.56	B	0.51	B	0.51	C	0.62	C	0.61	C	0.64	B	0.55	C	0.61	C	0.61
US 90 / SR 10	North of US 90 / SR 10	D	B	0.23	B	0.18	B	0.18	B	0.33	B	0.25	B	0.26	B	0.43	B	0.27	B	0.28
BROAD STREET & WILLING STREET (CR 191)																				
US 90 / SR 10	Berryhill Road	D	B	0.46	B	0.25	B	0.27	C	0.66	B	0.36	B	0.40	C	0.82	B	0.51	B	0.55
Berryhill Road	Munson Highway / CR 191	D	B	0.32	B	0.09	B	0.10	B	0.43	B	0.14	B	0.17	B	0.54	B	0.24	B	0.26
WARD BASIN ROAD																				
I-10	South Airport Road	D	B	0.29	B	0.22	B	0.22	B	0.47	B	0.33	B	0.30	B	0.55	B	0.43	B	0.45
US 90 / SR 10	US 90 / SR 10	D	B	0.24	B	0.17	B	0.17	B	0.40	B	0.26	B	0.23	B	0.46	B	0.35	B	0.36
AIRPORT ROAD																				
South of US 90 / SR 10	US 90 / SR 10	D	B	0.03	B	0.03	B	0.03	B	0.05	B	0.04	B	0.04	B	0.06	B	0.06	B	0.06
US 90 / SR 10	North of US 90 / SR 10	D	B	0.06	B	0.06	B	0.06	B	0.10	B	0.10	B	0.10	B	0.13	B	0.13	B	0.13
SR 87 S																				
Hickory Hammock Road	I-10	C	B	0.45	B	0.46	B	0.46	B	0.56	B	0.58	B	0.58	B	0.64	B	0.67	B	0.67
I-10	US 90 / SR 10	D	B	0.36	B	0.48	B	0.48	B	0.41	B	0.61	B	0.61	B	0.49	B	0.69	B	0.69
US 90 / SR 10	Correction Facility	D	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00	A	0.00
MUNSON HIGHWAY / CR 191																				
SR 87 N / Stewart Street	Broad Street	D	B	0.41	B	0.14	B	0.15	B	0.57	B	0.23	B	0.27	C	0.78	B	0.40	B	0.45
Broad Street	Munson Lane	D	B	0.32	B	0.15	B	0.16	B	0.44	B	0.20	B	0.21	B	0.56	B	0.26	B	0.27
Munson Lane	CR 87 A	D	B	0.28	B	0.13	B	0.14	B	0.41	B	0.17	B	0.20	B	0.55	B	0.22	B	0.28
CR 87 A	Springhill Road	D	B	0.08	B	0.10	B	0.10	B	0.09	B	0.10	B	0.10	B	0.10	B	0.11	B	0.11
CR 87 A / WHITING FIELD CIRCLE / EAST ENTRANCE																				
Munson Highway	NAS Whiting Field	D	B	0.17	B	0.18	B	0.18	B	0.33	B	0.36	B	0.36	B	0.49	B	0.54	B	0.54
OLD US 90																				
Canal St / Henry Street	US 90 / SR 10	D	B	0.06	B	0.04	B	0.04	B	0.06	B	0.06	B	0.06	B	0.06	B	0.05	B	0.05
SR 87 CONNECTOR (ALT 1 & 2)																				
US90 / SR 10	CR 191 / Munson Hwy	D			B	0.17	B	0.16			B	0.23	B	0.22			B	0.31	B	0.30
CR 191 / Munson Hwy	SR 87 N	D			B	0.14	B	0.13			B	0.20	B	0.18			B	0.27	B	0.24

Notes: Yellow highlight refers to additional lanes.

Orange highlight refers to failing LOS based on 2009 Generalized LOS Tables.

Table 7: Intersection Analysis for Existing and Future Conditions

Location		AM										SIGNALIZATION	
		2010	2015			2025			2035			2035 - AM	
		LOS / DELAY	LOS / DELAY			LOS / DELAY			LOS / DELAY			LOS / DELAY	
		No Build	No Build	Corridor 1	Corridor 2	No Build	Corridor 1	Corridor 2	No Build	Corridor 1	Corridor 2	Corridor 1	Corridor 2
US 90 @	SR 87S	C / 26.9	C / 23.7	C / 20.3	C / 24.8	C / 25.2	C / 28.0	C / 26.7	C / 27.0	C / 31.2	C / 31.0		
	Ward Basin Rd	C / 22.9	C / 22.2	C / 20.3	C / 20.9	C / 27.1	C / 23.8	C / 22.9	C / 30.7	C / 27.1	C / 27.2		
	Willing St / Broad St	C / 20.9	C / 21.8	B / 12.2	B / 12.8	D / 45.4	B / 17.2	B / 18.2	F / 96.7	C / 26.4	C / 29.5		
	Canal St	C / 22.1	B / 19.2	B / 16.5	B / 16.5	C / 21.4	B / 19.2	B / 19.7	C / 21.1	B / 19.5	B / 19.5		
	SR 87N	B / 18.8	B / 18.1	B / 16.5	B / 16.7	B / 19.1	B / 17.2	B / 17.3	C / 21.2	B / 19.0	B / 19.0		
	SR 89	C / 20.5	B / 19.4	B / 19.4	B / 19.4	C / 20.5	C / 20.3	C / 20.3	C / 23.0	C / 22.4	C / 22.4		
SR 87N	SR 89/Dogwood Dr	B / 18.4	B / 18.6	C / 32.7	C / 32.4	C / 20.9	C / 32.0	C / 30.8	C / 22.5	C /29.8	C / 30.3		
	SR 89/Oriole St (*)	B / 14.4	C / 21.0	D / 30.1	B / 12.1	F / 63.1	F / 174	B / 13.5	F / 210	F / 512	B / 13.6	B / 11.2	
	Langley St	A / 8.8	A / 6.9	A / 8.1	A / 8.1	A / 7.8	A / 9.0	A / 9.1	A / 9.0	B / 10.2	B / 10.3		
	Munson Hwy/Oliver St (*)	C / 16.1	C / 15.5	B / 12.1	B / 12.2	B / 14.4	B / 13.0	B / 13.3	D / 29.6	B / 14.2	B / 14.6		
Munson Hwy at Broad St/Okaloosa St (*)		B / 11.0	B / 10.6	A / 9.8	A / 9.3	B / 14.5	A / 9.6	A / 9.7	B / 11.7	B / 11.3	B / 11.8		
SR 87 Connector & SR 87 N				C / 22.0	C / 23.3		C / 30.3	C / 26.6		D / 43.4	C /32.7		
SR 87 Connector & Munson Highway (*)				E / 47.7	E / 49.4		F / **	F / **		F / **	F / **	B / 10.7	B / 16.3

Location		PM										SIGNALIZATION	
		2010	2015			2025			2035			2035 - PM	
		LOS / DELAY	LOS / DELAY			LOS / DELAY			LOS / DELAY			LOS / DELAY	
		No Build	No Build	Corridor 1	Corridor 2	No Build	Corridor 1	Corridor 2	No Build	Corridor 1	Corridor 2	Corridor 1	Corridor 2
US 90 @	SR 87S	C / 28.3	C / 21.9	C / 24.9	C / 25.0	C / 23.5	C / 31.0	C / 31.1	C / 25.1	D / 36.0	D / 36.3		
	Ward Basin Rd	B / 16.7	B / 17.1	B / 15.9	B / 15.8	C / 21.3	B / 18.4	B / 17.6	C / 24.9	C / 20.9	C / 21.2		
	Willing St / Broad St	C / 30.5	C / 28.3	B / 13.7	B / 14.6	E / 75.3	B / 19.9	C / 21.4	F / 142	C / 34.0	D / 41.7		
	Canal St	C / 26.4	C / 29.2	C / 22.8	C / 23.0	D / 42.5	C / 33.1	D / 36.6	D / 35.4	D / 35.9	C / 34.0		
	SR 87N	C / 22.4	C / 22.9	C / 20.4	C / 20.6	C / 24.9	C / 21.6	C / 21.7	C / 29.5	C / 26.3	C / 26.7		
	SR 89	C / 33.4	C / 31.3	C / 32.2	C / 32.2	C / 34.0	D / 35.2	D / 35.2	D / 39.9	D / 39.2	D / 39.2		
SR 87N	SR 89/Dogwood Dr	B / 18.0	B / 18.3	C / 28.5	C / 29.3	B / 19.0	C / 28.3	C / 29.1	C / 20.9	C / 29.2	C / 29.6		
	SR 89/Oriole St (*)	B / 14.6	D / 29.1	F / 95.7	B / 12.6	F / 232	F / **	B / 13.5	F / 847	F / **	C / 15.0	D / 43.3	
	Langley St	C / 20.4	B / 14.2	B / 10.2	B / 10.3	B / 14.8	B / 10.7	B / 10.9	B / 15.3	B / 11.7	B / 11.8		
	Munson Hwy/Oliver St (*)	D / 29.0	C / 22.8	B / 14.2	B / 14.5	E / 39.2	C / 16.0	C / 16.5	F / 121	C / 18.8	C / 19.5		
Munson Hwy at Broad St/Okaloosa St (*)		B / 10.5	B / 12.0	A / 9.8	A / 9.4	C / 15.2	A / 10.0	B / 10.3	C / 23.3	B / 11.5	B / 12.0		
SR 87 Connector & SR 87 N				B / 16.9	C / 23.6		C / 26.9	C / 27.4		D / 45.6	C / 33.8		
SR 87 Connector & Munson Highway (*)				F / 82.0	F / 70.0		F / **	F / **		F / **	F / **	C / 20.5	B / 13.8

Notes: (*) Refers to unsignalized intersections. (**) Delays outside the validity of HCS equations, No delay value is given by HCS.

Yellow highlight refers to LOS F and Orange highlight refers to LOS E.

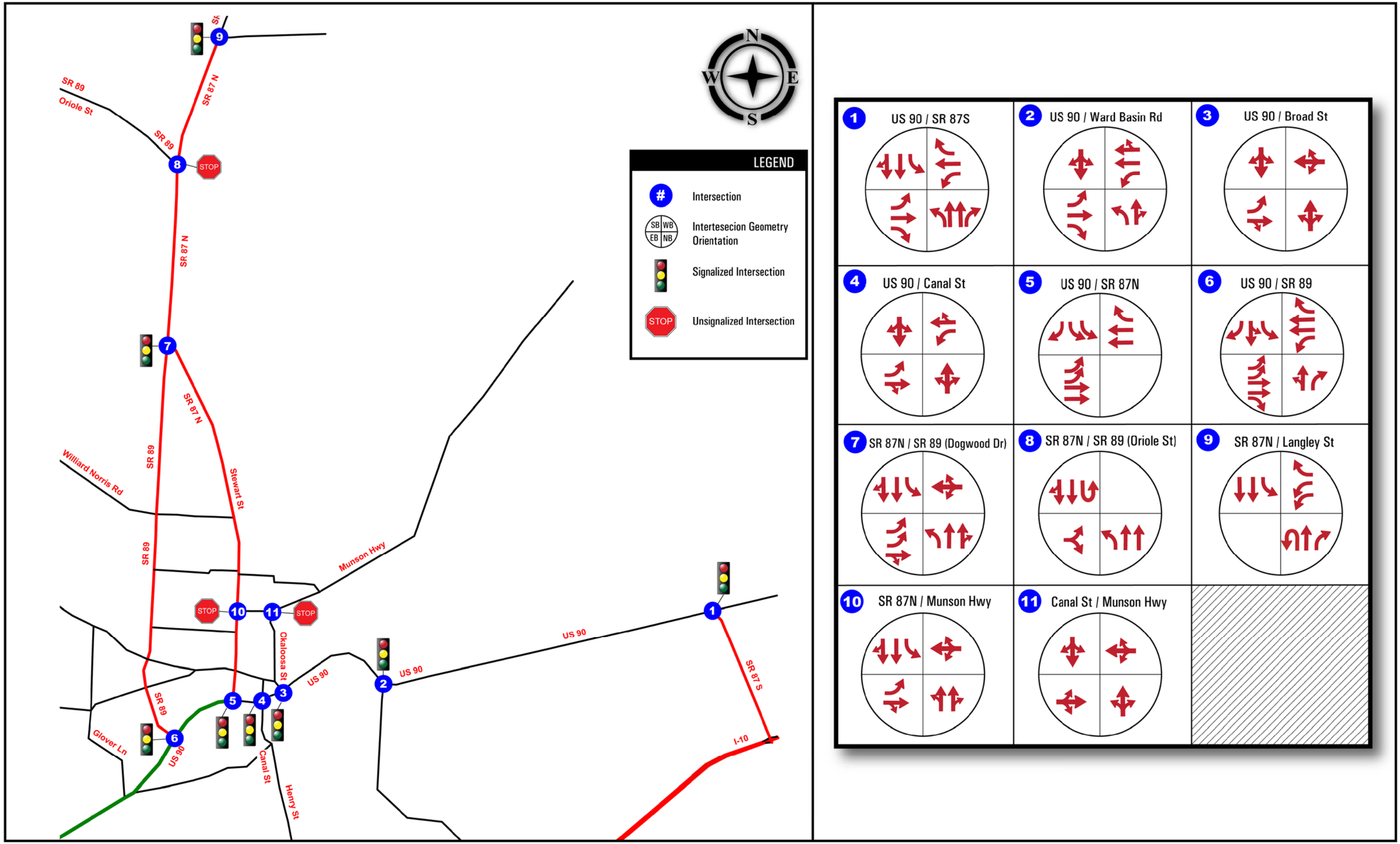
Intersection locations and layouts are shown in Figures 11, 12 and 13 for existing/No Build, Alignment 1 and Alignment 2; respectively. The roadway design CAD layouts are provided in **Appendices H and I**.

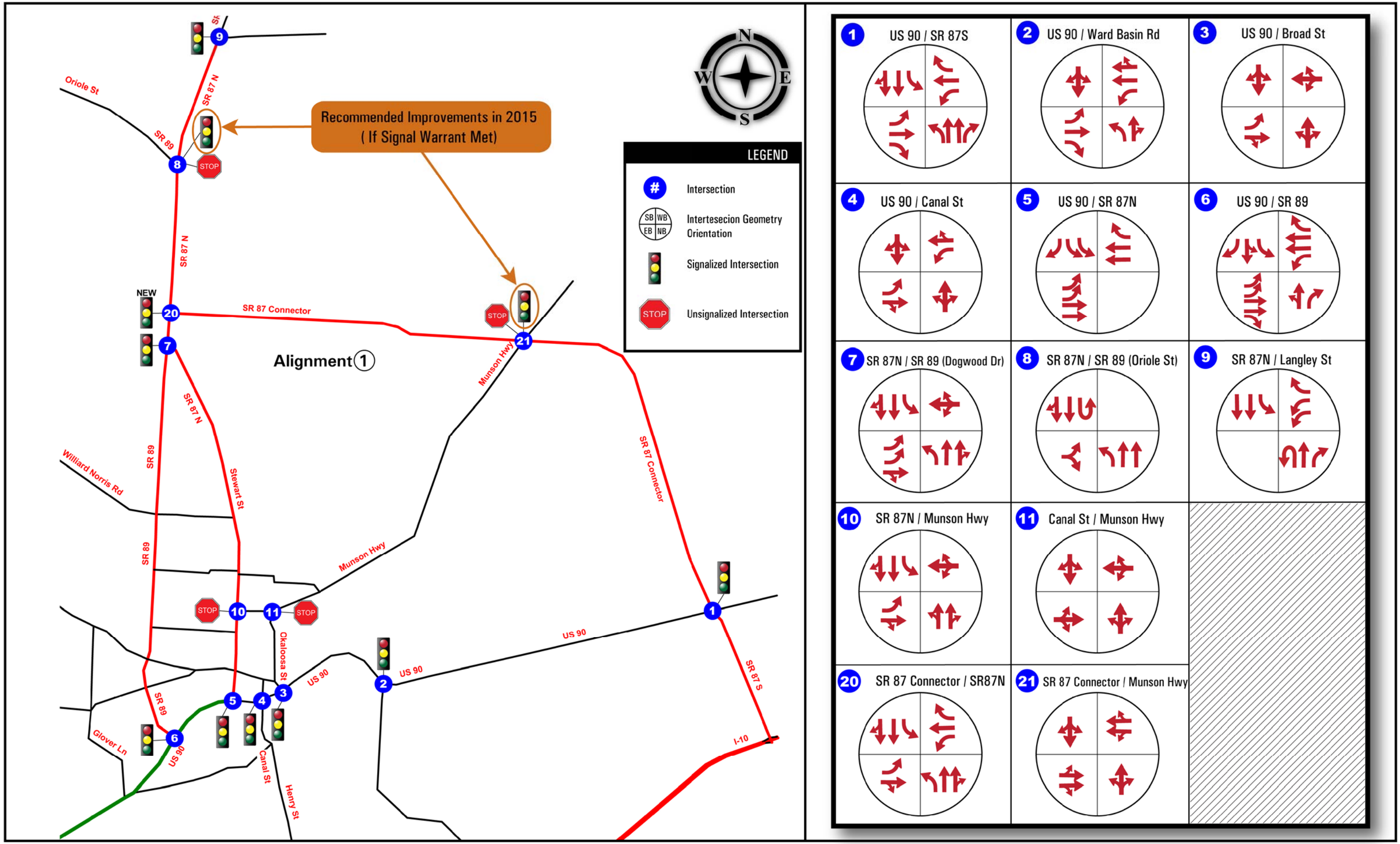
The location and layout of the study intersections are shown in **Figure 11** for No Build alternative, **Figure 12** for Alignment 1 and **Figure 13** for Alignment 2. The only proposed improvements are the signalization of SR 89 (Oriole Street)/SR87N for Alignment 1; and SR 87 Connector/Munson Highway for Alignments 1 and 2 if the signal warrants are met. Signal warrants would have to be evaluated at the design phase since they require more information than what is available for this study. Peak hour volumes at Munson Highway may not satisfy the peak hour signal warrant, however, the lower volume thresholds for the 4-hour and 8-hour warrants cannot be evaluated with current data. Other warrants such as Warrant 8 also need to be examined.

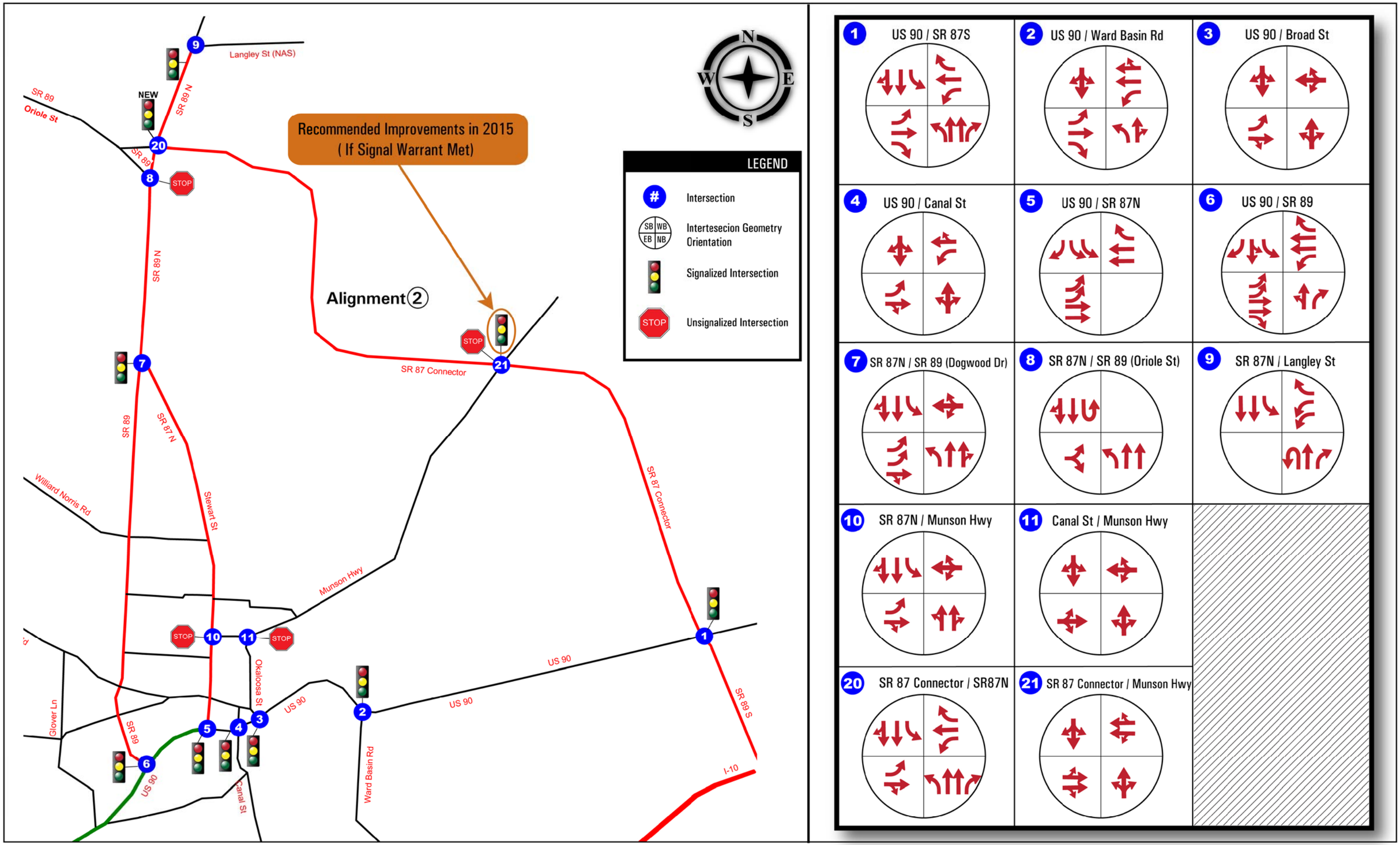
11. CONCLUSIONS

SR 87 Connector is projected to carry approximately 11,000 daily vehicles in 2015; 15,000 in 2025; and 20,000 in 2035. While these volumes will provide some relief to traffic congestion along US 90, they are well within (and less than half) the daily capacity of a four-lane divided roadway with few signalized intersections. This provides a comfortable level of service for vehicles and trucks beyond 2035, offers a shorter truck route to serve Alabama and the northern parts of the county saving time and fuel, and maximizes roadway capacity during hurricane evacuation of the beach areas.

The operational performance of both alignments is quite similar, with Alignment 1 carrying approximately 10% more traffic than Alignment 2. Therefore, Alignment 1 provides slightly more relief to US 90, however, it requires the signalization (is signal warrants are met) of the intersection formed by the SR87N/SR 89 split to accommodate the additional northbound left turn traffic from Alignment 1 onto SR 89. Furthermore, both alignments require the signalization (if signal warrants are met) of the intersection of SR 87 Connector and Munson Highway to accommodate the southbound left turning traffic from Munson Highway. All other intersections located within the study area are anticipated to operate at acceptable levels of service at the 2035 design year.


N
W
E
S
LEGEND
Intersection
Intertesecion Geometry Orientation
Signalized Intersection
Unsignalized Intersection
SB WB EB NB
STOP
SR 89
Oriole St
SR 87 N
Williard Norris Rd
Stewart St
Munson Hwy
Okaloosa St
US 90
Glover Ln
Canal St
Henry St
SR 87 S
I-10
1 US 90 / SR 87S
2 US 90 / Ward Basin Rd
3 US 90 / Broad St
4 US 90 / Canal St
5 US 90 / SR 87N
6 US 90 / SR 89
7 SR 87N / SR 89 (Dogwood Dr)
8 SR 87N / SR 89 (Oriole St)
9 SR 87N / Langley St
10 SR 87N / Munson Hwy
11 Canal St / Munson Hwy


Recommended Improvements in 2015
(If Signal Warrant Met)
Alignment 1
LEGEND
Intersection
Intertesecion Geometry Orientation
Signalized Intersection
Unsignalized Intersection
Oriole St
SR 87 N
SR 89
SR 87 Connector
Munson Hwy
Stewart St
Williard Norris Rd
Okaloosa St
US 90
Glover Ln
Canal St
Henry St
SR 87 S
I-10
NEW
STOP
1 US 90 / SR 87S
2 US 90 / Ward Basin Rd
3 US 90 / Broad St
4 US 90 / Canal St
5 US 90 / SR 87N
6 US 90 / SR 89
7 SR 87N / SR 89 (Dogwood Dr)
8 SR 87N / SR 89 (Oriole St)
9 SR 87N / Langley St
10 SR 87N / Munson Hwy
11 Canal St / Munson Hwy
20 SR 87 Connector / SR87N
21 SR 87 Connector / Munson Hwy


Recommended Improvements in 2015
(If Signal Warrant Met)
Alignment 2
LEGEND
Intersection
Intertesecion Geometry Orientation
Signalized Intersection
Unsignalized Intersection
SB WB EB NB
N
S
E
W
Langley St (NAS)
SR 89
Oriole St
NEW
SR 89 N
SR 87 Connector
SR 87 N
Stewart St
Williard Norris Rd
Munson Hwy
Okaloosa St
US 90
Glover Ln
Canal St
Ward Basin Rd
SR 89 S
I-10
STOP
1 US 90 / SR 87S
2 US 90 / Ward Basin Rd
3 US 90 / Broad St
4 US 90 / Canal St
5 US 90 / SR 87N
6 US 90 / SR 89
7 SR 87N / SR 89 (Dogwood Dr)
8 SR 87N / SR 89 (Oriole St)
9 SR 87N / Langley St
10 SR 87N / Munson Hwy
11 Canal St / Munson Hwy
20 SR 87 Connector / SR87N
21 SR 87 Connector / Munson Hwy

The intersection analysis indicates that SR 87 Connector intersections with US 90 and SR87N for both Alignment 1 and Alignment 2 will operate at LOS C or better by 2025 and LOS D or better by 2035 during the AM and PM peak hours. The intersection of SR 87 connector and Munson Highway will fail as unsignalized, but will operate at LOS B for both alignments in 2035 when signalized. Signal warrant analyses should be performed during the design phase with updated information on layout and traffic, and preferably using HCM 2010 procedures.

A sensitivity analysis was performed to evaluate the impacts of a future Wal-Mart store that may be located near the intersection formed by Alignment 1 of SR 87 Connector and SR87N. A traffic concurrency study performed in 2006 to support a land use amendment indicated that the Wal-Mart store will generate up to 315 new directional PM peak hour trips. No updated traffic study was performed since 2006, however, County staff indicated that Wal-Mart requested in January 2012 to extend the development order until November 2014. Wal-Mart proposed location places it in TAZ 519. Zonal data for TAZ 519 was reviewed for the 2006 validated and 2035 Cost Feasible NWFRPM models. Whereas residential units are anticipated to double between 2006 and 2035, employment will only increase by 100 workers for the entire TAZ. Therefore, the Wal-Mart store has not been accounted for in the Cost Feasible model. To examine the future traffic impacts of the proposed Wal-Mart store, the net increase in peak hour trips estimated in the 2006 concurrency study were overlaid in both directions onto 2035 future traffic projections at the two nearest intersections and then a SYNCHRO analysis was performed. The analysis indicated that these intersections would still operate at acceptable LOS D or better in 2035 after accounting for Wal-Mart traffic that was estimated in the 2006 study. The 2006 traffic concurrency study and the SYNCHRO analysis printouts are provided in the **Appendix K**.

Appendix: A

Methodology Memorandums

MEETING MINUTES

Date: Tuesday 3/9/10, 10:30 AM, FDOT District 3, Chipley, Florida.
Minutes prepared on 3/22/10

From: Fadi Emil Nassar, PhD, P.E., PTOE, Senior Transportation Engineer

Attendees:
Linda C. Little, FDOT D3, Modeling Coordinator, Linda.Little@dot.state.fl.us, 850.415.9217
Peggy Kelley, FDOT-3, Project Development, Peggy.Kelley@dot.state.fl.us, 850.638.0250x517
J. Brandon Bruner, P.E., FDOT D3, Joseph.Bruner@dot.state.fl.us, 850.638.0250x625
Daniel J. Beaty, AICP, PBS&J, Project Director, DJBeaty@pbsj.com, 850.580.7914
Amy Y. Wiwi, GISP, Metric, Vice President, AmyWiwi@metriceng.com, 850.638.2393
John Flora, R.A., Metric Eng., PD&E Manager, JFlora@metriceng.com, 407.644.1898
Fadi Emil Nassar, P.E., ATEC, Sr. Transp. Engineer, FNassar@ateceng.com, 305.480.9938

The meeting was requested by Fadi Nassar to discuss transportation modeling and model refinement issues related to the SR 87 Connector PD&E Project. The main items discussed are the following:

1. Fadi thanked FDOT for holding the meeting and PBS&J for sharing draft NWFRPM model data. Various modeling approaches based on Florida-Alabama, NWFRPM, and hybrid models were discussed. The pluses and minuses of each approach were examined. At the conclusion of the discussions, Daniel Beaty suggested, and the rest of attendants concurred, that the best traffic modeling approach is to use the draft 2006 base year and 2035 cost feasible NWFRPM for developing future project traffic for SR 87 alternative corridors. The 2006 NWFRPM base year model will be refined for the study area for the year 2006 to avoid recent reductions in traffic volumes due to economic slowdown. The 2035 Cost Feasible Network specific to this PD&E project will need to be created with coordination and approval from both the NWFRPC and FDOT District 3 since the approved 2035 Cost Feasible Network will not be available until December of 2010.

2. The main reasons for not selecting the adopted Florida-Alabama 2002 validated and 2025 cost feasible models were because of significant changes in coastal development due to Hurricane Ivan that devastated the coast in 2004, and changes in future land uses that are more accurately reflected in the 2035 draft zonal data. Further, the NWFRPM model has additional TAZs, improved centroid connectors, and encompasses a larger area resulting in a more refined model that can more accurately examine the areawide traffic impacts of different corridors.

3. The sub-area refinement will be performed using the 2006 NWRPM base year model. Then, the future 2035 model will be developed using the draft 2035 zonal data that will be adjusted to reflect information obtained from the military bases latest master plans, large DRIs, ULAM model and the statewide model. Zonal data for modeling intermediate phases (2015, 2025) will be developed by linear interpolation except for military bases, large projects and special generators where available phasing information will be used. The 2015 and 2025 networks specific to this PD&E project will need to be created with coordination and approval from both the NWFRPC and FDOT District 3.

4. Regarding converting daily future and design year volumes to peak hour traffic volumes for operational analysis, it was indicated that District 3 does not have a unique procedure. Therefore, the standard FDOT guidelines will be used to apply K, D and T factors, and TURNS5 will be used for balancing volumes at intersections. Other issues discussed were the preservation of a bridge and transit deficiencies.

MEETING MINUTES

Date: Wed. 3/10/10, 1:20 AM, West Florida Regional Planning Council, Pensacola, Florida.
Minutes prepared on 3/22/10

From: Fadi Emil Nassar, PhD, P.E., PTOE, Senior Transportation Engineer

Attendees:

Gary Kramer, WFRPC, Senior Planner II, gary.kramer@wfrpc.com, 850.332.7976 x219
Peggy Kelley, FDOT-3, Project Development, peggy.kelley@dot.state.fl.us, 850.638.0250x517
Wiley C. Page, Jr., AICP, PBS&J, Sr. Group Manager, wcpage@pbsj.com, 904.363.6100 x8461
Jennifer Adkison, Metric Eng., Public Involvement, JAdkison@metriceng.com, 850.638.2393
John Flora, R.A., Metric Eng., PD&E Manager, JFlora@metriceng.com, 407.644.1898
Fadi Emil Nassar, P.E., ATEC, Sr. Transp. Engineer, fnassar@ateceng.com, 305.480.9938

This meeting was held on 3/10/10 following the Florida-Alabama TPO meeting. The main items discussed are the following:

1. Attendants were informed about the decision reached on 3/9/10 at FDOT District 3 meeting to use the Draft 2006 base year and 2035 cost feasible NWFRPM zonal data to forecast traffic volumes for the SR 87 Connector corridor alternatives. Sub-area model refinement will be performed for 2006. Gary Kramer of WFRPC and Wiley Page of PBS&J were in agreement with this decision.

2. Mr. Page indicated that PBS&J will email to ATEC a draft E+C 2013 version of the NWFRPM that incorporates programmed roadway improvements.

3. Mr. Kramer provided a 2025 Florida-Alabama LRTP summary report dated August 2007 and indicated changes as related to some of the roadway improvements shown on the attached map. A discussion followed related to the 4-lane “beltway” road, possibly a toll road, previously included in the 2025 cost feasible model. The beltway road was programmed to connect SR 87 north of I-10 with SR 90 west of SR 95, bypassing the historic district of Milton. Both Mr. Kramer and Mr. Page indicated that this road should be removed from the future model but requested that this step be coordinated with Mr. Jim DeVries of FDOT Urban Office.

4. Mr. Kramer recommended coordination with Mike Brown regarding the land use ULAM model and with the military bases as well as a joint planning committee tasked with finding compatible land uses near the bases that can serve them without compromising security. Mr. Kramer suggested obtaining Information on the sector plan being considered in Escambia County as well as other large projects and developments of regional impacts (DRI) impacting the corridors.

5. Fadi Nassar indicated that ATEC will coordinate with agencies, developers and military bases to refine the model's socio-economic database and identify roadway improvements for each phase of the analysis. As agreed at District 3 meeting, sub-area model refinement will be performed using the 2006 NWFRPM model. Future 2035 NWFRPM model will be developed using the draft 2035 zonal data that will be adjusted to reflect information obtained from the military bases, large DRIs, ULAM model and the statewide model. Intermediate phases (2015, 2025) will be developed by linear interpolation of zonal data except for military bases, large projects and special generators where specific development phasing information will be used when available. The zonal and network information obtained from the various sources will be summarized and provided to District 3, WFRPC and their consultants for their review before being used to refine the model and forecast traffic for the PD&E design alternatives.

Appendix: B

NWFRPM Model Refinement Memorandum

MEMORANDUM

DRAFT

Date: April 13, 2011

To: Peggy Kelley, FDOT-3, FDOT Project Manager
John Flora, R.A., Metric Eng., PD&E Manager

From: Fadi Emil Nassar, Ph.D., P.E., PTOE, Senior Transportation Engineer
Lei Cai, Ph.D., P.E., Senior Transportation Engineer

Subject: SR 87 Connector PD&E – NWFRPM Subarea Model Refinement

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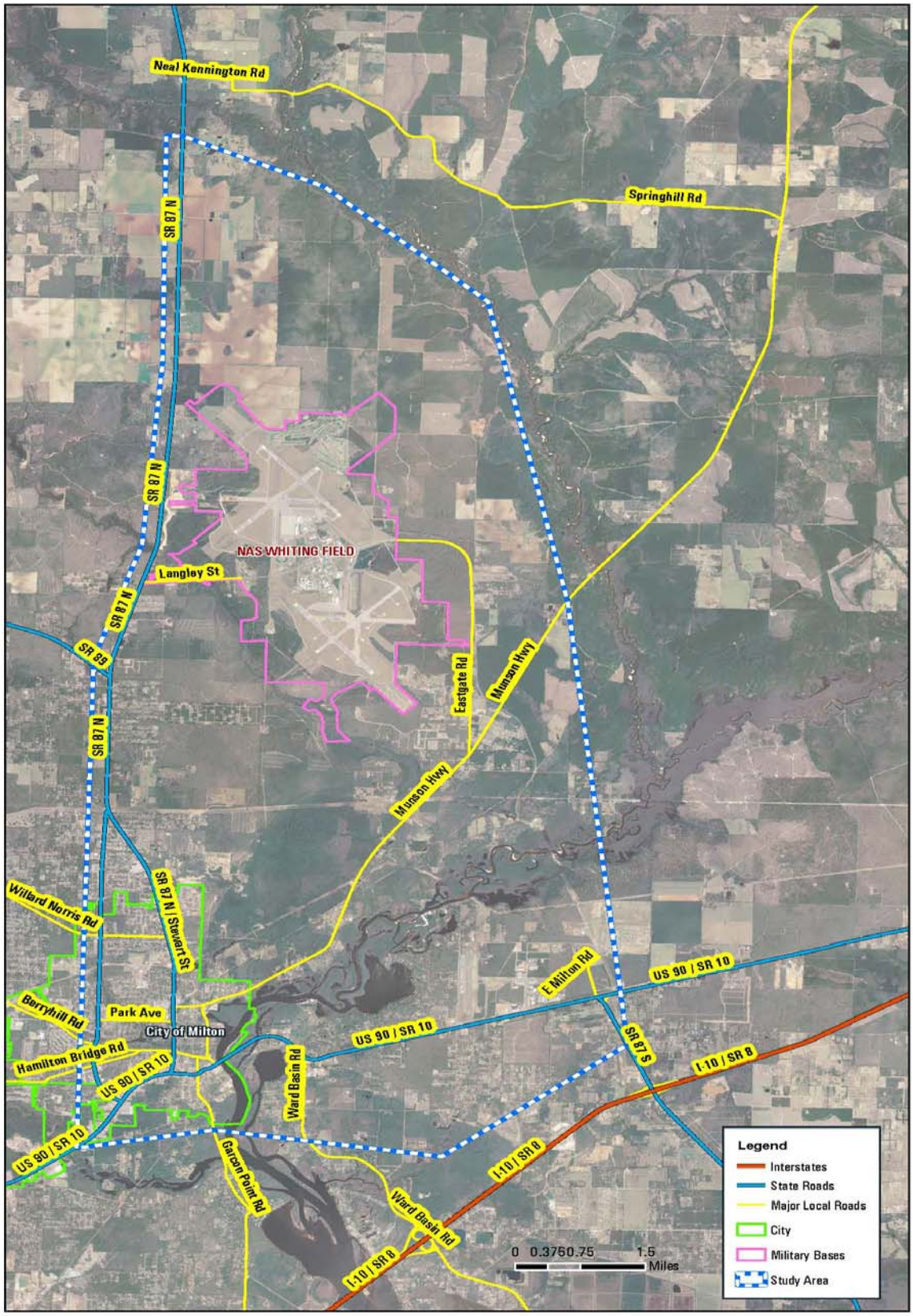
I. Subarea Model Refinement Overview

ATEC, a subconsultant to Metric Engineering, has performed a sub-area model refinement of the Northwest Florida Regional Transportation Planning Model (NWFRPM) for the SR 87 Connector PD&E project. The study area is shown in **Figure 1** and extends from east of SR 87 S to West of SR 281 (Avalon Boulevard) and from south of I-10 to Springhill Road located north of the Witting Field Naval Air Station (NAS). The subarea refinement was performed using the validated base year 2006 NWFRPM1.1 model. The work effort included identifying the traffic analysis zones (TAZ) located within the study area, checking the employment and residential data including the industrial zones, reviewing school and military base information, checking the model's roadway network and centroid connectors, conducting field reviews and travel time runs, and performing select zone analyses to examine the reasonableness of the trip patterns generated by the model.

A large number of documents and websites were reviewed in the process of performing the sub-area model refinement. The most relevant information was obtained from the model validation report written by PBS&J, documents obtained from the Florida-Alabama Transportation Planning Organization (TPO), property parcel data, property tax records, field reviews, and phone calls to large businesses, industrial parks, hotels and schools. GIS was extensively used as well as overlaying various GIS layers over Google Earth to identify and locate residential and business properties. These GIS layers included TAZ shape files, residential developments, industrial parks, school districts, hotels, traffic signals and others. However, ATEC found significant inaccuracies and omissions in the InfoUSA employment data set provided by FDOT and it was difficult to obtain specific information related to the air bases that are generally not included in the InfoUSA employment database. A list of documents, websites and references reviewed for this study, as well as reviews of employment and socio economic data and sample Google Earth snapshots with GIS overlays are provided in **Appendix A**.

Figure 1: Project location and study area



II. NWFRPM V1.1 Roadway Network Review and Refinement

A review of NWFRPM traffic forecasts for the base year indicated that the model in general performed well and the variation between forecasted volumes and traffic counts were generally within acceptable ranges within the study area. There were few validation issues identified in the study area, some caused by local factors and others by external factors (i.e. regional trips and trip patterns) that were outside the scope of this subarea model refinement. The most important model refinements implemented in the study area are the following:

1. Splitting TAZ 481 and creating a new TAZ 610 to better reflect the developments in the area north of US 90 and east and west of SR 87 S. TAZ 481 encompasses a large area subject to significant development that will be directly impacted by SR 87 Connector. TAZ 481 is bordered by US 90 to the south and extends from N. Airport Road to Dearborn Bridge Road for a distance of over 7 miles along SR 90. It has only one centroid connector connecting the entire TAZ with US 90 at a location 5 miles east of SR 87 S. The TAZ and its centroid connector do not properly represent the access points of the current and future businesses comprising of the industrial area, airport related businesses, and the correctional and sheriff facilities all located within a mile radius from the intersection of US 90 and SR 87 S. Therefore, a new TAZ was created to represent this region and was connected to US 90 at SR 87 S.

2. Adjusting network coding in the downtown area to improve model assignment on the 2-lane segment (with continuous left turn lanes) of US-90 west of the historic bridge. Comparing the validated model assignment to the 2006 count stations revealed that forecasted volumes along US-90 are significantly lower than traffic counts for FDOT Count Stations # 5010 and 5011 located between the bridge and SR 87 N, and about a third between SR 87 N and SR 89 at FDOT Count Station # 5018. Model assignment on US 90 improves significantly west of SR 89. Since NWFRPM over assigns traffic along Willing Street/Berryhill Street (FDOT Count Stations 5008 and 5022) it become obvious that the model was overestimating the use of Willing Street/Berryhill Street as a bypass to US-90 within the downtown area. Model refinement included adding turn penalties and adjusting facility types and centroid locations to improve model assignment within this area. TAZs 524 and 466 were moved to the north to better represent the distribution of employment density closer to US-90.

3. Performing minor refinements to the roadway network like adjusting facility type and area type of the roadway segments listed in **Table 1**. Area type (AT), facility type (FT) and number of lanes for each major roadway within the study area were checked using field observations, the FDOT FTI/FHD 2009 DVD, and the Florida-Alabama TPO Transportation Improvement Program (TIP) from 2002 to 2014. The review indicated that the model has the correct number of lanes for all roadway segments within the study area. **Table 1** lists the links with questionable area type or facility type coding in the validated model.

Table 1: Roadway network refinements

ROADWAY		2006				
FROM	TO	Area Type		FT		Recommendation
US 90/SR 10						
SR 87N/Stewart Street	Canal Street	13	Y	37	N	Und Art T/B II/III. FT = 34
Canal Street	Elmira Street	13	Y	37	N	Und Art T/B II/III. FT = 34
Elmira Street	Broad Street/Willing Street	13	Y	37	N	Und Art T/B II/III. FT = 34
BERRYHILL ROAD/CR 184 A						
Glover Lane	SR 89/Dogwood Drive	31	Y	43	N	Major Loc T/B. FT =42
LANGLEY STREET/CR 87 A						
SR 87 N / Stewart Street	NAS Whiting Field	33	Y	42	N	Major Loc NTB, FT =43
SR 281/AVALON BLVD						
I-10	north of I-10	31	Y	35	Y	Change FT in future years only
SR 87 N/STEWART STREET						
Miller Road	SR 89/Dogwood Drive	23	N	36	N	Segment coding need verification
Langley Street	Whiting Field Circle	33	Y	32	N	Und Art NTB 45 mph, FT=35
BROAD STREET/WILLING STREET/CR 191						
US 90 / SR 10	Berryhill Road	13	Y	43	N	Local Collector, FT=47
Berryhill Road	Munson Highway/CR 191	31	Y	43	N	Local Collector, FT=47

4. There are regional assignment issues impacting traffic on US-90 from east of SR 89 to west of SR 281/Avalon Blvd (FDOT Count Stations 5018, 1502 and 128) that are outside the scope of this subarea model refinement. Model's traffic forecasts on these sections are significantly lower than traffic counts indicating an issue with friction factors impacting trip patterns. It should be noted that this segment of US-90 carries more traffic than the parallel segment of I-10 and should receive a greater focus in the next model validation effort. Likewise, model assignment of regional trips on SR 87 and SR 89 north of their junction (Oriole Street) near the Whiting Field NAS are significantly higher than traffic counts (FDOT Count Stations #114, 119, 121 and 278). However, traffic volumes on these mostly 2-lane undivided rural roadways are relatively small and a greater variance is traffic volume is acceptable.

5. Traffic distribution from 36 TAZs within the study impact area was reviewed based on field observations, aerial review and engineering judgment. Aerials taken in 2006 were not available for this study. While the irregular shape of most TAZs and the multitude of unsignalized driveways make it difficult to balance trip assignment on multiple centroid connectors, with the shorter connectors typically receiving a greater proportion of traffic, it was decided to make changes to centroid locations or connectors only when needed to adjust a great imbalance in traffic. This was the case for the two TAZs south of US 90 in the downtown area as explained above. Also the justification for splitting TAZ 481 was provided earlier.

6. In relation to the adopted Cost Feasible 2035 model, the roadway improvements listed in the Florida-Alabama 2035 Long Range Transportation Plan (LRTP), prepared in February 2011 for the Florida-Alabama TPO and FDOT District 3, were compared with the 2035 Cost Feasible NWFRPM 1.1 roadway network. The comparison result is shown in **Table 2**. The difference in number of lanes between the 2035 LRTP and the 2035 Cost Feasible Model were determined to be correct because all these roadway segments did not have a construction phase (CST) in the 2035 LRTP. Therefore the adopted 2035 Cost Feasible NWFRPM model was determined to be consistent with the latest 2035 LRTP dated February 2011.

Table 2: Comparison of roadway networks for 2035 LRTP and 2035 Cost Feasible Model

Area		Roadway	Segment	Number of Lanes	
				Adopted 2035 CF Plan	2035 CF Model
Within Santa Rosa County	Within Study Limits	SR 281/Avalon Blvd	From I-10 to US 90	4	4
		SR 87N	From CR 87A/Langley St to TPO Urban Area Boundary	4*	2
		US 90	From SR 281/Avalon Blvd to SR 87N/Stewart St	6	6
		US 90	From Airport Rd to SR 87S	4*	2
		US 90	From SR 87 S to S.A Jones Rd	4*	2
	Outside of Study Limits				
		US 98	From Bayshore Dr to Portside Dr	6*	4
		CR 184 A/Berryhill Rd	From Five Points to West Spencer field Road	4	4
		Woodbine Rd	From US 90 to Fine Points Intersection	4	4
		East Spencer Field Rd	From US 90 to South Spencer Field Rd	4	4
		Bell Ln	From Sterling Way to US 90	4	4
		Sterling Way	From Bell Ln to SR 281/Avalon Blvd	4	4
		I-10	From Escambia Bay beidge to Avalon Blvd	6	6

Note: * No construction funds (CST) in the Adopted 2035 CF plan

III. NWFRPM V1.1 Zonal Data Review and Refinement

The 2006 socio-economic data used in the NWFRPM validated model was reviewed for the study area TAZs. The centroid location and trip assignment on multiple centroid connectors were also checked for reasonableness. The review efforts included population, residential units, employment, hotel rooms, school districts, student enrollment and military bases. The data sources used in the review were obtained from InfoUSA (2007), Bureau of Economics and Business Research (BEBR), Florida Geographic Data Library (FGDL), Florida Department of Education (FDOE), Google map aerials, and tax records. Additional information was obtained via phone calls and emails. However, some requested data was not available for 2006 or difficult to obtain, especially in relation to employment and army facilities. Most phone calls and emails to major employers did not result in a positive response. In some cases where 2006 data was not available, the data for the closest year was used as a reference.

Various resources were utilized for checking the zonal data and GIS was extensively used. There were macro-type countywide information obtained from BEBR, land use maps and similar sources; but also detailed and specific information obtained from InfoUSA data bases,

Parcel 2009 GIS files, Census data, geo-coding of selected GIS layers, and high-resolution aerials. Unfortunately, geo-coding InfoUSA employment data was proven highly inaccurate. Getting employment information by contacting large employers was also less productive than expected. On the other hand, information on school locations and student enrollment was easily obtained and crosschecked with various sources. Likewise, selected TAZs with predominate single-family homes were identified and good quality aerials were used to confirm the general validity of residential data. Field visits also helped in identifying and excluding recent post 2006 developments. Good information on hotels was also available and crosschecked by phone. **Table 3** provides a summary of the socio-economic data.

Table 3: Summary of Socio-economic Data Refinement

NO	Item	Data Source for 2006 Condition		Match Level between Model and Collected Data	Comment	Model Coding Change: Yes or No?
		Name	Year			
1	Population	Census	2000	Poor	No 2006 population	NO
		BEBR	2006	Fair	Countywide	
2	Residential Unit	FGDL	2006	Fair	No multi-family	NO
		Aerials/Tax Records	2006-2009	Good	Time Consuming	
		BEBR	2006	Poor	Countywide	
3	Employment	Info USA	2007	Poor	Not Accurate	NO
		BEBR	2006	Good	Countywide	
4	Hotel Unit	FGDL	2008	Good	Checked by Phone	NO
5	School Enrollment	FDOE	2006-2007	Good	Checked by Phone	NO
6	Military base	Various	documents	Poor	Emails	NO

The results of single family units spot check by comparing various databases from the county property appraisal and the Parcel 2009 databases are shown in **Table 4**.

Table 4: Single Family Units Spot-Check

TAZ	Single Family Units (County Property Appraisal Website dated May 28, 2010)	Single Family Units (NWFRPM 2006)	Single Family Units (Parcel 2009 GIS File)
471	475	471	490
473	150	154	156
481	350	320	368
519	537	529	529

Additional information related to population, employment, hotels, school enrollment, industrial parks and public transit are provided in **Appendix A**.

IV. Subarea Model Refinement Summary

In summary, the NWFRPM V1.1 has been properly validated and the subarea model refinement efforts resulted in few changes. The model review process indicated the network coding, the residential data and the school information had a high degree of accuracy. However, the information related to employment were difficult to verify because the InfoUSA database is not accurate, geo-coding and buffering resulted in many errors especially along commercial roadways separating two TAZs, and obtaining by phone or email 2006 employment information from large employers was very difficult. However, for the TAZs we were able to obtain specific information, we found out that NWFRPM coded employment data was reasonable and we had no justification to change it.

The subarea model refinement efforts resulted in the following changes to the NWFRPM validated model:

(1) Increasing traffic on US 90 in Milton's downtown area and reducing traffic on the bypass road of Willing Street/Berryhill Street by coding turn penalties and adjusting facility type and centroid locations.

(2) Splitting TAZ 481 and creating a new TAZ 610 that is needed to better reflect the level of development and access locations of the dense employment area that includes the local airport, correctional facility, sheriff office and an industrial park. This new TAZ is even more important for future scenarios as all north alignments of the SR 87 Connector will cross the new TAZ and therefore access connections and zonal times can be modeled more accurately with the new TAZs.

(3) Performing few minor network changes related to facility type or area type.

(4) The technical results of the subarea refinement process are summarized in **Table 5**. **Table 5** shows the calculated percent Root Mean Square Error (RMSE) before and after subarea refinement. Reducing the percent RMSE indicates an improvement in model trip forecast and assignment. The percent RMSE was calculated for the entire study are and also for only US 90. When considering the entire study area, **Table 5** indicates that the percent RMSE is reduced from 43.4 to 38.1. However, when only considering US 90 within the study area (from Avalon Boulevard to SR 87 S), the percent RMSE is significantly reduced from 59.8 to 39.2 indicating a measurable improvement in model's prediction of traffic volumes along US 90. Plots showing model assignment within the downtown area before and after refinements are shown in **Figures 2 and 3**. The TAZ boundaries are shown in **Figure 4** including TAZ 481. School locations are depicted in **Figure 5**. As stated in the introduction, a list of documents, websites and references reviewed for this study; additional information on population, employment, hotels, school enrollment, industrial parks and public transit; as well as samples of Google Earth snapshots with GIS overlays are provided in **Appendix A**. Finally, selected internal memos documenting some of the refinement tasks are provided in **Appendix B**.

TABLE 5
SR 87 CONNECTOR PD&E - NWFRPM SUBAREA MODEL REFINEMENT

SUBAREA MODEL REFINEMENT		FDOT COUNTS		NWFRPM 2006 VALIDATED			NWFRPM 2006 REFINED		
Road Section	Location	FDOT Count Station	Count Station Volume	NWFRPM VAL 2006 Volume	Difference (Count - Forecast)	Count / Val 2006 Ratio	NWFRPM Run 8c Volume	Difference (Count - Forecast)	Count / Run 8c Ratio
US 90	East of SR 87 S	58-0018	5500	7400	-1900	0.74	6200	-700	0.89
	West of SR 87 S	58-0019	10700	12200	-1500	0.88	13400	-2700	0.80
	East of Ward Basin Rd	58-0062	15000	12500	2500	1.20	13300	1700	1.13
	East of Bridge	58-1507	18900	18600	300	1.02	18800	100	1.01
	West of Bridge	58-5010	16100	8600	7500	1.87	16500	-400	0.98
	East of SR 87 N	58-5011	24000	12000	12000	2.00	19600	4400	1.22
	East of SR 89	58-5018	33300	13300	20000	2.50	16400	16900	2.03
	West of SR 89	58-1802	38000	30200	7800	1.26	31300	6700	1.21
	West of Avalon Blvd	58-0128	34900	28000	6900	1.25	28100	6800	1.24
I-10	East of SR 87 S	58-2007	27200	20200	7000	1.35	21200	6000	1.28
	West of SR 87 S	58-2005	26000	27300	-1300	0.95	28300	-2300	0.92
	West of Ward Basin Rd	58-2008	28800	33000	-4200	0.87	33900	-5100	0.85
	East of Avalon Blvd	58-2003	28200	39800	-11600	0.71	40300	-12100	0.70
	West of Avalon Blvd	58-2001	38800	58400	-19600	0.66	58500	-19700	0.66
SR 87 S	South of I-10	58-0271	8400	14400	-6000	0.58	14600	-6200	0.58
	South of US 90	58-0020	7500	11000	-3500	0.68	12600	-5100	0.60
SR 87 N	North of US 90	58-5006	19500	13100	6400	1.49	20500	-1000	0.95
	North of Oliver Street	58-5004	17000	15800	1200	1.08	15100	1900	1.13
	South of SR 89	58-1508	10000	10200	-200	0.98	10500	-500	0.95
	South of Junction (87)	NEW	13000	15800	-2800	0.82	15500	-2500	0.84
	North of Langley St	580119	3400	7700	-4300	0.44	7800	-4400	0.44
SR 89	North of US 90	58-5017	20200	21500	-1300	0.94	21900	-1700	0.92
	S. of Magnolia St	58-5016	14600	17000	-2400	0.86	17400	-2800	0.84
	N. of Magnolia St	58-1506	15400	9500	5900	1.62	8800	6600	1.75
	North of split w/SR 89	58-0121	2500	5900	-3400	0.42	5600	-3100	0.45
	No. of joint w/ SR 89	58-0278	2100	6000	-3900	0.35	5600	-3500	0.38
Ward Basin Rd	North of I-10	58-0281	4600	4500	100	1.02	4300	300	1.07
	South of US 90	58-0186	7200	4500	2700	1.60	4300	2900	1.67
Canal Street	South of US 90	58-5014	7100	7700	-600	0.92	7100	0	1.00
Avalon Blvd	South of US 90	58-5014	17200	15200	2000	1.13	15000	2200	1.15
Munson Hwy	East of SR 87 N	58-1501	4500	3800	700	1.18	3800	700	1.18
Willing St	North of US 90	58-5008	8400	11800	-3400	0.71	4900	3500	1.71
	East of Canal Street	58-0022	8900	10000	-1100	0.89	3300	5600	2.70
	West of SR 87 N	58-5019	6700	5400	1300	1.24	5400	1300	1.24
	West of SR 89	58-5023	11500	9800	1700	1.17	9600	1900	1.20
C-191	West of SR 87 N	58-5015	3000	3700	-700	0.81	2700	300	1.11
	West o SR 89	58-5025	8000	9800	-1800	0.82	9700	-1700	0.82
%RMSE	(US 90 Only)	N	9		%RMSE =	59.8%		%RMSE	39.2%
%RMSE	(all road segments)	N	37		%RMSE =	43.4%		%RMSE	38.1%

$$RMSE\ (\%) = \frac{\sqrt{\sum_{i=1}^{N}(Estimated_i - Observed_i)^2/(N-1)}}{\sum_{i=1}^{N} Observed_i/N} \times 100$$

N = Number of samples
Estimated = Model volumes
Observed = Traffic counts

FIGURE 2
NWFRPM - 2006 VALIDATED - TWO-WAY VOLUMES (RED), COUNTS (BLUE), AND RATIO (GREEN)

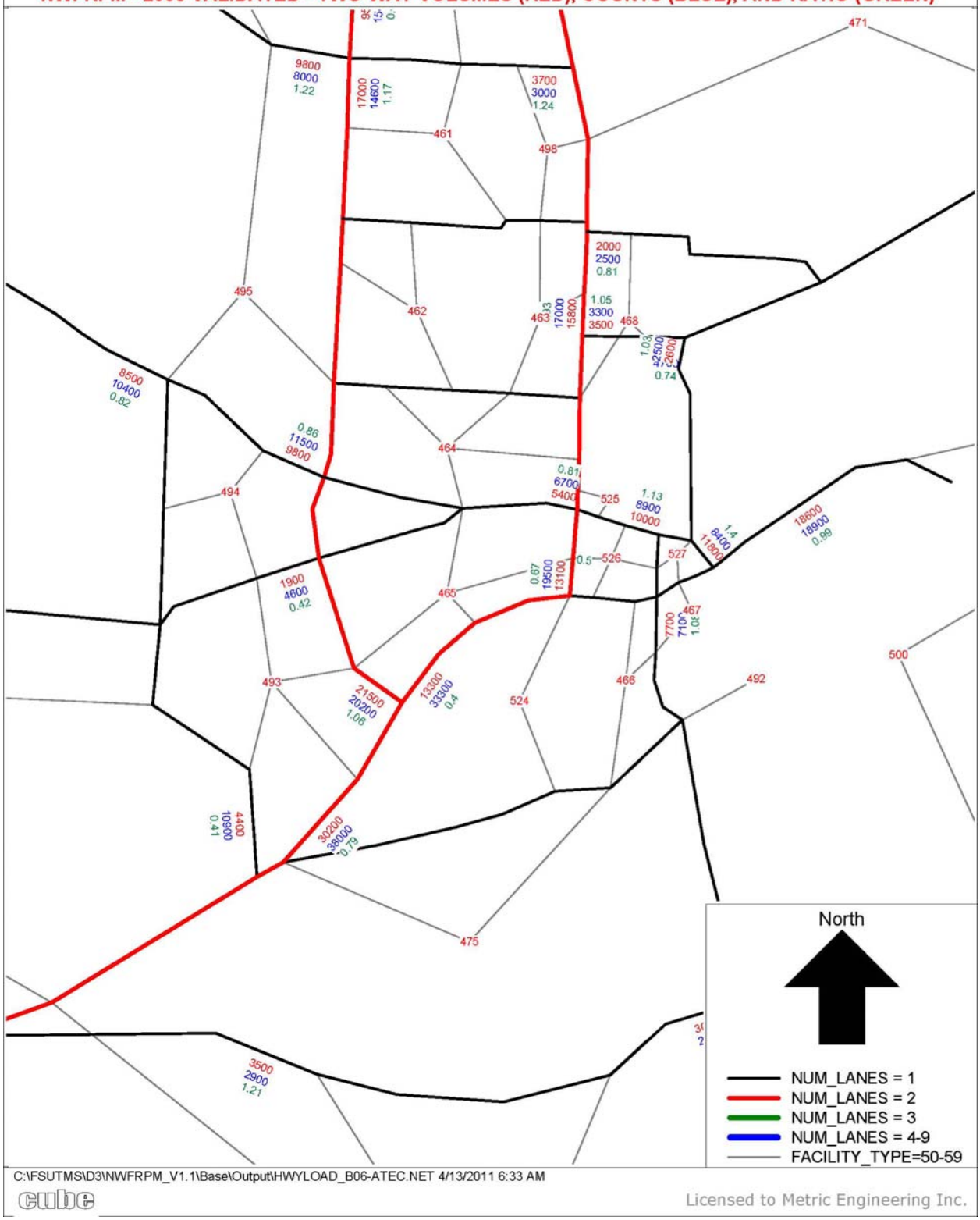


FIGURE 3
NWFRPM - 2006 REFINED - TWO-WAY VOLUMES (RED), COUNTS (BLUE), AND RATIO (GREEN)

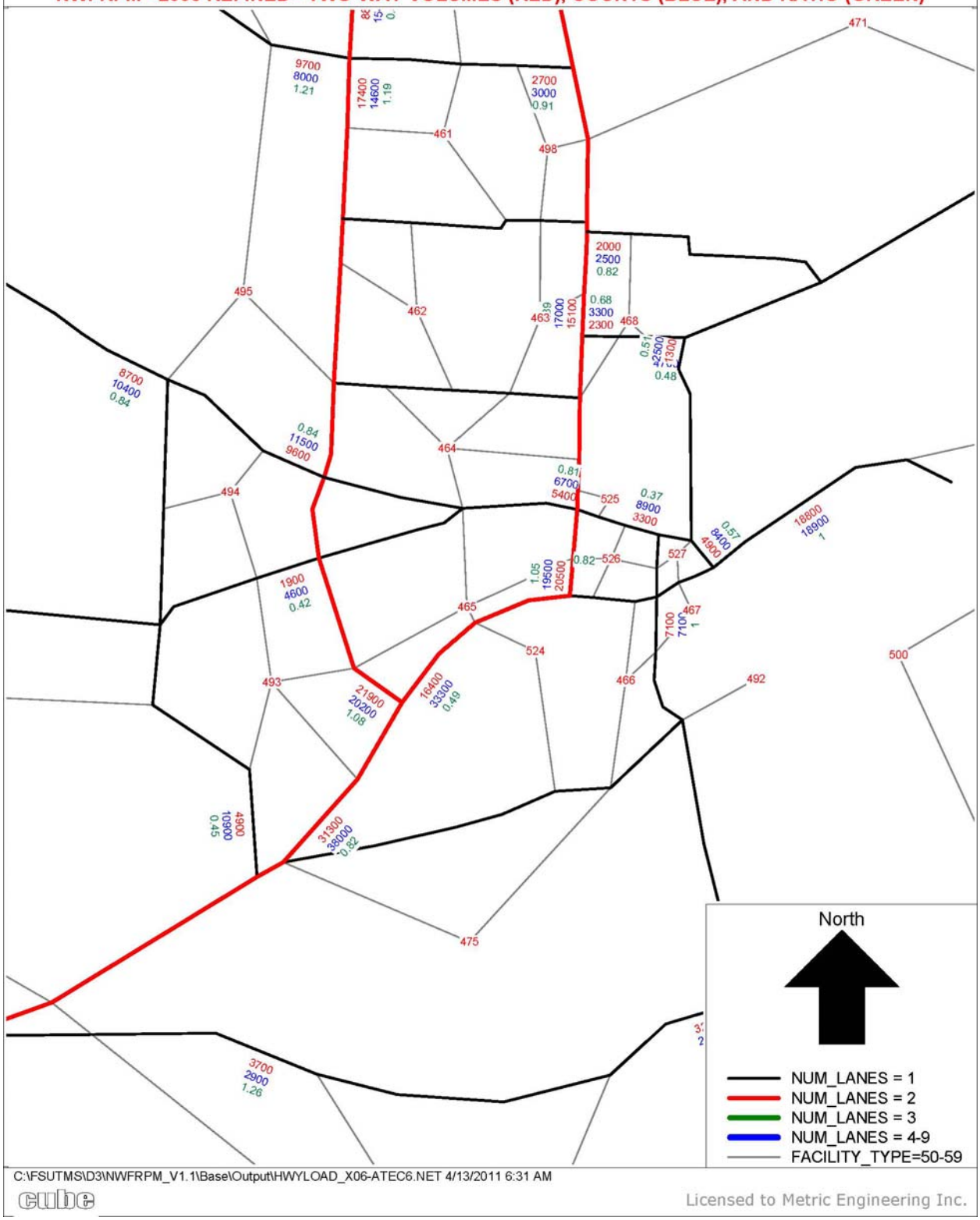


Figure 4: TAZ boundaries overlaid over Google Earth

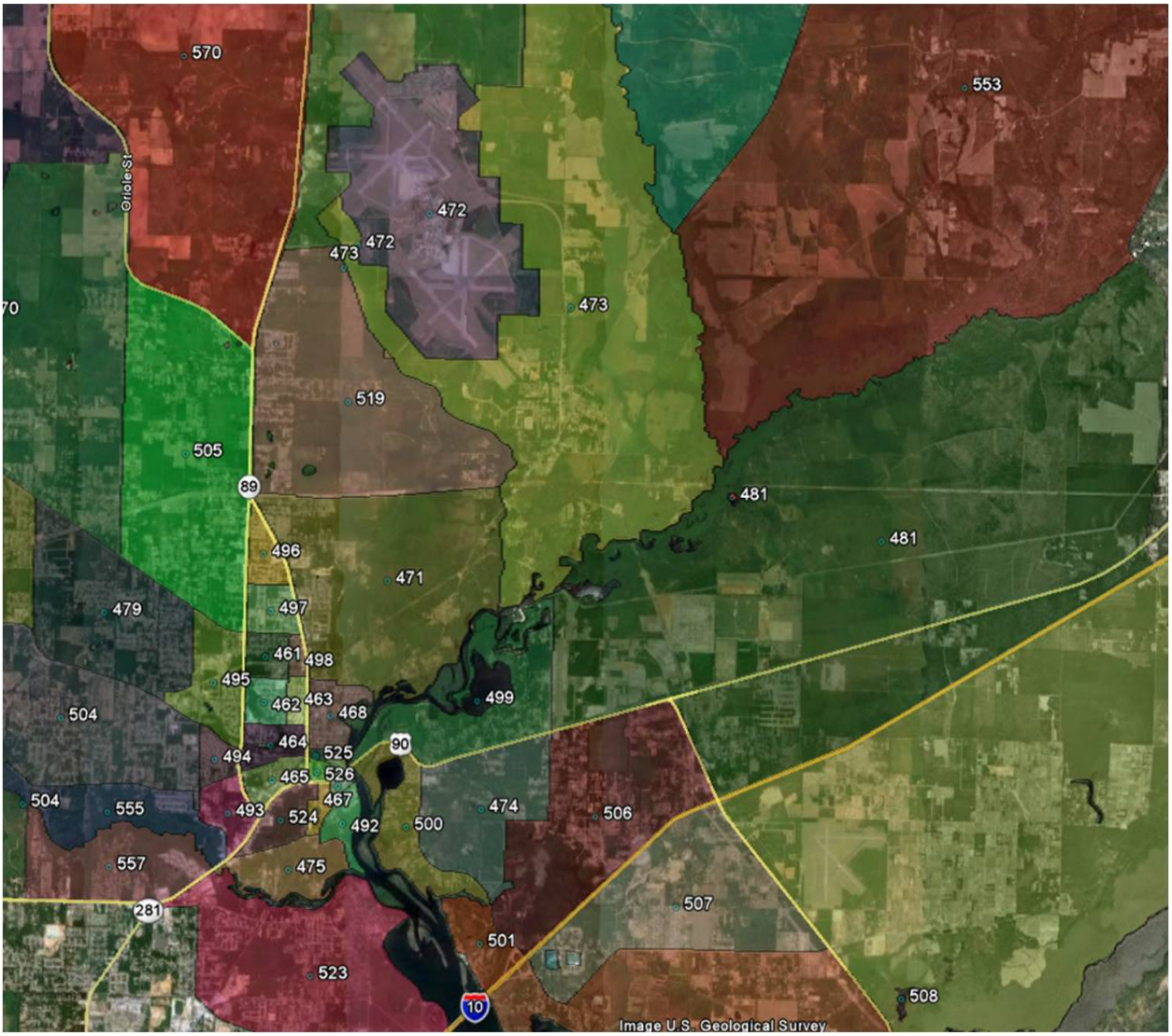
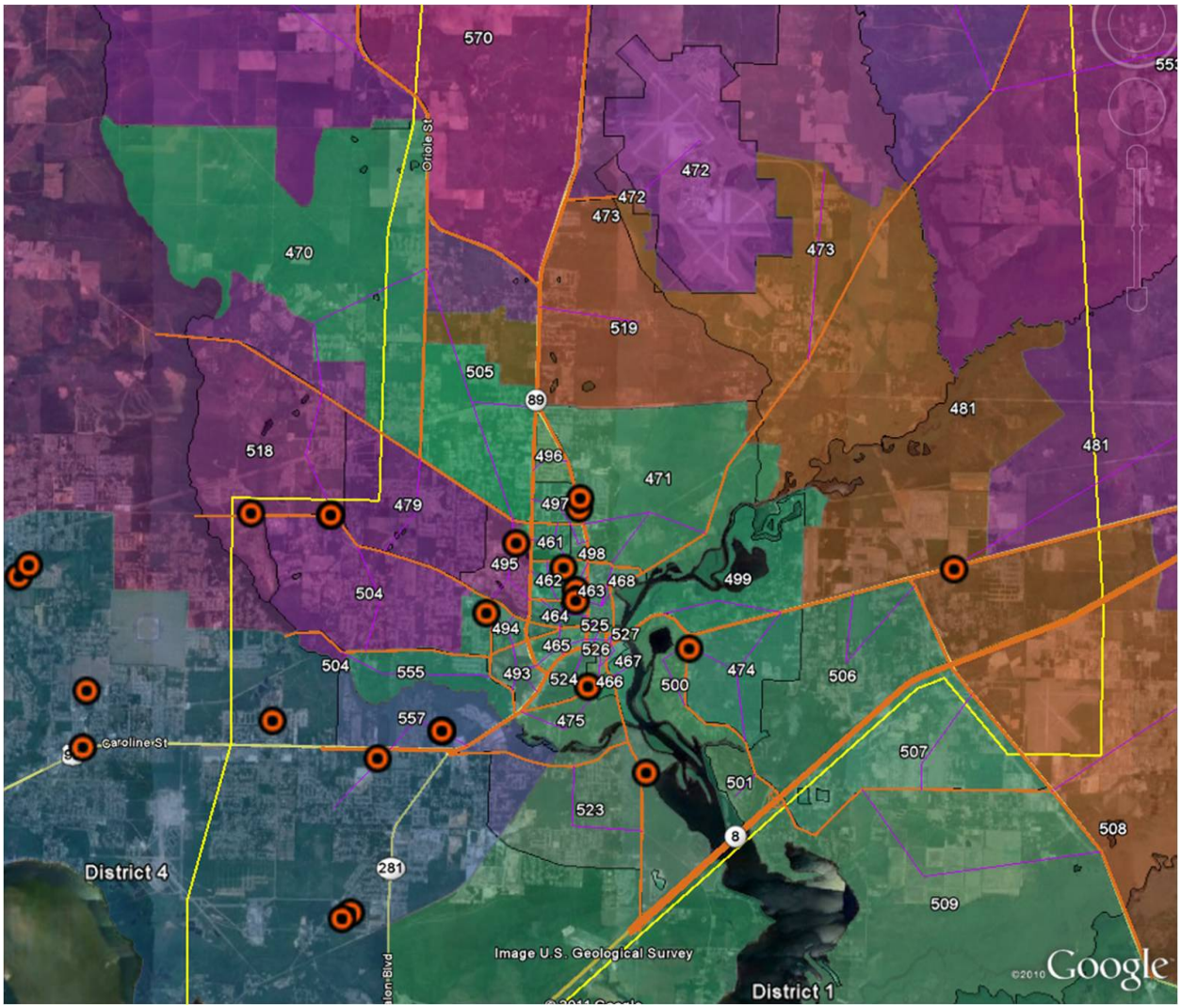


Figure 5: School locations overlaid over Google Earth



APPENDIX A

Refinement Documents, Preliminary Reviews And Sample GIS Overlays over Google Earth

Appendix for Model Refinement

In order to refine or update the travel demand models, socio-economic information, roadway characteristics, and information of TAZs within the study area were collected.

1. **Collected Documents:**

- **West Florida Regional Planning Council**
  - West Florida Developments of Regional Impact (DRIs)

- **Florida Alabama Transportation Planning Organization**
  - Transportation Statistical Data Development Report-FA LRTP 2035
  - FLAL_TAZ_Mapbook_2035
  - Florida Alabama 2035 TAZs
  - Maps of NWFRP 2006 Model TAZs within the Study Area
  - FATPO-Transportation Land Use Alternative Report-Final
  - FLAL TPO-Blueprint 2035 LRTP Cost Feasible Plan Development
  - Northwest Florida Regional Planning Model-Model Development and Validation Report
  - Florida Urban Land Use Allocation (FLUA) Model
  - 2002 – 2014 Transportation Improve Program (TIP)
  - 2025 Long Range Transportation Plan (LRTP)
  - FY2011-FY2012 Unified Planning Work Program
  - Congestion Management Process Plan
  - FLAL March 2010 Information Items
  - FLAL Bicycle & Pedestrian Plan
  - 2010 SIS Strategic Plan Update
  - Florida-Alabama TPO Boundaries
  - Most Current Maps for DRIs
  - Regional Intelligent Transportation Systems (ITS) Plan

- **Santa Rosa County**
  - Santa Rosa County 2000-2020 Comprehensive Plan
  - Santa Rosa County 2008-2025 Comprehensive Plan
  - Santa Rosa County EAR-based Comprehensive Plan Amendments
  - 2010 - 2014 Tentative Work Program
  - County Transportation Network
  - County Map
  - Santa Rosa Road Segment Report 2007 (Traffic Count)
  - Public Transit
  - Industrial Parks
  - Current Land Development Code – Article Five: Concurrency Management System
  - Existing (2009) Land Use Map-Updated in April 2010
  - Future (2025) Land Use Map

- Integration of the Local Mitigation Strategy into the Local Comprehensive Plan-Santa Rosa County Profile
- County's Traffic Counts Collected in 2007

- **Military Related**
  - Florida Defense Industry Economic Impact Analysis
  - 2005-Amendment-Military Airport Zones (MAZ)
  - Florida Defense Factbook
  - Florida Defense Industry-Economic Impact Analysis
  - NAS Whiting Field Joint Land Use Study (JLUS)
  - BRAC Impact on Population Growth
  - Tri-county Growth Management Plan Okaloosa - Atlas of Existing Conditions

- **FDOT**
  - Florida's Adopted Five Year Work Program July 1, 2009 through June 30, 2014
  - Florida Statewide Model
  - SR 87N, SR 87S, and SR 90 RCI data from FDOT Intranet

- **Florida-Alabama TPO, Okaloosa-Walton TPO and Bay County TPO**
  - Regional Intelligent Transportation Systems (ITS) Plan

- **TEAM Santa Rosa**
  - Industrial Parks
  - Santa Rosa Joint Land Use Plan Chapter 2 - NAS WHITING FIELD JLUS

- **Bureau of Economic and Business Research**
  - Florida Population Studies Bulletin 156

- **U.S. Census Bureau**
  - 2000 Census Data

2. **List of Most Important Websites:**

- West Florida Regional Planning Council
  http://www.wfrpc.org/

- FLAL TPO
  http://wfrpc.org/2035UpdateWeb/Florida-Alabama/FL-AL-TPO2035Update.htm

- Santa Rosa County
  http://www.co.santa-rosa.fl.us/

- Santa Rosa County School Board
  http://www.santarosa.k12.fl.us/schools.html

- Santa Rosa County GIS Map
  http://santarosa.roktech.net/gomaps/map/Index.cfm

- Santa Rosa Property Appraisal
  http://www.qpublic.net/santarosa/index.html

- Santa Rosa County Zoning Map
  http://maps.roktech.net/santarosa/ags/zoning/

- Santa Rosa County Traffic Counts
  http://www.santarosa.fl.gov/zoning/trafficcconcurrency/roadsegments031909.pdf

- SR 87 Connect PD&E Study
  http://www.sr87connector.com/index.html

- TEAM Santa Rosa
  http://www.teamsantarosa.com/

- Florida Department of Education
  http://doeweb-prd.doe.state.fl.us/eds/nclbspar/

- FDOT Geographic Information System (GIS) Road Data
  http://www.dot.state.fl.us/planning/statistics/gis/roaddata.shtm

- Historic Milton
  http://www.floridabeachestorivers.com/

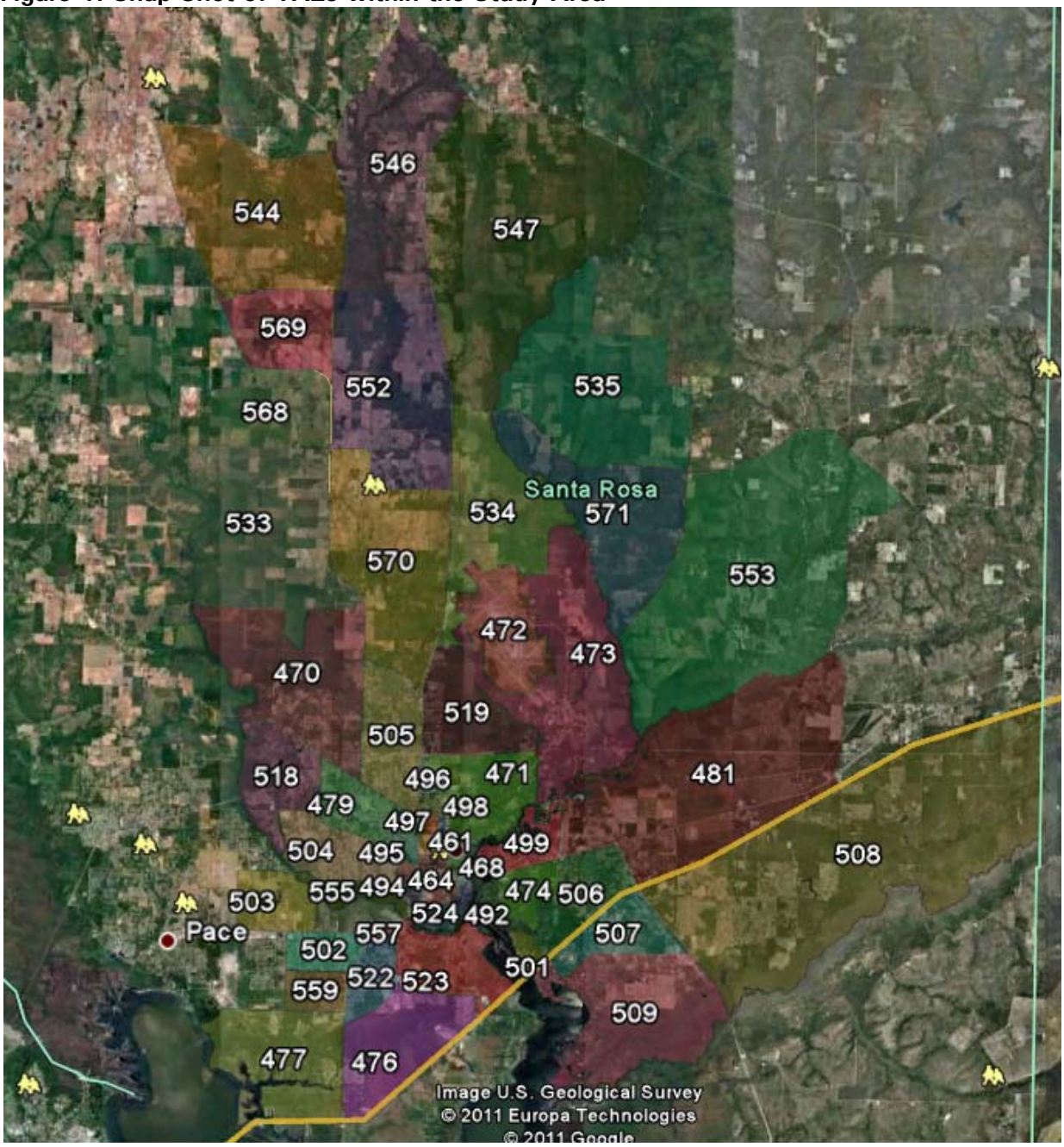
- Santa Rosa County Public Transit
  www.santarosa.fl.gov/transit

3. Google Earth Files:

The following Google earth files are created for this study.

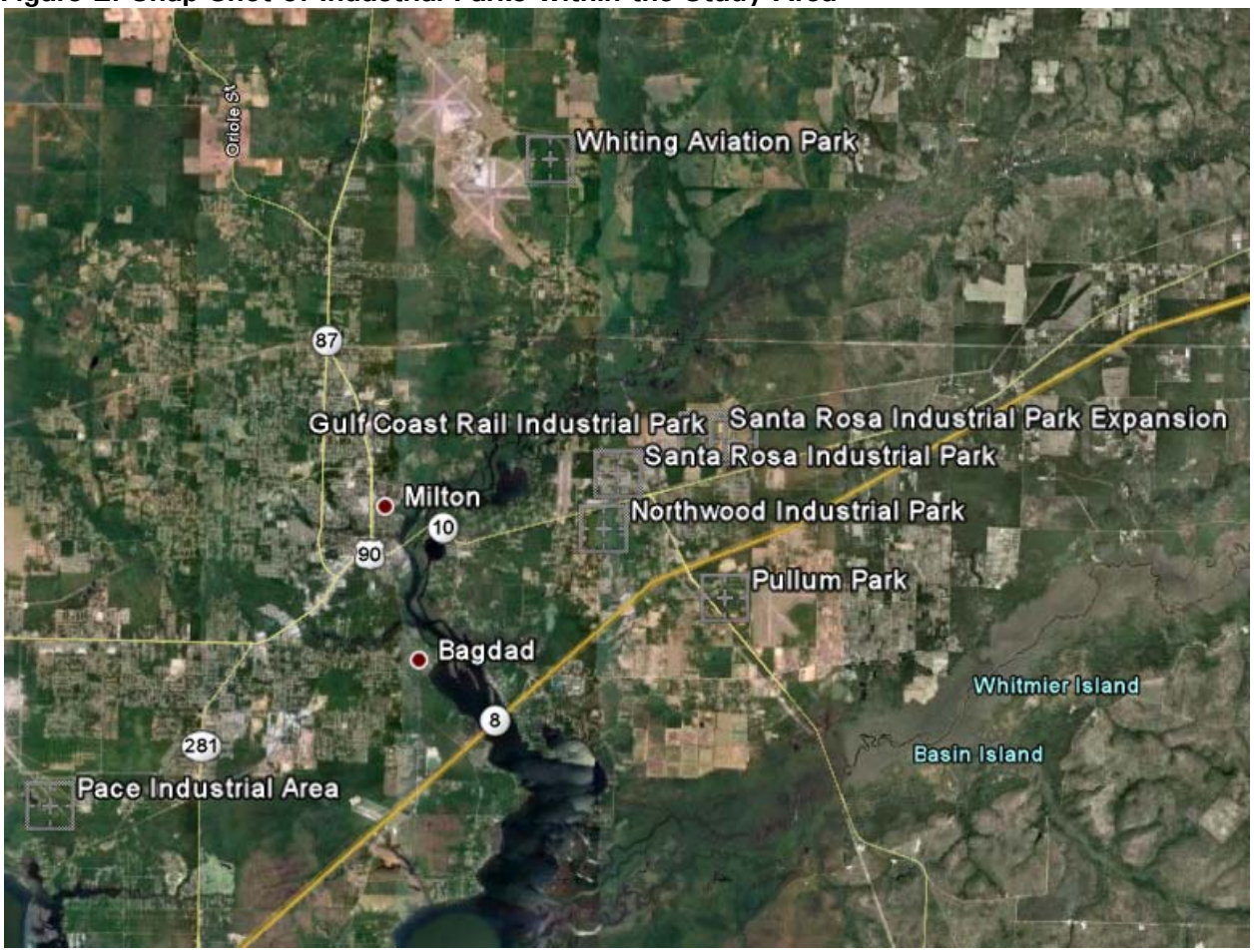
TAZ:

Figure 1: Snap Shot of TAZs within the Study Area



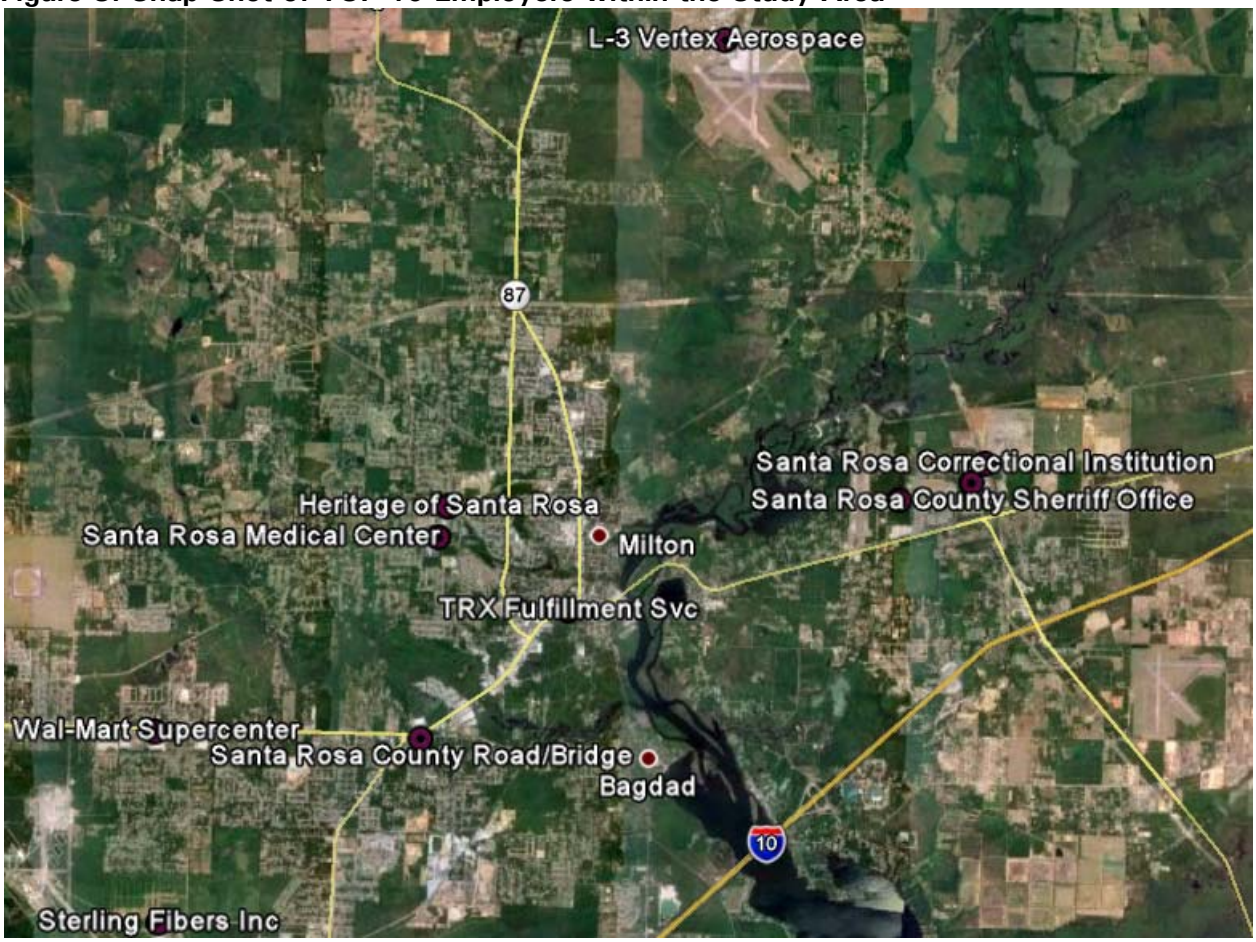
Industrial Parks:

Figure 2: Snap Shot of Industrial Parks within the Study Area



TOP 10 Employers:

Figure 3: Snap Shot of TOP 10 Employers within the Study Area



Schools

Figure 4: Snap Shot of Schools within the Study Area

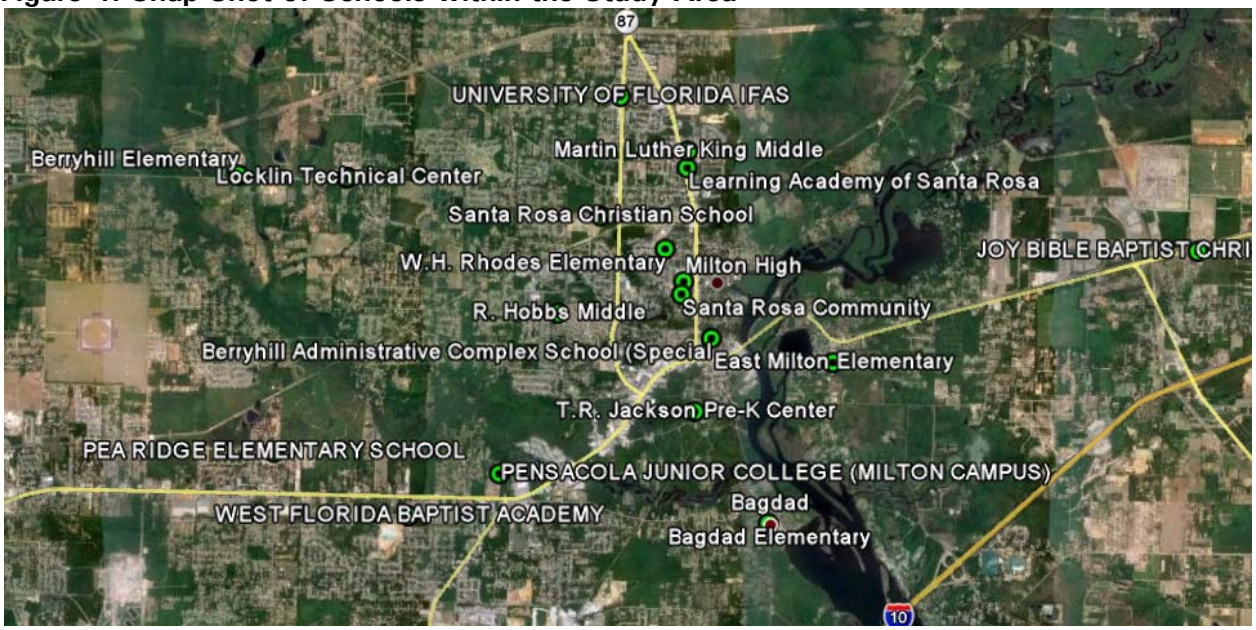
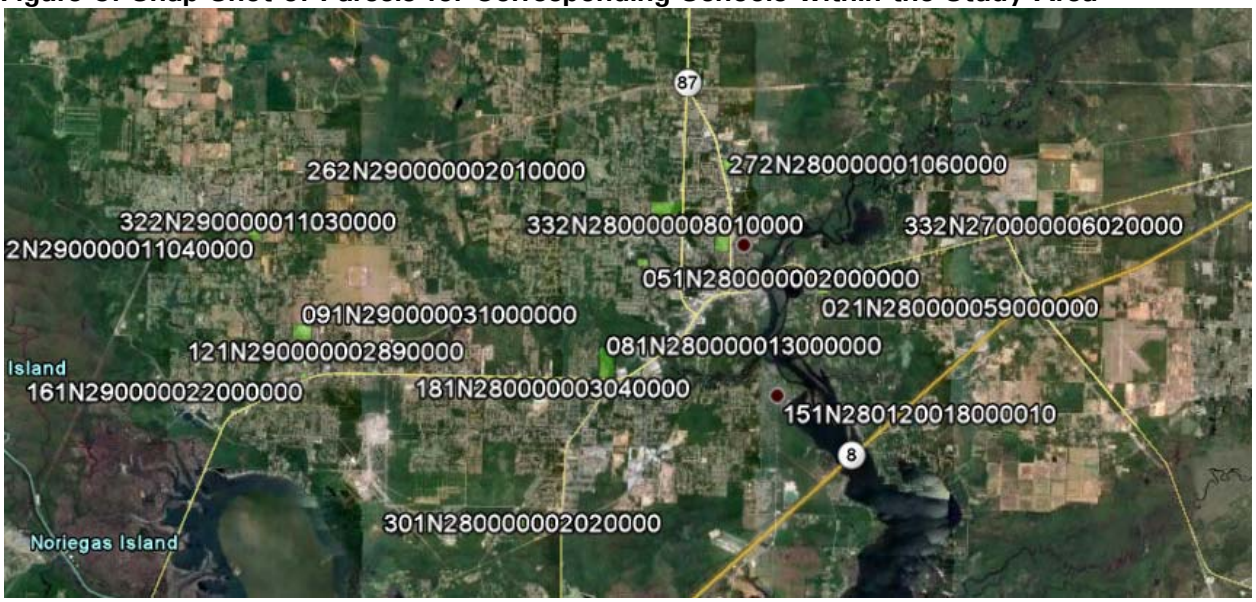


Figure 5: Snap Shot of Parcels for Corresponding Schools within the Study Area



2006 FSUTMS Network and TAZs

Figure 6: Snap Shot of 2006 FSUTMS Network and TAZs within the Study Area

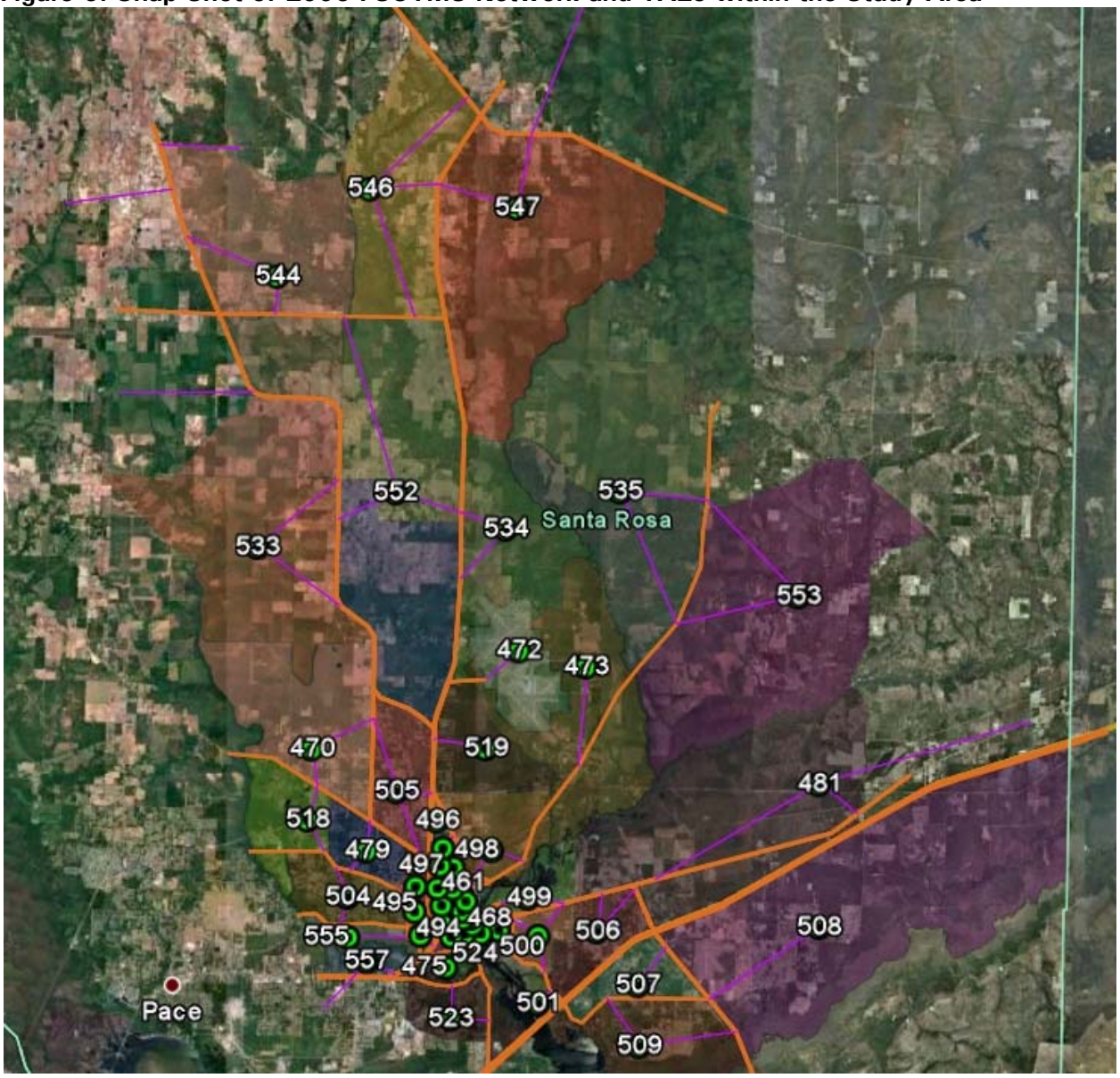


Figure 7: Snap Shot of 2006 FSTUMS Node

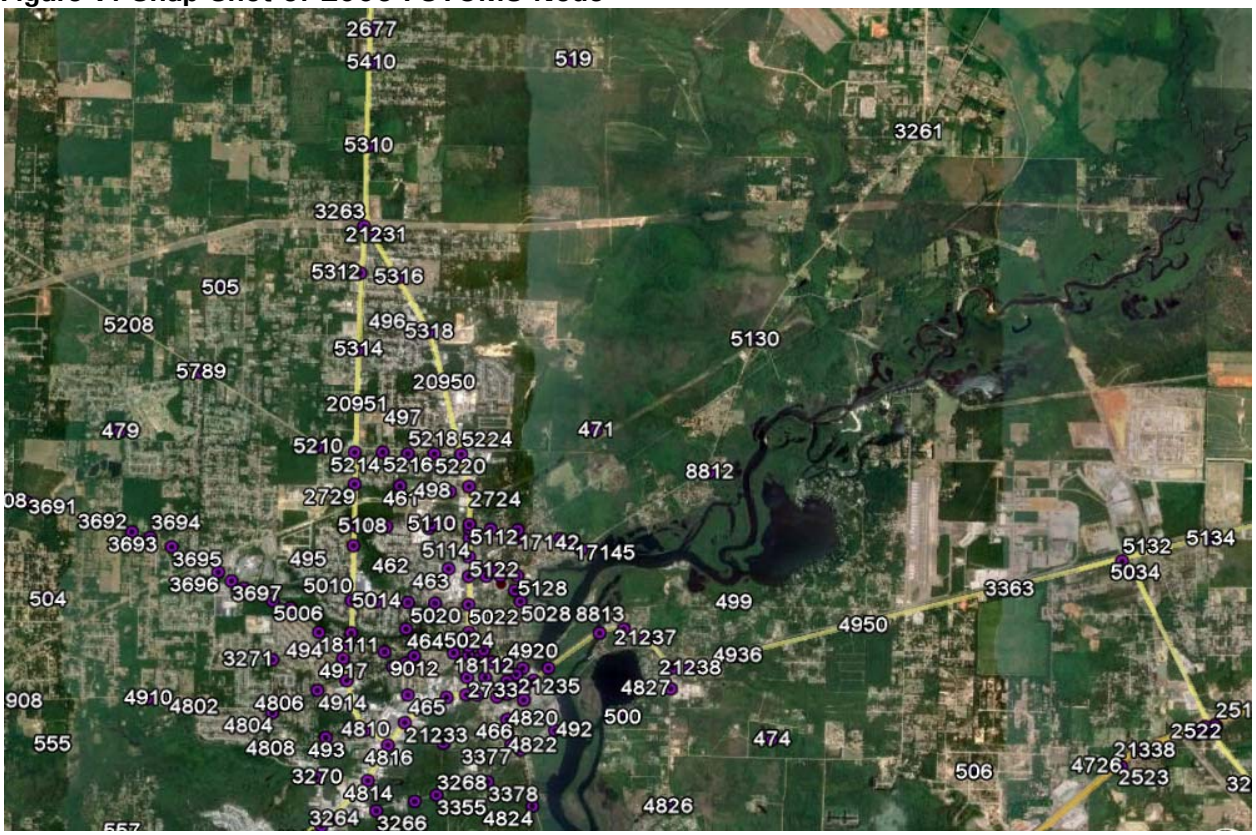
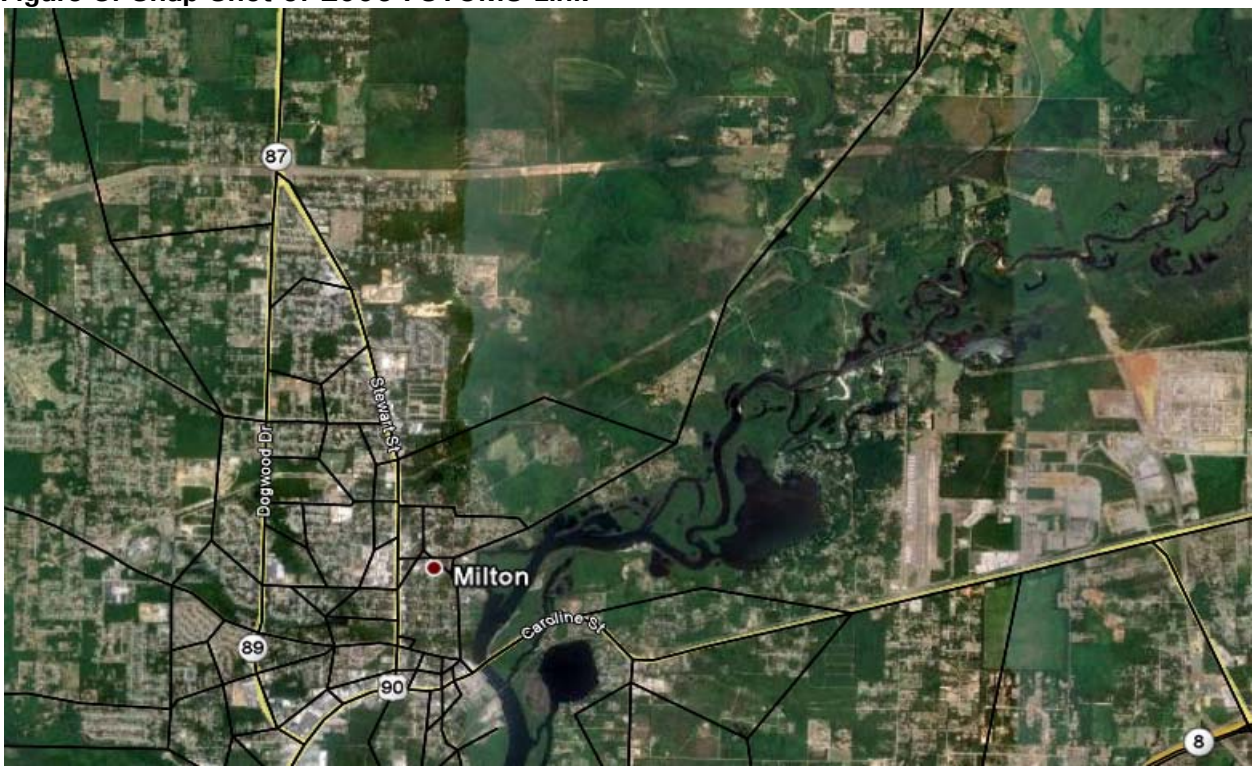
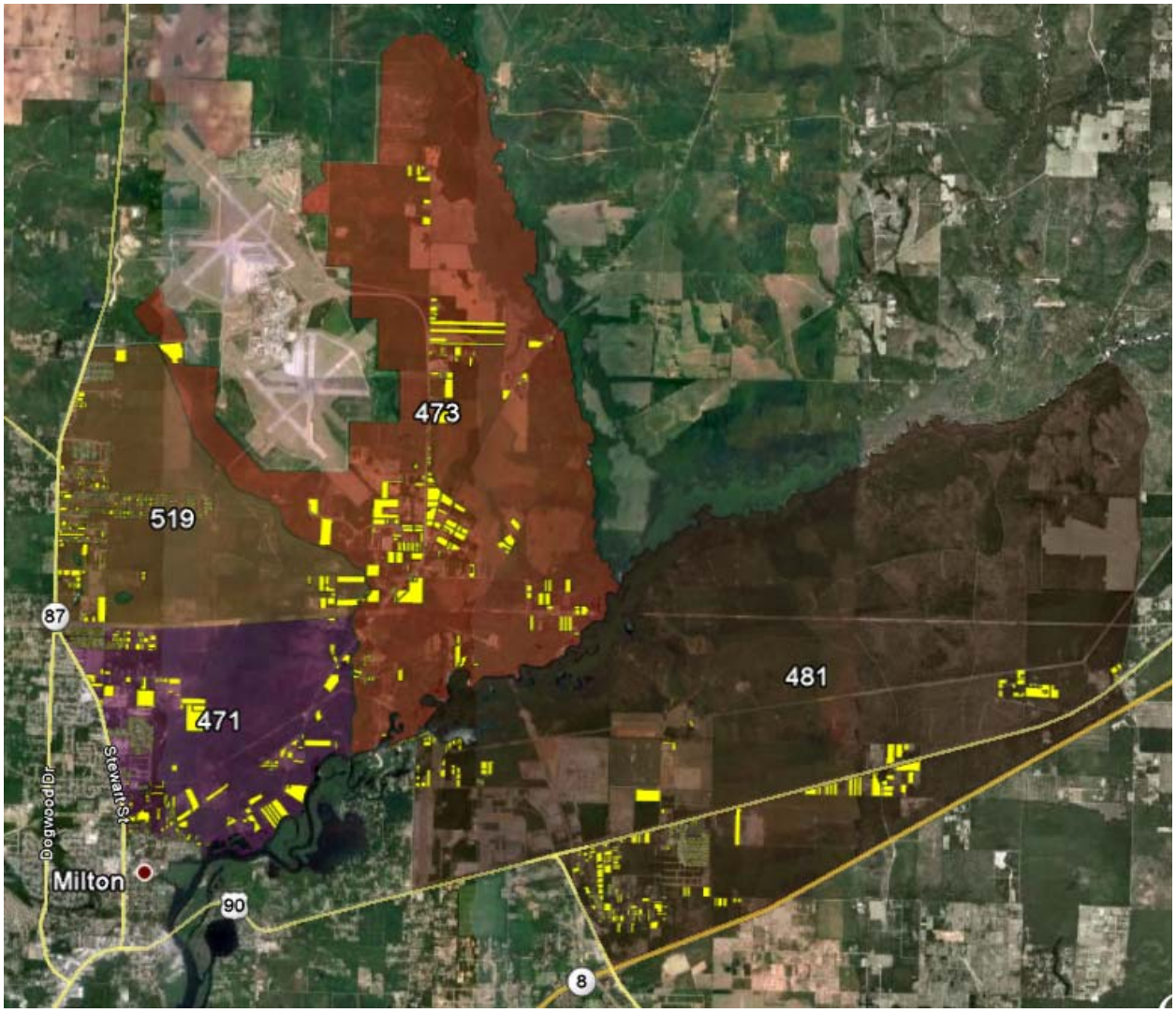


Figure 8: Snap Shot of 2006 FSTUMS Link



Property Parcel

Figure 9: Snap Shot of Property Parcels of Single Family Units within TAZs 471, 473, 481 and 519



4. Socio Economic Data

Bureau of economics and Business Research (BEBR) and InfoUSA were contacted by emails to confirm how BEBR and InfoUSA estimate the employment and population. The responses from BEBR and InfoUSA are shown in the following.

- Based on the email communications with Krishnan Viswanathan from Cambridge Systematics Inc., public sector employment, which includes military base, is one area where InfoUSA data is lacking.
- Based on the email communications with Scott Cody from BEBR, BEBR doesn't estimate employment in the military bases. BEBR does not estimate the military population directly. It estimates the military population in two ways.
  1. If they live in a house, they would be included in the population estimation.
  2. If they live in the barracks, then they are included in the group quarters multiplier.

Based on the above responses from BEBR and InfoUSA, the following conclusions are drawn.

- The employment data from InfoUSA may be underestimated.
- The employment data from BEBR does not include that in the military bases.
- The population in the military bases from BEBR were estimated by group quarters method.

Growth Rate

Florida Population Studies Bulletin 156 published by Bureau of Economic and Business Research states that five different techniques were used to provide nine projections of population for each county in Florida. Some average methods and adjustments were also applied to the projected population. Therefore, there is no single growth rate for each county.

Residential Units

Single Family Units were spot-checked for TAZs 471, 473, 481, and 519. The data was obtained from Santa Rosa County Property Appraiser Website, and FGDL 2009 property parcel data. The comparison results could be found in **Table 1**.

The 2006 and 2009 property parcel data within the study area was obtained from FGDL. The comparison results could be found in **Table 2**.

Table 1: Single Family Units Spot-Check Results

TAZ	Single Family Units (County Property Appraisal Website dated May 28, 2010)	Single Family Units (NWFRPM 2006)	Single Family Units (Parcel 2009 GIS File)
471	475	471	490
473	150	154	156
481	350	320	368
519	537	529	529

Population

The population within the study area was compared with that in Census 2000 to see whether the data in 2006 model was reasonable or not. The comparison results could be found in **Table 2**.

Employment Data

The employment data from 2006 NWFRP model and that from InfoUSA 2007 has been compared. The incorrect geocoding in Info USA 2007 have been corrected for TAZs 499, 519, and 500. The comparison results could be found in **Table 2**.

Hotel

The lodging facilities 2008 data within the study area was obtained from Florida Geographic Data Library (FGDL). The comparison results could be found in **Table 2**.

School Enrollment

The 2006 school enrollment data was obtained from FDOE's reports named No Child Left Behind School Public Accountability Reports 2006-2007 and the school 2008 data was obtained from FGDL. Furthermore, ATEC staffs also called the schools to obtain the accurate information. The comparison results could be found in **Table 2**.

Table 2: Comparison Results for Residential Units

				Property Appraisal Data 2006 (Total)						Property Appraisal Data 2006 (SF)						Property Appraisal Data 2006 (MF)						Property Appraisal Data 2009 (Total)						Property Appraisal Data 2009 (SF)						Property Appraisal Data 2009 (MF)			
TAZ	LOCATION	TOTAL UNITS	TAZ NO	TOTAL UNITS from Parcel 2006	TOTAL UNITS DIFFERENCE	TOTAL UNITS DIFFERENCE %	TOTAL UNITS Verification	UNITS-SF (Model)	TAZ NO	UNITS-SF from Parcel 2006	UNITS-SF DIFFERENCE	UNITS-SF DIFFERENCE %	UNITS-SF Verification	UNITS-MF (Model)	TAZ NO	UNITS-MF from Parcel 2006	UNITS-MF DIFFERENCE	UNITS-MF DIFFERENCE %	UNITS-MF Verification Notes	TOTAL UNITS	TAZ NO	TOTAL UNITS from Parcel 2009	TOTAL UNITS DIFFERENCE	TOTAL UNITS DIFFERENCE %	TOTAL UNITS Verification	UNITS-SF (Model)	TAZ NO	UNITS-SF from Parcel 2009	UNITS-SF DIFFERENCE	UNITS-SF DIFFERENCE %	UNITS-SF Verification	UNITS-MF	TAZ NO	UNITS-MF from Parcel	UNITS-MF DIFFERENC	UNITS-MF DIFFERENCE %	UNITS-MF Verification Notes
461	CBD	179	461	171	8	4.47%	OK	169	461	168	1	0.59%	OK	10	461	3	7	70.00%		179	461	173	6	3.35%	OK	169	461	169	0	0.00%	OK	10	461	4	6	60.00%	
462	CBD	340	462	516	-176	-51.76%		219	462	221	-2	-0.91%	OK	121	462	295	-174	-143.80%		340	462	220	120	35.29%		219	462	220	-1	-0.46%	OK	121					
463	CBD	81	463	74	7	8.64%		76	463	74	2	2.63%	OK	5	463					81	463	75	6	7.41%	OK	76	463	75	1	1.32%	OK	5					
464	CBD	382	464	318	64	16.75%		361	464	291	70	19.39%		21	464	27	-6	-28.57%		382	464	314	68	17.80%		361	464	292	69	19.11%		21	464	22	-1	-4.76%	OK
465	CBD	160	465	215	-55	-34.38%		92	465	86	6	6.52%	OK	68	465	129	-61	-89.71%		160	465	157	3	1.88%	OK	92	465	90	2	2.17%	OK	68	465	67	1	1.47%	OK
466	CBD	89	466	93	-4	-4.49%	OK	71	466	63	8	11.27%		18	466	30	-12	-66.67%		89	466	80	9	10.11%		71	466	64	7	9.86%	OK	18	466	16	2	11.11%	
467	CBD	29	467	26	3	10.34%	OK	24	467	26	-2	-8.33%	OK	5	467					29	467	23	6	20.69%		24	467	23	1	4.17%	OK	5	467				
468	CBD	335	468	261	74	22.09%		251	468	221	30	11.95%		84	468	40	44	52.38%		335	468	309	26	7.76%	OK	251	468	252	-1	-0.40%	OK	84	468	57	27	32.14%	
470		566	470	546	20	3.53%	OK	510	470	521	-11	-2.16%	OK	56	470	25	31	55.36%		566	470	563	3	0.53%	OK	510	470	539	-29	-5.69%	OK	56	470	24	32	57.14%	
471		688	471	857	-169	-24.56%		471	471	489	-18	-3.82%	OK	217	471	368	-151	-69.59%		688	471	646	42	6.10%	OK	471	471	490	-19	-4.03%	OK	217	471	156	61	28.11%	
472		88	472				No data available	63	472				No data available	25	472				No data available f	88	472				No data available f	63	472				No data available	25	472				No data available from property appraisal data
473		427	473	154	273	63.93%		154	473	154	0	0.00%	OK	273	473					427	473	156	271	63.47%		154	473	156	-2	-1.30%	OK	273	473				
474		180	474	155	25	13.89%		143	474	155	-12	-8.39%	OK	37	474					180	474	147	33	18.33%		143	474	147	-4	-2.80%	OK	37	474				
475		135	475	66	69	51.11%		112	475	66	46	41.07%		23	475					135	475	67	68	50.37%		112	475	67	45	40.18%		23	475				
476		439	476	420	19	4.33%	OK	344	476	416	-72	-20.93%		95	476	4	91	95.79%	Big Difference	439	476	431	8	1.82%	OK	344	476	427	-83	-24.13%		95	476	4	91	95.79%	Big Difference
477		876	477	723	153	17.47%		784	477	691	93	11.86%		92	477	32	60	65.22%		876	477	724	152	17.35%		784	477	704	80	10.20%		92	477	20	72	78.26%	
479		891	479	918	-27	-3.03%	OK	847	479	918	-71	-8.38%	OK	44	479					891	479	984	-93	-10.44%		847	479	984	-137	-16.17%		44	479				
481		590	481	333	257	43.56%		320	481	333	-13	-4.06%	OK	270	481					590	481	368	222	37.63%		320	481	368	-48	-15.00%		270	481				
492	CBD	50	492	47	3	6.00%	OK	47	492	45	2	4.26%	OK	3	492	2	1	33.33%	OK	50	492	47	3	6.00%	OK	47	492	45	2	4.26%	OK	3	492	2	1	33.33%	OK
493	CBD	267	493	193	74	27.72%		155	493	138	17	10.97%		112	493	55	57	50.89%		267	493	204	63	23.60%		155	493	148	7	4.52%	OK	112	493	56	56	50.00%	
494	CBD	499	494	178	321	64.33%	Big Difference	458	494	72	386	84.28%	Big Difference	41	494	106	-65	-158.54%		499	494	75	424	84.97%	Big Difference	458	494	75	383	83.62%	Big Difference	41					
495	CBD	390	495	650	-260	-66.67%		304	495	340	-36	-11.84%		86	495	310	-224	-260.47%		390	495	517	-127	-32.56%		304	495	348	-44	-14.47%		86	495	169	-83	-96.51%	
496	CBD	507	496	423	84	16.57%		350	496	358	-8	-2.29%	OK	157	496	65	92	58.60%		507	496	421	86	16.96%		350	496	357	-7	-2.00%	OK	157	496	64	93	59.24%	
497	CBD	355	497	316	39	10.99%		249	497	233	16	6.43%	OK	106	497	83	23	21.70%		355	497	342	13	3.66%	OK	249	497	247	2	0.80%	OK	106	497	95	11	10.38%	
498	CBD	177	498	395	-218	-123.16%		79	498	70	9	11.39%		98	498	325	-227	-231.63%		177	498	220	-43	-24.29%		79	498	71	8	10.13%		98	498	149	-51	-52.04%	
499		482	499	312	170	35.27%		329	499	310	19	5.78%	OK	153	499	2	151	98.69%	Big Difference	482	499	322	160	33.20%		329	499	320	9	2.74%	OK	153	499	2	151	98.69%	
500		265	500	236	29	10.94%		219	500	231	-12	-5.48%	OK	46	500	5	41	89.13%		265	500	250	15	5.66%	OK	219	500	230	-11	-5.02%	OK	46	500	20	26	56.52%	
501		67	501	64	3	4.48%	OK	62	501	64	-2	-3.23%	OK	5	501					67	501	64	3	4.48%	OK	62	501	64	-2	-3.23%	OK	5	501				
502		1515	502	1311	204	13.47%		1229	502	1277	-48	-3.91%	OK	286	502	34	252	88.11%	Big Difference	1515	502	1312	203	13.40%		1229	502	1276	-47	-3.82%	OK	286	502	36	250	87.41%	Big Difference
503		843	503	883		0.00%	OK	742	503	876	-134	-18.06%		101	503	7	94	93.07%	Big Difference	843	503	853		0.00%	OK	742	503	844	-102	-13.75%		101	503	9	92	91.09%	Big Difference
504		1501	504	1427	74	4.93%	OK	1297	504	1254	43	3.32%	OK	204	504	173	31	15.20%		1501	504	1400	101	6.73%	OK	1297	504	1277	20	1.54%	OK	204	504	123	81	39.71%	
505		972	505	898	74	7.61%	OK	849	505	825	24	2.83%	OK	123	505	73	50	40.65%		972	505	928	44	4.53%	OK	849	505	845	4	0.47%	OK	123	505	83	40	32.52%	
506		438	506	167	271	61.87%		155	506	165	-10	-6.45%	OK	283	506	2	281	99.29%	Big Difference	438	506	169	269	61.42%		155	506	167	-12	-7.74%	OK	283	506	2	281	99.29%	Big Difference
507		601	507	154	447	74.38%	Big Difference	178	507	154	24	13.48%		423	507					601	507	152	449	74.71%	Big Difference	178	507	152	26	14.61%		423	507				
508		1048	508	245	803	76.62%	Big Difference	250	508	245	5	2.00%	OK	798	508					1048	508	283	765	73.00%	Big Difference	250	508	283	-33	-13.20%		798	508				
509		503	509	335	168	33.40%		261	509	333	-72	-27.59%		242	509	2	240	99.17%	Big Difference	503	509	299	204	40.56%		261	509	297	-36	-13.79%		242	509	2	240	99.17%	Big Difference
518		411	518	475	-64	-15.57%		384	518	475	-91	-23.70%		27	518					411	518	352	59	14.36%		384	518	352	32	8.33%	OK	27	518				
519		898	519	649	249	27.73%		529	519	573	-44	-8.32%	OK	369	519	76	293	79.40%	Big Difference	898	519	621	277	30.85%		529	519	529	0	0.00%	OK	369	519	92	277	75.07%	
522		968	522	530	438	45.25%	Big Difference	653	522	526	127	19.45%		315	522	4	311	98.73%	Big Difference	968	522	524	444	45.87%	Big Difference	653	522	520	133	20.37%		315	522	4	311	98.73%	Big Difference
523		1271	523	1002	269	21.16%		924	523	975	-51	-5.52%	OK	347	523	27	320	92.22%	Big Difference	1271	523	1104	167	13.14%		924	523	1073	-149	-16.13%		347	523	31	316	91.07%	Big Difference
524	CBD	56	524	31	25	44.64%		47	524	31	16	34.04%		9	524					56	524	32	24	42.86%		47	524	32	15	31.91%		9	524				
525	CBD	12	525	12	0	0.00%	OK	9	525	10	-1	-11.11%	OK	3	525	2	1	33.33%	OK	12	525	12	0	0.00%	OK	9	525	10	-1	-11.11%	OK	3	525	2	1	33.33%	OK
526	CBD	40	526	31	9	22.50%		33	526	30	3	9.09%	OK	7	526	1	6	85.71%		40	526	29	11	27.50%		33	526	29	4	12.12%	OK	7	526				
527	CBD	23	527	17	6	26.09%		15	527	16	-1	-6.67%	OK	8	527	1	7	87.50%		23	527	17	6	26.09%		15	527	17	-2	-13.33%	OK	8	527				
533	NORTH	200	533	51	149	74.50%		141	533	51	90	63.83%		59	533					200	533	55	145	72.50%		141	533	55	86	60.99%		59	533				
534	NORTH	494	534	23	471	95.34%	Big Difference	204	534	23	181	88.73%	Big Difference	290	534					494	534	22	472	95.55%	Big Difference	204	534	22	182	89.22%	Big Difference	290	534				
535	NORTH	48	535	39	9	18.75%		26	535	39	-13	-50.00%		22	535					48	535	42	6	12.50%		26	535	42	-16	-61.54%		22	535				
544		118	544	54	64	54.24%		95	544	54	41	43.16%		23	544					118	544	58	60	50.85%		95	544	58	37	38.95%		23	544				
546		384	546	102	282	73.44%		237	546	102	135	56.96%		147	546					384	546	111	273	71.09%		237	546	111	126	53.16%		147	546				
547		386	547	111	275	71.24%		239	547	111	128	53.56%		147	547					386	547	123	263	68.13%		239	547	123	116	48.54%		147	547				
552	NORTH	190	552	82	108	56.84%		142	552	82	60	42.25%		48	552					190	552	93	97	51.05%		142	552	93	49	34.51%		48	552				
553		193	553	53	140	72.54%		101	553	53	48	47.52%		92	553					193	553	53	140	72.54%		101	553	53	48	47.52%		92	553				
555		226	555	245	-19	-8.41%	OK	216	555	245	-29	-13.43%		10	555					226	555	257	-31	-13.72%		216	555	257	-41	-18.98%		10	555				
557		406	557	327	79	19.46%		389	557	327	62	15.94%		17	557					406	557	324	82	20.20%		389	557	324	65	16.71%		17	557				
559		424	559	382	42	9.91%	OK	309	559	327	-18	-5.83%	OK	115	559	55	60	52.17%		424	559	391	33	7.78%	OK	309	559	333	-24	-7.77%	OK	115	559	58	57	49.57%	
568		49	568	26	23	46.94%		35	568	26	9	25.71%		14	568					49	568	48	1	2.04%	OK	35	568	48	-13	-37.14%		14	568				
569		47	569	24	23	48.94%		35	569	24	11	31.43%		12	569					47	569	24	23	48.94%		35	569	24	11	31.43%		12	569				
570		237	570	206	31	13.08%		177	570	206	-29	-16.38%		60	570					237	570	209	28	11.81%		177	570	209	-32	-18.08%		60	570				
571		48	571	15	33	68.75%		26	571	15	11	42.31%		22	571					48	571	24	24	50.00%		26	571	24	2	7.69%	OK	22	571				
TOTAL		24,084		18,567	5,517	22.91%		17,190		16,204	986	5.74%		6,894		2,363	4,531	65.72%		24,084		17,820	6,264	26.01%		17,190		16,451	739	4.30%		6,894		1,369	5,525	80.14%	

Table 3: Comparison Results for Population, Hotel, Employment, and School Enrollmen

				Census 2000						Hotel 2008					InfoUSA 2007 Data After Verification						School 2008				2006 FDOE Data			
TAZ	LOCATION	PERSONS (Model)	TAZ NO	PERSONS from Population 2000	PERSONS DIFFERENCE	PERSONS DIFFERENCE	PERSON Verification Notes	HOTEL (Model	TAZ NO	HOTEL from Hotel 2008	HOTEL DIFFERENCE	HOTEL DIFFERENCE %	HOTEL Verification	TAZ NO	EMPLOYMENT from InfoUSA 2007	EMPLOYMENT DIFFERENCE	EMPLOYMENT DIFFERENCE %	EMPLOYMENT Verification Notes	SCHOOL (Model)	TAZ NO	SCHOOL from School	SCHOOL DIFFERENCE	SCHOOL DIFFERENCE	SCHOOL Verification	SCHOOL from School	SCHOOL DIFFERENCE	SCHOOL DIFFERENCE %	SCHOOL Verification Notes
461	CBD	384	461	417	-33	-8.59%	OK	0	461					461	15	1	6.25%		0	461								
462	CBD	620	462	677	-57	-9.19%	OK	0	462					462	288	-5	-1.77%		975	462	873	102	10.46%		1000	-25	-2.56%	
463	CBD	183	463	151	32	17.49%		0	463					463	375	-67	-21.75%		1766	463	1799	-33	-1.87%	OK	1834	-68	-3.85%	
464	CBD	869	464	744	125	14.38%		0	464	8				464	145	-98	-208.51%		0	464								
465	CBD	289	465	232	57	19.72%		42	465	42	0	0.00%	OK	465	792	-14	-1.80%		0	465								
466	CBD	162	466	172	-10	-6.17%	OK	0	466					466	396	-264	-200.00%		301	466	257	44	14.62%		297	4	1.33%	
467	CBD	61	467	56	5	8.20%	OK	0	467					467	331	-224	-209.35%		0	467								
468	CBD	682	468	747	-65	-9.53%	OK	0	468					468	511	239	31.87%		0	468								
470		1518	470	1011	507	33.40%	Big Difference	0	470					470	67	-30	-81.08%		0	470								
471		1555	471	1470	85	5.47%	OK	0	471					471	94	55	36.91%		691	471	621	70	10.13%	OK	688	3	0.43%	
472		168	472	207	-39	-23.21%		0	472					472	457	1843	80.13%	Employment estima	0	472								
473		738	473	715	23	3.12%	OK	0	473					473	44	30	40.54%		0	473								
474		412	474	407	5	1.21%	OK	0	474					474	185	-29	-18.59%		779	474	765	14	1.80%	OK	782	-3	-0.39%	
475		253	475	150	103	40.71%		0	475					475	21	10	32.26%		0	475								
476		978	476	832	146	14.93%		0	476	8				476	148	36	19.57%		0	476								
477		2281	477	1139	1142	50.07%	Big Difference	0	477					477	245	305	55.45%		774	477	862	-88	-11.37%		781	-7	-0.90%	
479		2271	479	1930	341	15.02%		0	479					479	171	-16	-10.32%		0	479								
481		1453	481	2483	-1030	-70.89%	Big Difference	0	481					481	2148	12	0.56%	OK	0	481	9				0	0	0.00%	
492	CBD	102	492	80	22	21.57%		0	492					492	9	37	80.43%		0	492								
493	CBD	621	493	453	168	27.05%		39	493	39	0	0.00%	OK	493	544	0	0.00%	OK	0	493								
494	CBD	1416	494	871	545	38.49%	Big Difference	0	494					494	111	-22	-24.72%		0	494								
495	CBD	944	495	976	-32	-3.39%	OK	0	495					495	603	35	5.49%	OK	236	495	416	-180	-76.27%					No Data
496	CBD	1260	496	1270	-10	-0.79%	OK	0	496					496	123	-54	-78.26%		0	496								
497	CBD	821	497	695	126	15.35%		0	497					497	227	-86	-60.99%		0	497	85				0	0	0.00%	
498	CBD	288	498	425	-137	-47.57%		0	498					498	60	-19	-46.34%		0	498								
499		1163	499	947	216	18.57%		0	499					499	88	6	6.38%	OK	0	499								
500		608	500	410	198	32.57%		0	500					500	31	22	41.51%		0	500								
501		157	501	119	38	24.20%		0	501					501	4	5	55.56%		0	501								
502		3931	502	2831	1100	27.98%	Big Difference	0	502					502	415	108	20.65%		260	502	314	-54	-20.77%				0.00%	No Data
503		2137	503	1692	445	20.82%	Big Difference	0	503					503	1837	-1350	-277.21%	Big Difference	944	503	884	60	6.36%	OK	948	-4	-0.42%	
504		3877	504	2792	1085	27.99%	Big Difference	0	504					504	796	-470	-144.17%	Big Difference	710	504	690	20	2.82%	OK	718	-8	-1.13%	
505		2465	505	1981	484	19.63%		0	505					505	356	-111	-45.31%		0	505								
506		1007	506	975	32	3.18%	OK	64	506	64	0	0.00%	OK	506	112	25	18.25%		0	506								
507		1394	507	953	441	31.64%	Big Difference	30	507	30	0	0.00%	OK	507	59	2	3.28%		0	507								
508		2427	508	1988	439	18.09%		66	508	66	0	0.00%	OK	508	108	-21	-24.14%		0	508								
509		1168	509	1125	43	3.68%	OK	0	509					509	56	-7	-14.29%		0	509								
518		1092	518	801	291	26.65%		0	518					518	237	-88	-59.06%		1477	518	1019	458	31.01%	Big Difference	1204	273	18.48%	
519		1998	519	1610	388	19.42%		0	519					519	507	-422	-496.47%	Big Difference	0	519								
522		2456	522	1401	1055	42.96%	Big Difference	0	522					522	516	498	49.11%	Big Difference	0	522	0	0						
523		2970	523	2325	645	21.72%	Big Difference	0	523					523	649	-136	-26.51%		515	523	684	-169	-32.82%		521	-6	-1.17%	
524	CBD	106	524	57	49	46.23%		0	524					524	1058	41	3.73%	OK	0	524								
525	CBD	26	525	24	2	7.69%	OK	0	525					525	85	-64	-304.76%		0	525	74				0	0		
526	CBD	86	526	79	7	8.14%	OK	0	526					526	142	-39	-37.86%		0	526					75	-75		Not a school.
527	CBD	43	527	64	-21	-48.84%		0	527					527	353	-237	-204.31%		0	527								
533	NORTH	483	533	167	316	65.42%		0	533					533	1	56	98.25%		0	533								
534	NORTH	868	534	68	800	92.17%	Big Difference	0	534					534	11	-3	-37.50%	OK	0	534								
535	NORTH	111	535	147	-36	-32.43%		0	535					535	4	38	90.48%		0	535								
544		273	544	234	39	14.29%		0	544					544	40	-20	-100.00%		0	544								
546		905	546	533	372	41.10%		0	546					546	17	0	0.00%	OK	0	546								
547		910	547	717	193	21.21%		0	547					547	81	-8	-10.96%		0	547								
552	NORTH	463	552	393	70	15.12%		0	552					552	104	-31	-42.47%		271	552	291	-20	-7.38%	OK	278	-7	-2.58%	
553		446	553	409	37	8.30%	OK	0	553					553	32	-20	-166.67%		0	553								
555		605	555	252	353	58.35%		0	555					555	236	-155	-191.36%		0	555								
557		1051	557	242	809	76.97%	Big Difference	0	557					557	510	-116	-29.44%		2500	557	0				2662	-162	-6.48%	
559		1078	559	1289	-211	-19.57%		0	559					559	651	-539	-481.25%	Big Difference	0	559								
568		119	568	93	26	21.85%		0	568					568	4				0	568								
569		115	569	126	-11	-9.57%		0	569					569	20				0	569								
570		577	570	485	92	15.94%		0	570					570	106	-55	-107.84%		0	570								
571		111	571	61	50	45.05%		0	571					571	50	-9	-21.95%		0	571								
TOTAL		57,555		45,700	11,855	20.60%		241		257	-16	-6.64%			17,386	-1,449	-9.09%		12,199		9,643	2,556	20.95%		11,788	411	3.37%	

5. Public Transit

Ms Nancy Model, a Transportation Planner in Santa Rosa County was contacted to obtain the public transit information. **Table 4** shows the public transit information.

Table 4: Public Transit Information

Route Name	Service Area	Planned		
		No of Stations	Hours of Operation	Fare ($)
Santa Rosa Transit Hwy 90	US 90 corridor from the intersection of Nine Mile Rd/University Parkway in Escambia County to 1 mile east of the intersection of US 90/SR 87S in Santa Rosa County. The route also includes stops in the City of Milton north of US 90.	24	Monday to Friday 4:30 AM to 5:30 PM	$1.00

6. Industrial Parks

Besides the website of TEAM Santa Rosa Economic Development Council, the staff in Team Santa Rosa was also contacted to obtain the following information of the industrial parks.

a. There is industrial property in Galt City, Not necessarily an industrial park. It is in an area with asphalt plants, concrete facilities, rock storage areas, landfill, etc. We do not market this area for new industry.

b. The following is a link to some more detailed park information.
http://www.teamsantarosa.com/buildings_industrial.php

c. Northwood Park is a single parcel on Hwy 90 just west of Hwy 87 south. It is not developed and has no employees.

d. Pace Industrial Area: This is the area surrounding Air Products, Taminco and Sterling Fiber in south Pace. We have only brought in one new business since we began marketing it last year and the entire area has approximately 100 employees.

e. Pullum Park in now the Northwest Florida Industrial Park at 1 - 10 and has just come on line this year, no employees.

f. Santa Rosa Industrial Park. This is the original industrial park for Santa Rosa County. It has approximately 25 businesses and over 2,000 employees. It is located north of Hwy 90 and the entrance is at the intersection of Hwy 90 and Hwy 87 south.

g. Whiting Aviation Park. This Park is under construction as I type. It has no businesses in at this time and is located adjacent to and to the southeast of NAS Whiting Field.

APPENDIX B

Selected Internal Memorandums Discussing Model Refinement Efforts

Lei Cai

From: Fadi Emil Nassar
Sent: Thursday, May 27, 2010 10:37 AM
To: Lei Cai
Subject: FW: Centroid and Zone Match
Attachments: image001.gif; Centroid and Zone Check.png; Four_Unmatched_Centroids.png

---

From: Lixin Huang
Sent: Thursday, April 29, 2010 11:28 AM
To: Fadi Emil Nassar
Subject: Centroid and Zone Match

Fadi,

I wrote a GIS program to check if the a centroid matches its corresponding zone. If a centroid with number N falls inside its corresponding zone with number N, it means that Centroid N matches Zone N. Based on what I know,. the centroid is not the geometry center of a zone. Therefore, there may be a few cases which a centroid is outside its corresponding zone. In most cases, the centroid will be within its corresponding zone. I used the GIS program to check the centroids within the study TAZs we selected match their corresponding zones. I found that there are four centroids with number 568, 569, 570, and 571 which don't fall inside their corresponding zones (See attached file: Centroid and Zone Check.png). By checking the locations of these four centroid in GIS map, these four centroids are connected to node 21309 (See attached file: Four_Unmatched_Centroids.png). It seems that these four centroids are dummy nodes. I think we need to investigate this issue and make any necessary corrections. Please correct me if I am wrong. I appreciate your help very much.

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Lei Cai

From: Lixin Huang
Sent: Wednesday, May 26, 2010 9:11 AM
To: Lei Cai; Fadi Emil Nassar
Subject: FW: Santa Rosa Transit information

-----Original Message-----
From: Nancy Model [mailto:nancym@santarosa.fl.gov]
Sent: Tue 5/25/2010 8:03 PM
To: Lixin Huang
Subject: RE: Santa Rosa Transit information

Lixin - We are still working on the transit route. We hope to start it this summer. It is the only transit route in the County. The City of Milton does not have its own transit service. The County does have wonderful multi-use paths. I'll try to explain below and direct you to a website that will help:

1. Blackwater Heritage Trail which is a paved 8-mile multi-use path built on the bed of the Florida and Alabama Railroad which served the historic Bagdad lumber mill and later Naval Air Station Whiting Field. The Blackwater Heritage Trail connects into the paved 4-mile long military trail on NAS Whiting Field property leading to its east gate. Eventually the plan is to extend the trail around NAS Whiting Field.

2. The Old State Road 1 "Brick Road" which is the historical brick road opened in 1921 extending eastward from Milton. It is on the National Register of Historic Places. The old brick road is parallel to US 90, on the south side nearer to Milton and on the north side as it extends eastward. It is almost 6 miles long. It is currently in design now to be rehabbed as a bicycle/pedestrian facility. FDOT construction funds for the rehab are available. The project is being done by the County as a Local Agency Program (LAP) project with Transportation Enhancement funds. Chris Phillips, County Engineering, is the project manager. Part of the project is to connect the eastern end via a .2 mile asphalt path to the Blackwater River State Forest trails. The western end will be connected to downtown Milton, although a short gap currently exists. Filling the gap will allow it to be connected to a trail hub in downtown Milton where the Blackwater Heritage Trail leads north, the Old State Road 1 leads east, and eventually the Bagdad Heritage Trail will extend south.

3. The Bagdad Heritage Trail is underway. The County has funded design of a CSX Railroad Crossing and the Santa Rosa Tourist Development Council will pay for the construction of the crossing. The Bagdad Heritage Trail, less than a mile, will extend south from the southern terminus of the Blackwater Heritage Trail to Old Bagdad Highway sidewalks, which will lead to a multi-use path at the Mill Site Park. The sidewalks and multi-use path have been funded but not yet constructed.

4. A 5-mile paved multi-use path is on the north side of CR 399 (Gulf Boulevard) on Navarre Beach from the Gulf Islands National Seashore to the intersection where Gulf Boulevard turns north toward US 98. The County park on Navarre Beach has paved multi-use paths, less than a mile.

5. The Blackwater River State Forest has miles of unpaved hiking trails.

6. The Florida Trail, one of the eight National Scenic Trails designated by Congress, enters from Okaloosa County, north of the Yellow River. It runs parallel north of the river and

then turn south along SR 87. It crosses US 98 to Navarre Beach and continues through the Gulf Islands National Seashore to Pensacola Beach. A paved shoulder is available for bicyclists through the Gulf Islands National Seashore. A multi-use path was available at one time but has been destroyed too many times by hurricanes.

7. The FDEP Yellow River Aquatic Preserve land on Garcon Point includes an unpaved hiking path. It is maintained by FDEP.

We also have miles of canoe and equestrian trails in Santa Rosa County. We are the canoe capital of Florida.

Here is the link to the interactive trail website that will provide additional information: http://www.floridabeachestorivers.com/trailsmap/

Are you ready to move here yet:-) It's a great place. Let me know if you have any other questions. I think the FDEP Office of Greenways and Trails shows some of our trails, too, if you look on their website.

Nancy

From: Lixin Huang [mailto:lhuang@atectrans.com]
Sent: Monday, May 24, 2010 9:43 AM
To: Nancy Model
Subject: RE: Santa Rosa Transit information

Nancy,

How are you? Thanks for all your help on providing us with the transit information in Santa Rosa County. What is the status of the planned transit route?. As we in the middle of our project, we'd like to know if the planned transit route the is only one in the County? Does the City of Milton offer its own transit service? If yes, do you know whom I can contact for more information? Can you do me another favor? We want to know if the County has the non-motorized transportation modes, like Bike or Trail, and whom we can contact for more information. Your help is greatly appreciated.

Lixin

From: Nancy Model [mailto:nancym@santarosa.fl.gov]
Sent: Monday, March 29, 2010 2:57 PM
To: Lixin Huang
Subject: RE: Santa Rosa Transit information

Lei Cai

From: Lixin Huang
Sent: Wednesday, June 02, 2010 10:35 AM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: Verify Employment Data (InfoUSA 2007) for TAZ 519
Attachments: image001.gif

Lei,

Per your request, I will verify all the locations of employment data (InfoUSA 2007) in TAZ 519 by using Santa Rosa Property Appraisal website. The employment difference for TAZ 519 between NWFRPM 2006 and InfoUSA 2007 is 1052 (1237.65%). There are a total of 212 employment data in TAZ 519. It was found that the addresses of the half of employment data only contain the city and zip code information, which makes the verification process difficult. Therefore, the verification will only deal with the employment data which have full address information. Please let me know if you have any questions.

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Lei Cai

From: Lixin Huang
Sent: Wednesday, June 09, 2010 10:34 AM
To: Lei Cai
Cc: Sunil Gyawali; Fadi Emil Nassar
Subject: Employmemnt Data Verification Result for TAZ 499 500 519
Attachments: image001.gif

Lei,

The employment data verification result for TAZ 49, 500, and 519 can be found at Q:\SR 87\9_Analysis Tables\Top 5 Employers in TAZ 499 500 519 Verification Result.xlsx. The result is based on verifying all locations of the employers and the number of employees of the top 5 employers in TAZ 499, 500, and 519.

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Lei Cai

From: Lixin Huang [lhuang@atectrans.com]
Sent: Wednesday, June 16, 2010 8:51 AM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: RE: Information of Santa Rosa County Jail

Lei,

Hayes mentioned the Santa Rosa County Jail has the same address as Santa Rosa County Sheriff's Office. I updated the Excel file. If you have any questions, please let me know.

Lixin

From: Lei Cai [mailto:lcai@atectrans.com]
Sent: Tuesday, June 15, 2010 5:58 PM
To: Lixin Huang
Cc: Fadi Emil Nassar
Subject: RE: Information of Santa Rosa County Jail

Lixin,

Would you please confirm the location of the jail and put the information in the excel file named as Q:\SR 87\6_Data Collection\Schools & Prisons\Santa Rosa County District Schools&Prisons.xlsx. Thanks.

Regards

Lei

From: Lixin Huang [mailto:lhuang@atectrans.com]
Sent: Tuesday, June 15, 2010 5:41 PM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: Information of Santa Rosa County Jail

Lei,

The following is the response from the Marc Hayes, Human Resource Director of Santa Rosa County Sheriff's Office.

Lixin

From: HAYES, MARC [mailto:MHAYES@srso.net]
Sent: Tuesday, June 15, 2010 5:35 PM
To: Lixin Huang
Subject: RE: request

The Santa Rosa County Jail is part of the Santa Rosa County Sheriff's Office with the same address. The total number of employees for the Sheriff's Office is included in the 387. They operate off of the same budget as the Sheriff's Office.

There is a State Prison next to us if that is what you are looking for??? It is called Santa Rosa Correctional.

Lt. Marc Hayes
Human Resource Director
Santa Rosa County Sheriff's Office
(850) 983-1235 Office
(850) 983-1211 Fax
e-mail: mhayes@srso.net
"CONFIDENTIALITY NOTICE: This message and any attachments are for the sole use of the intended recipient(s) and may contain confidential and privileged information that is exempt from public disclosure. Any unauthorized review, use, disclosure or distribution is prohibited. If you have received this message in error, please contact the sender (by phone or reply electronic mail) and then destroy all copies of the original message."

From: Lixin Huang [mailto:lhuang@atectrans.com]
Sent: Tuesday, June 15, 2010 4:26 PM
To: HAYES, MARC
Cc: SKINNER, LEANDRA
Subject: RE: request

Hayes,

Thanks for your help on providing us with employment information in Santa Rosa County Sheriff's Office. While we are working on our project, there seems to be a Santa Rosa County Jail near the Sheriff's Office. We'd like get more information on it, such as the address, number of employees, and phone number. Your help is greatly appreciated.

Lixin

From: HAYES, MARC [mailto:MHAYES@srso.net]
Sent: Friday, May 21, 2010 8:47 AM
To: lhuang@atectrans.com
Cc: SKINNER, LEANDRA
Subject: request

Mr. Huang,

Our agency located at 5755 East Milton Road, Milton, Fl has a total of 387 employees. This is our main office for the Sheriff's Office. We also have 4 other district offices throughout the County, but the administrative offices are at this address.

Lt. Marc Hayes
Human Resource Director
Santa Rosa County Sheriff's Office
(850) 983-1235 Office
(850) 983-1211 Fax
e-mail: mhayes@srso.net
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Name: LIXIN HUANG

EmailAddress: lhuang@atectrans.com

Telephone: 305-480-9938

Lei Cai

From: Lixin Huang [lhuang@atectrans.com]
Sent: Tuesday, June 15, 2010 9:12 AM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: FW: Industrial Parks in Santa Rosa County
Attachments: image001.gif

Lei,

The following is the response from Cindy Anderson, Executive Director of Team Santa Rosa, about the information of the industrial parks in Santa Rosa County.

Lixin

From: Cindy Anderson [mailto:canderson@teamsantarosa.com]
Sent: Tuesday, June 15, 2010 6:58 AM
To: Lixin Huang
Subject: RE: Industrial Parks in Santa Rosa County

So sorry, had a family emergency and I am behind. Here is the info I hope you needed.

1. There is industrial property in Galt City, Not necessarily an industrial park. It is in an area with asphalt plants, concrete facilities, rock storage areas, landfill, etc. We do not market this area for new industry
2. The following is a link to some more detailed park information http://www.teamsantarosa.com/buildings_industrial.php
3. Northwood Park is a single parcel on Hwy 90 just west of Hwy 87 south. It is not developed and has no employees
4. Pace Industrial Area: This is the area surrounding Air Products, Taminco and Sterling Fiber in south Pace. We have only brought in one new business since we began marketing it last year and the entire area has approximately 100 employees
5. Pullum Park in now the Northwest Florida Industrial Park at 1-10 and has just come on line this year, no employees.
6. Santa Rosa Industrial Park. This is the original industrial park for Santa Rosa County. It has approximately 25 businesses and over 2,000 employees. It is located north of Hwy 90 and the entrance is at the intersection of Hwy 90 and Hwy 87 south
7. Whiting Aviation Park. This Park is under construction as I type. It has no businesses in at this time and is located adjacent to and to the southeast of NAS Whiting Field

I am not able to get you the GIS files at this time as I would have to generate the all, and am pressed on a project due this week. Hopefully this will meet your needs.

From: Lixin Huang [mailto:lhuang@atectrans.com]
Sent: Monday, June 14, 2010 4:01 PM
To: Cindy Anderson
Subject: FW: Industrial Parks in Santa Rosa County

Dear Ms Anderson,

Lei Cai

From: Lixin Huang
Sent: Friday, June 18, 2010 5:13 PM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: Exitsing Land use GIS File
Attachments: image001.gif; SantaRosa_LandUse_Map_2009.jpg

Lei,

The following is the description of the existing (2009) land use GIS file obtained from Florida Geographic Data Library (FGDL). Attached please find the map. If you have any questions, please let me know. Thanks.

This dataset contains generalized land use derived from parcel specific land use for Florida Department of Transportation (FDOT) District 3. The original 99 land use classes from the parcel data have been collapsed into 15 generalized classes.

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Lei Cai

From: Lixin Huang
Sent: Thursday, June 24, 2010 10:05 AM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: Summaries of Existing and Furture Land Use in Preliminary Area of Influence
Attachments: image001.gif

Lei,

The Excel files of summary tables of existing and future land use in preliminary area of Influence (SantaRosa_Exising_LandUse_PreliminaryAreaOfInfluence.xlsx and SantaRosa_Future_LandUse_PreliminaryAreaOfInfluence.xlsx) can be found at Q:\SR 87\9_Analysis Tables. The percentage in the summary tables was calculated by dividing the area of each land use category by the area of total land use in the preliminary area of influence. If you have any questions, please let me know.

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Lei Cai

From: Lixin Huang [lhuang@atectrans.com]
Sent: Wednesday, June 23, 2010 11:50 AM
To: Lei Cai
Subject: FW: Santa Rosa County Future Land Use Map and Existing Land Use Map
Attachments: garcon-poly.shx; garcon-poly.dbf; garcon-poly.prj; garcon-poly.sbn; garcon-poly.sbx; garcon-poly.shp; garcon-poly.shp.xml; 2008-2025 Comp Plan.pdf

Lei,

This is the response from Mary Ann Vance in Santa Rosa County regarding the questions on the land use category. I hope it helps. If you still have questions, I can help you call her to get the answers.

Lixin

From: Mary Ann Vance [mailto:MaryV@santarosa.fl.gov]
Sent: Wednesday, June 23, 2010 11:19 AM
To: Lixin Huang
Cc: Nancy Model
Subject: RE: Santa Rosa County Future Land Use Map and Existing Land Use Map

Good Morning Lixin,

Public Owned Property is comprised of a variety of owners .. State (DOT, DEP), County and Water Management District. Silviculture are those lands used primarily in the growth of trees (again, this is determined by the Property Appraiser's Primary Use Code which we use to derive existing land use).

GP = Garcon Point. We have an overlay called the Garcon Point Protection Area. This is an environmentally sensitive area and has additional restrictions to protect the area. I've attached a shapefile which defines the boundary. The comprehensive plan further defines the protections afforded this area.

Navarre Beach is another area where we have separate and more restrictive regulations governing development. I've attached our comprehensive plan - chapter 3 defines each future land use category and the associated density. In the particular case of NB Medium High Density Residential the density is allowed based on platted lot whereas in the Navarre Beach Medium and High Density Residential FLUM categories density is based on acreage. As you can see, this answer doesn't really say yes or no because one would need to do some calculations on the area to determine actual density comparisons between the categories.

We also have some other area's of the county where we have limits and/or restrictions and goals that define development. I think we should chat a little about your project to insure that you have all the data and information you need to accurately analyze transportation within Santa Rosa County. Please feel free to call me at your convenience. I'm usually in the office between 8:00 and 4:30 central time; however, today I will be departing at 2:00.

Sincerely,

Mary Ann

From: Lixin Huang [mailto:lhuang@atectrans.com]
Sent: Wednesday, June 23, 2010 9:03 AM
To: Mary Ann Vance
Subject: RE: Santa Rosa County Future Land Use Map and Existing Land Use Map

Ms Vance,

Thanks for all your help on providing us with existing and future land use GIS maps. We reviewed the maps and have some questions the land use category. I would appreciate it if you could provide me with the answers to the following questions.

Existing Land Use Map Legend

Public Owned Property (POP) (Does this category mean the lands are owned by Santa Rosa County?)
Silviculture (SILVICUL) (What does Silvviculture mean?)

Future Land Use Map Legend

GP SINGLE FAMILY RESIDENTIAL (GPSFR) (What does GP mean?)
GP RURAL RESIDENTIAL (GPRR) (What does GP mean?)
NAVARRE BEACH MEDIUM/HIGH DENSITY RESIDENTIAL (NBMHDR) (Does this category mean the density is between medium and high?)

Lixin Huang, EI, GISP
Transportation Engineering Analyst / GIS Professional
Advanced Transportation Engineering Consultants
12905 SW 42 St Suite 208
Miami, FL 33175
(305) 480-9938 Office
(305) 480-9964 Fax

From: Mary Ann Vance [mailto:MaryV@santarosa.fl.gov]
Sent: Tuesday, June 22, 2010 9:35 AM
To: Lixin Huang
Subject: RE: Santa Rosa County Future Land Use Map and Existing Land Use Map

Future land use is for the planning period of 2008-2025 and includes land use change amendments that have been approved to date. It is our policy to create a new existing land use layer every six months if we have updated parcel data. Here is the disclaimer from the Property Appraiser's website ..I would agree with you that the assessments are based on 2009 Tax Roll but that the parcel line data is current to March 2010.

If you need further clarification I can get with Nancy and get her opinion .. she is out of the office at the moment but will return later.

Disclaimer

The Santa Rosa County Property Appraiser and staff are constantly working to provide and publish the most current and accurate information possible. No warranties, expressed or implied are provided for the data herein, its use, or its interpretation. The current assessed values as viewed herein **are 2009 Certified Values,** the data elements are current as of **March 5, 2010**.

Again, one must remember that the primary use of the assessment data contained herein is for general public information. No responsibility or liability is assumed for inaccuracies or errors. Please govern yourself accordingly.

The 2009 Tax Roll was Certified on October 16, 2009.

Mary Ann Vance, GISP
Community Planning, Zoning and
Development Division
6051 Old Bagdad Highway, Suite 201
Milton, FL 32583
(850) 981-7081; (850) 983-9874 (Fax)
maryv@santarosa.fl.gov

From: Lixin Huang [mailto:lhuang@atectrans.com]
Sent: Tuesday, June 22, 2010 8:20 AM
To: Mary Ann Vance
Subject: RE: Santa Rosa County Future Land Use Map and Existing Land Use Map

Ms Vance,

Thanks for your prompt reply. Based on my understanding, the existing land use is for the year of 2009. For the future land use, it is for the year of 2030. Please let me know if my understanding is correct. Your help is greatly appreciated.

Lixin

From: Mary Ann Vance [mailto:MaryV@santarosa.fl.gov]
Sent: Tuesday, June 22, 2010 9:10 AM
To: Lixin Huang
Subject: RE: Santa Rosa County Future Land Use Map and Existing Land Use Map

Good morning Lixin,

The existing land use layer was created in April 2010 based upon the most recent parcel data provided to us by the Santa Rosa County Property Appraiser. As you probably know, they assign a use code based on their interpretation of the current use of the parcel and we also use this coding schema to assign the existing land use code. The future land use layer was last updated on May 20, 2010.

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Development Division
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(850) 981-7081; (850) 983-9874 (Fax)
maryv@santarosa.fl.gov

From: Lixin Huang [mailto:lhuang@atectrans.com]
Sent: Monday, June 21, 2010 4:26 PM
To: Mary Ann Vance
Cc: Nancy Model
Subject: RE: Santa Rosa County Future Land Use Map and Existing Land Use Map

Ms Vance,

Lei Cai

From: Lixin Huang
Sent: Friday, July 02, 2010 4:53 PM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: RE: My comments for "Things Need to Be Verified"
Attachments: image001.gif

Lei,

The following is my response.

- **Hotel in TAZ 464**: The hotel in TAZ 464 was contacted by phone. It is actually a boarding house (Refer to http://en.wikipedia.org/wiki/Boarding_house for more information). It has eight rooms for rent.

- **TAZ 576**: In NWFRPM 2006, all the values in ZDATA for TAZ 576 are zero. GIS was used to analyze the residential units in TAZ 576 by using the property parcel 2006 and 2009 GIS data. There were two single family units in TAZ 576 and no multi-family units by using property parcel 2006 GIS data. There were two single family units and one mobile home unit in TAZ 576, and no multi-family units by using property parcel 2009 GIS data. GIS was also used to analyze the employment, population, school, and hotel. It was found that there the population in TAZ 576 was 12 based on the Census 2000 GIS data There were no employment, school, and hotel in TAZ 576 based on the InfoUSA 2007 GIS data, School 2008 GIS data, and Hotel 2008 GIS data, respectively. TAZ 576 may be ignored since it has little impact on the model results. By the way, TAZs 882 and 883 are located in Okaloosa County.

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| p: 305.480.9938 | f: 305.480.9964 | www.atectrans.com

From: Lei Cai
Sent: Friday, July 02, 2010 3:46 PM
To: Lixin Huang
Cc: Fadi Emil Nassar
Subject: My comments for "Things Need to Be Verified"

Lixin,

(1) Please give a call to the hotel in TAZ 464.

(2) Can we find any information about population and employment for TAZs 576, 882 and 883 through other sources? Maybe the socio-economic data of TAZ 883 in the NWFRPM model include those data for TAZ 576.

(3) The intersection of SR 87S and Hickory Hammock Rd is outside of our study boundary and has already been confirmed by the staff in the County.

Thanks.

Lei

From: Lixin Huang
Sent: Friday, July 02, 2010 1:51 PM
To: Lei Cai
Cc: Fadi Emil Nassar
Subject: Things Need to Be Verified

Lei,

There are a few things which need to be verified as shown in the following. If you have any questions, please let me know.

- **Hotel Discrepancy**: There is one hotel in TAZ 464 with capacity of 8 persons shown in the Hotel 2008 GIS data. Please see the attached Excel file (Hotels_Not_Found_in_NWFRPM2006.xlsx) for more information. The ZDATA file for NWFRPM 2006 shows that there is no hotel in TAZ 464.

- **TAZ 576**: Highway network file for NWFRPM 2006 was reviewed by using Viper. It was found that the boundary of TAZ 576 was defined in TAZ Boundary Shapefile (Q:\SR 87\NWFRPM1.1\Shapes\2006_NWFRP_Model_TAZs_updated.shp) for NWFRPM 2006. There is no centroid defined for TAZ 576. The attached PDF file shows the location of TAZ 576 and no centroid is defined for TAZ 576.

- **Intersection of SR 87S and Hickory Hammock Rd**: This intersection is equipped with a flashing light. It is not a signalized intersection. The attached PDF file (SR 87S and Hickory Hammock Rd.pdf) was captured from Google Street View on of 07/02/2010. It shows that this intersection is a flashing light intersection. It was also confirmed by Stephen Furman in Santa Rosa County.

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Lei Cai

From: Lixin Huang
Sent: Friday, July 23, 2010 6:04 PM
To: Fadi Emil Nassar
Cc: Lei Cai
Subject: 2025 & 2035 Model Input Data Verification
Attachments: image001.gif

Fadi,

I verified 2025 and 2035 model input data. The following is the verification result.

School enrollment data was verified at TAZ level. The school enrollment data is from ULAM report dated January 2010. The Excel spreadsheet can be found at "**Q:\SR 87\9_Analysis Tables\Comparison & Verification\School_2025_Verification.xlsx**" and "**Q:\SR 87\9_Analysis Tables\Comparison & Verification\School_2035_Verification.xlsx**".

There are only the county-wide population, employment, and hotel unit 2025 & 2035 data available in ULAM report dated January 2010. However, I found that the county-wide population, employment, and hotel unit data for Escambia County (Appendix A-1) and Santa Rosa County (Appendix A-2) are all the same. It is hard to tell if the data is for Santa Rosa County or Escambia County. It also seems to me that those numbers are much larger than those in NWFRPM 2025 and 2035. Therefore, the verification of population, employment, and hotel unit was not done due to the data errors in the ULAM report dated January 2010.

By the way, the base year (2006) model input data verification results can be found at "**Q:\SR 87\9_Analysis Tables\Comparison & Verification\ATEC-ZDATA-INT-NWFRPM-06-2035-MAY-2010s Comparison 2006.xls**". The memo for the verification can be found at "**Q:\SR 87\8_Internal Memo\Lixin\Memo - Residential Units and Employment Comparison 2006 - 2010_07_01.docx**".

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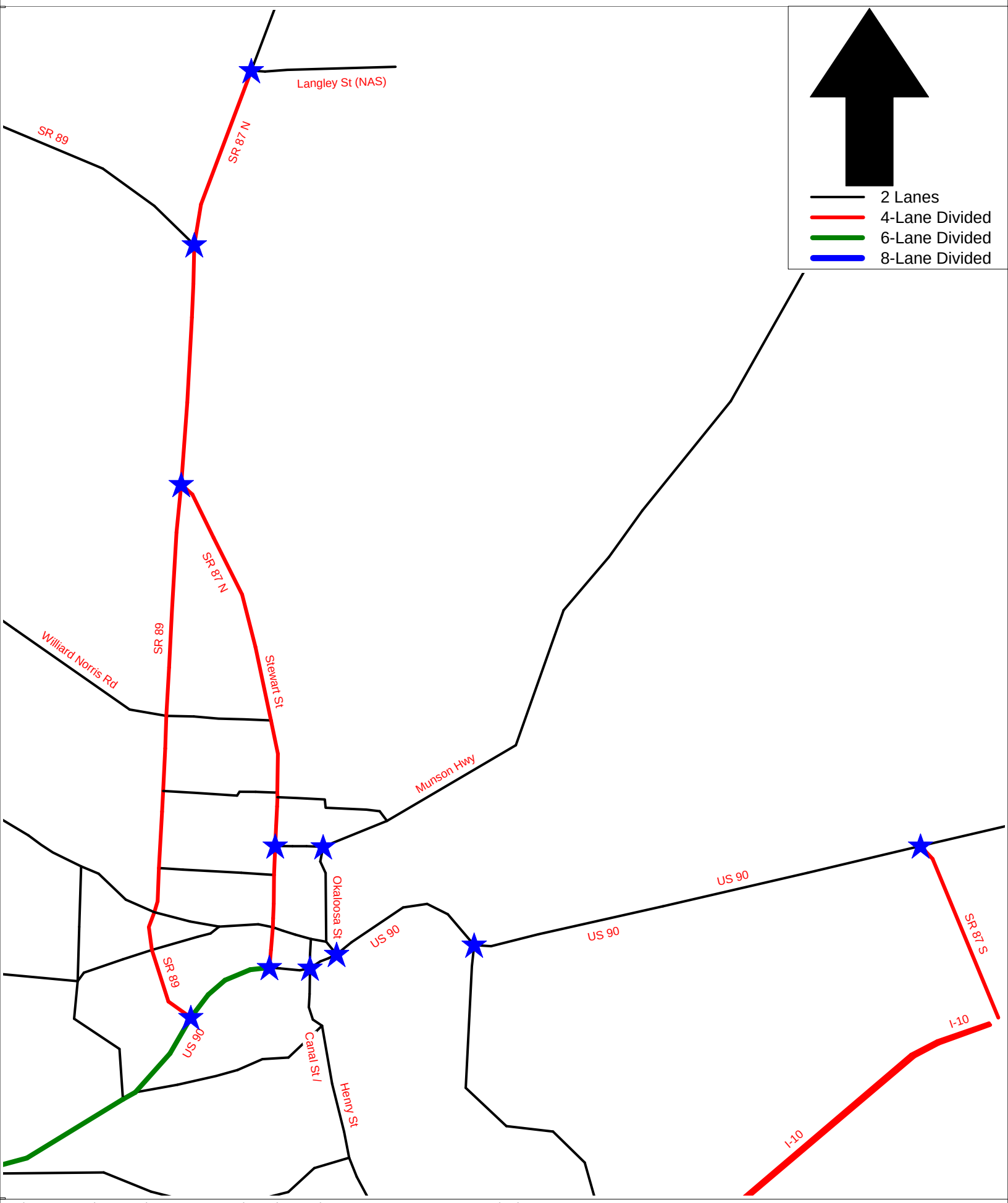
Appendix: C

Future Daily Volume Projections

NWFRPM 2035 - NO BUILD ALTERNATIVE
STUDY INTERSECTIONS



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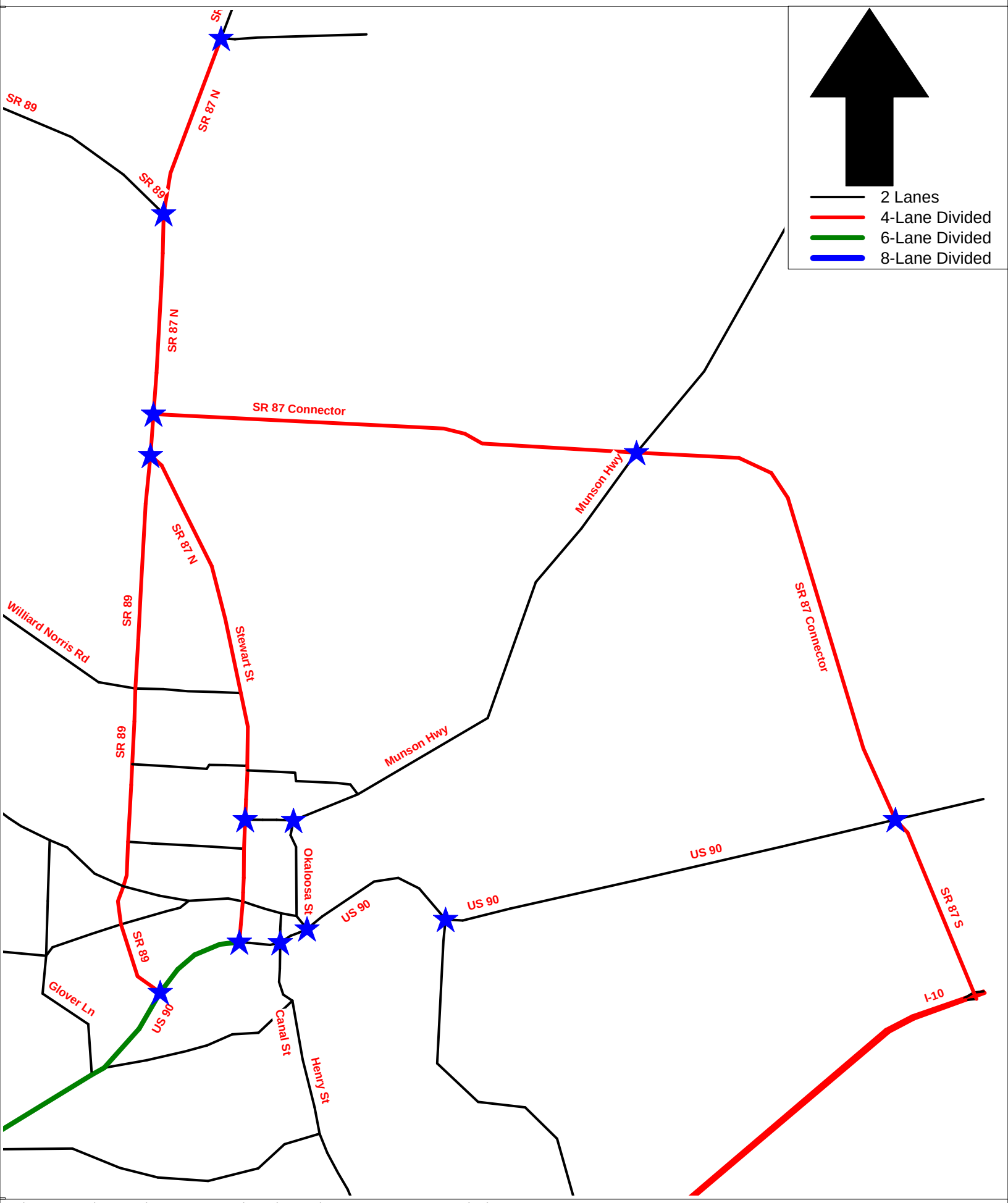
cube

Licensed to Metric Engineering Inc.

NWFRPM 2035 - CORRIDOR 1
STUDY INTERSECTIONS



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cube

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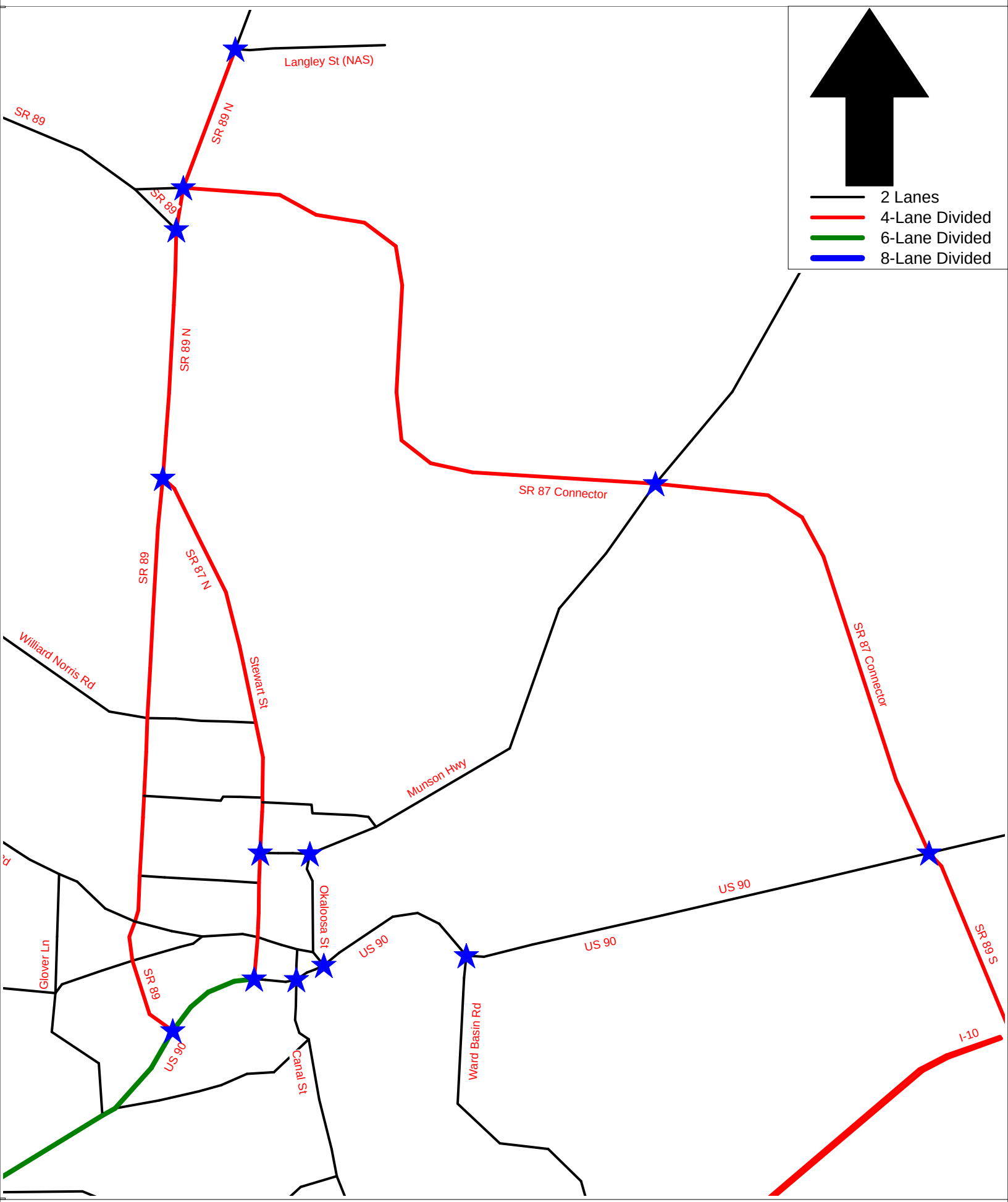
NWRPM 2035 - CORRIDOR 2
STUDY INTERSECTIONS



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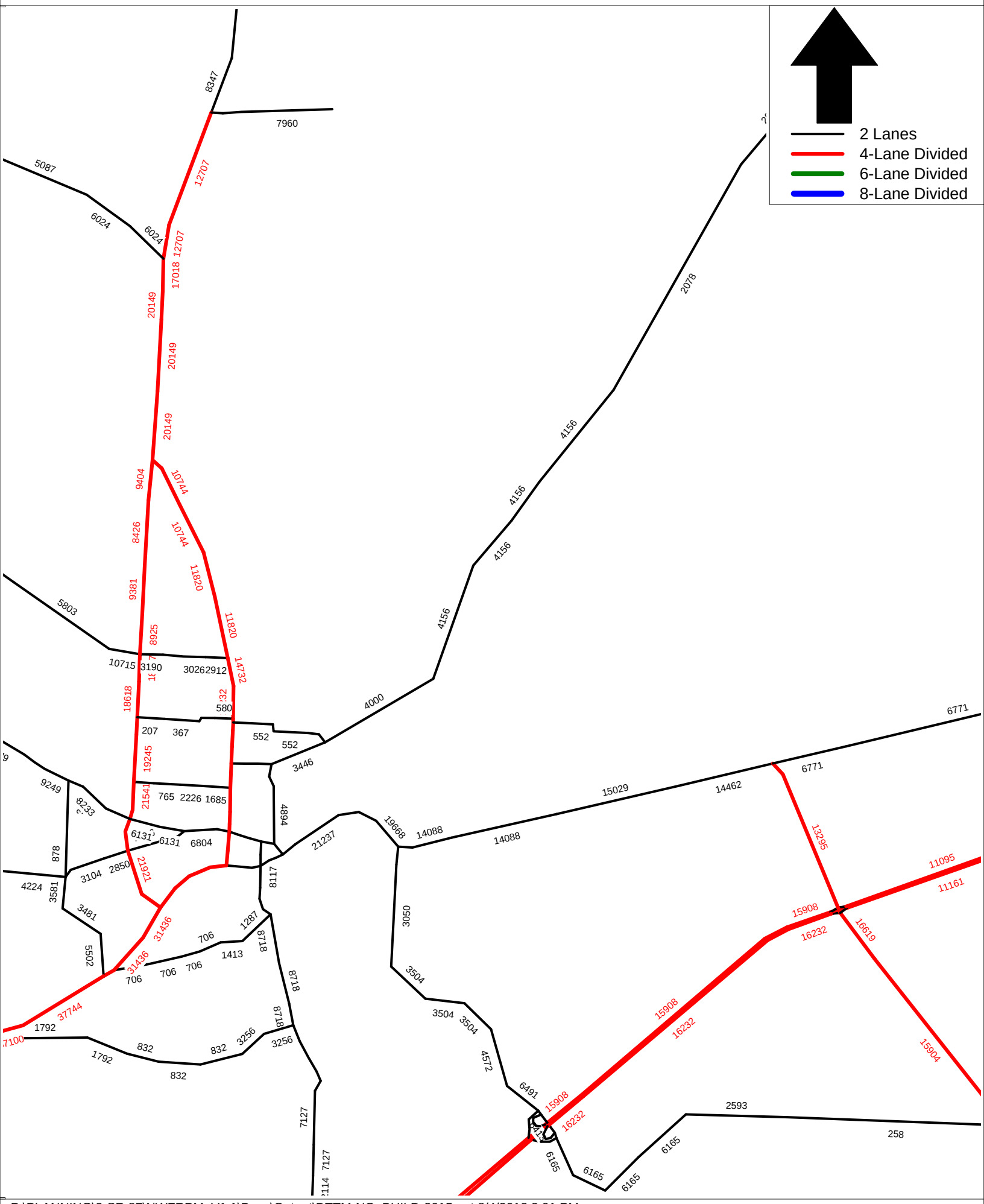
NWFRPM 2015 - NO BUILD ALTERNATIVE - 2-WAY AADTs



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cube

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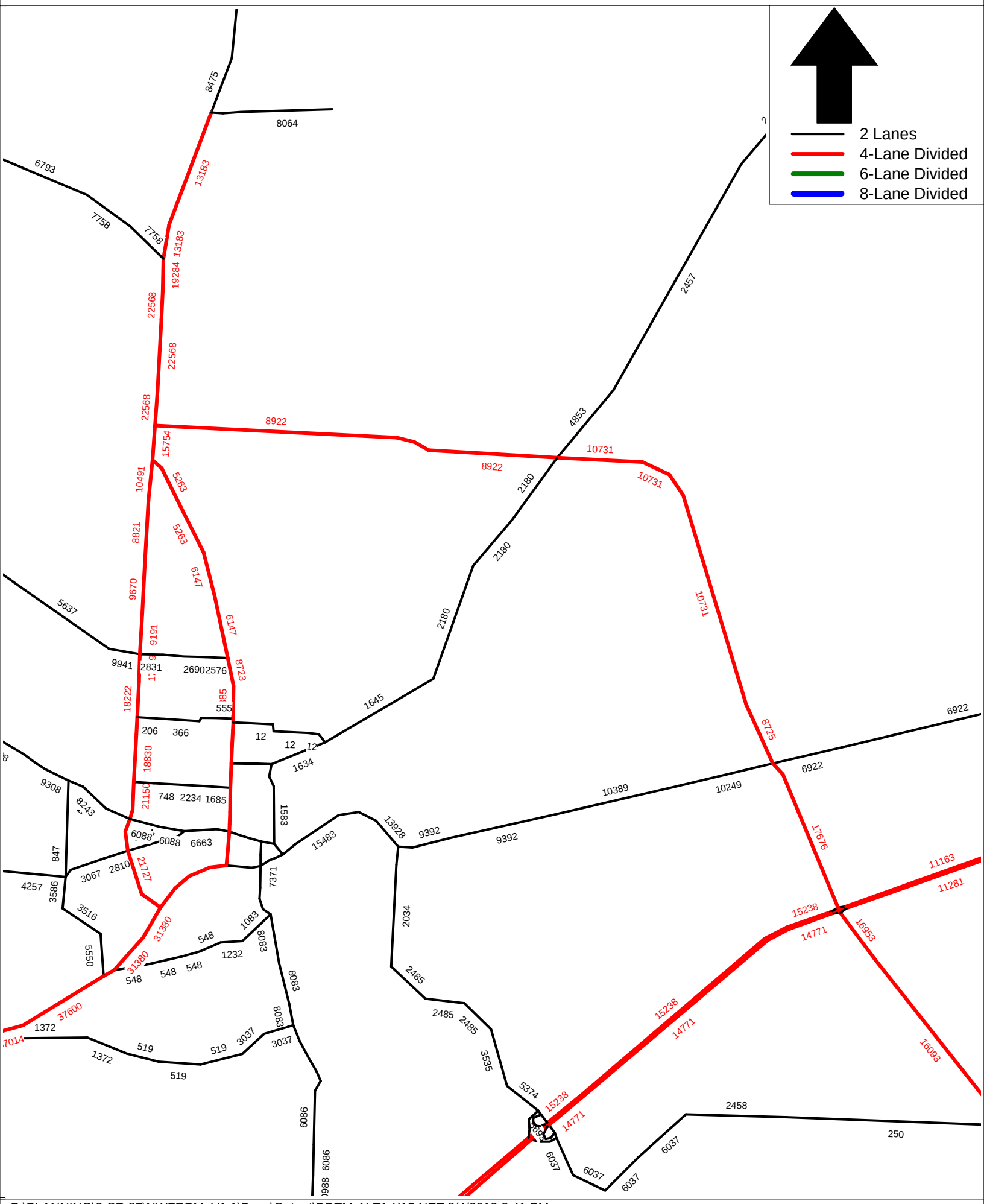
NWFRPM 2015X - ALTERNATIVE 1 - 2-WAY AADTs



P:\PLANNING\2-SR 87\NWFRPM_V1.1\Base\Output\DDTM-ALT1-X15.NET 8/4/2012 2:41 PM

cube

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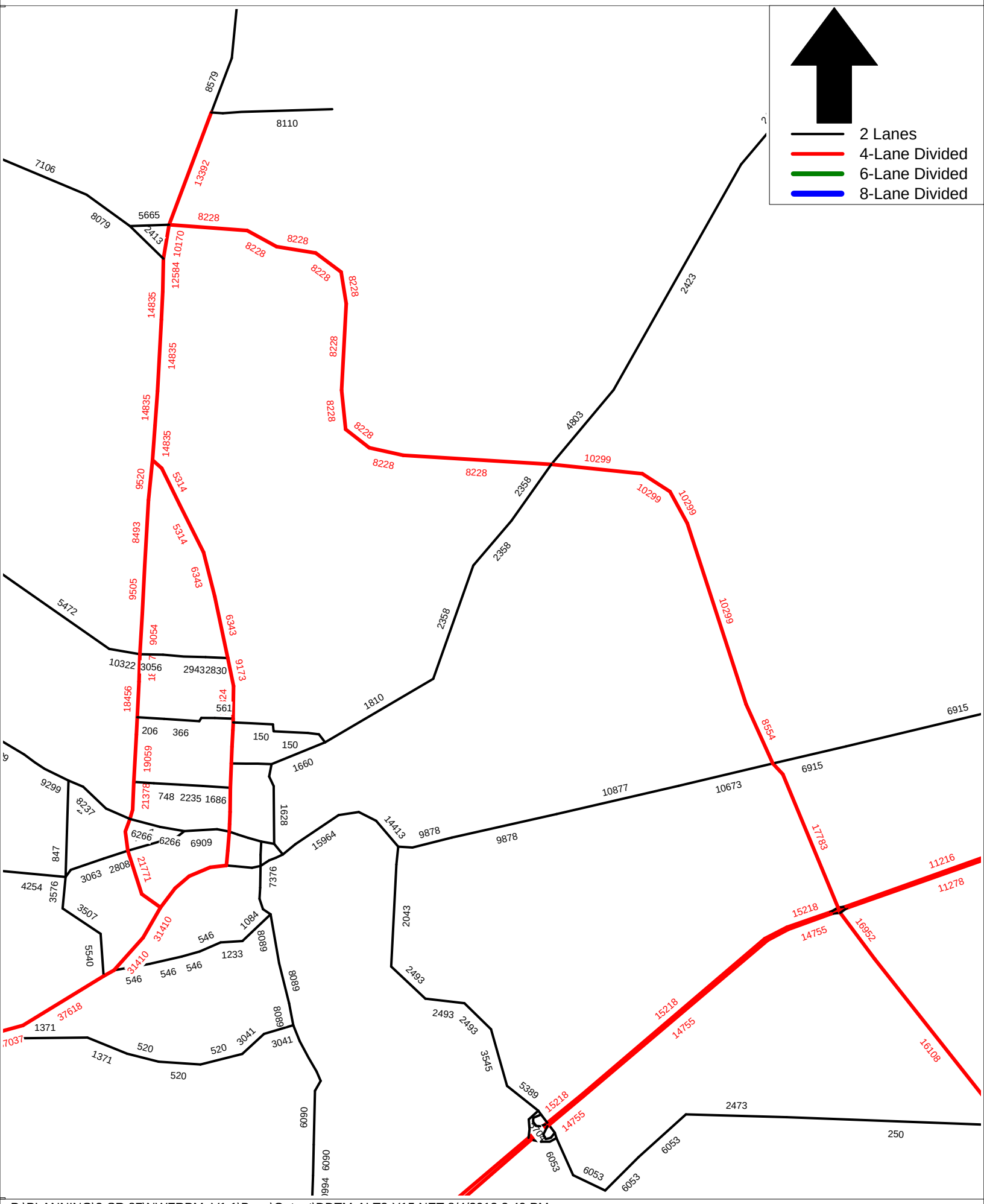
NWFRPM 2015Y - ALTERNATIVE 2 - 2-WAY AADTs



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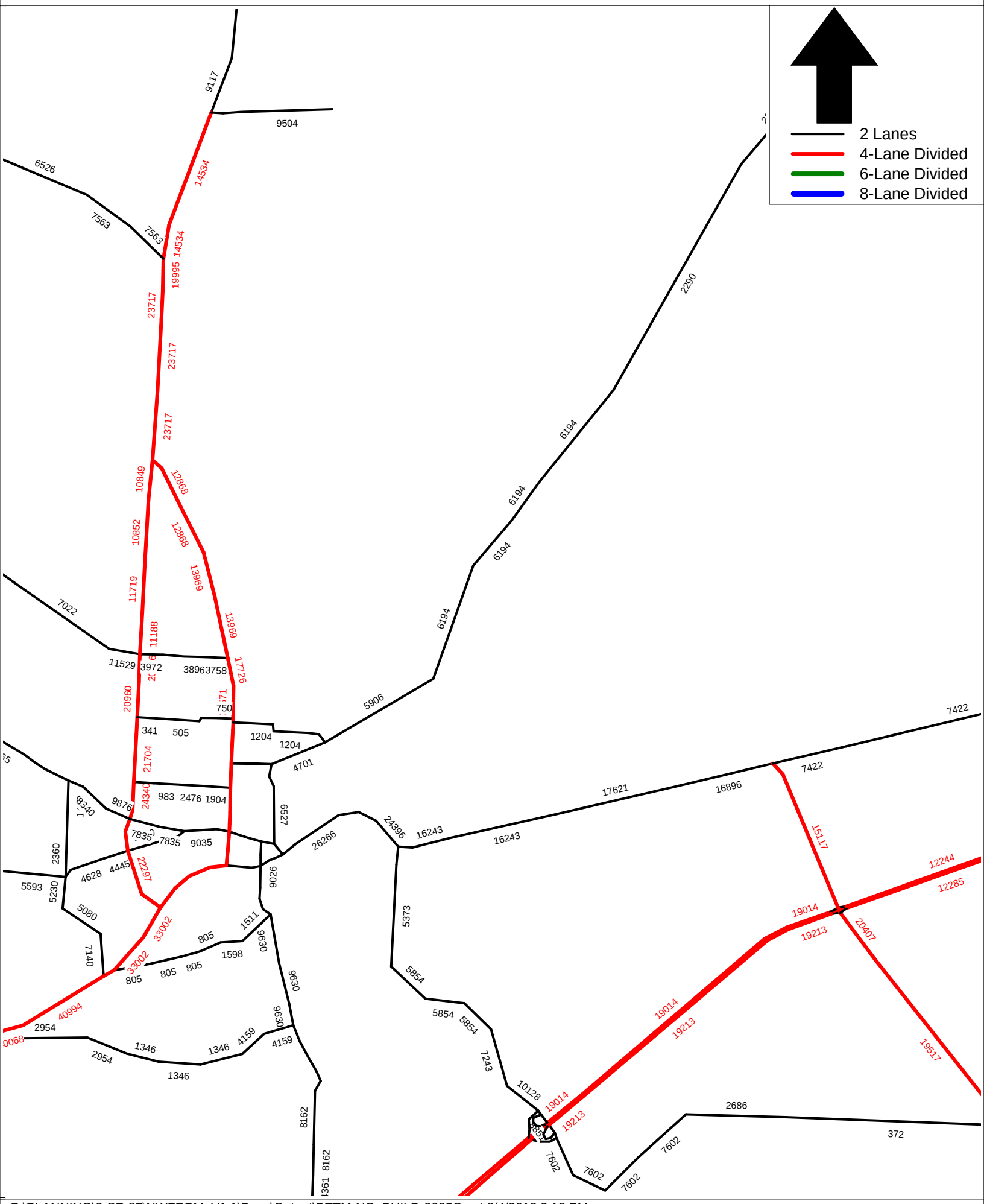
NWFRPM 2025 - NO BUILD ALTERNATIVE - 2-WAY AADTs



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cube

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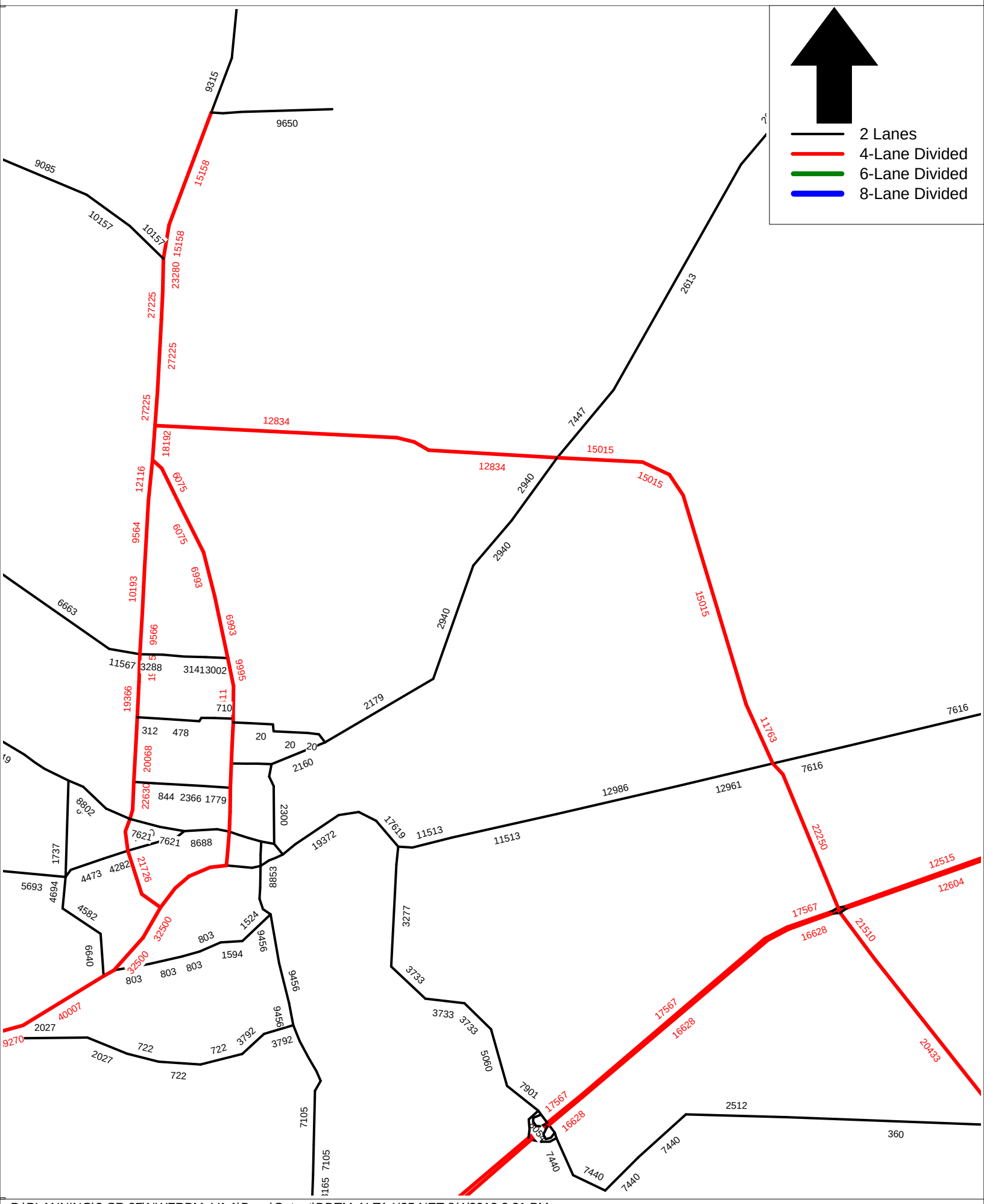
NWFRPM 2025X - ALTERNATIVE 1 - 2-WAY AADTs



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cube

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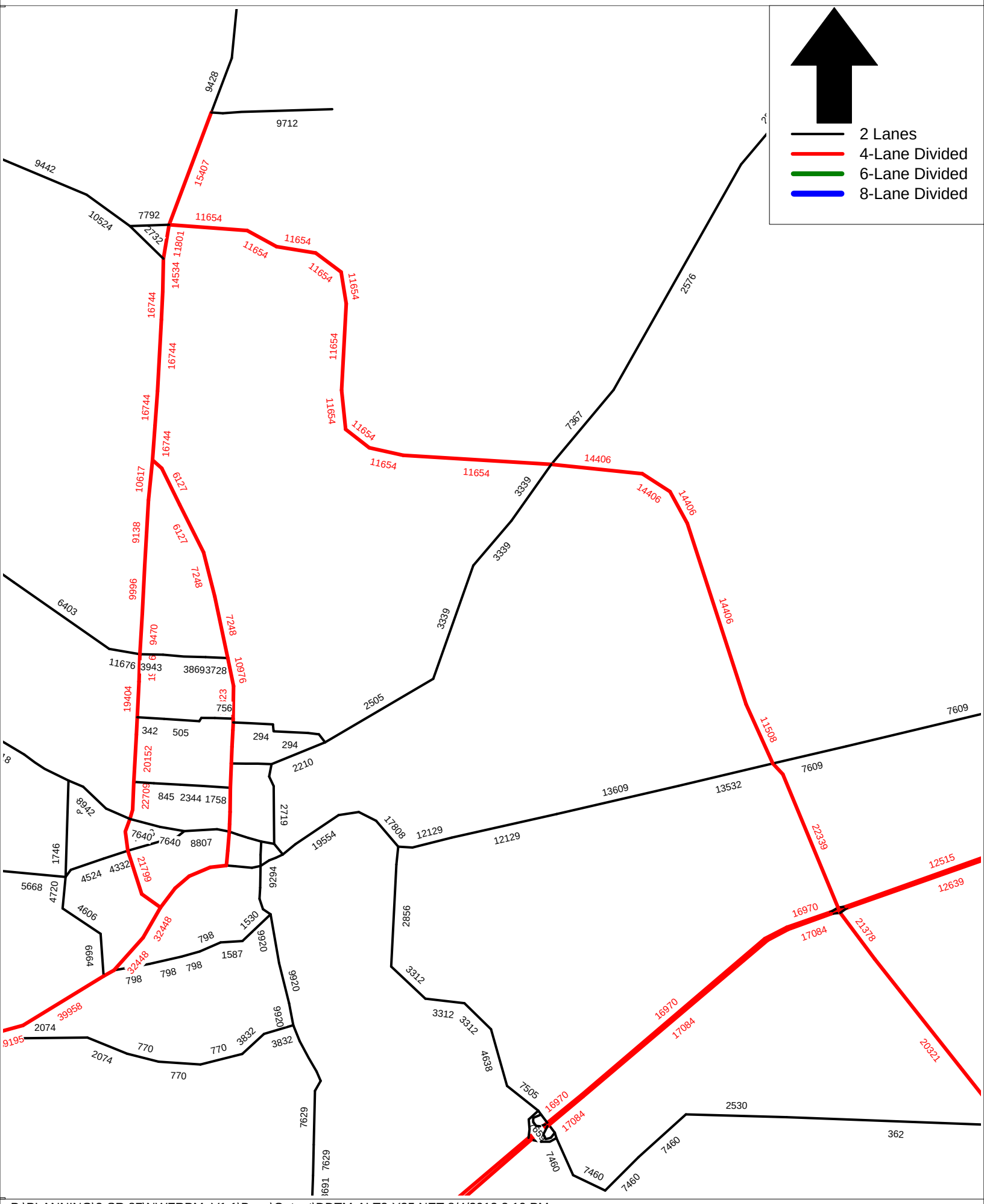
NWFRPM 2025Y - ALTERNATIVE 2 - 2-WAY AADTs



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cube

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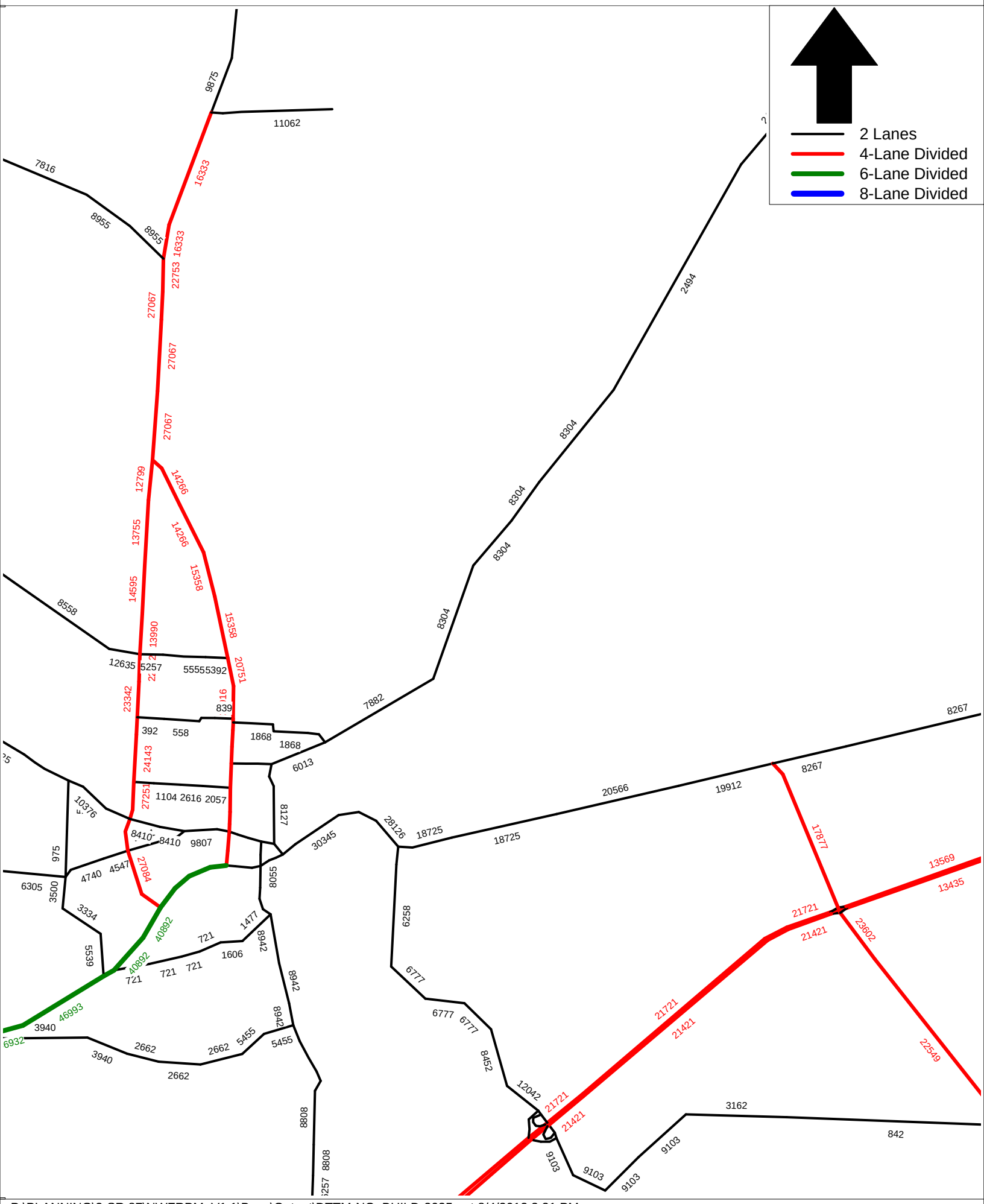
NWFRPM 2035 - NO BUILD ALTERNATIVE - 2-WAY AADTs



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cube

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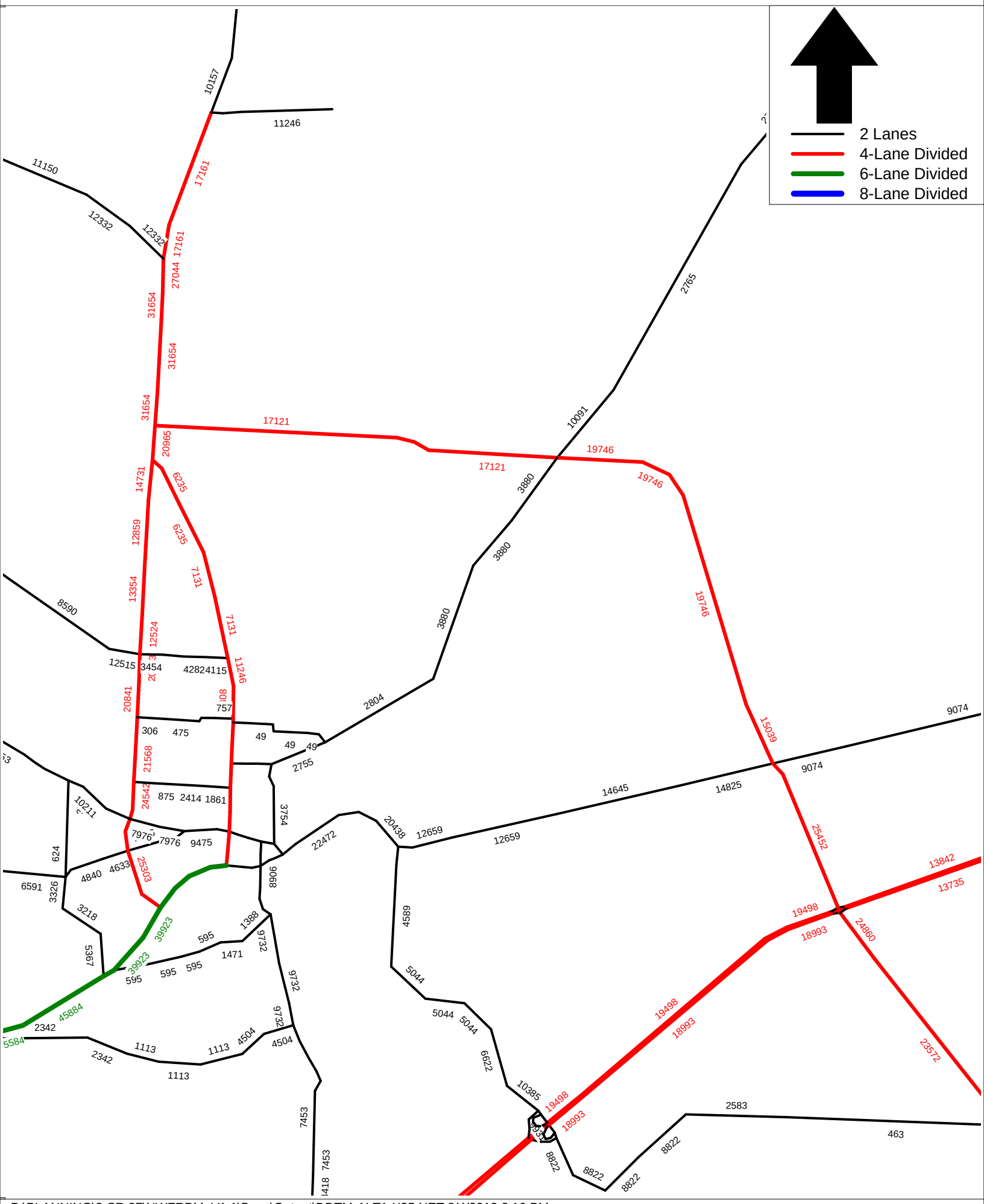
NWFRPM 2035X - ALTERNATIVE 1 - 2-WAY AADTs



P:\PLANNING\2-SR 87\NWFRPM_V1.1\Base\Output\DDTM-ALT1-X35.NET 8/4/2012 2:16 PM

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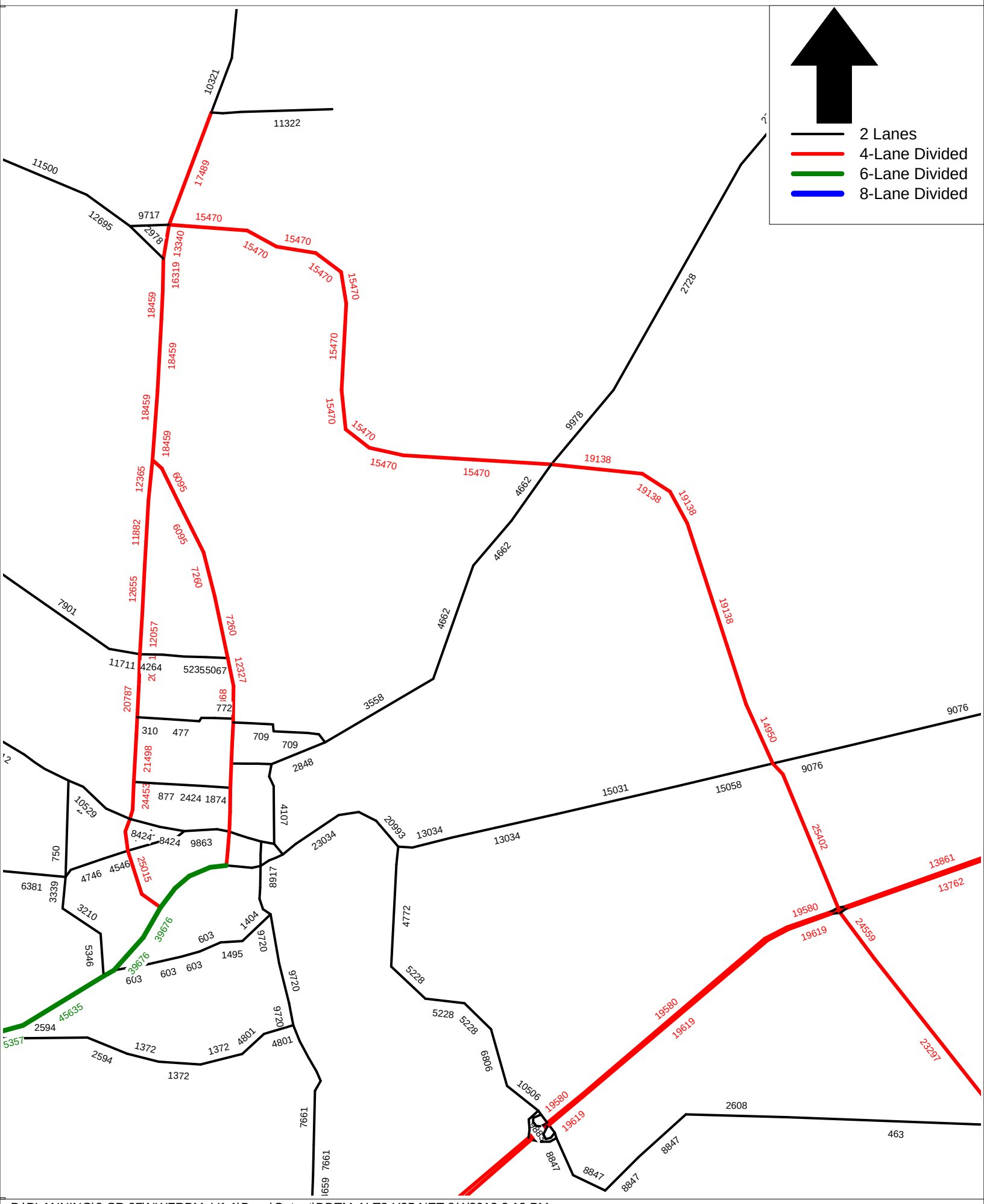
NWFRPM 2035Y - ALTERNATIVE 2 - 2-WAY AADTs



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cube

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Appendix: D

Intersection Turning Movement Balancing Sheets (TMTOOL)

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#1 - US 90 at SR 87 S - NO BUILD		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	5,380		5,800		9,700		13,000		33,880	
Open AADT:	2015	5,649		6,771		13,295		14,462		40,177	18.6%
Interim AADT:	2025	6,496		7,422		15,117		16,896		45,931	35.6%
Design AADT:	2035	7,513		8,267		17,877		19,912		53,569	58.1%
Future AADT:	2035	7,513		8,267		17,877		19,912		53,569	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.34%		1.43%		2.48%		1.72%	
Recommended Growth Rate:	**1.34%**	**CGR**	**1.43%**	**CGR**	**2.48%**	**CGR**	**1.72%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		5,380		5,800		9,700		13,000
NO. YEARS	5	2015	1.069	5,649	1.073	6,771	1.130	13,295	1.089	14,462
NO. YEARS	15	2025	1.222	6,496	1.237	7,422	1.443	15,117	1.292	16,896
NO. YEARS	25	2035	1.396	7,513	1.425	8,267	1.843	17,877	1.532	19,912

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		5,380			5,800			9,700			13,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	13,000	9,700	5,800	5,380	13,000	9,700	5,800	5,380	13,000	9,700	5,800	5,380
	46%	34%	20%	19%	46%	35%	24%	22%	54%	46%	28%	26%
2015 2-WAY ADT		5,649			6,771			13,295			14,462		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	14,462	13,295	6,771	5,649	14,462	13,295	6,771	5,649	14,462	13,295	6,771	5,649
	42%	39%	20%	17%	43%	40%	25%	21%	54%	52%	26%	22%
2025 2-WAY ADT		6,496			7,422			15,117			16,896		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	16,896	15,117	7,422	6,496	16,896	15,117	7,422	6,496	16,896	15,117	7,422	6,496
	43%	38%	19%	17%	44%	39%	24%	21%	55%	52%	26%	22%
2035 2-WAY ADT		7,513			8,267			17,877			19,912		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	19,912	17,877	8,267	7,513	19,912	17,877	8,267	7,513	19,912	17,877	8,267	7,513
	43%	39%	18%	17%	44%	39%	23%	21%	56%	53%	25%	22%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	538			491			782			961			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	67	65	11	38	179	80	63	168	232	174	120	189	1,386
% TURNS:	47%	45%	8%	13%	60%	27%	14%	36%	50%	36%	25%	39%	
P.M.	2-Way Pk Hr Vol:	279			557			882			1,050			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	100	117	22	2	164	96	81	16	266	306	192	22	1,384
% TURNS:	42%	49%	9%	1%	63%	37%	22%	4%	73%	59%	37%	4%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	47%	45%	8%	13%	60%	27%	14%	36%	50%	36%	25%	39%
	2015	46%	45%	9%	13%	59%	28%	15%	35%	50%	38%	25%	37%
	2025	46%	45%	9%	13%	58%	28%	15%	34%	51%	38%	25%	37%
	2035	46%	44%	9%	13%	58%	29%	15%	34%	51%	39%	25%	36%
P.M.													
	2010	42%	49%	9%	1%	63%	37%	22%	4%	73%	59%	37%	4%
	2015	42%	48%	10%	2%	61%	37%	23%	6%	71%	58%	36%	6%
	2025	42%	48%	10%	3%	60%	37%	23%	6%	71%	58%	36%	6%
	2035	42%	47%	11%	3%	59%	37%	22%	7%	70%	58%	35%	7%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #1 - US 90 at SR 87 S - NO BUILD

Advanced Transportation Engineering Consultants

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	5,380	5,800	9,700	13,000
24 HR EST. AADT	2015	5,649	6,771	13,295	14,462
24 HR EST. AADT	2025	6,496	7,422	15,117	16,896
24 HR EST. AADT	2035	7,513	8,267	17,877	19,912

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2015	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2025	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2035	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2015	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2025	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2035	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%

#1 - US 90 at SR 87 S - NO BUILD

A.M. DESIGN HR. TURNS		NORTH LEG RIGHT	NORTH LEG THRU	NORTH LEG LEFT	EAST LEG RIGHT	EAST LEG THRU	EAST LEG LEFT	SOUTH LEG RIGHT	SOUTH LEG THRU	SOUTH LEG LEFT	WEST LEG RIGHT	WEST LEG THRU	WEST LEG LEFT
2010	Actual TMC - AM	67	65	11	38	179	80	63	168	232	174	120	189
2010	EST. TURNS	67	65	11	38	179	79	63	169	231	173	119	190
2015	EST. TURNS	63	66	15	39	169	125	95	211	302	243	113	160
2025	EST. TURNS	75	75	18	43	191	135	103	240	356	288	129	194
2035	EST. TURNS	86	85	22	48	211	150	114	277	433	352	141	225
P.M. DESIGN HR. TURNS													
2010	Actual TMC - PM	100	117	22	2	164	96	81	16	266	306	192	22
2010	EST. TURNS	100	117	22	2	165	96	82	16	265	304	194	23
2015	EST. TURNS	97	132	30	4	146	166	140	20	349	414	174	15
2025	EST. TURNS	114	147	36	5	165	173	145	25	405	484	195	21
2035	EST. TURNS	137	165	44	6	182	198	161	27	495	598	212	23

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	NORTH LEG TO	NORTH LEG LINK	EAST LEG FROM	EAST LEG TO	EAST LEG LINK	SOUTH LEG FROM	SOUTH LEG TO	SOUTH LEG LINK	WEST LEG FROM	WEST LEG TO	WEST LEG LINK
CONTROL LINK VOLUMES		143	397	540	297	193	490	463	317	780	483	477	960
2010	TURN SUMMARY	143	397	540	297	193	490	462	317	779	482	477	959
CONTROL LINK VOLUMES		150	410	560	347	223	570	635	435	1070	537	533	1070
2015	TURN SUMMARY	144	410	554	333	223	556	608	435	1043	516	533	1049
CONTROL LINK VOLUMES		173	477	650	380	250	630	722	498	1220	628	622	1250
2025	TURN SUMMARY	168	477	645	369	250	619	700	498	1198	611	622	1233
CONTROL LINK VOLUMES		200	550	750	423	277	700	853	587	1440	740	730	1470
2035	TURN SUMMARY	194	550	744	409	277	686	824	587	1411	718	730	1448

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		239	41	280	262	298	560	363	517	880	520	530	1050
2010	TURN SUMMARY	239	41	280	262	298	560	364	517	881	521	530	1051
CONTROL LINK VOLUMES		251	39	290	306	344	650	498	712	1210	578	592	1170
2015	TURN SUMMARY	260	39	299	316	344	660	508	712	1220	603	592	1195
CONTROL LINK VOLUMES		289	51	340	335	375	710	566	804	1370	676	684	1360
2025	TURN SUMMARY	297	51	348	343	375	718	574	804	1378	700	684	1384
CONTROL LINK VOLUMES		334	56	390	373	417	790	669	961	1630	796	814	1610
2035	TURN SUMMARY	346	56	402	386	417	803	683	961	1644	833	814	1647

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#1 - US 90 at SR 87 S - CORRIDOR 1		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	5,380		5,800		9,700		13,000		33,880	
Open AADT:	2015	8,725		6,922		17,676		10,249		43,572	28.6%
Interim AADT:	2025	11,763		7,616		22,250		12,961		54,590	61.1%
Design AADT:	2035	15,039		9,074		25,452		14,825		64,390	90.1%
Future AADT:	2035	15,039		9,074		25,452		14,825		64,390	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	4.20%		1.81%		3.93%		0.53%	
Recommended Growth Rate:	**4.20%**	**CGR**	**1.81%**	**CGR**	**3.93%**	**CGR**	**0.53%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		5,380		5,800		9,700		13,000
NO. YEARS	5	2015	1.228	8,725	1.094	6,922	1.213	17,676	1.027	10,249
NO. YEARS	15	2025	1.853	11,763	1.308	7,616	1.784	22,250	1.082	12,961
NO. YEARS	25	2035	2.795	15,039	1.564	9,074	2.624	25,452	1.140	14,825

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010	2-WAY ADT	5,380			5,800			9,700			13,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	13,000	9,700	5,800	5,380	13,000	9,700	5,800	5,380	13,000	9,700	5,800	5,380
	46%	34%	20%	19%	46%	35%	24%	22%	54%	46%	28%	26%
2015	2-WAY ADT	8,725			6,922			17,676			10,249		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	10,249	17,676	6,922	8,725	10,249	17,676	6,922	8,725	10,249	17,676	6,922	8,725
	29%	51%	20%	24%	28%	48%	27%	34%	40%	53%	21%	26%
2025	2-WAY ADT	11,763			7,616			22,250			12,961		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	12,961	22,250	7,616	11,763	12,961	22,250	7,616	11,763	12,961	22,250	7,616	11,763
	30%	52%	18%	25%	28%	47%	24%	36%	40%	53%	18%	28%
2035	2-WAY ADT	15,039			9,074			25,452			14,825		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	14,825	25,452	9,074	15,039	14,825	25,452	9,074	15,039	14,825	25,452	9,074	15,039
	30%	52%	18%	27%	27%	46%	23%	39%	38%	51%	18%	30%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	538			491			782			961			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	67	65	11	38	179	80	63	168	232	174	120	189	1,386
% TURNS:	47%	45%	8%	13%	60%	27%	14%	36%	50%	36%	25%	39%	
P.M.	2-Way Pk Hr Vol:	279			557			882			1,050			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	100	117	22	2	164	96	81	16	266	306	192	22	1,384
% TURNS:	42%	49%	9%	1%	63%	37%	22%	4%	73%	59%	37%	4%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	47%	45%	8%	13%	60%	27%	14%	36%	50%	36%	25%	39%
	2015	45%	46%	9%	14%	57%	29%	15%	36%	49%	38%	24%	38%
	2025	45%	46%	9%	14%	56%	29%	15%	36%	49%	38%	24%	38%
	2035	44%	46%	9%	15%	55%	30%	15%	37%	48%	39%	24%	38%
P.M.													
	2010	42%	49%	9%	1%	63%	37%	22%	4%	73%	59%	37%	4%
	2015	41%	49%	10%	3%	59%	38%	23%	7%	70%	58%	35%	6%
	2025	40%	49%	10%	4%	58%	38%	22%	8%	69%	58%	35%	7%
	2035	40%	49%	11%	5%	57%	38%	22%	10%	67%	58%	34%	9%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #1 - US 90 at SR 87 S - CORRIDOR 1

Advanced Transportation Engineering Consultants

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	5,380	5,800	9,700	13,000
24 HR EST. AADT	2015	8,725	6,922	17,676	10,249
24 HR EST. AADT	2025	11,763	7,616	22,250	12,961
24 HR EST. AADT	2035	15,039	9,074	25,452	14,825

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2015	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2025	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2035	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2015	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2025	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2035	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%

#1 - US 90 at SR 87 S - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**67**	**65**	**11**	**38**	**179**	**80**	**63**	**168**	**232**	**174**	**120**	**189**
2010	EST. TURNS	67	65	11	38	179	79	63	169	231	173	119	190
2015	EST. TURNS	69	139	30	56	82	227	149	469	228	220	56	114
2025	EST. TURNS	93	189	45	68	90	250	148	641	294	288	57	158
2035	EST. TURNS	121	246	61	101	112	284	173	788	316	305	71	211
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**100**	**117**	**22**	**2**	**164**	**96**	**81**	**16**	**266**	**306**	**192**	**22**
2010	EST. TURNS	100	117	22	2	165	96	82	16	265	304	194	23
2015	EST. TURNS	69	291	41	4	43	285	251	52	308	373	55	6
2025	EST. TURNS	87	393	56	4	44	312	275	74	401	482	56	8
2035	EST. TURNS	111	482	72	7	56	353	317	93	440	522	70	12

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		143	397	540	297	193	490	463	317	780	483	477	960
2010	TURN SUMMARY	143	397	540	297	193	490	462	317	779	482	477	959
CONTROL LINK VOLUMES		232	638	870	354	236	590	844	586	1430	381	379	760
2015	TURN SUMMARY	238	638	876	364	236	600	847	586	1433	390	379	769
CONTROL LINK VOLUMES		313	867	1180	390	250	640	1062	728	1790	482	478	960
2025	TURN SUMMARY	328	867	1195	408	250	658	1084	728	1812	503	478	981
CONTROL LINK VOLUMES		400	1100	1500	465	305	770	1215	835	2050	551	549	1100
2035	TURN SUMMARY	428	1100	1528	497	305	802	1277	835	2112	587	549	1136

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		239	41	280	262	298	560	363	517	880	520	530	1050
2010	TURN SUMMARY	239	41	280	262	298	560	364	517	881	521	530	1051
CONTROL LINK VOLUMES		388	62	450	313	347	660	661	949	1610	410	420	830
2015	TURN SUMMARY	402	62	464	331	347	678	611	949	1560	434	420	854
CONTROL LINK VOLUMES		523	87	610	344	386	730	833	1187	2020	518	532	1050
2025	TURN SUMMARY	536	87	623	361	386	747	750	1187	1937	546	532	1078
CONTROL LINK VOLUMES		668	112	780	410	460	870	952	1358	2310	593	607	1200
2035	TURN SUMMARY	666	112	778	416	460	876	851	1358	2209	604	607	1211

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#1 - US 90 at SR 87 S - CORRIDOR 2		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	5,380		5,800		9,700		13,000		33,880	
Open AADT:	2015	8,554		6,915		17,783		10,673		43,925	29.6%
Interim AADT:	2025	11,508		7,609		22,339		13,532		54,988	62.3%
Design AADT:	2035	14,950		9,076		25,402		15,058		64,486	90.3%
Future AADT:	2035	14,950		9,076		25,402		15,058		64,486	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	4.17%		1.81%		3.93%		0.59%	
Recommended Growth Rate:	**4.17%**	**CGR**	**1.81%**	**CGR**	**3.93%**	**CGR**	**0.59%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		5,380		5,800		9,700		13,000
NO. YEARS	5	2015	1.227	8,554	1.094	6,915	1.212	17,783	1.030	10,673
NO. YEARS	15	2025	1.846	11,508	1.308	7,609	1.782	22,339	1.092	13,532
NO. YEARS	25	2035	2.779	14,950	1.565	9,076	2.619	25,402	1.158	15,058

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		5,380			5,800			9,700			13,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	13,000	9,700	5,800	5,380	13,000	9,700	5,800	5,380	13,000	9,700	5,800	5,380
	46%	34%	20%	19%	46%	35%	24%	22%	54%	46%	28%	26%
2015 2-WAY ADT		8,554			6,915			17,783			10,673		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	10,673	17,783	6,915	8,554	10,673	17,783	6,915	8,554	10,673	17,783	6,915	8,554
	30%	50%	20%	23%	29%	48%	26%	33%	41%	53%	21%	26%
2025 2-WAY ADT		11,508			7,609			22,339			13,532		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	13,532	22,339	7,609	11,508	13,532	22,339	7,609	11,508	13,532	22,339	7,609	11,508
	31%	51%	18%	24%	29%	47%	23%	35%	41%	54%	18%	28%
2035 2-WAY ADT		14,950			9,076			25,402			15,058		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	15,058	25,402	9,076	14,950	15,058	25,402	9,076	14,950	15,058	25,402	9,076	14,950
	30%	51%	18%	27%	27%	46%	23%	38%	39%	51%	18%	30%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	538			491			782			961			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	67	65	11	38	179	80	63	168	232	174	120	189	1,386
% TURNS:	47%	45%	8%	13%	60%	27%	14%	36%	50%	36%	25%	39%	
P.M.	2-Way Pk Hr Vol:	279			557			882			1,050			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	100	117	22	2	164	96	81	16	266	306	192	22	1,384
% TURNS:	42%	49%	9%	1%	63%	37%	22%	4%	73%	59%	37%	4%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	47%	45%	8%	13%	60%	27%	14%	36%	50%	36%	25%	39%
	2015	45%	46%	9%	14%	57%	29%	15%	36%	49%	38%	24%	38%
	2025	45%	46%	9%	14%	56%	29%	15%	36%	49%	38%	24%	38%
	2035	44%	46%	9%	15%	55%	30%	15%	37%	48%	39%	24%	38%
P.M.													
	2010	42%	49%	9%	1%	63%	37%	22%	4%	73%	59%	37%	4%
	2015	41%	49%	10%	3%	59%	38%	23%	7%	70%	58%	35%	6%
	2025	41%	49%	10%	4%	58%	38%	22%	8%	69%	58%	35%	7%
	2035	40%	49%	11%	5%	57%	38%	22%	10%	67%	58%	34%	9%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #1 - US 90 at SR 87 S - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	5,380	5,800	9,700	13,000
24 HR EST. AADT	2015	8,554	6,915	17,783	10,673
24 HR EST. AADT	2025	11,508	7,609	22,339	13,532
24 HR EST. AADT	2035	14,950	9,076	25,402	15,058

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2015	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2025	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%
2035	Approach K30 factor	10.0%	5.2%	8.5%	9.6%	8.1%	9.1%	7.4%	8.1%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2015	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2025	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%
2035	Approach D30 Factor	26.6%	85.7%	60.5%	47.0%	59.2%	41.2%	50.3%	49.5%

#1 - US 90 at SR 87 S - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**67**	**65**	**11**	**38**	**179**	**80**	**63**	**168**	**232**	**174**	**120**	**189**
2010	EST. TURNS	67	65	11	38	179	79	63	169	231	173	119	190
2015	EST. TURNS	69	134	29	55	86	221	148	460	239	227	59	118
2025	EST. TURNS	93	182	43	64	93	248	148	621	311	304	59	159
2035	EST. TURNS	121	244	61	101	112	284	173	787	317	310	72	215
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**100**	**117**	**22**	**2**	**164**	**96**	**81**	**16**	**266**	**306**	**192**	**22**
2010	EST. TURNS	100	117	22	2	165	96	82	16	265	304	194	23
2015	EST. TURNS	70	283	41	3	45	283	250	50	318	389	57	7
2025	EST. TURNS	89	380	56	5	47	311	271	75	413	504	59	9
2035	EST. TURNS	114	477	73	8	58	352	314	96	446	530	73	13

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		143	397	540	297	193	490	463	317	780	483	477	960
2010	TURN SUMMARY	143	397	540	297	193	490	462	317	779	482	477	959
CONTROL LINK VOLUMES		227	633	860	354	236	590	849	581	1430	397	393	790
2015	TURN SUMMARY	232	633	865	361	236	597	847	581	1428	404	393	797
CONTROL LINK VOLUMES		306	844	1150	390	250	640	1066	734	1800	503	497	1000
2025	TURN SUMMARY	318	844	1162	405	250	655	1080	734	1814	522	497	1019
CONTROL LINK VOLUMES		397	1103	1500	465	305	770	1212	838	2050	559	551	1110
2035	TURN SUMMARY	426	1103	1529	498	305	803	1277	838	2115	597	551	1148

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		239	41	280	262	298	560	363	517	880	520	530	1050
2010	TURN SUMMARY	239	41	280	262	298	560	364	517	881	521	530	1051
CONTROL LINK VOLUMES		380	60	440	312	348	660	665	955	1620	427	433	860
2015	TURN SUMMARY	394	60	454	331	348	679	618	955	1573	453	433	886
CONTROL LINK VOLUMES		511	89	600	344	386	730	836	1194	2030	541	549	1090
2025	TURN SUMMARY	525	89	614	362	386	748	759	1194	1953	572	549	1121
CONTROL LINK VOLUMES		664	116	780	410	460	870	951	1359	2310	602	618	1220
2035	TURN SUMMARY	664	116	780	417	460	877	857	1359	2216	615	618	1233

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#2 - US 90 at Ward Basin Road - NO BUILD		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	240		13,000		5,400		19,700		38,340	
Open AADT:	2015	252		14,088		5,944		20,668		40,952	6.8%
Interim AADT:	2025	290		16,243		8,612		24,396		49,541	29.2%
Design AADT:	2035	335		18,725		9,907		28,126		57,093	48.9%
Future AADT:	2035	335		18,725		9,907		28,126		57,093	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.34%		1.47%		2.46%		1.43%	
Recommended Growth Rate:	**1.34%**	**CGR**	**1.47%**	**CGR**	**2.46%**	**CGR**	**1.43%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		**1**		**1**		**1**
		2010		240		13,000		5,400		19,700
NO. YEARS	5	2015	1.069	252	1.076	14,088	1.129	5,944	1.074	20,668
NO. YEARS	15	2025	1.222	290	1.245	16,243	1.439	8,612	1.238	24,396
NO. YEARS	25	2035	1.396	335	1.440	18,725	1.835	9,907	1.428	28,126

Percent Turns Calculated From Base Year AADTs:

JKTURNS	FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT	240			13,000			5,400			19,700		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	19,700	5,400	13,000	240	19,700	5,400	13,000	240	19,700	5,400	13,000	240
	52%	14%	34%	1%	78%	21%	39%	1%	60%	29%	70%	1%
2015 2-WAY ADT	252			14,088			5,944			20,668		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	20,668	5,944	14,088	252	20,668	5,944	14,088	252	20,668	5,944	14,088	252
	51%	15%	35%	1%	77%	22%	40%	1%	59%	29%	69%	1%
2025 2-WAY ADT	290			16,243			8,612			24,396		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	24,396	8,612	16,243	290	24,396	8,612	16,243	290	24,396	8,612	16,243	290
	50%	17%	33%	1%	73%	26%	40%	1%	60%	34%	65%	1%
2035 2-WAY ADT	335			18,725			9,907			28,126		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	28,126	9,907	18,725	335	28,126	9,907	18,725	335	28,126	9,907	18,725	335
	50%	17%	33%	1%	73%	26%	40%	1%	60%	34%	65%	1%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	23			986			606			1,243			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	2	8	2	1	418	105	60	10	243	180	400	0	1,429
% TURNS:	17%	67%	17%	0%	80%	20%	19%	3%	78%	31%	69%	0%	
P.M.	2-Way Pk Hr Vol:	20			1,185			511			1,550			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	3	3	0	1	555	27	43	9	176	253	559	4	1,633
% TURNS:	50%	50%	0%	0%	95%	5%	19%	4%	77%	31%	69%	0%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	17%	67%	17%	0%	80%	20%	19%	3%	78%	31%	69%	0%
	2015	20%	61%	18%	0%	79%	20%	21%	3%	76%	31%	69%	0%
	2025	21%	61%	19%	0%	79%	21%	22%	3%	75%	31%	68%	0%
	2035	22%	58%	19%	0%	79%	21%	23%	3%	75%	32%	68%	0%
P.M.													
	2010	50%	50%	0%	0%	95%	5%	19%	4%	77%	31%	69%	0%
	2015	50%	46%	3%	0%	93%	6%	21%	4%	75%	31%	69%	1%
	2025	50%	46%	4%	0%	92%	7%	21%	4%	75%	31%	68%	1%
	2035	50%	45%	5%	0%	92%	8%	22%	3%	74%	32%	68%	1%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #2 - US 90 at Ward Basin Road - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	240	13,000	5,400	19,700
24 HR EST. AADT	2015	252	14,088	5,944	20,668
24 HR EST. AADT	2025	290	16,243	8,612	24,396
24 HR EST. AADT	2035	335	18,725	9,907	28,126

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2015	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2025	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2035	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2015	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2025	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2035	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%

#2 - US 90 at Ward Basin Road - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**2**	**8**	**2**	**1**	**418**	**105**	**60**	**10**	**243**	**180**	**400**	**0**
2010	EST. TURNS	2	8	2	1	415	108	62	7	243	181	402	0
2015	EST. TURNS	2	8	3	1	434	127	81	6	255	190	418	0
2025	EST. TURNS	3	9	4	1	459	189	123	13	360	273	449	1
2035	EST. TURNS	4	9	4	1	528	215	145	11	411	311	516	1
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**3**	**3**	**0**	**1**	**555**	**27**	**43**	**9**	**176**	**253**	**559**	**4**
2010	EST. TURNS	3	3	0	1	555	27	44	9	176	252	563	4
2015	EST. TURNS	3	3	0	1	585	42	55	8	186	264	592	4
2025	EST. TURNS	3	3	0	1	643	74	91	9	262	369	661	3
2035	EST. TURNS	4	4	1	2	742	93	106	14	299	425	764	6

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		12	8	20	524	466	990	313	297	610	580	660	1240
2010	TURN SUMMARY	12	8	20	524	466	990	313	297	610	582	660	1242
CONTROL LINK VOLUMES		13	7	20	568	502	1070	345	325	670	608	692	1300
2015	TURN SUMMARY	13	7	20	562	502	1064	342	325	667	609	692	1301
CONTROL LINK VOLUMES		15	15	30	655	575	1230	499	471	970	718	822	1540
2025	TURN SUMMARY	15	15	30	650	575	1225	495	471	966	723	822	1545
CONTROL LINK VOLUMES		17	13	30	755	665	1420	574	536	1110	828	942	1770
2035	TURN SUMMARY	17	13	30	745	665	1410	567	536	1103	828	942	1770
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		6	14	20	583	607	1190	228	282	510	816	734	1550
2010	TURN SUMMARY	6	14	20	584	607	1191	228	282	510	819	734	1553
CONTROL LINK VOLUMES		6	14	20	632	648	1280	251	309	560	856	774	1630
2015	TURN SUMMARY	6	14	20	629	648	1277	250	309	559	860	774	1634
CONTROL LINK VOLUMES		7	13	20	728	752	1480	364	446	810	1011	909	1920
2025	TURN SUMMARY	7	13	20	718	752	1470	361	446	807	1033	909	1942
CONTROL LINK VOLUMES		8	22	30	840	870	1710	418	522	940	1165	1045	2210
2035	TURN SUMMARY	8	22	30	837	870	1707	419	522	941	1195	1045	2240

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Advanced Transportation Engineering Consultants

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#2 - US 90 at Ward Basin Road - CORRIDOR 1		

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT	TOTAL AADT	GROWTH
Actual AADT:	2010	240	13,000	5,400	19,700	38,340	
Open AADT:	2015	252	9,392	4,911	14,928	29,483	-23.1%
Interim AADT:	2025	290	11,513	6,631	17,619	36,053	-6.0%
Design AADT:	2035	335	12,659	8,435	20,438	41,867	9.2%
Future AADT:	2035	335	12,659	8,435	20,438	41,867	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.34%		-0.11%		1.80%		0.15%	
Recommended Growth Rate:	**1.34%**	**CGR**	**-0.11%**	**CGR**	**1.80%**	**CGR**	**0.15%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
1	1	1	1

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		240		13,000		5,400		19,700
NO. YEARS	5	2015	1.069	252	0.995	9,392	1.093	4,911	1.007	14,928
NO. YEARS	15	2025	1.222	290	0.984	11,513	1.307	6,631	1.022	17,619
NO. YEARS	25	2035	1.396	335	0.974	12,659	1.562	8,435	1.037	20,438

Percent Turns Calculated From Base Year AADTs:

JKTURNS	FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		240			13,000			5,400			19,700	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	19,700	5,400	13,000	240	19,700	5,400	13,000	240	19,700	5,400	13,000	240
	52%	14%	34%	1%	78%	21%	39%	1%	60%	29%	70%	1%
2015 2-WAY ADT		252			9,392			4,911			14,928	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	14,928	4,911	9,392	252	14,928	4,911	9,392	252	14,928	4,911	9,392	252
	51%	17%	32%	1%	74%	24%	38%	1%	61%	34%	65%	2%
2025 2-WAY ADT		290			11,513			6,631			17,619	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	17,619	6,631	11,513	290	17,619	6,631	11,513	290	17,619	6,631	11,513	290
	49%	19%	32%	1%	72%	27%	39%	1%	60%	36%	62%	2%
2035 2-WAY ADT		335			12,659			8,435			20,438	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	20,438	8,435	12,659	335	20,438	8,435	12,659	335	20,438	8,435	12,659	335
	49%	20%	30%	1%	70%	29%	38%	1%	61%	39%	59%	2%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	23			986			606			1,243		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	2	8	2	1	418	105	60	10	243	180	400	0	1,429
% TURNS:	17%	67%	17%	0%	80%	20%	19%	3%	78%	31%	69%	0%	
P.M.	2-Way Pk Hr Vol:	20			1,185			511			1,550		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	3	3	0	1	555	27	43	9	176	253	559	4	1,633
% TURNS:	50%	50%	0%	0%	95%	5%	19%	4%	77%	31%	69%	0%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.												
2010	17%	67%	17%	0%	80%	20%	19%	3%	78%	31%	69%	0%
2015	20%	62%	18%	0%	79%	20%	21%	3%	76%	31%	69%	0%
2025	21%	61%	19%	0%	79%	21%	22%	3%	75%	32%	68%	0%
2035	22%	59%	19%	0%	78%	22%	22%	3%	75%	32%	67%	0%
P.M.												
2010	50%	50%	0%	0%	95%	5%	19%	4%	77%	31%	69%	0%
2015	50%	47%	3%	0%	93%	7%	21%	4%	76%	31%	68%	1%
2025	50%	46%	4%	0%	92%	7%	21%	4%	75%	32%	68%	1%
2035	50%	45%	5%	0%	91%	9%	22%	3%	75%	32%	67%	1%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #2 - US 90 at Ward Basin Road - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	240	13,000	5,400	19,700
24 HR EST. AADT	2015	252	9,392	4,911	14,928
24 HR EST. AADT	2025	290	11,513	6,631	17,619
24 HR EST. AADT	2035	335	12,659	8,435	20,438

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2015	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2025	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2035	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2015	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2025	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2035	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%

#2 - US 90 at Ward Basin Road - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**2**	**8**	**2**	**1**	**418**	**105**	**60**	**10**	**243**	**180**	**400**	**0**
2010	EST. TURNS	2	8	2	1	415	108	62	7	243	181	402	0
2015	EST. TURNS	3	7	3	1	280	93	58	6	217	165	270	0
2025	EST. TURNS	3	8	4	1	315	141	92	13	273	207	310	1
2035	EST. TURNS	4	9	5	1	329	176	117	11	356	276	328	1
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**3**	**3**	**0**	**1**	**555**	**27**	**43**	**9**	**176**	**253**	**559**	**4**
2010	EST. TURNS	3	3	0	1	555	27	44	9	176	252	563	4
2015	EST. TURNS	3	3	0	1	390	31	41	8	158	219	398	4
2025	EST. TURNS	4	3	0	1	454	59	70	9	203	288	464	3
2035	EST. TURNS	4	3	1	2	495	74	81	14	264	366	500	6

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		12	8	20	524	466	990	313	297	610	580	660	1240
2010	TURN SUMMARY	12	8	20	524	466	990	313	297	610	582	660	1242
CONTROL LINK VOLUMES		13	7	20	379	331	710	285	265	550	440	500	940
2015	TURN SUMMARY	13	7	20	374	331	705	281	265	546	435	500	935
CONTROL LINK VOLUMES		15	15	30	464	406	870	384	356	740	519	591	1110
2025	TURN SUMMARY	15	15	30	457	406	863	378	356	734	518	591	1109
CONTROL LINK VOLUMES		17	13	30	510	450	960	489	461	950	602	688	1290
2035	TURN SUMMARY	17	13	30	506	450	956	484	461	945	605	688	1293
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		6	14	20	583	607	1190	228	282	510	816	734	1550
2010	TURN SUMMARY	6	14	20	584	607	1191	228	282	510	819	734	1553
CONTROL LINK VOLUMES		6	14	20	421	439	860	207	253	460	618	552	1170
2015	TURN SUMMARY	6	14	20	423	439	862	208	253	461	621	552	1173
CONTROL LINK VOLUMES		7	13	20	516	534	1050	280	350	630	730	660	1390
2025	TURN SUMMARY	7	13	20	514	534	1048	281	350	631	755	660	1415
CONTROL LINK VOLUMES		8	22	30	568	582	1150	356	444	800	847	763	1610
2035	TURN SUMMARY	8	22	30	571	582	1153	359	444	803	872	763	1635

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#2 - US 90 at Ward Basin Road - CORRIDOR 2		

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Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	240		13,000		5,400		19,700		38,340	
Open AADT:	2015	252		9,878		4,916		15,413		30,459	-20.6%
Interim AADT:	2025	290		12,129		6,207		17,808		36,434	-5.0%
Design AADT:	2035	335		13,034		8,614		20,993		42,976	12.1%
Future AADT:	2035	335		13,034		8,614		20,993		42,976	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.34%		0.01%		1.89%		0.25%	
Recommended Growth Rate:	**1.34%**	**CGR**	**0.01%**	**CGR**	**1.89%**	**CGR**	**0.25%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		**1**		**1**		**1**
		2010		240		13,000		5,400		19,700
NO. YEARS	5	2015	1.069	252	1.001	9,878	1.098	4,916	1.013	15,413
NO. YEARS	15	2025	1.222	290	1.002	12,129	1.323	6,207	1.039	17,808
NO. YEARS	25	2035	1.396	335	1.003	13,034	1.595	8,614	1.066	20,993

Percent Turns Calculated From Base Year AADTs:

JKTURNS	FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT	240			13,000			5,400			19,700		
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
19,700	5,400	13,000	240	19,700	5,400	13,000	240	19,700	5,400	13,000	240
52%	14%	34%	1%	78%	21%	39%	1%	60%	29%	70%	1%
2015 2-WAY ADT	252			9,878			4,916			15,413	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
15,413	4,916	9,878	252	15,413	4,916	9,878	252	15,413	4,916	9,878	252
51%	16%	33%	1%	75%	24%	39%	1%	60%	33%	66%	2%
2025 2-WAY ADT	290			12,129			6,207			17,808	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
17,808	6,207	12,129	290	17,808	6,207	12,129	290	17,808	6,207	12,129	290
49%	17%	34%	1%	73%	26%	40%	1%	59%	33%	65%	2%
2035 2-WAY ADT	335			13,034			8,614			20,993	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
20,993	8,614	13,034	335	20,993	8,614	13,034	335	20,993	8,614	13,034	335
49%	20%	31%	1%	70%	29%	38%	1%	61%	39%	59%	2%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	23			986			606			1,243			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	2	8	2	1	418	105	60	10	243	180	400	0	1,429
% TURNS:	17%	67%	17%	0%	80%	20%	19%	3%	78%	31%	69%	0%	
P.M.	2-Way Pk Hr Vol:	20			1,185			511			1,550			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	3	3	0	1	555	27	43	9	176	253	559	4	1,633
% TURNS:	50%	50%	0%	0%	95%	5%	19%	4%	77%	31%	69%	0%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	17%	67%	17%	0%	80%	20%	19%	3%	78%	31%	69%	0%
	2015	20%	62%	18%	0%	79%	20%	21%	3%	76%	31%	69%	0%
	2025	21%	60%	19%	0%	79%	21%	22%	3%	75%	31%	68%	0%
	2035	22%	59%	19%	0%	78%	21%	22%	3%	75%	32%	67%	0%
P.M.													
	2010	50%	50%	0%	0%	95%	5%	19%	4%	77%	31%	69%	0%
	2015	50%	47%	3%	0%	93%	7%	21%	4%	76%	31%	68%	1%
	2025	50%	46%	4%	0%	92%	7%	22%	4%	75%	31%	68%	1%
	2035	50%	45%	5%	0%	91%	9%	22%	3%	75%	32%	67%	1%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #2 - US 90 at Ward Basin Road - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	240	13,000	5,400	19,700
24 HR EST. AADT	2015	252	9,878	4,916	15,413
24 HR EST. AADT	2025	290	12,129	6,207	17,808
24 HR EST. AADT	2035	335	13,034	8,614	20,993

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2015	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2025	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%
2035	Approach K30 factor	9.6%	8.3%	7.6%	9.1%	11.2%	9.5%	6.3%	7.9%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2015	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2025	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%
2035	Approach D30 Factor	52.2%	30.0%	53.1%	49.2%	51.7%	44.6%	46.7%	52.6%

#2 - US 90 at Ward Basin Road - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**2**	**8**	**2**	**1**	**418**	**105**	**60**	**10**	**243**	**180**	**400**	**0**
2010	EST. TURNS	2	8	2	1	415	108	62	7	243	181	402	0
2015	EST. TURNS	3	8	3	1	298	95	60	6	216	162	289	0
2025	EST. TURNS	3	9	3	2	341	141	92	12	252	191	335	1
2035	EST. TURNS	4	9	5	1	338	181	122	11	361	281	339	1
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**3**	**3**	**0**	**1**	**555**	**27**	**43**	**9**	**176**	**253**	**559**	**4**
2010	EST. TURNS	3	3	0	1	555	27	44	9	176	252	563	4
2015	EST. TURNS	3	3	0	1	411	34	43	8	158	226	414	4
2025	EST. TURNS	3	3	0	1	476	59	71	8	182	266	495	3
2035	EST. TURNS	4	3	1	2	508	78	86	14	268	375	519	6

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		12	8	20	524	466	990	313	297	610	580	660	1240
2010	TURN SUMMARY	12	8	20	524	466	990	313	297	610	582	660	1242
CONTROL LINK VOLUMES		13	7	20	398	352	750	285	265	550	454	516	970
2015	TURN SUMMARY	13	7	20	394	352	746	282	265	547	451	516	967
CONTROL LINK VOLUMES		15	15	30	489	431	920	360	340	700	524	596	1120
2025	TURN SUMMARY	15	15	30	483	431	914	356	340	696	527	596	1123
CONTROL LINK VOLUMES		17	13	30	525	465	990	499	471	970	618	702	1320
2035	TURN SUMMARY	17	13	30	520	465	985	493	471	964	621	702	1323
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		6	14	20	583	607	1190	228	282	510	816	734	1550
2010	TURN SUMMARY	6	14	20	584	607	1191	228	282	510	819	734	1553
CONTROL LINK VOLUMES		6	14	20	443	457	900	208	262	470	638	572	1210
2015	TURN SUMMARY	6	14	20	445	457	902	209	262	471	644	572	1216
CONTROL LINK VOLUMES		7	13	20	544	566	1110	262	328	590	738	662	1400
2025	TURN SUMMARY	7	13	20	537	566	1103	261	328	589	764	662	1426
CONTROL LINK VOLUMES		8	22	30	585	605	1190	364	456	820	870	780	1650
2035	TURN SUMMARY	8	22	30	588	605	1193	368	456	824	899	780	1679

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#3 - US 90 at Willing Street - NO BUILD		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	6,400		19,700		550		14,000		40,650	
Open AADT:	2015	6,799		21,237		594		14,755		43,385	6.7%
Interim AADT:	2025	9,753		26,266		683		16,725		53,427	31.4%
Design AADT:	2035	12,114		30,345		790		18,385		61,634	51.6%
Future AADT:	2035	12,114		30,345		790		18,385		61,634	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	2.59%		1.74%		1.46%		1.10%	
Recommended Growth Rate:	**2.59%**	**CGR**	**1.74%**	**CGR**	**1.46%**	**CGR**	**1.10%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
		2010		6,400		19,700		550		14,000	
NO. YEARS	5	2015	1.136	6,799	1.090	21,237	1.075	594	1.056	14,755	
NO. YEARS	15	2025	1.466	9,753	1.296	26,266	1.243	683	1.178	16,725	
NO. YEARS	25	2035	1.893	12,114	1.540	30,345	1.436	790	1.313	18,385	

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		6,400			19,700			550			14,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	14,000	550	19,700	6,400	14,000	550	19,700	6,400	14,000	550	19,700	6,400	
	41%	2%	58%	31%	67%	3%	49%	16%	35%	2%	74%	24%	
2015 2-WAY ADT		6,799			21,237			594			14,755		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	14,755	594	21,237	6,799	14,755	594	21,237	6,799	14,755	594	21,237	6,799	
	40%	2%	58%	31%	67%	3%	50%	16%	34%	2%	74%	24%	
2025 2-WAY ADT		9,753			26,266			683			16,725		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	16,725	683	26,266	9,753	16,725	683	26,266	9,753	16,725	683	26,266	9,753	
	38%	2%	60%	36%	62%	3%	50%	18%	32%	2%	72%	27%	
2035 2-WAY ADT		12,114			30,345			790			18,385		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	18,385	790	30,345	12,114	18,385	790	30,345	12,114	18,385	790	30,345	12,114	
	37%	2%	61%	39%	59%	3%	50%	20%	30%	2%	70%	28%	

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	468			1,312			76			908			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL	
AM Peak	3	30	212	215	532	1	11	5	2	27	341	3	1,382	
% TURNS:	1%	12%	87%	29%	71%	0%	61%	28%	11%	7%	92%	1%		
P.M.	2-Way Pk Hr Vol:	610			1,606			83			1,099			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL	
PM Peak	13	12	255	292	511	1	15	25	16	14	532	13	1,699	
% TURNS:	5%	4%	91%	36%	64%	0%	27%	45%	29%	3%	95%	2%		

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	1%	12%	87%	29%	71%	0%	61%	28%	11%	7%	92%	1%
	2015	5%	11%	84%	29%	71%	0%	60%	27%	13%	7%	90%	3%
	2025	6%	11%	83%	30%	70%	0%	60%	27%	14%	7%	89%	4%
	2035	7%	10%	82%	30%	69%	1%	59%	26%	14%	6%	88%	5%
P.M.													
	2010	5%	4%	91%	36%	64%	0%	27%	45%	29%	3%	95%	2%
	2015	8%	4%	88%	36%	64%	0%	29%	42%	29%	2%	93%	4%
	2025	9%	4%	87%	36%	63%	0%	30%	41%	29%	2%	92%	5%
	2035	10%	4%	86%	37%	63%	1%	31%	41%	29%	2%	91%	7%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #3 - US 90 at Willing Street - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	6,400	19,700	550	14,000
24 HR EST. AADT	2015	6,799	21,237	594	14,755
24 HR EST. AADT	2025	9,753	26,266	683	16,725
24 HR EST. AADT	2035	12,114	30,345	790	18,385

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2015	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2025	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2035	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2015	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2025	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2035	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%

#3 - US 90 at Willing Street - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**3**	**30**	**212**	**215**	**532**	**1**	**11**	**5**	**2**	**27**	**341**	**3**
2010	EST. TURNS	3	30	213	217	534	1	11	5	2	31	338	3
2015	EST. TURNS	12	30	226	226	555	4	13	4	2	27	366	10
2025	EST. TURNS	16	41	323	318	619	4	15	5	2	23	415	14
2035	EST. TURNS	23	49	402	398	678	7	17	6	2	27	449	21
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**13**	**12**	**255**	**292**	**511**	**1**	**15**	**25**	**16**	**14**	**532**	**13**
2010	EST. TURNS	13	12	255	292	512	1	15	25	16	11	536	13
2015	EST. TURNS	21	12	272	308	534	4	21	23	16	14	571	21
2025	EST. TURNS	29	17	394	442	597	3	25	29	16	9	649	32
2035	EST. TURNS	38	21	492	544	651	6	30	33	16	13	710	43

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		245	225	470	748	562	1310	18	62	80	371	539	910
2010	TURN SUMMARY	246	225	471	752	562	1314	18	62	80	372	539	911
CONTROL LINK VOLUMES		260	240	500	806	604	1410	19	61	80	391	569	960
2015	TURN SUMMARY	267	240	507	785	604	1389	19	61	80	402	569	971
CONTROL LINK VOLUMES		373	337	710	997	753	1750	22	68	90	443	637	1080
2025	TURN SUMMARY	380	337	717	941	753	1694	22	68	90	452	637	1089
CONTROL LINK VOLUMES		464	426	890	1152	868	2020	26	84	110	487	703	1190
2035	TURN SUMMARY	474	426	900	1084	868	1952	26	84	110	498	703	1201

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		280	330	610	804	806	1610	56	24	80	559	541	1100
2010	TURN SUMMARY	280	330	610	805	806	1611	56	24	80	560	541	1101
CONTROL LINK VOLUMES		297	353	650	867	863	1730	60	30	90	589	571	1160
2015	TURN SUMMARY	305	353	658	847	863	1710	60	30	90	606	571	1177
CONTROL LINK VOLUMES		427	503	930	1072	1068	2140	70	30	100	668	642	1310
2025	TURN SUMMARY	440	503	943	1043	1068	2111	70	30	100	690	642	1332
CONTROL LINK VOLUMES		530	620	1150	1238	1232	2470	80	40	120	734	706	1440
2035	TURN SUMMARY	551	620	1171	1202	1232	2434	80	40	120	765	706	1471

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#3 - US 90 at Willing Street - CORRIDOR 1		

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Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	6,400		19,700		550		14,000		40,650	
Open AADT:	2015	3,679		15,483		594		12,074		31,830	-21.7%
Interim AADT:	2025	5,356		19,372		683		14,345		39,756	-2.2%
Design AADT:	2035	7,551		22,472		790		15,304		46,117	13.4%
Future AADT:	2035	7,551		22,472		790		15,304		46,117	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.66%		0.53%		1.46%		0.36%	
Recommended Growth Rate:	**0.66%**	**CGR**	**0.53%**	**CGR**	**1.46%**	**CGR**	**0.36%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
		2010		6,400		19,700		550		14,000	
NO. YEARS	5	2015	1.034	3,679	1.027	15,483	1.075	594	1.018	12,074	
NO. YEARS	15	2025	1.104	5,356	1.082	19,372	1.243	683	1.055	14,345	
NO. YEARS	25	2035	1.180	7,551	1.141	22,472	1.436	790	1.093	15,304	

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		6,400			19,700			550			14,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	14,000	550	19,700	6,400	14,000	550	19,700	6,400	14,000	550	19,700	6,400	
	41%	2%	58%	31%	67%	3%	49%	16%	35%	2%	74%	24%	
2015 2-WAY ADT		3,679			15,483			594			12,074		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	12,074	594	15,483	3,679	12,074	594	15,483	3,679	12,074	594	15,483	3,679	
	43%	2%	55%	23%	74%	4%	50%	12%	39%	3%	78%	19%	
2025 2-WAY ADT		5,356			19,372			683			14,345		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	14,345	683	19,372	5,356	14,345	683	19,372	5,356	14,345	683	19,372	5,356	
	42%	2%	56%	26%	70%	3%	50%	14%	37%	3%	76%	21%	
2035 2-WAY ADT		7,551			22,472			790			15,304		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	15,304	790	22,472	7,551	15,304	790	22,472	7,551	15,304	790	22,472	7,551	
	40%	2%	58%	32%	65%	3%	50%	17%	34%	3%	73%	25%	

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	468			1,312			76			908			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL	
AM Peak	3	30	212	215	532	1	11	5	2	27	341	3	1,382	
% TURNS:	1%	12%	87%	29%	71%	0%	61%	28%	11%	7%	92%	1%		
P.M.	2-Way Pk Hr Vol:	610			1,606			83			1,099			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL	
PM Peak	13	12	255	292	511	1	15	25	16	14	532	13	1,699	
% TURNS:	5%	4%	91%	36%	64%	0%	27%	45%	29%	3%	95%	2%		

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	1%	12%	87%	29%	71%	0%	61%	28%	11%	7%	92%	1%
	2015	5%	11%	83%	28%	71%	0%	60%	26%	14%	7%	91%	3%
	2025	6%	11%	83%	28%	71%	1%	60%	26%	14%	7%	90%	3%
	2035	8%	11%	82%	29%	70%	1%	59%	26%	15%	6%	89%	5%
P.M.													
	2010	5%	4%	91%	36%	64%	0%	27%	45%	29%	3%	95%	2%
	2015	8%	4%	87%	35%	65%	0%	29%	41%	30%	3%	93%	4%
	2025	9%	4%	87%	35%	64%	1%	30%	41%	30%	3%	93%	5%
	2035	10%	4%	86%	36%	64%	1%	31%	40%	29%	3%	91%	6%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #3 - US 90 at Willing Street - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	6,400	19,700	550	14,000
24 HR EST. AADT	2015	3,679	15,483	594	12,074
24 HR EST. AADT	2025	5,356	19,372	683	14,345
24 HR EST. AADT	2035	7,551	22,472	790	15,304

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2015	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2025	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2035	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2015	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2025	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2035	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%

#3 - US 90 at Willing Street - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**3**	**30**	**212**	**215**	**532**	**1**	**11**	**5**	**2**	**27**	**341**	**3**
2010	EST. TURNS	3	30	213	217	534	1	11	5	2	31	338	3
2015	EST. TURNS	7	15	129	121	450	7	14	3	3	39	299	5
2025	EST. TURNS	11	22	182	173	536	8	16	4	3	38	356	8
2035	EST. TURNS	17	31	256	242	564	13	18	5	3	41	373	13
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**13**	**12**	**255**	**292**	**511**	**1**	**15**	**25**	**16**	**14**	**532**	**13**
2010	EST. TURNS	13	12	255	292	512	1	15	25	16	11	536	13
2015	EST. TURNS	12	6	145	160	437	6	22	18	19	19	461	11
2025	EST. TURNS	19	9	210	235	518	6	26	23	20	15	553	18
2035	EST. TURNS	27	13	299	333	542	9	30	29	20	18	583	28

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		245	225	470	748	562	1310	18	62	80	371	539	910
2010	TURN SUMMARY	246	225	471	752	562	1314	18	62	80	372	539	911
CONTROL LINK VOLUMES		141	129	270	588	442	1030	19	61	80	320	460	780
2015	TURN SUMMARY	151	129	280	578	442	1020	20	61	81	343	460	803
CONTROL LINK VOLUMES		205	185	390	736	554	1290	22	68	90	380	550	930
2025	TURN SUMMARY	216	185	401	717	554	1271	23	68	91	402	550	952
CONTROL LINK VOLUMES		289	261	550	853	647	1500	26	84	110	406	584	990
2035	TURN SUMMARY	303	261	564	819	647	1466	27	84	111	427	584	1011
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		280	330	610	804	806	1610	56	24	80	559	541	1100
2010	TURN SUMMARY	280	330	610	805	806	1611	56	24	80	560	541	1101
CONTROL LINK VOLUMES		161	189	350	632	628	1260	60	30	90	482	468	950
2015	TURN SUMMARY	163	189	352	603	628	1231	59	30	89	490	468	958
CONTROL LINK VOLUMES		234	276	510	791	789	1580	70	30	100	573	557	1130
2025	TURN SUMMARY	238	276	514	759	789	1548	69	30	99	586	557	1143
CONTROL LINK VOLUMES		330	390	720	917	913	1830	80	40	120	611	589	1200
2035	TURN SUMMARY	339	390	729	884	913	1797	79	40	119	630	589	1219

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#3 - US 90 at Willing Street - CORRIDOR 2		

ATEC
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Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	6,400		19,700		550		14,000		40,650	
Open AADT:	2015	3,983		15,964		594		12,244		32,785	-19.3%
Interim AADT:	2025	5,857		19,554		683		14,026		40,120	-1.3%
Design AADT:	2035	8,138		23,034		790		15,280		47,242	16.2%
Future AADT:	2035	8,138		23,034		790		15,280		47,242	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.97%		0.63%		1.46%		0.35%	
Recommended Growth Rate:	**0.97%**	**CGR**	**0.63%**	**CGR**	**1.46%**	**CGR**	**0.35%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		6,400		19,700		550		14,000
NO. YEARS	5	2015	1.049	3,983	1.032	15,964	1.075	594	1.018	12,244
NO. YEARS	15	2025	1.155	5,857	1.098	19,554	1.243	683	1.054	14,026
NO. YEARS	25	2035	1.272	8,138	1.169	23,034	1.436	790	1.091	15,280

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		6,400			19,700			550			14,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	14,000	550	19,700	6,400	14,000	550	19,700	6,400	14,000	550	19,700	6,400
	41%	2%	58%	31%	67%	3%	49%	16%	35%	2%	74%	24%
2015 2-WAY ADT		3,983			15,964			594			12,244		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	12,244	594	15,964	3,983	12,244	594	15,964	3,983	12,244	594	15,964	3,983
	43%	2%	55%	24%	73%	4%	50%	12%	38%	3%	78%	19%
2025 2-WAY ADT		5,857			19,554			683			14,026		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	14,026	683	19,554	5,857	14,026	683	19,554	5,857	14,026	683	19,554	5,857
	41%	2%	57%	28%	68%	3%	50%	15%	36%	3%	75%	22%
2035 2-WAY ADT		8,138			23,034			790			15,280		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	15,280	790	23,034	8,138	15,280	790	23,034	8,138	15,280	790	23,034	8,138
	39%	2%	59%	34%	63%	3%	50%	18%	33%	2%	72%	25%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	468			1,312			76			908			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	3	30	212	215	532	1	11	5	2	27	341	3	1,382
% TURNS:	1%	12%	87%	29%	71%	0%	61%	28%	11%	7%	92%	1%	
P.M.	2-Way Pk Hr Vol:	610			1,606			83			1,099			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	13	12	255	292	511	1	15	25	16	14	532	13	1,699
% TURNS:	5%	4%	91%	36%	64%	0%	27%	45%	29%	3%	95%	2%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	1%	12%	87%	29%	71%	0%	61%	28%	11%	7%	92%	1%
	2015	5%	11%	83%	28%	71%	0%	60%	26%	14%	7%	90%	3%
	2025	6%	11%	83%	29%	71%	1%	60%	26%	14%	7%	90%	4%
	2035	8%	11%	82%	30%	70%	1%	59%	26%	15%	6%	89%	5%
P.M.													
	2010	5%	4%	91%	36%	64%	0%	27%	45%	29%	3%	95%	2%
	2015	8%	4%	88%	35%	64%	0%	29%	41%	30%	3%	93%	4%
	2025	9%	4%	87%	35%	64%	1%	30%	41%	29%	3%	93%	5%
	2035	10%	4%	86%	36%	63%	1%	31%	40%	29%	2%	91%	6%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #3 - US 90 at Willing Street - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	6,400	19,700	550	14,000
24 HR EST. AADT	2015	3,983	15,964	594	12,244
24 HR EST. AADT	2025	5,857	19,554	683	14,026
24 HR EST. AADT	2035	8,138	23,034	790	15,280

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2015	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2025	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%
2035	Approach K30 factor	7.3%	9.5%	6.7%	8.2%	13.8%	15.1%	6.5%	7.9%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2015	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2025	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%
2035	Approach D30 Factor	52.4%	45.9%	57.0%	50.1%	23.7%	67.5%	40.9%	50.9%

#3 - US 90 at Willing Street - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**3**	**30**	**212**	**215**	**532**	**1**	**11**	**5**	**2**	**27**	**341**	**3**
2010	EST. TURNS	3	30	213	217	534	1	11	5	2	31	338	3
2015	EST. TURNS	7	16	138	130	456	7	14	3	2	38	302	5
2025	EST. TURNS	12	25	198	192	523	7	15	5	3	36	345	9
2035	EST. TURNS	18	33	272	267	564	12	18	6	3	39	366	15
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**13**	**12**	**255**	**292**	**511**	**1**	**15**	**25**	**16**	**14**	**532**	**13**
2010	EST. TURNS	13	12	255	292	512	1	15	25	16	11	536	13
2015	EST. TURNS	13	6	157	176	440	6	22	18	18	18	468	12
2025	EST. TURNS	20	10	230	260	501	5	25	25	19	14	536	20
2035	EST. TURNS	29	14	325	363	542	9	30	31	19	17	585	31

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		245	225	470	748	562	1310	18	62	80	371	539	910
2010	TURN SUMMARY	246	225	471	752	562	1314	18	62	80	372	539	911
CONTROL LINK VOLUMES		152	138	290	606	454	1060	19	61	80	324	466	790
2015	TURN SUMMARY	161	138	299	593	454	1047	20	61	81	345	466	811
CONTROL LINK VOLUMES		224	206	430	742	558	1300	22	68	90	372	538	910
2025	TURN SUMMARY	234	206	440	723	558	1281	23	68	91	390	538	928
CONTROL LINK VOLUMES		312	288	600	875	655	1530	26	84	110	405	585	990
2035	TURN SUMMARY	323	288	611	842	655	1497	26	84	110	420	585	1005

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		280	330	610	804	806	1610	56	24	80	559	541	1100
2010	TURN SUMMARY	280	330	610	805	806	1611	56	24	80	560	541	1101
CONTROL LINK VOLUMES		174	206	380	652	648	1300	60	30	90	489	471	960
2015	TURN SUMMARY	177	206	383	622	648	1270	59	30	89	498	471	969
CONTROL LINK VOLUMES		256	304	560	798	792	1590	70	30	100	560	540	1100
2025	TURN SUMMARY	260	304	564	767	792	1559	69	30	99	571	540	1111
CONTROL LINK VOLUMES		356	424	780	940	940	1880	80	40	120	610	590	1200
2035	TURN SUMMARY	368	424	792	914	940	1854	80	40	120	632	590	1222

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#4 - US 90 at Canal Street - NO BUILD		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	2,720		11,230		6,900		22,000		42,850	
Open AADT:	2015	3,672		14,717		8,117		22,128		48,634	13.5%
Interim AADT:	2025	5,177		16,815		9,026		23,342		54,360	26.9%
Design AADT:	2035	6,595		18,591		8,055		23,229		56,470	31.8%
Future AADT:	2035	6,595		18,591		8,055		23,229		56,470	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.61%		2.04%		0.62%		0.22%	
Recommended Growth Rate:	**3.61%**	**CGR**	**2.04%**	**CGR**	**0.62%**	**CGR**	**0.22%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		2,720		11,230		6,900		22,000
NO. YEARS	5	2015	1.194	3,672	1.106	14,717	1.031	8,117	1.011	22,128
NO. YEARS	15	2025	1.701	5,177	1.353	16,815	1.097	9,026	1.033	23,342
NO. YEARS	25	2035	2.425	6,595	1.655	18,591	1.167	8,055	1.056	23,229

Percent Turns Calculated From Base Year AADTs:

JKTURNS	FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT	2,720			11,230			6,900			22,000		
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
22,000	6,900	11,230	2,720	22,000	6,900	11,230	2,720	22,000	6,900	11,230	2,720
55%	17%	28%	9%	70%	22%	31%	8%	61%	33%	54%	13%
2015 2-WAY ADT	3,672			14,717			8,117			22,128	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
22,128	8,117	14,717	3,672	22,128	8,117	14,717	3,672	22,128	8,117	14,717	3,672
49%	18%	33%	11%	65%	24%	36%	9%	55%	31%	56%	14%
2025 2-WAY ADT	5,177			16,815			9,026			23,342	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
23,342	9,026	16,815	5,177	23,342	9,026	16,815	5,177	23,342	9,026	16,815	5,177
47%	18%	34%	14%	62%	24%	37%	11%	51%	29%	54%	17%
2035 2-WAY ADT	6,595			18,591			8,055			23,229	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
23,229	8,055	18,591	6,595	23,229	8,055	18,591	6,595	23,229	8,055	18,591	6,595
47%	16%	37%	17%	61%	21%	38%	14%	48%	24%	56%	20%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	234			947			521			1,220			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	9	113	5	0	500	12	12	99	146	139	418	8	1,461
% TURNS:	7%	89%	4%	0%	98%	2%	5%	39%	57%	25%	74%	1%	
P.M.	2-Way Pk Hr Vol:	272			1,123			615			1,490			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	18	108	8	3	539	13	3	125	191	175	557	10	1,750
% TURNS:	13%	81%	6%	1%	97%	2%	1%	39%	60%	24%	75%	1%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	7%	89%	4%	0%	98%	2%	5%	39%	57%	25%	74%	1%
	2015	11%	82%	7%	1%	94%	5%	8%	36%	57%	25%	72%	3%
	2025	12%	80%	8%	2%	93%	5%	9%	35%	56%	25%	72%	3%
	2035	14%	77%	9%	3%	92%	5%	10%	34%	55%	25%	71%	4%
P.M.													
	2010	13%	81%	6%	1%	97%	2%	1%	39%	60%	24%	75%	1%
	2015	17%	74%	9%	2%	94%	5%	4%	36%	59%	24%	73%	3%
	2025	18%	73%	9%	2%	93%	5%	5%	36%	59%	24%	72%	3%
	2035	19%	70%	11%	3%	91%	5%	7%	35%	58%	24%	72%	4%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #4 - US 90 at Canal Street - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	2,720	11,230	6,900	22,000
24 HR EST. AADT	2015	3,672	14,717	8,117	22,128
24 HR EST. AADT	2025	5,177	16,815	9,026	23,342
24 HR EST. AADT	2035	6,595	18,591	8,055	23,229

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2015	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2025	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2035	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2015	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2025	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2035	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%

#4 - US 90 at Canal Street - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**9**	**113**	**5**	**0**	**500**	**12**	**12**	**99**	**146**	**139**	**418**	**8**
2010	EST. TURNS	9	113	5	0	498	12	12	96	148	138	421	7
2015	EST. TURNS	10	153	13	12	545	53	53	127	107	102	503	10
2025	EST. TURNS	13	207	22	31	588	61	70	162	90	76	561	15
2035	EST. TURNS	19	232	40	82	615	43	76	156	60	35	606	24
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**18**	**108**	**8**	**3**	**539**	**13**	**3**	**125**	**191**	**175**	**557**	**10**
2010	EST. TURNS	18	108	8	3	538	13	3	123	192	180	554	10
2015	EST. TURNS	16	154	18	17	588	60	42	160	150	131	683	12
2025	EST. TURNS	21	211	30	40	642	70	60	207	130	102	759	18
2035	EST. TURNS	28	243	51	99	673	53	73	206	85	51	817	29

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		127	103	230	512	438	950	257	263	520	565	655	1220
2010	TURN SUMMARY	127	103	230	510	438	948	256	263	519	566	655	1221
CONTROL LINK VOLUMES		171	149	320	671	569	1240	302	308	610	568	662	1230
2015	TURN SUMMARY	176	149	325	610	569	1179	287	308	595	615	662	1277
CONTROL LINK VOLUMES		242	208	450	767	653	1420	336	344	680	599	691	1290
2025	TURN SUMMARY	242	208	450	680	653	1333	321	344	665	652	691	1343
CONTROL LINK VOLUMES		308	262	570	848	722	1570	300	310	610	597	693	1290
2035	TURN SUMMARY	291	262	553	740	722	1462	292	310	602	665	693	1358
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		134	136	270	555	565	1120	319	301	620	742	748	1490
2010	TURN SUMMARY	134	136	270	554	565	1119	318	301	619	743	748	1491
CONTROL LINK VOLUMES		181	189	370	727	743	1470	375	345	720	746	754	1500
2015	TURN SUMMARY	189	189	378	665	743	1408	352	345	697	825	754	1579
CONTROL LINK VOLUMES		255	265	520	831	849	1680	417	383	800	787	793	1580
2025	TURN SUMMARY	262	265	527	752	849	1601	396	383	779	879	793	1672
CONTROL LINK VOLUMES		325	335	660	919	941	1860	372	348	720	783	787	1570
2035	TURN SUMMARY	323	335	658	826	941	1767	364	348	712	898	787	1685

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#4 - US 90 at Canal Street - CORRIDOR 1		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	2,720		11,230		6,900		22,000		42,850	
Open AADT:	2015	2,918		12,075		7,371		19,639		42,003	-2.0%
Interim AADT:	2025	4,046		14,302		8,853		21,338		48,539	13.3%
Design AADT:	2035	4,342		15,257		8,906		21,699		50,204	17.2%
Future AADT:	2035	4,342		15,257		8,906		21,699		50,204	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.89%		1.23%		1.03%		-0.06%	
Recommended Growth Rate:	**1.89%**	**CGR**	**1.23%**	**CGR**	**1.03%**	**CGR**	**-0.06%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		**1**		**1**		**1**
		2010		2,720		11,230		6,900		22,000
NO. YEARS	5	2015	1.098	2,918	1.063	12,075	1.052	7,371	0.997	19,639
NO. YEARS	15	2025	1.324	4,046	1.202	14,302	1.165	8,853	0.992	21,338
NO. YEARS	25	2035	1.596	4,342	1.359	15,257	1.291	8,906	0.986	21,699

Percent Turns Calculated From Base Year AADTs:

JKTURNS	FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT	2,720			11,230			6,900			22,000		
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
22,000	6,900	11,230	2,720	22,000	6,900	11,230	2,720	22,000	6,900	11,230	2,720
55%	17%	28%	9%	70%	22%	31%	8%	61%	33%	54%	13%
2015 2-WAY ADT	2,918			12,075			7,371			19,639	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
19,639	7,371	12,075	2,918	19,639	7,371	12,075	2,918	19,639	7,371	12,075	2,918
50%	19%	31%	10%	66%	25%	35%	8%	57%	33%	54%	13%
2025 2-WAY ADT	4,046			14,302			8,853			21,338	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
21,338	8,853	14,302	4,046	21,338	8,853	14,302	4,046	21,338	8,853	14,302	4,046
48%	20%	32%	12%	62%	26%	36%	10%	54%	33%	53%	15%
2035 2-WAY ADT	4,342			15,257			8,906			21,699	
RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
21,699	8,906	15,257	4,342	21,699	8,906	15,257	4,342	21,699	8,906	15,257	4,342
47%	19%	33%	12%	62%	25%	37%	11%	53%	31%	54%	15%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	234			947			521			1,220			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	9	113	5	0	500	12	12	99	146	139	418	8	1,461
% TURNS:	7%	89%	4%	0%	98%	2%	5%	39%	57%	25%	74%	1%	
P.M.	2-Way Pk Hr Vol:	272			1,123			615			1,490			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	18	108	8	3	539	13	3	125	191	175	557	10	1,750
% TURNS:	13%	81%	6%	1%	97%	2%	1%	39%	60%	24%	75%	1%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	7%	89%	4%	0%	98%	2%	5%	39%	57%	25%	74%	1%
	2015	11%	82%	7%	1%	94%	5%	8%	36%	57%	25%	72%	3%
	2025	12%	80%	7%	1%	93%	5%	9%	35%	56%	26%	71%	3%
	2035	14%	77%	9%	2%	92%	6%	10%	34%	56%	26%	71%	4%
P.M.													
	2010	13%	81%	6%	1%	97%	2%	1%	39%	60%	24%	75%	1%
	2015	17%	74%	8%	1%	94%	5%	4%	36%	60%	25%	73%	3%
	2025	18%	73%	9%	2%	93%	5%	5%	36%	59%	25%	72%	3%
	2035	19%	70%	11%	3%	91%	6%	7%	34%	59%	25%	71%	4%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #4 - US 90 at Canal Street - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	2,720	11,230	6,900	22,000
24 HR EST. AADT	2015	2,918	12,075	7,371	19,639
24 HR EST. AADT	2025	4,046	14,302	8,853	21,338
24 HR EST. AADT	2035	4,342	15,257	8,906	21,699

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2015	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2025	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2035	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2015	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2025	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2035	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%

#4 - US 90 at Canal Street - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**9**	**113**	**5**	**0**	**500**	**12**	**12**	**99**	**146**	**139**	**418**	**8**
2010	EST. TURNS	9	113	5	0	498	12	12	96	148	138	421	7
2015	EST. TURNS	9	122	10	6	458	47	43	100	119	116	416	7
2025	EST. TURNS	11	166	16	16	508	69	67	135	112	105	475	10
2035	EST. TURNS	13	170	21	24	525	78	82	130	105	90	492	12
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**18**	**108**	**8**	**3**	**539**	**13**	**3**	**125**	**191**	**175**	**557**	**10**
2010	EST. TURNS	18	108	8	3	538	13	3	123	192	180	554	10
2015	EST. TURNS	15	121	14	10	493	52	33	127	161	146	566	9
2025	EST. TURNS	18	166	23	20	552	77	57	169	160	137	643	12
2035	EST. TURNS	20	172	28	31	572	88	78	170	146	118	671	15

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		127	103	230	512	438	950	257	263	520	565	655	1220
2010	TURN SUMMARY	127	103	230	510	438	948	256	263	519	566	655	1221
CONTROL LINK VOLUMES		136	114	250	551	469	1020	275	285	560	504	586	1090
2015	TURN SUMMARY	141	114	255	512	469	981	262	285	547	539	586	1125
CONTROL LINK VOLUMES		189	161	350	652	558	1210	330	340	670	548	632	1180
2025	TURN SUMMARY	194	161	355	593	558	1151	314	340	654	590	632	1222
CONTROL LINK VOLUMES		203	167	370	696	594	1290	332	338	670	557	643	1200
2035	TURN SUMMARY	204	167	371	627	594	1221	317	338	655	594	643	1237

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		134	136	270	555	565	1120	319	301	620	742	748	1490
2010	TURN SUMMARY	134	136	270	554	565	1119	318	301	619	743	748	1491
CONTROL LINK VOLUMES		144	146	290	597	613	1210	341	319	660	662	668	1330
2015	TURN SUMMARY	150	146	296	555	613	1168	321	319	640	720	668	1388
CONTROL LINK VOLUMES		199	201	400	707	723	1430	409	381	790	720	730	1450
2025	TURN SUMMARY	207	201	408	650	723	1373	386	381	767	793	730	1523
CONTROL LINK VOLUMES		214	216	430	754	776	1530	412	378	790	732	738	1470
2035	TURN SUMMARY	220	216	436	691	776	1467	393	378	771	804	738	1542

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#4 - US 90 at Canal Street - CORRIDOR 2		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	2,720		11,230		6,900		22,000		42,850	
Open AADT:	2015	2,909		12,253		7,376		19,833		42,371	-1.1%
Interim AADT:	2025	4,065		13,988		9,294		21,457		48,804	13.9%
Design AADT:	2035	4,397		15,242		8,917		21,626		50,182	17.1%
Future AADT:	2035	4,397		15,242		8,917		21,626		50,182	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.94%		1.23%		1.03%		-0.07%	
Recommended Growth Rate:	**1.94%**	**CGR**	**1.23%**	**CGR**	**1.03%**	**CGR**	**-0.07%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
						1		**1**		**1**
		2010		2,720		11,230		6,900		22,000
NO. YEARS	5	2015	1.101	2,909	1.063	12,253	1.053	7,376	0.997	19,833
NO. YEARS	15	2025	1.334	4,065	1.201	13,988	1.166	9,294	0.990	21,457
NO. YEARS	25	2035	1.617	4,397	1.357	15,242	1.292	8,917	0.983	21,626

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		2,720			11,230			6,900			22,000	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	22,000	6,900	11,230	2,720	22,000	6,900	11,230	2,720	22,000	6,900	11,230	2,720
	55%	17%	28%	9%	70%	22%	31%	8%	61%	33%	54%	13%
2015 2-WAY ADT		2,909			12,253			7,376			19,833	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	19,833	7,376	12,253	2,909	19,833	7,376	12,253	2,909	19,833	7,376	12,253	2,909
	50%	19%	31%	10%	66%	24%	35%	8%	57%	33%	54%	13%
2025 2-WAY ADT		4,065			13,988			9,294			21,457	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	21,457	9,294	13,988	4,065	21,457	9,294	13,988	4,065	21,457	9,294	13,988	4,065
	48%	21%	31%	12%	62%	27%	35%	10%	54%	34%	51%	15%
2035 2-WAY ADT		4,397			15,242			8,917			21,626	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	21,626	8,917	15,242	4,397	21,626	8,917	15,242	4,397	21,626	8,917	15,242	4,397
	47%	19%	33%	13%	62%	26%	37%	11%	52%	31%	53%	15%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	234			947			521			1,220		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	9	113	5	0	500	12	12	99	146	139	418	8	1,461
% TURNS:	7%	89%	4%	0%	98%	2%	5%	39%	57%	25%	74%	1%	
P.M.	2-Way Pk Hr Vol:	272			1,123			615			1,490		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	18	108	8	3	539	13	3	125	191	175	557	10	1,750
% TURNS:	13%	81%	6%	1%	97%	2%	1%	39%	60%	24%	75%	1%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	7%	89%	4%	0%	98%	2%	5%	39%	57%	25%	74%	1%
	2015	11%	82%	7%	1%	94%	5%	8%	36%	57%	25%	72%	3%
	2025	12%	80%	7%	1%	93%	5%	9%	35%	56%	26%	71%	3%
	2035	14%	77%	9%	2%	92%	6%	10%	34%	56%	26%	71%	4%
P.M.													
	2010	13%	81%	6%	1%	97%	2%	1%	39%	60%	24%	75%	1%
	2015	17%	74%	8%	1%	94%	5%	4%	36%	60%	24%	73%	3%
	2025	18%	73%	9%	2%	93%	5%	5%	36%	59%	25%	72%	3%
	2035	19%	70%	11%	3%	91%	6%	7%	34%	59%	25%	71%	4%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #4 - US 90 at Canal Street - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	2,720	11,230	6,900	22,000
24 HR EST. AADT	2015	2,909	12,253	7,376	19,833
24 HR EST. AADT	2025	4,065	13,988	9,294	21,457
24 HR EST. AADT	2035	4,397	15,242	8,917	21,626

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2015	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2025	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%
2035	Approach K30 factor	8.6%	10.0%	8.4%	10.0%	7.6%	8.9%	5.5%	6.8%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2015	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2025	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%
2035	Approach D30 Factor	54.3%	49.3%	54.1%	49.4%	49.3%	51.9%	46.3%	49.8%

#4 - US 90 at Canal Street - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**9**	**113**	**5**	**0**	**500**	**12**	**12**	**99**	**146**	**139**	**418**	**8**
2010	EST. TURNS	9	113	5	0	498	12	12	96	148	138	421	7
2015	EST. TURNS	9	121	10	6	464	47	43	100	118	117	418	8
2025	EST. TURNS	12	167	16	14	501	70	66	136	126	117	460	10
2035	EST. TURNS	14	172	21	26	528	77	80	136	103	89	494	13
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**18**	**108**	**8**	**3**	**539**	**13**	**3**	**125**	**191**	**175**	**557**	**10**
2010	EST. TURNS	18	108	8	3	538	13	3	123	192	180	554	10
2015	EST. TURNS	14	121	14	10	498	53	34	128	159	145	576	9
2025	EST. TURNS	19	167	23	19	537	82	57	178	170	152	630	12
2035	EST. TURNS	20	174	28	33	568	87	75	174	143	117	664	16

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		127	103	230	512	438	950	257	263	520	565	655	1220
2010	TURN SUMMARY	127	103	230	510	438	948	256	263	519	566	655	1221
CONTROL LINK VOLUMES		136	114	250	559	471	1030	275	285	560	509	591	1100
2015	TURN SUMMARY	141	114	255	517	471	988	261	285	546	542	591	1133
CONTROL LINK VOLUMES		190	160	350	638	542	1180	346	354	700	551	639	1190
2025	TURN SUMMARY	195	160	355	584	542	1126	328	354	682	588	639	1227
CONTROL LINK VOLUMES		205	175	380	695	595	1290	332	338	670	555	645	1200
2035	TURN SUMMARY	207	175	382	631	595	1226	319	338	657	596	645	1241
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		134	136	270	555	565	1120	319	301	620	742	748	1490
2010	TURN SUMMARY	134	136	270	554	565	1119	318	301	619	743	748	1491
CONTROL LINK VOLUMES		143	147	290	606	624	1230	341	319	660	669	671	1340
2015	TURN SUMMARY	149	147	296	561	624	1185	320	319	639	730	671	1401
CONTROL LINK VOLUMES		200	210	410	691	709	1400	430	400	830	724	726	1450
2025	TURN SUMMARY	208	210	418	638	709	1347	405	400	805	793	726	1519
CONTROL LINK VOLUMES		217	223	440	753	767	1520	412	378	790	729	731	1460
2035	TURN SUMMARY	222	223	445	688	767	1455	392	378	770	797	731	1528

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#5 - US 90 at SR 87 N - NO BUILD		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	16,600		22,000		0		21,100		59,700	
Open AADT:	2015	18,854		24,429		0		22,512		65,795	10.2%
Interim AADT:	2025	20,359		25,606		0		23,857		69,822	17.0%
Design AADT:	2035	22,190		25,482		0		26,480		74,152	24.2%
Future AADT:	2035	22,190		25,482		0		26,480		74,152	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.17%		0.59%		0.00%		0.91%	
Recommended Growth Rate:	**1.17%**	**CGR**	**0.59%**	**CGR**	**0.00%**	**CGR**	**0.91%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		16,600		22,000		0		21,100
NO. YEARS	5	2015	1.060	18,854	1.030	24,429	1.000	0	1.046	22,512
NO. YEARS	15	2025	1.190	20,359	1.092	25,606	1.000	0	1.146	23,857
NO. YEARS	25	2035	1.337	22,190	1.158	25,482	1.000	0	1.255	26,480

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		16,600			22,000			0			21,100		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	21,100	0	22,000	16,600	21,100	0	22,000	16,600	21,100	0	22,000	16,600
	49%	0%	51%	44%	56%	0%	37%	28%	35%	0%	57%	43%
2015 2-WAY ADT		18,854			24,429			0			22,512		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	22,512	0	24,429	18,854	22,512	0	24,429	18,854	22,512	0	24,429	18,854
	48%	0%	52%	46%	54%	0%	37%	29%	34%	0%	56%	44%
2025 2-WAY ADT		20,359			25,606			0			23,857		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	23,857	0	25,606	20,359	23,857	0	25,606	20,359	23,857	0	25,606	20,359
	48%	0%	52%	46%	54%	0%	37%	29%	34%	0%	56%	44%
2035 2-WAY ADT		22,190			25,482			0			26,480		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	26,480	0	25,482	22,190	26,480	0	25,482	22,190	26,480	0	25,482	22,190
	51%	0%	49%	46%	54%	0%	34%	30%	36%	0%	53%	47%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,093			1,360			1			1,463			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	337	0	283	212	483	0	0	0	0	0	382	261	1,959
% TURNS:	54%	0%	46%	30%	69%	0%	33%	33%	33%	0%	59%	41%	
P.M.	2-Way Pk Hr Vol:	1,451			1,630			1			2,107			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	441	0	246	241	568	0	0	0	0	0	575	523	2,595
% TURNS:	64%	0%	36%	30%	70%	0%	33%	33%	33%	0%	52%	48%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	54%	0%	46%	30%	69%	0%	33%	33%	33%	0%	59%	41%
	2015	54%	0%	46%	32%	68%	0%	34%	33%	33%	0%	59%	41%
	2025	54%	0%	46%	32%	68%	0%	34%	33%	33%	0%	59%	41%
	2035	54%	0%	46%	33%	67%	0%	34%	33%	34%	0%	58%	42%
P.M.													
	2010	64%	0%	36%	30%	70%	0%	33%	33%	33%	0%	52%	48%
	2015	63%	0%	37%	31%	69%	0%	34%	33%	33%	0%	53%	47%
	2025	62%	0%	38%	32%	68%	0%	34%	33%	33%	0%	53%	47%
	2035	62%	0%	38%	32%	68%	0%	34%	33%	34%	0%	53%	47%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	OPEN YEAR:	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	DESIGN YEAR:	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	PREPARED BY:	FEN

INTERSECTION: #5 - US 90 at SR 87 N - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	16,600	22,000	0	21,100
24 HR EST. AADT	2015	18,854	24,429	0	22,512
24 HR EST. AADT	2025	20,359	25,606	0	23,857
24 HR EST. AADT	2035	22,190	25,482	0	26,480

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2015	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2025	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2035	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2015	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2025	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2035	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%

#5 - US 90 at SR 87 N - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**337**	**0**	**283**	**212**	**483**	**0**	**0**	**0**	**0**	**0**	**382**	**261**
2010	EST. TURNS	335	0	283	211	482	0	0	0	0	0	382	259
2015	EST. TURNS	365	0	334	257	509	0	0	0	0	0	404	278
2025	EST. TURNS	395	0	357	273	527	0	0	0	0	0	413	306
2035	EST. TURNS	475	0	354	250	558	0	0	0	0	0	421	381
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**441**	**0**	**246**	**241**	**568**	**0**	**0**	**0**	**0**	**0**	**575**	**523**
2010	EST. TURNS	442	0	245	240	570	0	0	0	0	0	575	523
2015	EST. TURNS	479	0	303	301	599	0	0	0	0	0	608	567
2025	EST. TURNS	516	0	328	321	622	0	0	0	0	0	629	615
2035	EST. TURNS	601	0	323	283	660	0	0	0	0	0	630	738

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		620	470	1090	695	665	1360	1	-1	0	643	817	1460
2010	TURN SUMMARY	618	470	1088	693	665	1358	0	0	0	641	817	1458
CONTROL LINK VOLUMES		704	536	1240	772	738	1510	1	-1	0	686	874	1560
2015	TURN SUMMARY	699	535	1234	766	738	1504	0	0	0	682	874	1556
CONTROL LINK VOLUMES		761	579	1340	809	771	1580	1	-1	0	727	923	1650
2025	TURN SUMMARY	752	579	1331	800	770	1570	0	0	0	719	922	1641
CONTROL LINK VOLUMES		829	631	1460	805	775	1580	1	-1	0	807	1033	1840
2035	TURN SUMMARY	829	631	1460	808	775	1583	0	0	0	802	1033	1835
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		687	763	1450	809	821	1630	1	-1	0	1098	1012	2110
2010	TURN SUMMARY	687	763	1450	809	821	1630	1	-1	0	1098	1012	2110
CONTROL LINK VOLUMES		781	869	1650	899	911	1810	1	-1	0	1172	1078	2250
2015	TURN SUMMARY	782	869	1651	899	911	1810	1	-1	0	1175	1078	2253
CONTROL LINK VOLUMES		843	937	1780	942	958	1900	1	-1	0	1242	1138	2380
2025	TURN SUMMARY	844	937	1781	943	958	1901	1	-1	0	1244	1138	2382
CONTROL LINK VOLUMES		919	1021	1940	937	953	1890	1	-1	0	1378	1262	2640
2035	TURN SUMMARY	924	1021	1945	943	953	1896	1	-1	0	1367	1262	2629

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#5 - US 90 at SR 87 N - CORRIDOR 1		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	16,600		22,000		0		21,100		59,700	
Open AADT:	2015	15,200		21,952		0		22,540		59,692	0.0%
Interim AADT:	2025	16,058		23,625		0		24,006		63,689	6.7%
Design AADT:	2035	16,650		23,972		0		27,470		68,092	14.1%
Future AADT:	2035	16,650		23,972		0		27,470		68,092	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.01%		0.34%		0.00%		1.06%	
Recommended Growth Rate:	**0.01%**	**CGR**	**0.34%**	**CGR**	**0.00%**	**CGR**	**1.06%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	
		2010		16,600		22,000		0		21,100	
NO. YEARS	5	2015	1.001	15,200	1.017	21,952	1.000	0	1.054	22,540	
NO. YEARS	15	2025	1.002	16,058	1.053	23,625	1.000	0	1.172	24,006	
NO. YEARS	25	2035	1.003	16,650	1.090	23,972	1.000	0	1.302	27,470	

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010	2-WAY ADT	16,600			22,000			0			21,100		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	21,100	0	22,000	16,600	21,100	0	22,000	16,600	21,100	0	22,000	16,600
	49%	0%	51%	44%	56%	0%	37%	28%	35%	0%	57%	43%
2015	2-WAY ADT	15,200			21,952			0			22,540		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	22,540	0	21,952	15,200	22,540	0	21,952	15,200	22,540	0	21,952	15,200
	51%	0%	49%	40%	60%	0%	37%	25%	38%	0%	59%	41%
2025	2-WAY ADT	16,058			23,625			0			24,006		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	24,006	0	23,625	16,058	24,006	0	23,625	16,058	24,006	0	23,625	16,058
	50%	0%	50%	40%	60%	0%	37%	25%	38%	0%	60%	40%
2035	2-WAY ADT	16,650			23,972			0			27,470		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	27,470	0	23,972	16,650	27,470	0	23,972	16,650	27,470	0	23,972	16,650
	53%	0%	47%	38%	62%	0%	35%	24%	40%	0%	59%	41%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,093			1,360			1			1,463			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	337	0	283	212	483	0	0	0	0	0	382	261	1,959
% TURNS:	54%	0%	46%	30%	69%	0%	33%	33%	33%	0%	59%	41%	
P.M.	2-Way Pk Hr Vol:	1,451			1,630			1			2,107			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	441	0	246	241	568	0	0	0	0	0	575	523	2,595
% TURNS:	64%	0%	36%	30%	70%	0%	33%	33%	33%	0%	52%	48%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	54%	0%	46%	30%	69%	0%	33%	33%	33%	0%	59%	41%
	2015	54%	0%	46%	31%	69%	0%	34%	33%	34%	0%	59%	41%
	2025	54%	0%	46%	32%	68%	0%	34%	32%	34%	0%	59%	41%
	2035	54%	0%	46%	32%	68%	0%	34%	32%	35%	0%	59%	41%
P.M.													
	2010	64%	0%	36%	30%	70%	0%	33%	33%	33%	0%	52%	48%
	2015	63%	0%	37%	31%	69%	0%	34%	33%	34%	0%	53%	47%
	2025	62%	0%	38%	31%	69%	0%	34%	32%	34%	0%	53%	47%
	2035	62%	0%	38%	31%	69%	0%	34%	32%	35%	0%	53%	47%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #5 - US 90 at SR 87 N - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	16,600	22,000	0	21,100
24 HR EST. AADT	2015	15,200	21,952	0	22,540
24 HR EST. AADT	2025	16,058	23,625	0	24,006
24 HR EST. AADT	2035	16,650	23,972	0	27,470

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2015	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2025	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2035	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2015	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2025	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2035	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%

#5 - US 90 at SR 87 N - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**337**	**0**	**283**	**212**	**483**	**0**	**0**	**0**	**0**	**0**	**382**	**261**
2010	EST. TURNS	335	0	283	211	482	0	0	0	0	0	382	259
2015	EST. TURNS	340	0	235	172	532	0	0	0	0	0	431	259
2025	EST. TURNS	357	0	250	187	571	0	0	0	0	0	463	273
2035	EST. TURNS	427	0	216	146	645	0	0	0	1	-1	506	332
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**441**	**0**	**246**	**241**	**568**	**0**	**0**	**0**	**0**	**0**	**575**	**523**
2010	EST. TURNS	442	0	245	240	570	0	0	0	0	0	575	523
2015	EST. TURNS	441	0	192	179	635	0	0	0	0	-1	631	521
2025	EST. TURNS	465	0	202	190	686	0	0	0	0	-1	678	545
2035	EST. TURNS	537	0	169	139	773	0	0	0	1	-1	729	631

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		620	470	1090	695	665	1360	1	-1	0	643	817	1460
2010	TURN SUMMARY	618	470	1088	693	665	1358	0	0	0	641	817	1458
CONTROL LINK VOLUMES		568	432	1000	694	666	1360	1	-1	0	687	873	1560
2015	TURN SUMMARY	575	431	1006	704	666	1370	0	0	0	690	872	1562
CONTROL LINK VOLUMES		600	460	1060	747	713	1460	1	-1	0	732	928	1660
2025	TURN SUMMARY	607	460	1067	758	713	1471	0	0	0	736	928	1664
CONTROL LINK VOLUMES		622	478	1100	758	722	1480	1	-1	0	837	1073	1910
2035	TURN SUMMARY	643	478	1121	791	722	1513	1	-1	0	837	1073	1910
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		687	763	1450	809	821	1630	1	-1	0	1098	1012	2110
2010	TURN SUMMARY	687	763	1450	809	821	1630	1	-1	0	1098	1012	2110
CONTROL LINK VOLUMES		629	701	1330	807	823	1630	1	-1	0	1173	1077	2250
2015	TURN SUMMARY	633	701	1334	815	823	1638	1	-1	0	1152	1077	2229
CONTROL LINK VOLUMES		665	735	1400	869	881	1750	1	-1	0	1249	1151	2400
2025	TURN SUMMARY	667	735	1402	875	881	1756	1	-1	0	1222	1151	2373
CONTROL LINK VOLUMES		689	771	1460	882	898	1780	1	-1	0	1430	1310	2740
2035	TURN SUMMARY	706	771	1477	912	898	1810	1	-1	0	1360	1310	2670

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#5 - US 90 at SR 87 N - CORRIDOR 2		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	16,600		22,000		0		21,100		59,700	
Open AADT:	2015	15,471		22,144		0		22,594		60,209	0.9%
Interim AADT:	2025	16,245		23,744		0		24,004		63,993	7.2%
Design AADT:	2035	16,878		23,888		0		27,545		68,311	14.4%
Future AADT:	2035	16,878		23,888		0		27,545		68,311	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.07%		0.33%		0.00%		1.07%	
Recommended Growth Rate:	**0.07%**	**CGR**	**0.33%**	**CGR**	**0.00%**	**CGR**	**1.07%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		16,600		22,000		0		21,100
NO. YEARS	5	2015	1.003	15,471	1.017	22,144	1.000	0	1.055	22,594
NO. YEARS	15	2025	1.010	16,245	1.051	23,744	1.000	0	1.173	24,004
NO. YEARS	25	2035	1.017	16,878	1.086	23,888	1.000	0	1.305	27,545

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010	2-WAY ADT	16,600			22,000			0			21,100		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	21,100	0	22,000	16,600	21,100	0	22,000	16,600	21,100	0	22,000	16,600
	49%	0%	51%	44%	56%	0%	37%	28%	35%	0%	57%	43%
2015	2-WAY ADT	15,471			22,144			0			22,594		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	22,594	0	22,144	15,471	22,594	0	22,144	15,471	22,594	0	22,144	15,471
	51%	0%	49%	41%	59%	0%	37%	26%	38%	0%	59%	41%
2025	2-WAY ADT	16,245			23,744			0			24,004		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	24,004	0	23,744	16,245	24,004	0	23,744	16,245	24,004	0	23,744	16,245
	50%	0%	50%	40%	60%	0%	37%	25%	38%	0%	59%	41%
2035	2-WAY ADT	16,878			23,888			0			27,545		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	27,545	0	23,888	16,878	27,545	0	23,888	16,878	27,545	0	23,888	16,878
	54%	0%	46%	38%	62%	0%	35%	25%	40%	0%	59%	41%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,093			1,360			1			1,463			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	337	0	283	212	483	0	0	0	0	0	382	261	1,959
% TURNS:	54%	0%	46%	30%	69%	0%	33%	33%	33%	0%	59%	41%	
P.M.	2-Way Pk Hr Vol:	1,451			1,630			1			2,107			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	441	0	246	241	568	0	0	0	0	0	575	523	2,595
% TURNS:	64%	0%	36%	30%	70%	0%	33%	33%	33%	0%	52%	48%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	54%	0%	46%	30%	69%	0%	33%	33%	33%	0%	59%	41%
	2015	54%	0%	46%	32%	68%	0%	34%	33%	34%	0%	59%	41%
	2025	54%	0%	46%	32%	68%	0%	34%	32%	34%	0%	59%	41%
	2035	54%	0%	46%	32%	68%	0%	34%	32%	34%	0%	59%	41%
P.M.													
	2010	64%	0%	36%	30%	70%	0%	33%	33%	33%	0%	52%	48%
	2015	63%	0%	37%	31%	69%	0%	34%	33%	34%	0%	53%	47%
	2025	62%	0%	38%	31%	69%	0%	34%	32%	34%	0%	53%	47%
	2035	62%	0%	38%	31%	69%	0%	34%	32%	34%	0%	53%	47%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #5 - US 90 at SR 87 N - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	16,600	22,000	0	21,100
24 HR EST. AADT	2015	15,471	22,144	0	22,594
24 HR EST. AADT	2025	16,245	23,744	0	24,004
24 HR EST. AADT	2035	16,878	23,888	0	27,545

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2015	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2025	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%
2035	Approach K30 factor	6.6%	8.7%	6.2%	7.4%	600.0%	600.0%	6.9%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2015	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2025	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%
2035	Approach D30 Factor	56.7%	47.3%	51.1%	49.6%	50.0%	50.0%	44.0%	52.1%

#5 - US 90 at SR 87 N - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**337**	**0**	**283**	**212**	**483**	**0**	**0**	**0**	**0**	**0**	**382**	**261**
2010	EST. TURNS	335	0	283	211	482	0	0	0	0	0	382	259
2015	EST. TURNS	346	0	240	177	535	0	0	0	0	0	430	264
2025	EST. TURNS	358	0	255	191	569	0	0	0	0	0	465	272
2035	EST. TURNS	430	0	219	146	639	0	0	0	1	-1	505	333
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**441**	**0**	**246**	**241**	**568**	**0**	**0**	**0**	**0**	**0**	**575**	**523**
2010	EST. TURNS	442	0	245	240	570	0	0	0	0	0	575	523
2015	EST. TURNS	446	0	197	184	637	0	0	0	0	-1	629	526
2025	EST. TURNS	467	0	209	197	683	0	0	0	0	-1	678	549
2035	EST. TURNS	545	0	171	139	770	0	0	0	1	-1	720	642

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		620	470	1090	695	665	1360	1	-1	0	643	817	1460
2010	TURN SUMMARY	618	470	1088	693	665	1358	0	0	0	641	817	1458
CONTROL LINK VOLUMES		578	442	1020	700	670	1370	1	-1	0	689	881	1570
2015	TURN SUMMARY	586	441	1027	712	670	1382	0	0	0	694	881	1575
CONTROL LINK VOLUMES		607	463	1070	750	720	1470	1	-1	0	732	928	1660
2025	TURN SUMMARY	613	463	1076	760	720	1480	0	0	0	737	927	1664
CONTROL LINK VOLUMES		631	479	1110	755	725	1480	1	-1	0	840	1070	1910
2035	TURN SUMMARY	649	479	1128	785	724	1509	1	-1	0	837	1070	1907
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		687	763	1450	809	821	1630	1	-1	0	1098	1012	2110
2010	TURN SUMMARY	687	763	1450	809	821	1630	1	-1	0	1098	1012	2110
CONTROL LINK VOLUMES		640	710	1350	814	826	1640	1	-1	0	1176	1084	2260
2015	TURN SUMMARY	643	710	1353	821	826	1647	1	-1	0	1155	1084	2239
CONTROL LINK VOLUMES		673	747	1420	873	887	1760	1	-1	0	1249	1151	2400
2025	TURN SUMMARY	676	747	1423	880	887	1767	1	-1	0	1227	1151	2378
CONTROL LINK VOLUMES		699	781	1480	879	891	1770	1	-1	0	1434	1316	2750
2035	TURN SUMMARY	716	781	1497	909	891	1800	1	-1	0	1361	1316	2677

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#6 - US 90 at SR 89 - NO BUILD		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	22,500		26,000		3,330		32,180		84,010	
Open AADT:	2015	22,840		26,129		3,497		32,436		84,902	1.1%
Interim AADT:	2025	24,800		27,296		3,812		35,502		91,410	8.8%
Design AADT:	2035	27,047		30,497		4,126		40,892		102,562	22.1%
Future AADT:	2035	27,047		30,497		4,126		40,892		102,562	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.74%		0.64%		0.86%		0.96%	
Recommended Growth Rate:	**0.74%**	**CGR**	**0.64%**	**CGR**	**0.86%**	**CGR**	**0.96%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		22,500		26,000		3,330		32,180
NO. YEARS	5	2015	1.037	22,840	1.032	26,129	1.044	3,497	1.049	32,436
NO. YEARS	15	2025	1.117	24,800	1.100	27,296	1.137	3,812	1.155	35,502
NO. YEARS	25	2035	1.202	27,047	1.173	30,497	1.239	4,126	1.271	40,892

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010	2-WAY ADT	22,500			26,000			3,330			32,180		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	32,180	3,330	26,000	22,500	32,180	3,330	26,000	22,500	32,180	3,330	26,000	22,500
	52%	5%	42%	39%	55%	6%	32%	28%	40%	6%	50%	43%
2015	2-WAY ADT	22,840			26,129			3,497			32,436		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	32,436	3,497	26,129	22,840	32,436	3,497	26,129	22,840	32,436	3,497	26,129	22,840
	52%	6%	42%	39%	55%	6%	32%	28%	40%	7%	50%	44%
2025	2-WAY ADT	24,800			27,296			3,812			35,502		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	35,502	3,812	27,296	24,800	35,502	3,812	27,296	24,800	35,502	3,812	27,296	24,800
	53%	6%	41%	39%	55%	6%	31%	28%	41%	7%	49%	44%
2035	2-WAY ADT	27,047			30,497			4,126			40,892		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	40,892	4,126	30,497	27,047	40,892	4,126	30,497	27,047	40,892	4,126	30,497	27,047
	54%	5%	40%	38%	57%	6%	31%	27%	42%	7%	49%	44%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,369			1,616			137			2,346			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	618	70	150	118	683	28	12	10	4	13	625	403	2,734
% TURNS:	74%	8%	18%	14%	82%	3%	46%	38%	15%	1%	60%	39%	
P.M.	2-Way Pk Hr Vol:	1,814			2,277			333			3,218			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	699	45	145	179	826	69	90	75	19	35	968	671	3,821
% TURNS:	79%	5%	16%	17%	77%	6%	49%	41%	10%	2%	58%	40%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	74%	8%	18%	14%	82%	3%	46%	38%	15%	1%	60%	39%
	2015	72%	8%	20%	17%	80%	4%	45%	37%	18%	2%	59%	39%
	2025	71%	8%	21%	17%	79%	4%	44%	37%	19%	2%	59%	39%
	2035	70%	8%	22%	18%	78%	4%	44%	37%	20%	2%	58%	40%
P.M.													
	2010	79%	5%	16%	17%	77%	6%	49%	41%	10%	2%	58%	40%
	2015	76%	5%	19%	19%	75%	6%	47%	39%	13%	3%	57%	40%
	2025	75%	5%	19%	19%	74%	6%	47%	39%	14%	3%	57%	41%
	2035	75%	5%	20%	20%	74%	6%	46%	39%	16%	3%	56%	41%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #6 - US 90 at SR 89 - CORRIDOR 1

Advanced Transportation Engineering Consultants

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	22,500	26,000	3,330	32,180
24 HR EST. AADT	2015	22,686	26,291	3,497	32,410
24 HR EST. AADT	2025	24,308	27,210	3,812	34,948
24 HR EST. AADT	2035	25,122	31,513	4,126	39,676

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2015	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2025	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2035	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2015	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2025	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2035	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%

#6 - US 90 at SR 89 - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**618**	**70**	**150**	**118**	**683**	**28**	**12**	**10**	**4**	**13**	**625**	**403**
2010	EST. TURNS	621	71	150	119	684	30	12	10	4	14	629	403
2015	EST. TURNS	619	67	161	125	688	28	12	10	5	19	619	401
2025	EST. TURNS	683	70	164	121	729	33	12	11	7	28	645	443
2035	EST. TURNS	725	69	165	125	873	35	14	10	9	34	777	459
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**699**	**45**	**145**	**179**	**826**	**69**	**90**	**75**	**19**	**35**	**968**	**671**
2010	EST. TURNS	699	45	144	178	828	67	90	75	19	34	971	668
2015	EST. TURNS	694	45	161	190	833	67	90	74	28	45	963	670
2025	EST. TURNS	755	47	165	184	881	68	93	80	36	55	998	736
2035	EST. TURNS	796	47	165	190	1,063	70	102	77	47	64	1,192	770

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		838	532	1370	829	791	1620	26	114	140	1041	1309	2350
2010	TURN SUMMARY	842	532	1374	833	791	1624	26	115	141	1046	1309	2355
CONTROL LINK VOLUMES		845	535	1380	838	792	1630	27	113	140	1048	1312	2360
2015	TURN SUMMARY	847	536	1383	841	792	1633	27	114	141	1039	1312	2351
CONTROL LINK VOLUMES		905	575	1480	868	822	1690	30	130	160	1131	1419	2550
2025	TURN SUMMARY	917	575	1492	883	821	1704	30	131	161	1116	1419	2535
CONTROL LINK VOLUMES		936	594	1530	1005	955	1960	32	138	170	1283	1607	2890
2035	TURN SUMMARY	959	594	1553	1033	956	1989	33	138	171	1270	1607	2877
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		889	921	1810	1074	1206	2280	184	146	330	1674	1546	3220
2010	TURN SUMMARY	888	921	1809	1073	1205	2278	184	146	330	1673	1546	3219
CONTROL LINK VOLUMES		896	934	1830	1086	1214	2300	193	157	350	1686	1554	3240
2015	TURN SUMMARY	900	934	1834	1090	1214	2304	192	157	349	1678	1555	3233
CONTROL LINK VOLUMES		960	1000	1960	1124	1256	2380	211	169	380	1818	1672	3490
2025	TURN SUMMARY	967	1000	1967	1133	1256	2389	209	170	379	1789	1672	3461
CONTROL LINK VOLUMES		993	1037	2030	1302	1458	2760	228	182	410	2064	1906	3970
2035	TURN SUMMARY	1008	1037	2045	1323	1459	2782	226	181	407	2026	1906	3932

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#6 - US 90 at SR 89 - CORRIDOR 1		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	22,500		26,000		3,330		32,180		84,010	
Open AADT:	2015	22,686		26,291		3,497		32,410		84,884	1.0%
Interim AADT:	2025	24,308		27,210		3,812		34,948		90,278	7.5%
Design AADT:	2035	25,122		31,513		4,126		39,676		100,437	19.6%
Future AADT:	2035	25,122		31,513		4,126		39,676		100,437	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.44%		0.77%		0.86%		0.84%	
Recommended Growth Rate:	**0.44%**	**CGR**	**0.77%**	**CGR**	**0.86%**	**CGR**	**0.84%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		22,500		26,000		3,330		32,180
NO. YEARS	5	2015	1.022	22,686	1.039	26,291	1.044	3,497	1.043	32,410
NO. YEARS	15	2025	1.068	24,308	1.122	27,210	1.137	3,812	1.134	34,948
NO. YEARS	25	2035	1.117	25,122	1.212	31,513	1.239	4,126	1.233	39,676

Percent Turns Calculated From Base Year AADTs:

JKTURNS	FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT	22,500			26,000			3,330			32,180		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	32,180	3,330	26,000	22,500	32,180	3,330	26,000	22,500	32,180	3,330	26,000	22,500
	52%	5%	42%	39%	55%	6%	32%	28%	40%	6%	50%	43%
2015 2-WAY ADT	22,686			26,291			3,497			32,410		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	32,410	3,497	26,291	22,686	32,410	3,497	26,291	22,686	32,410	3,497	26,291	22,686
	52%	6%	42%	39%	55%	6%	32%	28%	40%	7%	50%	43%
2025 2-WAY ADT	24,308			27,210			3,812			34,948		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	34,948	3,812	27,210	24,308	34,948	3,812	27,210	24,308	34,948	3,812	27,210	24,308
	53%	6%	41%	39%	55%	6%	31%	28%	40%	7%	49%	44%
2035 2-WAY ADT	25,122			31,513			4,126			39,676		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	39,676	4,126	31,513	25,122	39,676	4,126	31,513	25,122	39,676	4,126	31,513	25,122
	53%	5%	42%	36%	58%	6%	33%	26%	41%	7%	52%	41%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,369			1,616			137			2,346			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	618	70	150	118	683	28	12	10	4	13	625	403	2,734
% TURNS:	74%	8%	18%	14%	82%	3%	46%	38%	15%	1%	60%	39%	
P.M.	2-Way Pk Hr Vol:	1,814			2,277			333			3,218			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	699	45	145	179	826	69	90	75	19	35	968	671	3,821
% TURNS:	79%	5%	16%	17%	77%	6%	49%	41%	10%	2%	58%	40%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	74%	8%	18%	14%	82%	3%	46%	38%	15%	1%	60%	39%
	2015	72%	8%	20%	17%	80%	4%	45%	37%	18%	2%	59%	39%
	2025	71%	8%	21%	17%	79%	4%	44%	37%	19%	2%	59%	39%
	2035	70%	8%	22%	18%	78%	4%	44%	36%	20%	2%	59%	39%
P.M.													
	2010	79%	5%	16%	17%	77%	6%	49%	41%	10%	2%	58%	40%
	2015	76%	5%	19%	19%	75%	6%	47%	39%	13%	3%	57%	40%
	2025	75%	5%	19%	19%	74%	6%	47%	39%	14%	3%	57%	41%
	2035	74%	5%	21%	20%	74%	6%	46%	38%	15%	3%	57%	40%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #6 - US 90 at SR 89 - CORRIDOR 1

Advanced Transportation Engineering Consultants

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	22,500	26,000	3,330	32,180
24 HR EST. AADT	2015	22,686	26,291	3,497	32,410
24 HR EST. AADT	2025	24,308	27,210	3,812	34,948
24 HR EST. AADT	2035	25,122	31,513	4,126	39,676

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2015	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2025	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2035	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2015	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2025	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2035	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%

#6 - US 90 at SR 89 - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**618**	**70**	**150**	**118**	**683**	**28**	**12**	**10**	**4**	**13**	**625**	**403**
2010	EST. TURNS	621	71	150	119	684	30	12	10	4	14	629	403
2015	EST. TURNS	619	67	161	125	688	28	12	10	5	19	619	401
2025	EST. TURNS	683	70	164	121	729	33	12	11	7	28	645	443
2035	EST. TURNS	725	69	165	125	873	35	14	10	9	34	777	459
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**699**	**45**	**145**	**179**	**826**	**69**	**90**	**75**	**19**	**35**	**968**	**671**
2010	EST. TURNS	699	45	144	178	828	67	90	75	19	34	971	668
2015	EST. TURNS	694	45	161	190	833	67	90	74	28	45	963	670
2025	EST. TURNS	755	47	165	184	881	68	93	80	36	55	998	736
2035	EST. TURNS	796	47	165	190	1,063	70	102	77	47	64	1,192	770

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		838	532	1370	829	791	1620	26	114	140	1041	1309	2350
2010	TURN SUMMARY	842	532	1374	833	791	1624	26	115	141	1046	1309	2355
CONTROL LINK VOLUMES		845	535	1380	838	792	1630	27	113	140	1048	1312	2360
2015	TURN SUMMARY	847	536	1383	841	792	1633	27	114	141	1039	1312	2351
CONTROL LINK VOLUMES		905	575	1480	868	822	1690	30	130	160	1131	1419	2550
2025	TURN SUMMARY	917	575	1492	883	821	1704	30	131	161	1116	1419	2535
CONTROL LINK VOLUMES		936	594	1530	1005	955	1960	32	138	170	1283	1607	2890
2035	TURN SUMMARY	959	594	1553	1033	956	1989	33	138	171	1270	1607	2877
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		889	921	1810	1074	1206	2280	184	146	330	1674	1546	3220
2010	TURN SUMMARY	888	921	1809	1073	1205	2278	184	146	330	1673	1546	3219
CONTROL LINK VOLUMES		896	934	1830	1086	1214	2300	193	157	350	1686	1554	3240
2015	TURN SUMMARY	900	934	1834	1090	1214	2304	192	157	349	1678	1555	3233
CONTROL LINK VOLUMES		960	1000	1960	1124	1256	2380	211	169	380	1818	1672	3490
2025	TURN SUMMARY	967	1000	1967	1133	1256	2389	209	170	379	1789	1672	3461
CONTROL LINK VOLUMES		993	1037	2030	1302	1458	2760	228	182	410	2064	1906	3970
2035	TURN SUMMARY	1008	1037	2045	1323	1459	2782	226	181	407	2026	1906	3932

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#6 - US 90 at SR 89 - CORRIDOR 2		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	22,500		26,000		3,330		32,180		84,010	
Open AADT:	2015	22,686		26,291		3,497		32,410		84,884	1.0%
Interim AADT:	2025	24,308		27,210		3,812		34,948		90,278	7.5%
Design AADT:	2035	25,122		31,513		4,126		39,676		100,437	19.6%
Future AADT:	2035	25,122		31,513		4,126		39,676		100,437	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.44%		0.77%		0.86%		0.84%	
Recommended Growth Rate:	**0.44%**	**CGR**	**0.77%**	**CGR**	**0.86%**	**CGR**	**0.84%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		22,500		26,000		3,330		32,180
NO. YEARS	5	2015	1.022	22,686	1.039	26,291	1.044	3,497	1.043	32,410
NO. YEARS	15	2025	1.068	24,308	1.122	27,210	1.137	3,812	1.134	34,948
NO. YEARS	25	2035	1.117	25,122	1.212	31,513	1.239	4,126	1.233	39,676

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010	2-WAY ADT	22,500			26,000			3,330			32,180		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	32,180	3,330	26,000	22,500	32,180	3,330	26,000	22,500	32,180	3,330	26,000	22,500
	52%	5%	42%	39%	55%	6%	32%	28%	40%	6%	50%	43%
2015	2-WAY ADT	22,686			26,291			3,497			32,410		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	32,410	3,497	26,291	22,686	32,410	3,497	26,291	22,686	32,410	3,497	26,291	22,686
	52%	6%	42%	39%	55%	6%	32%	28%	40%	7%	50%	43%
2025	2-WAY ADT	24,308			27,210			3,812			34,948		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	34,948	3,812	27,210	24,308	34,948	3,812	27,210	24,308	34,948	3,812	27,210	24,308
	53%	6%	41%	39%	55%	6%	31%	28%	40%	7%	49%	44%
2035	2-WAY ADT	25,122			31,513			4,126			39,676		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	39,676	4,126	31,513	25,122	39,676	4,126	31,513	25,122	39,676	4,126	31,513	25,122
	53%	5%	42%	36%	58%	6%	33%	26%	41%	7%	52%	41%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,369			1,616			137			2,346			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	618	70	150	118	683	28	12	10	4	13	625	403	2,734
% TURNS:	74%	8%	18%	14%	82%	3%	46%	38%	15%	1%	60%	39%	
P.M.	2-Way Pk Hr Vol:	1,814			2,277			333			3,218			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	699	45	145	179	826	69	90	75	19	35	968	671	3,821
% TURNS:	79%	5%	16%	17%	77%	6%	49%	41%	10%	2%	58%	40%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	74%	8%	18%	14%	82%	3%	46%	38%	15%	1%	60%	39%
	2015	72%	8%	20%	17%	80%	4%	45%	37%	18%	2%	59%	39%
	2025	71%	8%	21%	17%	79%	4%	44%	37%	19%	2%	59%	39%
	2035	70%	8%	22%	18%	78%	4%	44%	36%	20%	2%	59%	39%
P.M.													
	2010	79%	5%	16%	17%	77%	6%	49%	41%	10%	2%	58%	40%
	2015	76%	5%	19%	19%	75%	6%	47%	39%	13%	3%	57%	40%
	2025	75%	5%	19%	19%	74%	6%	47%	39%	14%	3%	57%	41%
	2035	74%	5%	21%	20%	74%	6%	46%	38%	15%	3%	57%	40%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #6 - US 90 at SR 89 - CORRIDOR 2

Advanced Transportation Engineering Consultants

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	22,500	26,000	3,330	32,180
24 HR EST. AADT	2015	22,686	26,291	3,497	32,410
24 HR EST. AADT	2025	24,308	27,210	3,812	34,948
24 HR EST. AADT	2035	25,122	31,513	4,126	39,676

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2015	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2025	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%
2035	Approach K30 factor	6.1%	8.1%	6.2%	8.8%	4.1%	10.0%	7.3%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2015	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2025	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%
2035	Approach D30 Factor	61.2%	49.0%	51.3%	47.2%	19.0%	55.3%	44.4%	52.0%

#6 - US 90 at SR 89 - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**618**	**70**	**150**	**118**	**683**	**28**	**12**	**10**	**4**	**13**	**625**	**403**
2010	EST. TURNS	621	71	150	119	684	30	12	10	4	14	629	403
2015	EST. TURNS	619	67	161	125	688	28	12	10	5	19	619	401
2025	EST. TURNS	683	70	164	121	729	33	12	11	7	28	645	443
2035	EST. TURNS	725	69	165	125	873	35	14	10	9	34	777	459
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**699**	**45**	**145**	**179**	**826**	**69**	**90**	**75**	**19**	**35**	**968**	**671**
2010	EST. TURNS	699	45	144	178	828	67	90	75	19	34	971	668
2015	EST. TURNS	694	45	161	190	833	67	90	74	28	45	963	670
2025	EST. TURNS	755	47	165	184	881	68	93	80	36	55	998	736
2035	EST. TURNS	796	47	165	190	1,063	70	102	77	47	64	1,192	770

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		838	532	1370	829	791	1620	26	114	140	1041	1309	2350
2010	TURN SUMMARY	842	532	1374	833	791	1624	26	115	141	1046	1309	2355
CONTROL LINK VOLUMES		845	535	1380	838	792	1630	27	113	140	1048	1312	2360
2015	TURN SUMMARY	847	536	1383	841	792	1633	27	114	141	1039	1312	2351
CONTROL LINK VOLUMES		905	575	1480	868	822	1690	30	130	160	1131	1419	2550
2025	TURN SUMMARY	917	575	1492	883	821	1704	30	131	161	1116	1419	2535
CONTROL LINK VOLUMES		936	594	1530	1005	955	1960	32	138	170	1283	1607	2890
2035	TURN SUMMARY	959	594	1553	1033	956	1989	33	138	171	1270	1607	2877
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		889	921	1810	1074	1206	2280	184	146	330	1674	1546	3220
2010	TURN SUMMARY	888	921	1809	1073	1205	2278	184	146	330	1673	1546	3219
CONTROL LINK VOLUMES		896	934	1830	1086	1214	2300	193	157	350	1686	1554	3240
2015	TURN SUMMARY	900	934	1834	1090	1214	2304	192	157	349	1678	1555	3233
CONTROL LINK VOLUMES		960	1000	1960	1124	1256	2380	211	169	380	1818	1672	3490
2025	TURN SUMMARY	967	1000	1967	1133	1256	2389	209	170	379	1789	1672	3461
CONTROL LINK VOLUMES		993	1037	2030	1302	1458	2760	228	182	410	2064	1906	3970
2035	TURN SUMMARY	1008	1037	2045	1323	1459	2782	226	181	407	2026	1906	3932

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#7 - US 90 at SR 89/Dogwood Dr - NO BUILD		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	12,800		270		10,300		5,800		29,170	
Open AADT:	2015	20,149		284		10,744		6,113		37,290	27.8%
Interim AADT:	2025	23,717		310		12,868		7,052		43,947	50.7%
Design AADT:	2035	27,067		335		14,266		8,319		49,987	71.4%
Future AADT:	2035	27,067		335		14,266		8,319		49,987	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.04%		0.87%		1.31%		1.45%	
Recommended Growth Rate:	**3.04%**	**CGR**	**0.87%**	**CGR**	**1.31%**	**CGR**	**1.45%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		12,800		270		10,300		5,800
NO. YEARS	5	2015	1.162	20,149	1.044	284	1.067	10,744	1.075	6,113
NO. YEARS	15	2025	1.567	23,717	1.138	310	1.216	12,868	1.242	7,052
NO. YEARS	25	2035	2.115	27,067	1.241	335	1.385	14,266	1.434	8,319

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		12,800			270			10,300			5,800	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	5,800	10,300	270	12,800	5,800	10,300	270	12,800	5,800	10,300	270	12,800
	35%	63%	2%	44%	20%	36%	1%	68%	31%	44%	1%	55%
2015 2-WAY ADT		20,149			284			10,744			6,113	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	6,113	10,744	284	20,149	6,113	10,744	284	20,149	6,113	10,744	284	20,149
	36%	63%	2%	54%	17%	29%	1%	76%	23%	34%	1%	65%
2025 2-WAY ADT		23,717			310			12,868			7,052	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	7,052	12,868	310	23,717	7,052	12,868	310	23,717	7,052	12,868	310	23,717
	35%	64%	2%	54%	16%	29%	1%	76%	23%	35%	1%	64%
2035 2-WAY ADT		27,067			335			14,266			8,319	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	8,319	14,266	335	27,067	8,319	14,266	335	27,067	8,319	14,266	335	27,067
	36%	62%	1%	55%	17%	29%	1%	76%	23%	34%	1%	65%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,047			34			549			580			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	11	271	2	4	10	11	5	232	22	8	2	527	1,105
% TURNS:	4%	95%	1%	16%	40%	44%	2%	90%	8%	1%	0%	98%	
P.M.	2-Way Pk Hr Vol:	951			61			626			428			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	9	256	10	2	13	12	12	313	12	21	12	361	1,033
% TURNS:	3%	93%	4%	7%	48%	44%	4%	93%	4%	5%	3%	92%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB THRU			WB THRU			NB THRU			EB THRU	
		RIGHT		LEFT	RIGHT		LEFT	RIGHT		LEFT	RIGHT		LEFT
A.M.													
	2010	4%	95%	1%	16%	40%	44%	2%	90%	8%	1%	0%	98%
	2015	7%	92%	1%	20%	38%	43%	2%	88%	10%	5%	0%	95%
	2025	8%	91%	1%	21%	37%	42%	2%	88%	10%	6%	0%	94%
	2035	9%	90%	1%	22%	36%	41%	2%	87%	11%	7%	0%	93%
P.M.													
	2010	3%	93%	4%	7%	48%	44%	4%	93%	4%	5%	3%	92%
	2015	7%	90%	3%	12%	45%	43%	3%	91%	6%	8%	3%	89%
	2025	7%	89%	3%	13%	44%	43%	3%	91%	6%	9%	3%	88%
	2035	9%	88%	3%	15%	43%	42%	3%	90%	7%	10%	3%	87%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #7 - US 90 at SR 89/Dogwood Dr - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	12,800	270	10,300	5,800
24 HR EST. AADT	2015	20,149	284	10,744	6,113
24 HR EST. AADT	2025	23,717	310	12,868	7,052
24 HR EST. AADT	2035	27,067	335	14,266	8,319

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.2%	7.4%	12.6%	22.6%	5.3%	6.1%	10.0%	7.4%
2015	Approach K30 factor	8.2%	7.4%	12.6%	22.6%	5.3%	6.1%	10.0%	7.4%
2025	Approach K30 factor	8.2%	7.4%	12.6%	22.6%	5.3%	6.1%	10.0%	7.4%
2035	Approach K30 factor	8.2%	7.4%	12.6%	22.6%	5.3%	6.1%	10.0%	7.4%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	27.1%	28.9%	73.5%	44.3%	47.2%	53.8%	92.6%	92.1%
2015	Approach D30 Factor	27.1%	28.9%	73.5%	44.3%	47.2%	53.8%	92.6%	92.1%
2025	Approach D30 Factor	27.1%	28.9%	73.5%	44.3%	47.2%	53.8%	92.6%	92.1%
2035	Approach D30 Factor	27.1%	28.9%	73.5%	44.3%	47.2%	53.8%	92.6%	92.1%

#7 - US 90 at SR 89/Dogwood Dr - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**11**	**271**	**2**	**4**	**10**	**11**	**5**	**232**	**22**	**8**	**2**	**527**
2010	EST. TURNS	11	272	2	4	10	11	2	235	22	8	1	527
2015	EST. TURNS	31	296	8	23	6	2	4	373	6	2	2	808
2025	EST. TURNS	42	360	8	25	7	3	2	452	8	3	1	937
2035	EST. TURNS	46	394	8	29	6	3	1	495	8	4	0	1,085
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**9**	**256**	**10**	**2**	**13**	**12**	**12**	**313**	**12**	**21**	**12**	**361**
2010	EST. TURNS	10	259	10	2	13	12	12	313	13	22	12	361
2015	EST. TURNS	22	291	25	18	9	4	3	480	4	3	4	568
2025	EST. TURNS	27	350	30	22	9	4	5	574	5	4	5	655
2035	EST. TURNS	32	393	34	27	8	4	6	634	5	5	6	767

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		284	766	1050	25	5	30	259	291	550	537	43	580
2010	TURN SUMMARY	285	766	1051	25	5	30	259	291	550	536	43	579
CONTROL LINK VOLUMES		447	1203	1650	26	14	40	270	300	570	566	44	610
2015	TURN SUMMARY	335	1204	1539	31	14	45	383	300	683	812	43	855
CONTROL LINK VOLUMES		526	1414	1940	29	11	40	324	366	690	653	57	710
2025	TURN SUMMARY	410	1414	1824	35	11	46	462	366	828	941	57	998
CONTROL LINK VOLUMES		601	1609	2210	31	9	40	359	401	760	770	60	830
2035	TURN SUMMARY	448	1609	2057	38	9	47	504	401	905	1089	60	1149
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		275	675	950	27	33	60	337	293	630	394	36	430
2010	TURN SUMMARY	279	676	955	27	34	61	338	293	631	395	36	431
CONTROL LINK VOLUMES		433	1067	1500	28	32	60	352	298	650	415	35	450
2015	TURN SUMMARY	338	1066	1404	31	32	63	487	298	785	575	35	610
CONTROL LINK VOLUMES		510	1250	1760	31	39	70	421	359	780	479	41	520
2025	TURN SUMMARY	407	1251	1658	35	40	75	584	358	942	664	41	705
CONTROL LINK VOLUMES		582	1428	2010	34	46	80	467	403	870	565	45	610
2035	TURN SUMMARY	459	1428	1887	39	46	85	645	402	1047	778	45	823

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#8 - SR 87 at SR 89/Oriole Dr - NO BUILD		

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Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	11,100		0		12,800		2,500		26,400	
Open AADT:	2015	12,707		0		17,018		5,524		35,249	33.5%
Interim AADT:	2025	14,534		0		19,995		7,563		42,092	59.4%
Design AADT:	2035	16,333		0		22,753		8,955		48,041	82.0%
Future AADT:	2035	16,333		0		22,753		8,955		48,041	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.56%		0.00%		2.33%		5.24%	
Recommended Growth Rate:	**1.56%**	**CGR**	**0.00%**	**CGR**	**2.33%**	**CGR**	**5.24%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		11,100		0		12,800		2,500
NO. YEARS	5	2015	1.080	12,707	1.000	0	1.122	17,018	1.291	5,524
NO. YEARS	15	2025	1.261	14,534	1.000	0	1.412	19,995	2.150	7,563
NO. YEARS	25	2035	1.471	16,333	1.000	0	1.778	22,753	3.582	8,955

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		11,100			0			12,800			2,500	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,500	12,800	0	11,100	2,500	12,800	0	11,100	2,500	12,800	0	11,100
	16%	84%	0%	42%	9%	48%	0%	82%	18%	54%	0%	46%
2015 2-WAY ADT		12,707			0			17,018			5,524	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	5,524	17,018	0	12,707	5,524	17,018	0	12,707	5,524	17,018	0	12,707
	25%	75%	0%	36%	16%	48%	0%	70%	30%	57%	0%	43%
2025 2-WAY ADT		14,534			0			19,995			7,563	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	7,563	19,995	0	14,534	7,563	19,995	0	14,534	7,563	19,995	0	14,534
	27%	73%	0%	35%	18%	48%	0%	66%	34%	58%	0%	42%
2035 2-WAY ADT		16,333			0			22,753			8,955	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	8,955	22,753	0	16,333	8,955	22,753	0	16,333	8,955	22,753	0	16,333
	28%	72%	0%	34%	19%	47%	0%	65%	35%	58%	0%	42%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,099			1			1,221			180			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	6	374	0	0	0	0	0	696	53	98	0	23	1,251
% TURNS:	2%	98%	0%	33%	33%	33%	0%	93%	7%	81%	0%	19%	
P.M.	2-Way Pk Hr Vol:	1,086			1			1,252			210			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	17	681	0	0	0	0	0	383	104	84	0	5	1,275
% TURNS:	2%	98%	0%	33%	33%	33%	0%	79%	21%	94%	0%	6%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	2%	98%	0%	33%	33%	33%	0%	93%	7%	81%	0%	19%
	2015	4%	96%	0%	34%	32%	35%	0%	91%	9%	78%	0%	21%
	2025	5%	95%	0%	33%	31%	35%	0%	90%	10%	78%	0%	22%
	2035	6%	94%	0%	33%	31%	36%	0%	88%	12%	77%	0%	23%
P.M.													
	2010	2%	98%	0%	33%	33%	33%	0%	79%	21%	94%	0%	6%
	2015	5%	95%	0%	34%	32%	35%	0%	78%	22%	90%	0%	9%
	2025	6%	94%	0%	33%	31%	35%	0%	77%	23%	90%	0%	10%
	2035	7%	93%	0%	33%	31%	36%	0%	76%	24%	88%	0%	12%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #8 - SR 87 at SR 89/Oriole Dr - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	11,100	0	12,800	2,500
24 HR EST. AADT	2015	12,707	0	17,018	5,524
24 HR EST. AADT	2025	14,534	0	19,995	7,563
24 HR EST. AADT	2035	16,333	0	22,753	8,955

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2015	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2025	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2035	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2015	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2025	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2035	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%

#8 - SR 87 at SR 89/Oriole Dr - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**6**	**374**	**0**	**0**	**0**	**0**	**0**	**696**	**53**	**98**	**0**	**23**
2010	EST. TURNS	6	373	0	0	0	0	0	696	53	98	0	23
2015	EST. TURNS	15	406	0	0	0	0	0	785	116	218	0	40
2025	EST. TURNS	23	450	0	0	0	0	0	886	160	290	0	56
2035	EST. TURNS	29	498	0	0	0	0	0	994	187	339	0	67
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**17**	**681**	**0**	**0**	**0**	**0**	**0**	**383**	**104**	**84**	**0**	**5**
2010	EST. TURNS	17	679	0	0	0	0	0	386	103	84	0	5
2015	EST. TURNS	47	820	0	0	0	0	0	429	216	202	0	12
2025	EST. TURNS	76	922	0	0	0	0	0	487	293	277	0	19
2035	EST. TURNS	96	1,034	0	0	0	0	0	549	334	329	0	23

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		380	720	1100	1	-1	0	749	471	1220	121	59	180
2010	TURN SUMMARY	379	719	1098	0	0	0	749	471	1220	121	59	180
CONTROL LINK VOLUMES		435	825	1260	1	-1	0	996	624	1620	268	132	400
2015	TURN SUMMARY	421	825	1246	0	0	0	901	624	1525	258	131	389
CONTROL LINK VOLUMES		498	942	1440	1	-1	0	1170	740	1910	367	183	550
2025	TURN SUMMARY	473	942	1415	0	0	0	1046	740	1786	346	183	529
CONTROL LINK VOLUMES		559	1061	1620	1	-1	0	1332	838	2170	434	216	650
2035	TURN SUMMARY	527	1061	1588	0	0	0	1181	837	2018	406	216	622

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		698	392	1090	1	-1	0	487	763	1250	89	121	210
2010	TURN SUMMARY	696	391	1087	0	0	0	489	763	1252	89	120	209
CONTROL LINK VOLUMES		799	441	1240	1	-1	0	648	1022	1670	197	263	460
2015	TURN SUMMARY	867	441	1308	0	0	0	645	1022	1667	214	263	477
CONTROL LINK VOLUMES		914	506	1420	1	-1	0	761	1199	1960	270	370	640
2025	TURN SUMMARY	998	506	1504	0	0	0	780	1199	1979	296	369	665
CONTROL LINK VOLUMES		1027	573	1600	1	-1	0	866	1364	2230	320	430	750
2035	TURN SUMMARY	1130	572	1702	0	0	0	883	1363	2246	352	430	782

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#8 - SR 87 at SR 89/Oriole Dr - CORRIDOR 1		

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Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	11,100		0		12,800		2,500		26,400	
Open AADT:	2015	13,183		0		19,284		7,258		39,725	50.5%
Interim AADT:	2025	15,158		0		23,280		10,157		48,595	84.1%
Design AADT:	2035	17,161		0		27,044		12,332		56,537	114.2%
Future AADT:	2035	17,161		0		27,044		12,332		56,537	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.76%		0.00%		3.04%		6.59%	
Recommended Growth Rate:	**1.76%**	**CGR**	**0.00%**	**CGR**	**3.04%**	**CGR**	**6.59%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		11,100		0		12,800		2,500
NO. YEARS	5	2015	1.091	13,183	1.000	0	1.161	19,284	1.376	7,258
NO. YEARS	15	2025	1.299	15,158	1.000	0	1.566	23,280	2.605	10,157
NO. YEARS	25	2035	1.546	17,161	1.000	0	2.113	27,044	4.933	12,332

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		11,100			0			12,800			2,500	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,500	12,800	0	11,100	2,500	12,800	0	11,100	2,500	12,800	0	11,100
	16%	84%	0%	42%	9%	48%	0%	82%	18%	54%	0%	46%
2015 2-WAY ADT		13,183			0			19,284			7,258	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	7,258	19,284	0	13,183	7,258	19,284	0	13,183	7,258	19,284	0	13,183
	27%	73%	0%	33%	18%	49%	0%	64%	36%	59%	0%	41%
2025 2-WAY ADT		15,158			0			23,280			10,157	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	10,157	23,280	0	15,158	10,157	23,280	0	15,158	10,157	23,280	0	15,158
	30%	70%	0%	31%	21%	48%	0%	60%	40%	61%	0%	39%
2035 2-WAY ADT		17,161			0			27,044			12,332	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	12,332	27,044	0	17,161	12,332	27,044	0	17,161	12,332	27,044	0	17,161
	31%	69%	0%	30%	22%	48%	0%	58%	42%	61%	0%	39%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	1,099			1			1,221			180		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	6	374	0	0	0	0	0	696	53	98	0	23	1,251
% TURNS:	2%	98%	0%	33%	33%	33%	0%	93%	7%	81%	0%	19%	
P.M.	2-Way Pk Hr Vol:	1,086			1			1,252			210		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	17	681	0	0	0	0	0	383	104	84	0	5	1,275
% TURNS:	2%	98%	0%	33%	33%	33%	0%	79%	21%	94%	0%	6%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	2%	98%	0%	33%	33%	33%	0%	93%	7%	81%	0%	19%
	2015	4%	96%	0%	33%	32%	35%	0%	90%	10%	79%	0%	21%
	2025	5%	95%	0%	33%	32%	35%	0%	89%	11%	78%	0%	22%
	2035	7%	93%	0%	33%	31%	36%	0%	87%	13%	78%	0%	22%
P.M.													
	2010	2%	98%	0%	33%	33%	33%	0%	79%	21%	94%	0%	6%
	2015	5%	95%	0%	33%	32%	35%	0%	77%	23%	91%	0%	9%
	2025	6%	94%	0%	33%	32%	35%	0%	76%	24%	90%	0%	10%
	2035	7%	93%	0%	33%	31%	36%	0%	75%	25%	89%	0%	11%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #8 - SR 87 at SR 89/Oriole Dr - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	11,100	0	12,800	2,500
24 HR EST. AADT	2015	13,183	0	19,284	7,258
24 HR EST. AADT	2025	15,158	0	23,280	10,157
24 HR EST. AADT	2035	17,161	0	27,044	12,332

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2015	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2025	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2035	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2015	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2025	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2035	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%

#8 - SR 87 at SR 89/Oriole Dr - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**6**	**374**	**0**	**0**	**0**	**0**	**0**	**696**	**53**	**98**	**0**	**23**
2010	EST. TURNS	6	373	0	0	0	0	0	696	53	98	0	23
2015	EST. TURNS	16	417	0	0	0	0	0	817	152	293	0	41
2025	EST. TURNS	23	459	0	0	0	0	0	925	215	397	0	56
2035	EST. TURNS	29	515	0	0	0	0	0	1,045	263	482	0	67
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**17**	**681**	**0**	**0**	**0**	**0**	**0**	**383**	**104**	**84**	**0**	**5**
2010	EST. TURNS	17	679	0	0	0	0	0	386	103	84	0	5
2015	EST. TURNS	58	876	0	0	0	0	0	448	293	280	0	13
2025	EST. TURNS	87	998	0	0	0	0	0	509	400	396	0	18
2035	EST. TURNS	116	1,132	0	0	0	0	0	578	483	488	0	23

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		380	720	1100	1	-1	0	749	471	1220	121	59	180
2010	TURN SUMMARY	379	719	1098	0	0	0	749	471	1220	121	59	180
CONTROL LINK VOLUMES		452	858	1310	1	-1	0	1129	711	1840	352	168	520
2015	TURN SUMMARY	433	858	1291	0	0	0	969	710	1679	334	168	502
CONTROL LINK VOLUMES		519	981	1500	1	-1	0	1363	857	2220	492	238	730
2025	TURN SUMMARY	482	981	1463	0	0	0	1140	856	1996	453	238	691
CONTROL LINK VOLUMES		588	1112	1700	1	-1	0	1583	997	2580	598	292	890
2035	TURN SUMMARY	544	1112	1656	0	0	0	1308	997	2305	549	292	841

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		698	392	1090	1	-1	0	487	763	1250	89	121	210
2010	TURN SUMMARY	696	391	1087	0	0	0	489	763	1252	89	120	209
CONTROL LINK VOLUMES		829	461	1290	1	-1	0	734	1156	1890	259	351	610
2015	TURN SUMMARY	934	461	1395	0	0	0	741	1156	1897	293	351	644
CONTROL LINK VOLUMES		953	527	1480	1	-1	0	886	1394	2280	362	488	850
2025	TURN SUMMARY	1085	527	1612	0	0	0	909	1394	2303	414	487	901
CONTROL LINK VOLUMES		1079	601	1680	1	-1	0	1029	1621	2650	440	600	1040
2035	TURN SUMMARY	1248	601	1849	0	0	0	1061	1620	2681	511	599	1110

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#8 - SR 87 at SR 89/Oriole Dr - CORRIDOR 2		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	11,100		0		12,800		2,500		26,400	
Open AADT:	2015	10,170		0		12,584		2,413		25,167	-4.7%
Interim AADT:	2025	11,801		0		14,534		2,732		29,067	10.1%
Design AADT:	2035	13,340		0		16,319		2,978		32,637	23.6%
Future AADT:	2035	13,340		0		16,319		2,978		32,637	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.74%		0.00%		0.98%		0.70%	
Recommended Growth Rate:	**0.74%**	**CGR**	**0.00%**	**CGR**	**0.98%**	**CGR**	**0.70%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		11,100		0		12,800		2,500
NO. YEARS	5	2015	1.037	10,170	1.000	0	1.050	12,584	1.036	2,413
NO. YEARS	15	2025	1.117	11,801	1.000	0	1.157	14,534	1.111	2,732
NO. YEARS	25	2035	1.202	13,340	1.000	0	1.275	16,319	1.191	2,978

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		11,100			0			12,800			2,500	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,500	12,800	0	11,100	2,500	12,800	0	11,100	2,500	12,800	0	11,100
	16%	84%	0%	42%	9%	48%	0%	82%	18%	54%	0%	46%
2015 2-WAY ADT		10,170			0			12,584			2,413	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,413	12,584	0	10,170	2,413	12,584	0	10,170	2,413	12,584	0	10,170
	16%	84%	0%	40%	10%	50%	0%	81%	19%	55%	0%	45%
2025 2-WAY ADT		11,801			0			14,534			2,732	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,732	14,534	0	11,801	2,732	14,534	0	11,801	2,732	14,534	0	11,801
	16%	84%	0%	41%	9%	50%	0%	81%	19%	55%	0%	45%
2035 2-WAY ADT		13,340			0			16,319			2,978	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,978	16,319	0	13,340	2,978	16,319	0	13,340	2,978	16,319	0	13,340
	15%	85%	0%	41%	9%	50%	0%	82%	18%	55%	0%	45%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	1,099			1			1,221			180		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	6	374	0	0	0	0	0	696	53	98	0	23	1,251
% TURNS:	2%	98%	0%	33%	33%	33%	0%	93%	7%	81%	0%	19%	
P.M.	2-Way Pk Hr Vol:	1,086			1			1,252			210		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	17	681	0	0	0	0	0	383	104	84	0	5	1,275
% TURNS:	2%	98%	0%	33%	33%	33%	0%	79%	21%	94%	0%	6%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	2%	98%	0%	33%	33%	33%	0%	93%	7%	81%	0%	19%
	2015	3%	97%	0%	34%	31%	35%	0%	92%	8%	78%	0%	22%
	2025	3%	97%	0%	34%	30%	35%	0%	91%	9%	78%	0%	22%
	2035	4%	96%	0%	35%	29%	36%	0%	91%	9%	77%	0%	23%
P.M.													
	2010	2%	98%	0%	33%	33%	33%	0%	79%	21%	94%	0%	6%
	2015	4%	96%	0%	34%	31%	35%	0%	79%	21%	90%	0%	10%
	2025	4%	96%	0%	34%	30%	35%	0%	79%	21%	89%	0%	11%
	2035	5%	95%	0%	35%	29%	36%	0%	79%	21%	88%	0%	12%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #8 - SR 87 at SR 89/Oriole Dr - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	11,100	0	12,800	2,500
24 HR EST. AADT	2015	10,170	0	12,584	2,413
24 HR EST. AADT	2025	11,801	0	14,534	2,732
24 HR EST. AADT	2035	13,340	0	16,319	2,978

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2015	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2025	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%
2035	Approach K30 factor	9.9%	9.8%	1200.0%	1200.0%	9.5%	9.8%	7.2%	8.4%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2015	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2025	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%
2035	Approach D30 Factor	34.6%	64.3%	50.0%	50.0%	61.3%	38.9%	67.2%	42.4%

#8 - SR 87 at SR 89/Oriole Dr - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**6**	**374**	**0**	**0**	**0**	**0**	**0**	**696**	**53**	**98**	**0**	**23**
2010	EST. TURNS	6	373	0	0	0	0	0	696	53	98	0	23
2015	EST. TURNS	6	359	0	0	0	0	-1	645	47	104	0	17
2025	EST. TURNS	9	420	0	0	0	1	-1	746	59	118	0	20
2035	EST. TURNS	9	476	0	0	0	1	-1	840	57	128	0	22
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**17**	**681**	**0**	**0**	**0**	**0**	**0**	**383**	**104**	**84**	**0**	**5**
2010	EST. TURNS	17	679	0	0	0	0	0	386	103	84	0	5
2015	EST. TURNS	18	664	0	0	0	0	-1	355	96	86	0	5
2025	EST. TURNS	22	770	0	0	0	0	-1	411	111	97	0	6
2035	EST. TURNS	26	873	0	0	0	1	-1	463	118	105	0	8

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		380	720	1100	1	-1	0	749	471	1220	121	59	180
2010	TURN SUMMARY	379	719	1098	0	0	0	749	471	1220	121	59	180
CONTROL LINK VOLUMES		348	662	1010	1	-1	0	737	463	1200	117	53	170
2015	TURN SUMMARY	365	662	1027	0	-1	-1	691	463	1154	121	53	174
CONTROL LINK VOLUMES		404	766	1170	1	-1	0	851	539	1390	132	68	200
2025	TURN SUMMARY	429	766	1195	1	-1	0	804	539	1343	138	68	206
CONTROL LINK VOLUMES		457	863	1320	1	-1	0	955	605	1560	144	66	210
2035	TURN SUMMARY	485	862	1347	1	-1	0	896	605	1501	150	66	216

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		698	392	1090	1	-1	0	487	763	1250	89	121	210
2010	TURN SUMMARY	696	391	1087	0	0	0	489	763	1252	89	120	209
CONTROL LINK VOLUMES		640	360	1000	1	-1	0	479	751	1230	86	114	200
2015	TURN SUMMARY	682	360	1042	0	-1	-1	450	750	1200	91	114	205
CONTROL LINK VOLUMES		742	418	1160	1	-1	0	553	867	1420	97	133	230
2025	TURN SUMMARY	792	417	1209	0	-1	-1	521	867	1388	103	133	236
CONTROL LINK VOLUMES		839	471	1310	1	-1	0	621	979	1600	106	144	250
2035	TURN SUMMARY	899	471	1370	1	-1	0	580	979	1559	113	144	257

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#9 - SR 87N at Langley Street (NAS) - NO BUILD		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	4,000		7,200		11,100		0		22,300	
Open AADT:	2015	8,347		7,960		12,707		0		29,014	30.1%
Interim AADT:	2025	9,117		9,504		14,534		0		33,155	48.7%
Design AADT:	2035	9,875		11,062		16,333		0		37,270	67.1%
Future AADT:	2035	9,875		11,062		16,333		0		37,270	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.68%		1.73%		1.56%		0.00%	
Recommended Growth Rate:	**3.68%**	**CGR**	**1.73%**	**CGR**	**1.56%**	**CGR**	**0.00%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		4,000		7,200		11,100		0
NO. YEARS	5	2015	1.198	8,347	1.090	7,960	1.080	12,707	1.000	0
NO. YEARS	15	2025	1.720	9,117	1.294	9,504	1.261	14,534	1.000	0
NO. YEARS	25	2035	2.469	9,875	1.536	11,062	1.471	16,333	1.000	0

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		4,000			7,200			11,100			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	11,100	7,200	4,000	0	11,100	7,200	4,000	0	11,100	7,200	4,000
	0%	61%	39%	26%	0%	74%	64%	36%	0%	50%	32%	18%
2015 2-WAY ADT		8,347			7,960			12,707			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	12,707	7,960	8,347	0	12,707	7,960	8,347	0	12,707	7,960	8,347
	0%	61%	39%	40%	0%	60%	49%	51%	0%	44%	27%	29%
2025 2-WAY ADT		9,117			9,504			14,534			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	14,534	9,504	9,117	0	14,534	9,504	9,117	0	14,534	9,504	9,117
	0%	60%	40%	39%	0%	61%	51%	49%	0%	44%	29%	27%
2035 2-WAY ADT		9,875			11,062			16,333			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	16,333	11,062	9,875	0	16,333	11,062	9,875	0	16,333	11,062	9,875
	0%	60%	40%	38%	0%	62%	53%	47%	0%	44%	30%	26%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	318			835			1,100			10		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	0	184	23	8	0	118	686	103	9	0	0	0	1,132
% TURNS:	0%	89%	11%	6%	0%	94%	86%	13%	1%	33%	33%	33%	
P.M.	2-Way Pk Hr Vol:	316			687			975			27		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	0	138	3	24	0	552	108	151	26	0	0	0	1,003
% TURNS:	0%	98%	2%	4%	0%	96%	38%	53%	9%	40%	40%	20%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	0%	89%	11%	6%	0%	94%	86%	13%	1%	33%	33%	33%
	2015	0%	86%	14%	10%	0%	90%	82%	17%	1%	34%	33%	33%
	2025	0%	85%	15%	10%	0%	89%	82%	17%	1%	35%	33%	33%
	2035	0%	84%	16%	12%	0%	88%	80%	19%	1%	35%	33%	32%
P.M.													
	2010	0%	98%	2%	4%	0%	96%	38%	53%	9%	40%	40%	20%
	2015	0%	94%	6%	8%	0%	92%	39%	53%	8%	40%	39%	21%
	2025	0%	93%	7%	8%	0%	92%	40%	52%	8%	40%	39%	21%
	2035	0%	91%	9%	10%	0%	90%	40%	52%	8%	41%	38%	21%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #9 - SR 87N at Langley Street (NAS) - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	4,000	7,200	11,100	0
24 HR EST. AADT	2015	8,347	7,960	12,707	0
24 HR EST. AADT	2025	9,117	9,504	14,534	0
24 HR EST. AADT	2035	9,875	11,062	16,333	0

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2015	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2025	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2035	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2015	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2025	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2035	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%

#9 - SR 87N at Langley Street (NAS) - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**0**	**184**	**23**	**8**	**0**	**118**	**686**	**103**	**9**	**0**	**0**	**0**
2010	EST. TURNS	0	184	23	8	0	118	690	104	9	0	0	0
2015	EST. TURNS	0	269	83	40	0	76	697	188	8	0	0	0
2025	EST. TURNS	0	301	97	48	0	94	835	209	8	0	0	0
2035	EST. TURNS	0	331	113	55	0	115	972	224	8	0	0	0
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**0**	**138**	**3**	**24**	**0**	**552**	**108**	**151**	**26**	**0**	**0**	**0**
2010	EST. TURNS	0	139	3	26	0	556	110	153	29	0	0	0
2015	EST. TURNS	0	269	29	126	0	525	93	239	28	0	0	0
2025	EST. TURNS	0	287	33	142	0	619	116	255	29	0	0	0
2035	EST. TURNS	0	301	40	161	0	709	134	270	29	0	0	0

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		207	113	320	126	714	840	798	302	1100	1	9	10
2010	TURN SUMMARY	207	112	319	126	713	839	803	302	1105	0	9	9
CONTROL LINK VOLUMES		432	228	660	140	780	920	914	346	1260	1	9	10
2015	TURN SUMMARY	352	228	580	116	780	896	893	345	1238	0	8	8
CONTROL LINK VOLUMES		472	258	730	167	933	1100	1045	395	1440	1	9	10
2025	TURN SUMMARY	398	257	655	142	932	1074	1052	395	1447	0	8	8
CONTROL LINK VOLUMES		511	279	790	194	1086	1280	1174	446	1620	1	9	10
2035	TURN SUMMARY	444	279	723	170	1085	1255	1204	446	1650	0	8	8
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		141	179	320	576	114	690	285	695	980	1	29	30
2010	TURN SUMMARY	142	179	321	582	113	695	292	695	987	0	29	29
CONTROL LINK VOLUMES		294	366	660	637	123	760	326	794	1120	1	29	30
2015	TURN SUMMARY	298	365	663	651	122	773	360	794	1154	0	28	28
CONTROL LINK VOLUMES		322	398	720	760	150	910	373	907	1280	1	29	30
2025	TURN SUMMARY	320	397	717	761	149	910	400	906	1306	0	29	29
CONTROL LINK VOLUMES		348	432	780	885	175	1060	419	1011	1430	1	29	30
2035	TURN SUMMARY	341	431	772	870	174	1044	433	1010	1443	0	29	29

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#9 - SR 87N at Langley Street (NAS) - CORRIDOR 1		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	4,000		7,200		11,100		0		22,300	
Open AADT:	2015	8,475		8,064		13,183		0		29,722	33.3%
Interim AADT:	2025	9,315		9,650		15,158		0		34,123	53.0%
Design AADT:	2035	10,157		11,246		17,161		0		38,564	72.9%
Future AADT:	2035	10,157		11,246		17,161		0		38,564	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.80%		1.80%		1.76%		0.00%	
Recommended Growth Rate:	**3.80%**	**CGR**	**1.80%**	**CGR**	**1.76%**	**CGR**	**0.00%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		1		1		1
		2010		4,000		7,200		11,100		0
NO. YEARS	5	2015	1.205	8,475	1.093	8,064	1.091	13,183	1.000	0
NO. YEARS	15	2025	1.749	9,315	1.307	9,650	1.299	15,158	1.000	0
NO. YEARS	25	2035	2.539	10,157	1.562	11,246	1.546	17,161	1.000	0

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		4,000			7,200			11,100			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	11,100	7,200	4,000	0	11,100	7,200	4,000	0	11,100	7,200	4,000
	0%	61%	39%	26%	0%	74%	64%	36%	0%	50%	32%	18%
2015 2-WAY ADT		8,475			8,064			13,183			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	13,183	8,064	8,475	0	13,183	8,064	8,475	0	13,183	8,064	8,475
	0%	62%	38%	39%	0%	61%	49%	51%	0%	44%	27%	29%
2025 2-WAY ADT		9,315			9,650			15,158			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	15,158	9,650	9,315	0	15,158	9,650	9,315	0	15,158	9,650	9,315
	0%	61%	39%	38%	0%	62%	51%	49%	0%	44%	28%	27%
2035 2-WAY ADT		10,157			11,246			17,161			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	17,161	11,246	10,157	0	17,161	11,246	10,157	0	17,161	11,246	10,157
	0%	60%	40%	37%	0%	63%	53%	47%	0%	45%	29%	26%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	318			835			1,100			10		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	0	184	23	8	0	118	686	103	9	0	0	0	1,132
% TURNS:	0%	89%	11%	6%	0%	94%	86%	13%	1%	33%	33%	33%	
P.M.	2-Way Pk Hr Vol:	316			687			975			27		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	0	138	3	24	0	552	108	151	26	0	0	0	1,003
% TURNS:	0%	98%	2%	4%	0%	96%	38%	53%	9%	40%	40%	20%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	0%	89%	11%	6%	0%	94%	86%	13%	1%	33%	33%	33%
	2015	0%	86%	14%	10%	0%	90%	82%	17%	1%	34%	33%	33%
	2025	0%	85%	15%	10%	0%	90%	82%	17%	1%	35%	33%	33%
	2035	0%	84%	16%	11%	0%	88%	80%	19%	1%	35%	33%	32%
P.M.													
	2010	0%	98%	2%	4%	0%	96%	38%	53%	9%	40%	40%	20%
	2015	0%	94%	6%	8%	0%	92%	39%	53%	8%	40%	39%	21%
	2025	0%	93%	7%	8%	0%	92%	40%	52%	8%	41%	39%	21%
	2035	0%	92%	8%	10%	0%	90%	40%	52%	8%	41%	38%	21%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #9 - SR 87N at Langley Street (NAS) - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	4,000	7,200	11,100	0
24 HR EST. AADT	2015	8,475	8,064	13,183	0
24 HR EST. AADT	2025	9,315	9,650	15,158	0
24 HR EST. AADT	2035	10,157	11,246	17,161	0

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2015	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2025	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2035	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2015	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2025	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2035	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%

#9 - SR 87N at Langley Street (NAS) - CORRIDOR 1		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**0**	**184**	**23**	**8**	**0**	**118**	**686**	**103**	**9**	**0**	**0**	**0**
2010	EST. TURNS	0	184	23	8	0	118	690	104	9	0	0	0
2015	EST. TURNS	0	281	80	36	0	81	718	194	8	0	0	0
2025	EST. TURNS	0	311	94	44	0	99	857	214	8	0	0	0
2035	EST. TURNS	0	345	109	49	0	121	994	234	8	0	0	0
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**0**	**138**	**3**	**24**	**0**	**552**	**108**	**151**	**26**	**0**	**0**	**0**
2010	EST. TURNS	0	139	3	26	0	556	110	153	29	0	0	0
2015	EST. TURNS	0	277	29	120	0	545	96	251	29	0	0	0
2025	EST. TURNS	0	297	33	136	0	643	114	274	29	0	0	0
2035	EST. TURNS	0	317	39	146	0	752	130	296	29	0	0	0

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		207	113	320	126	714	840	798	302	1100	1	9	10
2010	TURN SUMMARY	207	112	319	126	713	839	803	302	1105	0	9	9
CONTROL LINK VOLUMES		439	231	670	141	799	940	948	362	1310	1	9	10
2015	TURN SUMMARY	361	230	591	117	798	915	920	362	1282	0	8	8
CONTROL LINK VOLUMES		482	258	740	169	951	1120	1090	410	1500	1	9	10
2025	TURN SUMMARY	405	258	663	143	951	1094	1079	410	1489	0	8	8
CONTROL LINK VOLUMES		526	284	810	197	1103	1300	1234	466	1700	1	9	10
2035	TURN SUMMARY	454	283	737	170	1103	1273	1236	466	1702	0	8	8
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		141	179	320	576	114	690	285	695	980	1	29	30
2010	TURN SUMMARY	142	179	321	582	113	695	292	695	987	0	29	29
CONTROL LINK VOLUMES		299	371	670	645	125	770	338	822	1160	1	29	30
2015	TURN SUMMARY	306	371	677	665	125	790	376	822	1198	0	29	29
CONTROL LINK VOLUMES		329	411	740	772	148	920	389	941	1330	1	29	30
2025	TURN SUMMARY	330	410	740	779	147	926	417	940	1357	0	29	29
CONTROL LINK VOLUMES		358	442	800	900	170	1070	441	1069	1510	1	29	30
2035	TURN SUMMARY	356	442	798	898	169	1067	455	1069	1524	0	29	29

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#9 - SR 87N at Langley Street (NAS) - CORRIDOR 2		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	4,000		7,200		11,100		0		22,300	
Open AADT:	2015	8,579		8,110		13,392		0		30,081	34.9%
Interim AADT:	2025	9,428		9,712		15,407		0		34,547	54.9%
Design AADT:	2035	10,321		11,322		17,489		0		39,132	75.5%
Future AADT:	2035	10,321		11,322		17,489		0		39,132	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.86%		1.83%		1.84%		0.00%	
Recommended Growth Rate:	**3.86%**	**CGR**	**1.83%**	**CGR**	**1.84%**	**CGR**	**0.00%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		4,000		7,200		11,100		0
NO. YEARS	5	2015	1.209	8,579	1.095	8,110	1.095	13,392	1.000	0
NO. YEARS	15	2025	1.766	9,428	1.312	9,712	1.314	15,407	1.000	0
NO. YEARS	25	2035	2.580	10,321	1.573	11,322	1.576	17,489	1.000	0

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		4,000			7,200			11,100			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	11,100	7,200	4,000	0	11,100	7,200	4,000	0	11,100	7,200	4,000
	0%	61%	39%	26%	0%	74%	64%	36%	0%	50%	32%	18%
2015 2-WAY ADT		8,579			8,110			13,392			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	13,392	8,110	8,579	0	13,392	8,110	8,579	0	13,392	8,110	8,579
	0%	62%	38%	39%	0%	61%	49%	51%	0%	45%	27%	29%
2025 2-WAY ADT		9,428			9,712			15,407			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	15,407	9,712	9,428	0	15,407	9,712	9,428	0	15,407	9,712	9,428
	0%	61%	39%	38%	0%	62%	51%	49%	0%	45%	28%	27%
2035 2-WAY ADT		10,321			11,322			17,489			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	17,489	11,322	10,321	0	17,489	11,322	10,321	0	17,489	11,322	10,321
	0%	61%	39%	37%	0%	63%	52%	48%	0%	45%	29%	26%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	318			835			1,100			10		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	0	184	23	8	0	118	686	103	9	0	0	0	1,132
% TURNS:	0%	89%	11%	6%	0%	94%	86%	13%	1%	33%	33%	33%	
P.M.	2-Way Pk Hr Vol:	316			687			975			27		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	0	138	3	24	0	552	108	151	26	0	0	0	1,003
% TURNS:	0%	98%	2%	4%	0%	96%	38%	53%	9%	40%	40%	20%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	0%	89%	11%	6%	0%	94%	86%	13%	1%	33%	33%	33%
	2015	0%	86%	14%	10%	0%	90%	82%	17%	1%	34%	33%	33%
	2025	0%	85%	15%	10%	0%	90%	82%	17%	1%	35%	33%	33%
	2035	0%	84%	16%	11%	0%	88%	80%	19%	1%	35%	33%	32%
P.M.													
	2010	0%	98%	2%	4%	0%	96%	38%	53%	9%	40%	40%	20%
	2015	0%	94%	6%	8%	0%	92%	39%	53%	8%	40%	39%	21%
	2025	0%	93%	7%	8%	0%	92%	40%	53%	8%	41%	39%	21%
	2035	0%	92%	8%	10%	0%	90%	40%	52%	8%	41%	38%	21%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #9 - SR 87N at Langley Street (NAS) - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	4,000	7,200	11,100	0
24 HR EST. AADT	2015	8,579	8,110	13,392	0
24 HR EST. AADT	2025	9,428	9,712	15,407	0
24 HR EST. AADT	2035	10,321	11,322	17,489	0

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2015	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2025	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%
2035	Approach K30 factor	8.0%	7.9%	11.6%	9.5%	9.9%	8.8%	9900.0%	26700.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2015	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2025	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%
2035	Approach D30 Factor	65.1%	44.6%	15.1%	83.8%	72.5%	29.2%	6.1%	1.9%

#9 - SR 87N at Langley Street (NAS) - CORRIDOR 2		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**0**	**184**	**23**	**8**	**0**	**118**	**686**	**103**	**9**	**0**	**0**	**0**
2010	EST. TURNS	0	184	23	8	0	118	690	104	9	0	0	0
2015	EST. TURNS	0	285	80	36	0	82	718	200	8	0	0	0
2025	EST. TURNS	0	319	93	42	0	103	867	219	8	0	0	0
2035	EST. TURNS	0	350	108	48	0	123	1,003	238	8	0	0	0
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**0**	**138**	**3**	**24**	**0**	**552**	**108**	**151**	**26**	**0**	**0**	**0**
2010	EST. TURNS	0	139	3	26	0	556	110	153	29	0	0	0
2015	EST. TURNS	0	282	29	117	0	554	92	260	29	0	0	0
2025	EST. TURNS	0	303	34	137	0	651	119	279	29	0	0	0
2035	EST. TURNS	0	326	40	149	0	765	133	306	29	0	0	0

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	TO	LINK	EAST LEG FROM	TO	LINK	SOUTH LEG FROM	TO	LINK	WEST LEG FROM	TO	LINK
CONTROL LINK VOLUMES		207	113	320	126	714	840	798	302	1100	1	9	10
2010	TURN SUMMARY	207	112	319	126	713	839	803	302	1105	0	9	9
CONTROL LINK VOLUMES		444	236	680	142	798	940	963	367	1330	1	9	10
2015	TURN SUMMARY	365	236	601	118	798	916	926	367	1293	0	8	8
CONTROL LINK VOLUMES		488	262	750	170	960	1130	1108	422	1530	1	9	10
2025	TURN SUMMARY	412	261	673	145	960	1105	1094	422	1516	0	8	8
CONTROL LINK VOLUMES		534	286	820	198	1112	1310	1257	473	1730	1	9	10
2035	TURN SUMMARY	458	286	744	171	1111	1282	1249	473	1722	0	8	8

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		141	179	320	576	114	690	285	695	980	1	29	30
2010	TURN SUMMARY	142	179	321	582	113	695	292	695	987	0	29	29
CONTROL LINK VOLUMES		303	377	680	649	121	770	344	836	1180	1	29	30
2015	TURN SUMMARY	311	377	688	671	121	792	381	836	1217	0	29	29
CONTROL LINK VOLUMES		333	417	750	777	153	930	396	954	1350	1	29	30
2025	TURN SUMMARY	337	416	753	788	153	941	427	954	1381	0	29	29
CONTROL LINK VOLUMES		364	456	820	906	174	1080	449	1091	1540	1	29	30
2035	TURN SUMMARY	366	455	821	914	173	1087	468	1091	1559	0	29	29

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#10 - SR 87N at Munson Highway - NO BUILD		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	17,600		3,600		16,000		0		37,200	
Open AADT:	2015	16,708		4,421		16,318		0		37,447	0.7%
Interim AADT:	2025	19,262		6,137		18,485		0		43,884	18.0%
Design AADT:	2035	21,951		8,328		20,821		0		51,100	37.4%
Future AADT:	2035	21,951		8,328		20,821		0		51,100	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.89%		3.41%		1.06%		0.00%	
Recommended Growth Rate:	**0.89%**	**CGR**	**3.41%**	**CGR**	**1.06%**	**CGR**	**0.00%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		17,600		3,600		16,000		0
NO. YEARS	5	2015	1.045	16,708	1.183	4,421	1.054	16,318	1.000	0
NO. YEARS	15	2025	1.142	19,262	1.654	6,137	1.171	18,485	1.000	0
NO. YEARS	25	2035	1.247	21,951	2.313	8,328	1.301	20,821	1.000	0

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		17,600			3,600			16,000			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	16,000	3,600	17,600	0	16,000	3,600	17,600	0	16,000	3,600	17,600
	0%	82%	18%	52%	0%	48%	17%	83%	0%	43%	10%	47%
2015 2-WAY ADT		16,708			4,421			16,318			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	16,318	4,421	16,708	0	16,318	4,421	16,708	0	16,318	4,421	16,708
	0%	79%	21%	51%	0%	49%	21%	79%	0%	44%	12%	45%
2025 2-WAY ADT		19,262			6,137			18,485			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	18,485	6,137	19,262	0	18,485	6,137	19,262	0	18,485	6,137	19,262
	0%	75%	25%	51%	0%	49%	24%	76%	0%	42%	14%	44%
2035 2-WAY ADT		21,951			8,328			20,821			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	20,821	8,328	21,951	0	20,821	8,328	21,951	0	20,821	8,328	21,951
	0%	71%	29%	51%	0%	49%	28%	72%	0%	41%	16%	43%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	1,144			187			1,167			6		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	0	605	40	42	0	63	42	454	0	3	0	3	1,252
% TURNS:	0%	94%	6%	40%	0%	60%	8%	92%	0%	50%	0%	50%	
P.M.	2-Way Pk Hr Vol:	1,322			265			1,450			87		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	0	544	39	55	0	68	103	666	0	69	0	18	1,562
% TURNS:	0%	93%	7%	45%	0%	55%	13%	87%	0%	79%	0%	21%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	0%	94%	6%	40%	0%	60%	8%	92%	0%	50%	0%	50%
	2015	0%	92%	8%	41%	0%	59%	10%	90%	0%	49%	1%	49%
	2025	0%	91%	9%	41%	0%	59%	10%	90%	0%	49%	2%	49%
	2035	0%	90%	10%	42%	0%	58%	12%	88%	0%	48%	3%	49%
P.M.													
	2010	0%	93%	7%	45%	0%	55%	13%	87%	0%	79%	0%	21%
	2015	0%	92%	8%	45%	0%	55%	14%	86%	0%	76%	1%	23%
	2025	0%	91%	9%	46%	0%	54%	15%	85%	0%	75%	2%	24%
	2035	0%	90%	10%	46%	0%	54%	16%	84%	0%	73%	3%	24%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	OPEN YEAR:	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	DESIGN YEAR:	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	PREPARED BY:	FEN

INTERSECTION: #10 - SR 87N at Munson Highway - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	17,600	3,600	16,000	0
24 HR EST. AADT	2015	16,708	4,421	16,318	0
24 HR EST. AADT	2025	19,262	6,137	18,485	0
24 HR EST. AADT	2035	21,951	8,328	20,821	0

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2015	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2025	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2035	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2015	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2025	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2035	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%

#10 - SR 87N at Munson Highway - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**0**	**605**	**40**	**42**	**0**	**63**	**42**	**454**	**0**	**3**	**0**	**3**
2010	EST. TURNS	1	608	40	41	1	63	45	451	1	3	0	3
2015	EST. TURNS	1	592	43	42	1	88	58	434	1	4	0	2
2025	EST. TURNS	1	659	56	63	2	115	85	478	1	3	0	3
2035	EST. TURNS	1	725	77	93	2	147	110	530	1	3	0	3
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**0**	**544**	**39**	**55**	**0**	**68**	**103**	**666**	**0**	**69**	**0**	**18**
2010	EST. TURNS	1	545	39	55	1	67	108	664	1	69	0	18
2015	EST. TURNS	1	529	39	57	1	95	139	634	1	72	1	16
2025	EST. TURNS	1	599	51	87	1	125	187	707	1	68	2	18
2035	EST. TURNS	1	665	69	128	1	160	252	774	1	64	4	20

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		645	495	1140	105	85	190	496	674	1170	6	4	10
2010	TURN SUMMARY	649	495	1144	105	85	190	497	674	1171	6	3	9
CONTROL LINK VOLUMES		612	478	1090	129	101	230	506	684	1190	6	4	10
2015	TURN SUMMARY	636	478	1114	131	101	232	493	684	1177	6	3	9
CONTROL LINK VOLUMES		706	544	1250	179	141	320	573	777	1350	6	4	10
2025	TURN SUMMARY	716	544	1260	180	141	321	564	777	1341	6	4	10
CONTROL LINK VOLUMES		804	626	1430	243	187	430	645	875	1520	6	4	10
2035	TURN SUMMARY	803	626	1429	242	187	429	641	875	1516	6	4	10
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		583	737	1320	123	147	270	769	681	1450	87	3	90
2010	TURN SUMMARY	585	737	1322	123	147	270	773	681	1454	87	3	90
CONTROL LINK VOLUMES		553	707	1260	151	179	330	784	696	1480	87	3	90
2015	TURN SUMMARY	569	707	1276	153	179	332	774	696	1470	89	3	92
CONTROL LINK VOLUMES		638	812	1450	210	240	450	888	792	1680	87	3	90
2025	TURN SUMMARY	651	812	1463	213	240	453	895	792	1687	88	3	91
CONTROL LINK VOLUMES		727	923	1650	285	325	610	1001	889	1890	87	3	90
2035	TURN SUMMARY	735	922	1657	289	325	614	1027	889	1916	88	3	91

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#10 - SR 87N at Munson Highway - CORRIDOR 1		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	17,600		3,600		16,000		0		37,200	
Open AADT:	2015	10,879		1,525		12,036		0		24,440	-34.3%
Interim AADT:	2025	12,317		2,431		13,350		0		28,098	-24.5%
Design AADT:	2035	13,825		4,318		14,010		0		32,153	-13.6%
Future AADT:	2035	13,825		4,318		14,010		0		32,153	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	-0.96%		0.73%		-0.53%		0.00%	
Recommended Growth Rate:	**-0.96%**	**CGR**	**0.73%**	**CGR**	**-0.53%**	**CGR**	**0.00%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
						1		**1**		**1**		**1**
		2010		17,600		3,600		16,000		0
NO. YEARS	5	2015	0.953	10,879	1.037	1,525	0.974	12,036	1.000	0
NO. YEARS	15	2025	0.865	12,317	1.115	2,431	0.923	13,350	1.000	0
NO. YEARS	25	2035	0.786	13,825	1.199	4,318	0.876	14,010	1.000	0

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		17,600			3,600			16,000			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	16,000	3,600	17,600	0	16,000	3,600	17,600	0	16,000	3,600	17,600
	0%	82%	18%	52%	0%	48%	17%	83%	0%	43%	10%	47%
2015 2-WAY ADT		10,879			1,525			12,036			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	12,036	1,525	10,879	0	12,036	1,525	10,879	0	12,036	1,525	10,879
	0%	89%	11%	47%	0%	53%	12%	88%	0%	49%	6%	45%
2025 2-WAY ADT		12,317			2,431			13,350			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	13,350	2,431	12,317	0	13,350	2,431	12,317	0	13,350	2,431	12,317
	0%	85%	15%	48%	0%	52%	16%	84%	0%	48%	9%	44%
2035 2-WAY ADT		13,825			4,318			14,010			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	14,010	4,318	13,825	0	14,010	4,318	13,825	0	14,010	4,318	13,825
	0%	76%	24%	50%	0%	50%	24%	76%	0%	44%	13%	43%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	1,144			187			1,167			6		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	0	605	40	42	0	63	42	454	0	3	0	3	1,252
% TURNS:	0%	94%	6%	40%	0%	60%	8%	92%	0%	50%	0%	50%	
P.M.	2-Way Pk Hr Vol:	1,322			265			1,450			87		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	0	544	39	55	0	68	103	666	0	69	0	18	1,562
% TURNS:	0%	93%	7%	45%	0%	55%	13%	87%	0%	79%	0%	21%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	0%	94%	6%	40%	0%	60%	8%	92%	0%	50%	0%	50%
	2015	0%	93%	7%	41%	0%	59%	9%	91%	0%	50%	1%	49%
	2025	0%	93%	7%	41%	0%	59%	9%	91%	0%	50%	1%	49%
	2035	0%	91%	9%	42%	0%	58%	11%	89%	0%	49%	2%	49%
P.M.													
	2010	0%	93%	7%	45%	0%	55%	13%	87%	0%	79%	0%	21%
	2015	0%	93%	7%	45%	0%	55%	13%	87%	0%	76%	1%	23%
	2025	0%	92%	8%	45%	0%	55%	14%	86%	0%	75%	1%	24%
	2035	0%	90%	10%	46%	0%	54%	15%	85%	0%	73%	2%	24%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #10 - SR 87N at Munson Highway - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	17,600	3,600	16,000	0
24 HR EST. AADT	2015	10,879	1,525	12,036	0
24 HR EST. AADT	2025	12,317	2,431	13,350	0
24 HR EST. AADT	2035	13,825	4,318	14,010	0

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2015	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2025	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2035	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2015	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2025	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2035	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%

#10 - SR 87N at Munson Highway - CORRIDOR		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**0**	**605**	**40**	**42**	**0**	**63**	**42**	**454**	**0**	**3**	**0**	**3**
2010	EST. TURNS	1	608	40	41	1	63	45	451	1	3	0	3
2015	EST. TURNS	1	458	18	6	1	43	18	303	2	6	0	1
2025	EST. TURNS	1	487	24	13	1	64	35	335	2	5	0	1
2035	EST. TURNS	1	490	39	35	1	92	55	356	2	4	0	2
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**0**	**544**	**39**	**55**	**0**	**68**	**103**	**666**	**0**	**69**	**0**	**18**
2010	EST. TURNS	1	545	39	55	1	67	108	664	1	69	0	18
2015	EST. TURNS	1	379	19	9	0	45	39	444	2	88	0	7
2025	EST. TURNS	1	417	23	19	1	67	73	495	2	84	0	9
2035	EST. TURNS	1	431	36	52	1	96	134	515	1	71	2	15

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		645	495	1140	105	85	190	496	674	1170	6	4	10
2010	TURN SUMMARY	649	495	1144	105	85	190	497	674	1171	6	3	9
CONTROL LINK VOLUMES		399	311	710	44	36	80	373	507	880	6	4	10
2015	TURN SUMMARY	477	310	787	50	36	86	323	507	830	7	4	11
CONTROL LINK VOLUMES		451	349	800	71	59	130	414	556	970	6	4	10
2025	TURN SUMMARY	512	349	861	78	59	137	372	556	928	6	4	10
CONTROL LINK VOLUMES		507	393	900	126	94	220	434	586	1020	6	4	10
2035	TURN SUMMARY	530	393	923	128	94	222	413	586	999	6	4	10
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		583	737	1320	123	147	270	769	681	1450	87	3	90
2010	TURN SUMMARY	585	737	1322	123	147	270	773	681	1454	87	3	90
CONTROL LINK VOLUMES		360	460	820	52	58	110	578	512	1090	87	3	90
2015	TURN SUMMARY	399	460	859	54	58	112	485	512	997	95	3	98
CONTROL LINK VOLUMES		408	522	930	83	97	180	642	568	1210	87	3	90
2025	TURN SUMMARY	441	523	964	87	96	183	570	568	1138	93	4	97
CONTROL LINK VOLUMES		458	582	1040	148	172	320	673	597	1270	87	3	90
2035	TURN SUMMARY	468	582	1050	149	172	321	650	598	1248	88	3	91

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#10 - SR 87N at Munson Highway - CORRIDOR 2		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	17,600		3,600		16,000		0		37,200	
Open AADT:	2015	11,185		1,589		12,321		0		25,095	-32.5%
Interim AADT:	2025	12,934		2,888		13,593		0		29,415	-20.9%
Design AADT:	2035	14,216		4,764		14,107		0		33,087	-11.1%
Future AADT:	2035	14,216		4,764		14,107		0		33,087	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	-0.85%		1.13%		-0.50%		0.00%	
Recommended Growth Rate:	**-0.85%**	**CGR**	**1.13%**	**CGR**	**-0.50%**	**CGR**	**0.00%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
						1		**1**		**1**		**1**
		2010		17,600		3,600		16,000		0
NO. YEARS	5	2015	0.958	11,185	1.058	1,589	0.975	12,321	1.000	0
NO. YEARS	15	2025	0.880	12,934	1.183	2,888	0.927	13,593	1.000	0
NO. YEARS	25	2035	0.808	14,216	1.323	4,764	0.882	14,107	1.000	0

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		17,600			3,600			16,000			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	16,000	3,600	17,600	0	16,000	3,600	17,600	0	16,000	3,600	17,600
	0%	82%	18%	52%	0%	48%	17%	83%	0%	43%	10%	47%
2015 2-WAY ADT		11,185			1,589			12,321			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	12,321	1,589	11,185	0	12,321	1,589	11,185	0	12,321	1,589	11,185
	0%	89%	11%	48%	0%	52%	12%	88%	0%	49%	6%	45%
2025 2-WAY ADT		12,934			2,888			13,593			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	13,593	2,888	12,934	0	13,593	2,888	12,934	0	13,593	2,888	12,934
	0%	82%	18%	49%	0%	51%	18%	82%	0%	46%	10%	44%
2035 2-WAY ADT		14,216			4,764			14,107			0	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	0	14,107	4,764	14,216	0	14,107	4,764	14,216	0	14,107	4,764	14,216
	0%	75%	25%	50%	0%	50%	25%	75%	0%	43%	14%	43%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	1,144			187			1,167			6		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	0	605	40	42	0	63	42	454	0	3	0	3	1,252
% TURNS:	0%	94%	6%	40%	0%	60%	8%	92%	0%	50%	0%	50%	
P.M.	2-Way Pk Hr Vol:	1,322			265			1,450			87		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	0	544	39	55	0	68	103	666	0	69	0	18	1,562
% TURNS:	0%	93%	7%	45%	0%	55%	13%	87%	0%	79%	0%	21%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

			SB			WB			NB			EB	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2010	0%	94%	6%	40%	0%	60%	8%	92%	0%	50%	0%	50%
	2015	0%	93%	7%	41%	0%	59%	9%	91%	0%	50%	1%	49%
	2025	0%	92%	8%	41%	0%	59%	10%	90%	0%	49%	1%	49%
	2035	0%	91%	9%	42%	0%	58%	11%	89%	0%	49%	3%	49%
P.M.													
	2010	0%	93%	7%	45%	0%	55%	13%	87%	0%	79%	0%	21%
	2015	0%	93%	7%	45%	0%	55%	13%	87%	0%	76%	1%	23%
	2025	0%	92%	8%	45%	0%	55%	14%	86%	0%	75%	1%	24%
	2035	0%	90%	10%	46%	0%	54%	15%	85%	0%	73%	2%	24%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	OPEN YEAR:	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	DESIGN YEAR:	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	PREPARED BY:	FEN

INTERSECTION: #10 - SR 87N at Munson Highway - CORRIDOR 2

ATEC Advanced Transportation Engineering Consultants

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	17,600	3,600	16,000	0
24 HR EST. AADT	2015	11,185	1,589	12,321	0
24 HR EST. AADT	2025	12,934	2,888	13,593	0
24 HR EST. AADT	2035	14,216	4,764	14,107	0

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2015	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2025	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%
2035	Approach K30 factor	6.5%	7.5%	5.2%	7.4%	7.3%	9.1%	6040.0%	87040.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2015	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2025	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%
2035	Approach D30 Factor	56.4%	44.1%	56.1%	46.4%	42.5%	53.0%	99.5%	100.0%

#10 - SR 87N at Munson Highway - CORRIDOR		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**0**	**605**	**40**	**42**	**0**	**63**	**42**	**454**	**0**	**3**	**0**	**3**
2010	EST. TURNS	1	608	40	41	1	63	45	451	1	3	0	3
2015	EST. TURNS	1	468	19	7	1	45	15	312	2	6	0	1
2025	EST. TURNS	1	494	28	18	1	70	38	346	2	5	0	2
2035	EST. TURNS	1	493	43	43	2	96	68	354	1	4	0	2
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**0**	**544**	**39**	**55**	**0**	**68**	**103**	**666**	**0**	**69**	**0**	**18**
2010	EST. TURNS	1	545	39	55	1	67	108	664	1	69	0	18
2015	EST. TURNS	1	392	19	10	0	47	47	453	2	88	0	7
2025	EST. TURNS	1	424	26	26	1	74	84	506	1	79	1	10
2035	EST. TURNS	1	435	39	62	1	99	145	520	1	68	3	17

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		645	495	1140	105	85	190	496	674	1170	6	4	10
2010	TURN SUMMARY	649	495	1144	105	85	190	497	674	1171	6	3	9
CONTROL LINK VOLUMES		410	320	730	46	34	80	382	518	900	6	4	10
2015	TURN SUMMARY	488	320	808	53	34	87	329	519	848	7	4	11
CONTROL LINK VOLUMES		474	366	840	84	66	150	421	569	990	6	4	10
2025	TURN SUMMARY	523	366	889	89	66	155	386	569	955	7	4	11
CONTROL LINK VOLUMES		521	399	920	139	111	250	437	593	1030	6	4	10
2035	TURN SUMMARY	537	399	936	141	111	252	423	593	1016	6	4	10
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		583	737	1320	123	147	270	769	681	1450	87	3	90
2010	TURN SUMMARY	585	737	1322	123	147	270	773	681	1454	87	3	90
CONTROL LINK VOLUMES		371	469	840	54	66	120	592	528	1120	87	3	90
2015	TURN SUMMARY	412	470	882	57	66	123	502	527	1029	95	3	98
CONTROL LINK VOLUMES		428	542	970	99	111	210	653	577	1230	87	3	90
2025	TURN SUMMARY	451	542	993	101	111	212	591	577	1168	90	3	93
CONTROL LINK VOLUMES		471	599	1070	163	187	350	678	602	1280	87	3	90
2035	TURN SUMMARY	475	599	1074	162	187	349	666	602	1268	88	3	91

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	**#11 - Munson Hwy at Broad Street - NO BUILD**		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	0		4,400		2,700		2,840		9,940	
Open AADT:	2015	0		4,446		3,670		4,421		12,537	26.1%
Interim AADT:	2025	0		4,701		5,297		6,137		16,135	62.3%
Design AADT:	2035	0		6,013		6,951		8,328		21,292	114.2%
Future AADT:	2035	0		6,013		6,951		8,328		21,292	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.00%		1.26%		3.85%		4.40%	
Recommended Growth Rate:	**0.00%**	**CGR**	**1.26%**	**CGR**	**3.85%**	**CGR**	**4.40%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
						1		**1**		**1**		**1**
		2010		0		4,400		2,700		2,840
NO. YEARS	5	2015	1.000	0	1.064	4,446	1.208	3,670	1.240	4,421
NO. YEARS	15	2025	1.000	0	1.206	4,701	1.764	5,297	1.907	6,137
NO. YEARS	25	2035	1.000	0	1.367	6,013	2.574	6,951	2.932	8,328

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		0			4,400			2,700			2,840	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,840	2,700	4,400	0	2,840	2,700	4,400	0	2,840	2,700	4,400	0
	29%	27%	44%	0%	51%	49%	61%	0%	39%	38%	62%	0%
2015 2-WAY ADT		0			4,446			3,670			4,421	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	4,421	3,670	4,446	0	4,421	3,670	4,446	0	4,421	3,670	4,446	0
	35%	29%	35%	0%	55%	45%	50%	0%	50%	45%	55%	0%
2025 2-WAY ADT		0			4,701			5,297			6,137	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	6,137	5,297	4,701	0	6,137	5,297	4,701	0	6,137	5,297	4,701	0
	38%	33%	29%	0%	54%	46%	43%	0%	57%	53%	47%	0%
2035 2-WAY ADT		0			6,013			6,951			8,328	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	8,328	6,951	6,013	0	8,328	6,951	6,013	0	8,328	6,951	6,013	0
	39%	33%	28%	0%	55%	45%	42%	0%	58%	54%	46%	0%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	10			312			121			201		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	4	4	0	0	153	73	43	1			43	1	322
% TURNS:	50%	50%	0%	0%	68%	32%	98%	2%	0%	0%	98%	2%	
P.M.	2-Way Pk Hr Vol:	22			420			154			284		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	6	2	0	2	103	79	63	10			173	2	440
% TURNS:	75%	25%	0%	1%	56%	43%	86%	14%	0%	0%	99%	1%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	50%	50%	0%	0%	68%	32%	98%	2%	0%	0%	98%	2%
	2015	49%	48%	4%	0%	66%	34%	93%	2%	5%	5%	93%	2%
	2025	49%	48%	4%	0%	66%	34%	91%	2%	7%	7%	91%	2%
	2035	48%	47%	5%	0%	66%	34%	88%	2%	10%	9%	89%	2%
P.M.													
	2010	75%	25%	0%	1%	56%	43%	86%	14%	0%	0%	99%	1%
	2015	71%	25%	4%	1%	56%	43%	83%	12%	5%	5%	94%	1%
	2025	70%	26%	4%	1%	56%	43%	81%	12%	7%	7%	92%	1%
	2035	69%	26%	5%	1%	56%	43%	79%	11%	10%	9%	90%	1%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #11 - Munson Hwy at Broad Street - NO BUILD

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	0	4,400	2,700	2,840
24 HR EST. AADT	2015	0	4,446	3,670	4,421
24 HR EST. AADT	2025	0	4,701	5,297	6,137
24 HR EST. AADT	2035	0	6,013	6,951	8,328

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2015	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2025	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2035	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2015	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2025	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2035	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%

#11 - Munson Hwy at Broad Street - NO BUILD		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**4**	**4**	**0**	**0**	**153**	**73**	**43**	**1**	**0**	**0**	**43**	**1**
2010	EST. TURNS	4	4	0	0	152	72	42	1	0	0	42	1
2015	EST. TURNS	7	3	0	0	217	82	41	1	18	15	50	1
2025	EST. TURNS	9	2	0	0	252	89	38	1	74	63	51	1
2035	EST. TURNS	9	2	0	0	344	105	47	1	108	90	74	1
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**6**	**2**	**0**	**2**	**103**	**79**	**63**	**10**	**0**	**0**	**173**	**2**
2010	EST. TURNS	6	2	0	2	99	75	64	8	0	0	172	2
2015	EST. TURNS	7	1	0	0	135	65	52	9	26	45	182	2
2025	EST. TURNS	8	1	0	0	149	49	49	9	75	108	204	3
2035	EST. TURNS	7	1	0	0	195	53	54	9	115	158	265	3

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		8	2	10	226	84	310	44	76	120	44	156	200
2010	TURN SUMMARY	8	2	10	224	84	308	43	76	119	43	156	199
CONTROL LINK VOLUMES		8	2	10	228	92	320	60	100	160	68	242	310
2015	TURN SUMMARY	10	2	12	299	91	390	60	100	160	66	242	308
CONTROL LINK VOLUMES		8	2	10	241	89	330	86	154	240	95	335	430
2025	TURN SUMMARY	11	2	13	341	89	430	113	154	267	115	335	450
CONTROL LINK VOLUMES		8	2	10	309	121	430	113	197	310	129	461	590
2035	TURN SUMMARY	11	2	13	449	121	570	156	197	353	165	461	626
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		8	12	20	184	236	420	73	77	150	175	105	280
2010	TURN SUMMARY	8	12	20	176	236	412	72	77	149	174	105	279
CONTROL LINK VOLUMES		8	12	20	186	234	420	99	111	210	272	168	440
2015	TURN SUMMARY	8	11	19	200	234	434	87	111	198	229	168	397
CONTROL LINK VOLUMES		8	12	20	197	253	450	143	157	300	378	232	610
2025	TURN SUMMARY	9	12	21	198	253	451	133	158	291	315	232	547
CONTROL LINK VOLUMES		8	12	20	251	319	570	188	212	400	513	317	830
2035	TURN SUMMARY	8	12	20	248	319	567	178	212	390	426	317	743

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#11 - Munson Hwy at Broad Street - CORRIDOR 1		

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Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	0		4,400		2,700		2,840		9,940	
Open AADT:	2015	0		2,634		349		1,525		4,508	-54.6%
Interim AADT:	2025	0		2,160		986		2,431		5,577	-43.9%
Design AADT:	2035	0		2,755		2,421		4,318		9,494	-4.5%
Future AADT:	2035	0		2,755		2,421		4,318		9,494	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.00%		-1.86%		-0.44%		1.69%	
Recommended Growth Rate:	**0.00%**	**CGR**	**-1.86%**	**CGR**	**-0.44%**	**CGR**	**1.69%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		0		4,400		2,700		2,840
NO. YEARS	5	2015	1.000	0	0.911	2,634	0.978	349	1.087	1,525
NO. YEARS	15	2025	1.000	0	0.755	2,160	0.937	986	1.286	2,431
NO. YEARS	25	2035	1.000	0	0.626	2,755	0.897	2,421	1.520	4,318

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		0			4,400			2,700			2,840		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,840	2,700	4,400	0	2,840	2,700	4,400	0	2,840	2,700	4,400	0
	29%	27%	44%	0%	51%	49%	61%	0%	39%	38%	62%	0%
2015 2-WAY ADT		0			2,634			349			1,525		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	1,525	349	2,634	0	1,525	349	2,634	0	1,525	349	2,634	0
	34%	8%	58%	0%	81%	19%	63%	0%	37%	12%	88%	0%
2025 2-WAY ADT		0			2,160			986			2,431		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,431	986	2,160	0	2,431	986	2,160	0	2,431	986	2,160	0
	44%	18%	39%	0%	71%	29%	47%	0%	53%	31%	69%	0%
2035 2-WAY ADT		0			2,755			2,421			4,318		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	4,318	2,421	2,755	0	4,318	2,421	2,755	0	4,318	2,421	2,755	0
	45%	26%	29%	0%	64%	36%	39%	0%	61%	47%	53%	0%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	10			312			121			201			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	4	4	0	0	153	73	43	1			43	1	322
% TURNS:	50%	50%	0%	0%	68%	32%	98%	2%	0%	0%	98%	2%	
P.M.	2-Way Pk Hr Vol:	22			420			154			284			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	6	2	0	2	103	79	63	10			173	2	440
% TURNS:	75%	25%	0%	1%	56%	43%	86%	14%	0%	0%	99%	1%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	50%	50%	0%	0%	68%	32%	98%	2%	0%	0%	98%	2%
	2015	48%	46%	6%	0%	69%	31%	94%	2%	4%	1%	97%	2%
	2025	49%	46%	5%	0%	68%	32%	91%	2%	7%	4%	94%	2%
	2035	49%	46%	5%	0%	67%	33%	88%	2%	10%	8%	90%	2%
P.M.													
	2010	75%	25%	0%	1%	56%	43%	86%	14%	0%	0%	99%	1%
	2015	71%	23%	6%	1%	59%	41%	84%	12%	4%	1%	98%	1%
	2025	71%	24%	5%	1%	58%	41%	81%	12%	7%	4%	95%	1%
	2035	70%	25%	5%	1%	57%	42%	78%	11%	10%	8%	91%	1%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	OPEN YEAR:	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	DESIGN YEAR:	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	PREPARED BY:	FEN

INTERSECTION: #11 - Munson Hwy at Broad Street - CORRIDOR 1

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ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	0	4,400	2,700	2,840
24 HR EST. AADT	2015	0	2,634	349	1,525
24 HR EST. AADT	2025	0	2,160	986	2,431
24 HR EST. AADT	2035	0	2,755	2,421	4,318

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2015	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2025	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2035	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2015	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2025	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2035	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%

#11 - Munson Hwy at Broad Street - CORRIDOR		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	Actual TMC - AM	4	4	0	0	153	73	43	1	0	0	43	1
2010	EST. TURNS	4	4	0	0	152	72	42	1	0	0	42	1
2015	EST. TURNS	1	4	2	0	85	10	11	0	0	0	43	2
2025	EST. TURNS	5	4	0	0	121	17	10	1	5	3	29	1
2035	EST. TURNS	10	2	0	0	190	33	14	0	43	36	44	2
P.M. DESIGN HR. TURNS													
2010	Actual TMC - PM	6	2	0	2	103	79	63	10	0	0	173	2
2010	EST. TURNS	6	2	0	2	99	75	64	8	0	0	172	2
2015	EST. TURNS	2	3	2	10	54	8	11	1	0	0	128	1
2025	EST. TURNS	7	2	0	1	77	20	11	7	6	11	109	5
2035	EST. TURNS	8	0	0	0	109	13	11	6	47	61	134	5

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		8	2	10	226	84	310	44	76	120	44	156	200
2010	TURN SUMMARY	8	2	10	224	84	308	43	76	119	43	156	199
CONTROL LINK VOLUMES		8	2	10	135	55	190	6	14	20	24	86	110
2015	TURN SUMMARY	7	2	9	95	56	151	11	14	25	45	86	131
CONTROL LINK VOLUMES		8	2	10	111	39	150	16	24	40	38	132	170
2025	TURN SUMMARY	9	2	11	138	39	177	16	24	40	33	131	164
CONTROL LINK VOLUMES		8	2	10	142	58	200	39	71	110	67	243	310
2035	TURN SUMMARY	12	2	14	223	58	281	57	71	128	82	243	325
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		8	12	20	184	236	420	73	77	150	175	105	280
2010	TURN SUMMARY	8	12	20	176	236	412	72	77	149	174	105	279
CONTROL LINK VOLUMES		8	12	20	110	140	250	9	11	20	94	56	150
2015	TURN SUMMARY	7	12	19	72	141	213	12	11	23	129	56	185
CONTROL LINK VOLUMES		8	12	20	90	120	210	27	33	60	150	90	240
2025	TURN SUMMARY	9	13	22	98	120	218	24	33	57	125	90	215
CONTROL LINK VOLUMES		8	12	20	115	145	260	65	75	140	266	164	430
2035	TURN SUMMARY	8	11	19	122	145	267	64	74	138	200	164	364

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#11 - Munson Hwy at Broad Street - CORRIDOR 2		

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Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	0		4,400		2,700		2,840		9,940	
Open AADT:	2015	0		1,660		393		1,589		3,642	-63.4%
Interim AADT:	2025	0		2,210		1,409		2,888		6,507	-34.5%
Design AADT:	2035	0		2,848		2,802		4,764		10,414	4.8%
Future AADT:	2035	0		2,848		2,802		4,764		10,414	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	0.00%		-1.72%		0.15%		2.09%	
Recommended Growth Rate:	**0.00%**	**CGR**	**-1.72%**	**CGR**	**0.15%**	**CGR**	**2.09%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		**1**		**1**		**1**
		2010		0		4,400		2,700		2,840
NO. YEARS	5	2015	1.000	0	0.917	1,660	1.007	393	1.109	1,589
NO. YEARS	15	2025	1.000	0	0.770	2,210	1.022	1,409	1.364	2,888
NO. YEARS	25	2035	1.000	0	0.647	2,848	1.038	2,802	1.677	4,764

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		0			4,400			2,700			2,840		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,840	2,700	4,400	0	2,840	2,700	4,400	0	2,840	2,700	4,400	0
	29%	27%	44%	0%	51%	49%	61%	0%	39%	38%	62%	0%
2015 2-WAY ADT		0			1,660			393			1,589		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	1,589	393	1,660	0	1,589	393	1,660	0	1,589	393	1,660	0
	44%	11%	46%	0%	80%	20%	51%	0%	49%	19%	81%	0%
2025 2-WAY ADT		0			2,210			1,409			2,888		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,888	1,409	2,210	0	2,888	1,409	2,210	0	2,888	1,409	2,210	0
	44%	22%	34%	0%	67%	33%	43%	0%	57%	39%	61%	0%
2035 2-WAY ADT		0			2,848			2,802			4,764		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	4,764	2,802	2,848	0	4,764	2,802	2,848	0	4,764	2,802	2,848	0
	46%	27%	27%	0%	63%	37%	37%	0%	63%	50%	50%	0%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	10			312			121			201			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	4	4	0	0	153	73	43	1			43	1	322
% TURNS:	50%	50%	0%	0%	68%	32%	98%	2%	0%	0%	98%	2%	
P.M.	2-Way Pk Hr Vol:	22			420			154			284			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	6	2	0	2	103	79	63	10			173	2	440
% TURNS:	75%	25%	0%	1%	56%	43%	86%	14%	0%	0%	99%	1%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	50%	50%	0%	0%	68%	32%	98%	2%	0%	0%	98%	2%
	2015	49%	46%	5%	0%	69%	31%	93%	2%	5%	2%	96%	2%
	2025	49%	46%	4%	0%	68%	32%	91%	2%	7%	5%	93%	2%
	2035	49%	46%	5%	0%	67%	33%	88%	2%	10%	8%	90%	2%
P.M.													
	2010	75%	25%	0%	1%	56%	43%	86%	14%	0%	0%	99%	1%
	2015	72%	24%	5%	1%	58%	41%	83%	12%	5%	2%	97%	1%
	2025	71%	25%	4%	1%	57%	42%	81%	12%	7%	5%	94%	1%
	2035	70%	25%	5%	1%	57%	42%	78%	11%	10%	8%	91%	1%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #11 - Munson Hwy at Broad Street - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	0	4,400	2,700	2,840
24 HR EST. AADT	2015	0	1,660	393	1,589
24 HR EST. AADT	2025	0	2,210	1,409	2,888
24 HR EST. AADT	2035	0	2,848	2,802	4,764

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2015	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2025	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%
2035	Approach K30 factor	10000.0%	22000.0%	7.1%	9.5%	4.5%	5.7%	7.1%	10.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2015	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2025	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%
2035	Approach D30 Factor	80.0%	36.4%	72.4%	43.8%	36.4%	47.4%	21.9%	61.6%

#11 - Munson Hwy at Broad Street - CORRIDOR		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2010	**Actual TMC - AM**	**4**	**4**	**0**	**0**	**153**	**73**	**43**	**1**	**0**	**0**	**43**	**1**
2010	EST. TURNS	4	4	0	0	152	72	42	1	0	0	42	1
2015	EST. TURNS	4	4	0	0	81	9	6	0	0	0	28	2
2025	EST. TURNS	7	4	0	0	135	24	12	1	13	9	34	1
2035	EST. TURNS	11	2	0	0	198	32	12	0	57	50	42	2
P.M. DESIGN HR. TURNS													
2010	**Actual TMC - PM**	**6**	**2**	**0**	**2**	**103**	**79**	**63**	**10**	**0**	**0**	**173**	**2**
2010	EST. TURNS	6	2	0	2	99	75	64	8	0	0	172	2
2015	EST. TURNS	5	3	0	3	57	6	5	4	1	0	85	5
2025	EST. TURNS	8	1	0	0	86	15	11	7	18	26	107	5
2035	EST. TURNS	8	0	0	0	117	12	11	6	61	72	140	6

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		8	2	10	226	84	310	44	76	120	44	156	200
2010	TURN SUMMARY	8	2	10	224	84	308	43	76	119	43	156	199
CONTROL LINK VOLUMES		8	2	10	85	35	120	6	14	20	25	85	110
2015	TURN SUMMARY	8	2	10	90	34	124	6	13	19	30	85	115
CONTROL LINK VOLUMES		8	2	10	114	46	160	23	37	60	45	155	200
2025	TURN SUMMARY	11	2	13	159	46	205	26	37	63	44	155	199
CONTROL LINK VOLUMES		8	2	10	146	54	200	46	84	130	74	266	340
2035	TURN SUMMARY	13	2	15	230	54	284	69	84	153	94	266	360
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		8	12	20	184	236	420	73	77	150	175	105	280
2010	TURN SUMMARY	8	12	20	176	236	412	72	77	149	174	105	279
CONTROL LINK VOLUMES		8	12	20	69	91	160	11	9	20	98	62	160
2015	TURN SUMMARY	8	12	20	66	90	156	10	9	19	90	63	153
CONTROL LINK VOLUMES		8	12	20	92	118	210	38	42	80	178	112	290
2025	TURN SUMMARY	9	12	21	101	118	219	36	42	78	138	112	250
CONTROL LINK VOLUMES		8	12	20	119	151	270	76	84	160	294	186	480
2035	TURN SUMMARY	8	12	20	129	151	280	78	84	162	218	186	404

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#20 - SR 87 Connector at SR 87 N - CORRIDOR 1		

ATEC Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	12,800		4,000		12,800		2,000		31,600	
Open AADT:	2015	22,568		8,922		15,754		2,100		49,344	56.2%
Interim AADT:	2025	27,225		12,834		18,192		3,100		61,351	94.1%
Design AADT:	2035	31,654		17,121		20,965		4,100		73,840	133.7%
Future AADT:	2035	31,654		17,121		20,965		4,100		73,840	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.69%		5.99%		1.99%		2.91%	
Recommended Growth Rate:	**3.69%**	**CGR**	**5.99%**	**CGR**	**1.99%**	**CGR**	**2.91%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		12,800		4,000		12,800		2,000
NO. YEARS	5	2015	1.199	22,568	1.338	8,922	1.104	15,754	1.154	2,100
NO. YEARS	15	2025	1.722	27,225	2.393	12,834	1.345	18,192	1.538	3,100
NO. YEARS	25	2035	2.473	31,654	4.280	17,121	1.638	20,965	2.050	4,100

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG	
2010 2-WAY ADT		12,800			4,000			12,800			2,000	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,000	12,800	4,000	12,800	2,000	12,800	4,000	12,800	2,000	12,800	4,000	12,800
	11%	68%	21%	46%	7%	46%	21%	68%	11%	43%	14%	43%
2015 2-WAY ADT		22,568			8,922			15,754			2,100	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	2,100	15,754	8,922	22,568	2,100	15,754	8,922	22,568	2,100	15,754	8,922	22,568
	8%	59%	33%	56%	5%	39%	27%	67%	6%	33%	19%	48%
2025 2-WAY ADT		27,225			12,834			18,192			3,100	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	3,100	18,192	12,834	27,225	3,100	18,192	12,834	27,225	3,100	18,192	12,834	27,225
	9%	53%	38%	56%	6%	37%	30%	63%	7%	31%	22%	47%
2035 2-WAY ADT		31,654			17,121			20,965			4,100	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	4,100	20,965	17,121	31,654	4,100	20,965	17,121	31,654	4,100	20,965	17,121	31,654
	10%	50%	41%	56%	7%	37%	32%	60%	8%	30%	25%	45%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)		
A.M.	2-Way Pk Hr Vol:	977			170			987			120		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	10	474	20	20	50	20	30	443	10	10	30	10	1,127
% TURNS:	2%	94%	4%	22%	56%	22%	6%	92%	2%	20%	60%	20%	
P.M.	2-Way Pk Hr Vol:	1,040			160			1,050			110		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	10	460	20	20	40	20	30	520	10	10	30	10	1,180
% TURNS:	2%	94%	4%	25%	50%	25%	5%	93%	2%	20%	60%	20%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		SB			WB			NB			EB	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2010	2%	94%	4%	22%	56%	22%	6%	92%	2%	20%	60%	20%
2015	3%	91%	7%	26%	51%	24%	8%	89%	2%	21%	56%	23%
2025	3%	89%	8%	26%	49%	24%	9%	88%	3%	21%	55%	23%
2035	3%	87%	10%	28%	48%	25%	11%	86%	3%	22%	54%	24%
P.M.												
2010	2%	94%	4%	25%	50%	25%	5%	93%	2%	20%	60%	20%
2015	3%	90%	7%	28%	46%	26%	7%	90%	2%	21%	56%	23%
2025	3%	89%	8%	29%	45%	27%	8%	89%	2%	21%	55%	23%
2035	3%	87%	10%	30%	43%	27%	10%	87%	3%	22%	54%	24%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #20 - SR 87 Connector at SR 87 N - CORRIDOR 1

Advanced Transportation Engineering Consultants

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	12,800	4,000	12,800	2,000
24 HR EST. AADT	2015	22,568	8,922	15,754	2,100
24 HR EST. AADT	2025	27,225	12,834	18,192	3,100
24 HR EST. AADT	2035	31,654	17,121	20,965	4,100

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	7.6%	8.1%	4.3%	4.0%	7.7%	8.2%	6.0%	5.5%
2015	Approach K30 factor	7.9%	8.3%	5.2%	5.0%	8.0%	8.4%	6.6%	6.2%
2025	Approach K30 factor	8.5%	8.7%	7.1%	7.0%	8.5%	8.7%	7.8%	7.6%
2035	Approach K30 factor	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	51.6%	47.1%	52.9%	50.0%	48.9%	53.3%	41.7%	45.5%
2015	Approach D30 Factor	52.3%	46.7%	51.4%	49.0%	48.1%	53.7%	44.3%	47.4%
2025	Approach D30 Factor	53.6%	45.8%	48.2%	47.0%	46.6%	54.3%	49.7%	51.2%
2035	Approach D30 Factor	55.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%

#20 - SR 87 Connector at SR 87 N - CORRIDOR 1

A.M. DESIGN HR. TURNS		NORTH LEG RIGHT	NORTH LEG THRU	NORTH LEG LEFT	EAST LEG RIGHT	EAST LEG THRU	EAST LEG LEFT	SOUTH LEG RIGHT	SOUTH LEG THRU	SOUTH LEG LEFT	WEST LEG RIGHT	WEST LEG THRU	WEST LEG LEFT
2015	EST. TURNS	14	635	112	187	62	19	66	644	3	2	44	16
2025	EST. TURNS	18	789	204	370	99	30	161	677	3	2	106	20
2035	EST. TURNS	23	987	338	588	141	52	311	671	3	2	198	23

P.M. DESIGN HR. TURNS

2015	EST. TURNS	15	594	111	188	50	17	73	790	3	2	47	17
2025	EST. TURNS	21	694	184	380	94	27	182	869	4	2	112	21
2035	EST. TURNS	24	805	280	637	138	45	359	905	4	2	208	26

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	NORTH LEG TO	NORTH LEG LINK	EAST LEG FROM	EAST LEG TO	EAST LEG LINK	SOUTH LEG FROM	SOUTH LEG TO	SOUTH LEG LINK	WEST LEG FROM	WEST LEG TO	WEST LEG LINK
CONTROL LINK VOLUMES		504	476	980	90	80	170	483	507	990	50	70	120
2010	TURN SUMMARY	507	476	983	90	80	170	486	507	993	50	70	120
CONTROL LINK VOLUMES		933	847	1780	238	222	460	604	656	1260	61	79	140
2015	TURN SUMMARY	761	847	1608	268	222	490	713	656	1369	62	79	141
CONTROL LINK VOLUMES		1234	1066	2300	439	471	910	719	821	1540	120	120	240
2025	TURN SUMMARY	1011	1067	2078	499	471	970	841	821	1662	128	120	248
CONTROL LINK VOLUMES		1567	1283	2850	693	847	1540	849	1041	1890	203	167	370
2035	TURN SUMMARY	1348	1282	2630	781	847	1628	985	1041	2026	223	167	390

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		490	550	1040	80	80	160	560	490	1050	50	60	110
2010	TURN SUMMARY	490	550	1040	80	80	160	560	490	1050	50	60	110
CONTROL LINK VOLUMES		875	995	1870	219	231	450	707	613	1320	62	68	130
2015	TURN SUMMARY	720	995	1715	255	231	486	866	613	1479	66	68	134
CONTROL LINK VOLUMES		1080	1270	2350	422	478	900	858	722	1580	121	119	240
2025	TURN SUMMARY	899	1270	2169	501	478	979	1055	723	1778	135	119	254
CONTROL LINK VOLUMES		1282	1568	2850	693	847	1540	1038	852	1890	203	167	370
2035	TURN SUMMARY	1109	1568	2677	820	847	1667	1268	852	2120	236	166	402

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#20 - SR 87 Connector at SR 87 N - CORRIDOR 2		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	12,800		7,000		12,800		5,000		37,600	
Open AADT:	2015	13,392		8,228		10,170		5,665		37,455	-0.4%
Interim AADT:	2025	15,407		11,654		11,801		7,792		46,654	24.1%
Design AADT:	2035	17,489		15,470		13,340		9,717		56,016	49.0%
Future AADT:	2035	17,489		15,470		13,340		9,717		56,016	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	1.26%		3.22%		0.17%		2.69%	
Recommended Growth Rate:	**1.26%**	**CGR**	**3.22%**	**CGR**	**0.17%**	**CGR**	**2.69%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		12,800		7,000		12,800		5,000
NO. YEARS	5	2015	1.064	13,392	1.172	8,228	1.008	10,170	1.142	5,665
NO. YEARS	15	2025	1.206	15,407	1.609	11,654	1.025	11,801	1.490	7,792
NO. YEARS	25	2035	1.366	17,489	2.210	15,470	1.042	13,340	1.943	9,717

Percent Turns Calculated From Base Year AADTs:

JKTURNS	FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT	12,800			7,000			12,800			5,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	5,000	12,800	7,000	12,800	5,000	12,800	7,000	12,800	5,000	12,800	7,000	12,800
	20%	52%	28%	42%	16%	42%	28%	52%	20%	39%	21%	39%
2015 2-WAY ADT	13,392			8,228			10,170			5,665		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	5,665	10,170	8,228	13,392	5,665	10,170	8,228	13,392	5,665	10,170	8,228	13,392
	24%	42%	34%	46%	19%	35%	30%	49%	21%	32%	26%	42%
2025 2-WAY ADT	15,407			11,654			11,801			7,792		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	7,792	11,801	11,654	15,407	7,792	11,801	11,654	15,407	7,792	11,801	11,654	15,407
	25%	38%	37%	44%	22%	34%	33%	44%	22%	30%	30%	40%
2035 2-WAY ADT	17,489			15,470			13,340			9,717		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	9,717	13,340	15,470	17,489	9,717	13,340	15,470	17,489	9,717	13,340	15,470	17,489
	25%	35%	40%	43%	24%	33%	36%	41%	23%	29%	33%	38%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	1,070			390			1,080			340			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
AM Peak	10	550	20	20	250	20	30	460	10	10	50	10	1,440
% TURNS:	2%	95%	3%	7%	86%	7%	6%	92%	2%	14%	71%	14%	
P.M.	2-Way Pk Hr Vol:	1,170			390			1,180			340			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
PM Peak	10	530	20	20	250	20	30	580	10	10	50	10	1,540
% TURNS:	2%	95%	4%	7%	86%	7%	5%	94%	2%	14%	71%	14%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		SB			WB			NB			EB	
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2010	2%	95%	3%	7%	86%	7%	6%	92%	2%	14%	71%	14%
2015	4%	90%	7%	11%	80%	10%	8%	88%	4%	16%	67%	17%
2025	5%	88%	8%	12%	78%	10%	9%	86%	5%	16%	66%	17%
2035	6%	85%	10%	13%	76%	11%	11%	83%	5%	17%	65%	18%
P.M.												
2010	2%	95%	4%	7%	86%	7%	5%	94%	2%	14%	71%	14%
2015	4%	89%	7%	11%	80%	10%	7%	89%	4%	16%	67%	17%
2025	5%	88%	8%	12%	78%	10%	8%	87%	4%	16%	66%	17%
2035	6%	85%	10%	13%	76%	11%	10%	85%	5%	17%	65%	18%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #20 - SR 87 Connector at SR 87 N - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2010	12,800	7,000	12,800	5,000
24 HR EST. AADT	2015	13,392	8,228	10,170	5,665
24 HR EST. AADT	2025	15,407	11,654	11,801	7,792
24 HR EST. AADT	2035	17,489	15,470	13,340	9,717

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	8.4%	9.1%	5.6%	5.6%	8.4%	9.2%	6.8%	6.8%
2015	Approach K30 factor	8.5%	9.1%	6.3%	6.3%	8.6%	9.2%	7.2%	7.2%
2025	Approach K30 factor	8.7%	9.1%	7.6%	7.6%	8.8%	9.1%	8.1%	8.1%
2035	Approach K30 factor	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	54.2%	47.9%	74.4%	74.4%	46.3%	52.5%	20.6%	20.6%
2015	Approach D30 Factor	54.4%	47.3%	68.5%	68.5%	46.0%	53.0%	27.5%	27.5%
2025	Approach D30 Factor	54.7%	46.1%	56.7%	56.7%	45.5%	54.0%	41.2%	41.2%
2035	Approach D30 Factor	55.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%

#20 - SR 87 Connector at SR 87 N - CORRIDOR 2

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
A.M. DESIGN HR. TURNS		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
2015	EST. TURNS	26	449	55	80	263	15	25	411	8	6	77	31
2025	EST. TURNS	27	533	88	134	334	27	69	437	9	9	229	42
2035	EST. TURNS	28	606	142	209	353	43	143	441	8	12	478	54
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	25	415	54	84	263	14	26	526	9	6	77	33
2025	EST. TURNS	25	459	80	145	335	24	74	566	9	8	232	45
2035	EST. TURNS	24	492	119	226	356	38	156	576	9	11	487	60

LINK VOLUME CHECK

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		580	490	1070	290	100	390	500	580	1080	70	270	340
2010	TURN SUMMARY	580	490	1070	290	100	390	500	580	1080	70	270	340
CONTROL LINK VOLUMES		618	522	1140	353	157	510	400	470	870	113	297	410
2015	TURN SUMMARY	530	522	1052	358	157	515	444	470	914	114	297	411
CONTROL LINK VOLUMES		737	613	1350	504	386	890	471	569	1040	261	369	630
2025	TURN SUMMARY	648	613	1261	495	386	881	515	569	1084	280	370	650
CONTROL LINK VOLUMES		866	704	1570	627	763	1390	540	660	1200	481	389	870
2035	TURN SUMMARY	776	704	1480	605	763	1368	592	661	1253	544	389	933
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		560	610	1170	290	100	390	620	560	1180	70	270	340
2010	TURN SUMMARY	560	610	1170	290	100	390	620	560	1180	70	270	340
CONTROL LINK VOLUMES		577	643	1220	353	157	510	495	435	930	113	297	410
2015	TURN SUMMARY	494	643	1137	361	157	518	561	435	996	116	297	413
CONTROL LINK VOLUMES		644	756	1400	504	386	890	579	491	1070	261	369	630
2025	TURN SUMMARY	564	756	1320	504	386	890	649	491	1140	285	369	654
CONTROL LINK VOLUMES		708	862	1570	627	763	1390	660	540	1200	481	389	870
2035	TURN SUMMARY	635	862	1497	620	762	1382	741	541	1282	558	389	947

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#21 - SR 87 Connector at Munson Hwy - CORRIDOR 1		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	4,500		10,000		2,000		8,500		25,000	
Open AADT:	2015	4,853		10,731		2,180		8,922		26,686	6.7%
Interim AADT:	2025	7,447		15,015		2,940		12,834		38,236	52.9%
Design AADT:	2035	10,091		19,746		3,880		17,121		50,838	103.4%
Future AADT:	2035	10,091		19,746		3,880		17,121		50,838	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.28%		2.76%		2.69%		2.84%	
Recommended Growth Rate:	**3.28%**	**CGR**	**2.76%**	**CGR**	**2.69%**	**CGR**	**2.84%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2010		4,500		10,000		2,000		8,500
NO. YEARS	5	2015	1.175	4,853	1.146	10,731	1.142	2,180	1.150	8,922
NO. YEARS	15	2025	1.623	7,447	1.504	15,015	1.488	2,940	1.522	12,834
NO. YEARS	25	2035	2.242	10,091	1.975	19,746	1.940	3,880	2.014	17,121

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010	2-WAY ADT	4,500			10,000			2,000			8,500		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	8,500	2,000	10,000	4,500	8,500	2,000	10,000	4,500	8,500	2,000	10,000	4,500	
	41%	10%	49%	30%	57%	13%	43%	20%	37%	12%	61%	27%	
2015	2-WAY ADT	4,853			10,731			2,180			8,922		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	8,922	2,180	10,731	4,853	8,922	2,180	10,731	4,853	8,922	2,180	10,731	4,853	
	41%	10%	49%	30%	56%	14%	44%	20%	36%	12%	60%	27%	
2025	2-WAY ADT	7,447			15,015			2,940			12,834		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	12,834	2,940	15,015	7,447	12,834	2,940	15,015	7,447	12,834	2,940	15,015	7,447	
	42%	10%	49%	32%	55%	13%	43%	21%	36%	12%	59%	29%	
2035	2-WAY ADT	10,091			19,746			3,880			17,121		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	
	17,121	3,880	19,746	10,091	17,121	3,880	19,746	10,091	17,121	3,880	19,746	10,091	
	42%	10%	48%	32%	55%	12%	42%	21%	36%	12%	59%	30%	

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	240			890			232			882			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL	
AM Peak	10	130	10	10	450	10	10	70	10	2	400	10	1,122	
% TURNS:	7%	87%	7%	2%	96%	2%	11%	78%	11%	0%	97%	2%		
P.M.	2-Way Pk Hr Vol:	270			940			262			932			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL	
PM Peak	10	140	10	10	500	10	10	90	10	2	400	10	1,202	
% TURNS:	6%	88%	6%	2%	96%	2%	9%	82%	9%	0%	97%	2%		

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	7%	87%	7%	2%	96%	2%	11%	78%	11%	0%	97%	2%
	2015	10%	79%	11%	5%	92%	3%	14%	72%	14%	2%	93%	5%
	2025	11%	77%	12%	6%	91%	3%	15%	71%	14%	2%	92%	6%
	2035	13%	74%	14%	7%	89%	4%	16%	68%	15%	2%	91%	7%
P.M.													
	2010	6%	88%	6%	2%	96%	2%	9%	82%	9%	0%	97%	2%
	2015	10%	80%	11%	5%	92%	3%	13%	76%	12%	2%	93%	5%
	2025	11%	78%	12%	6%	91%	3%	13%	74%	12%	2%	92%	6%
	2035	12%	75%	13%	7%	89%	4%	15%	72%	14%	2%	91%	7%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	**DATE:**	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	**OPEN YEAR:**	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	**DESIGN YEAR:**	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	**PREPARED BY:**	FEN

INTERSECTION: #21 - SR 87 Connector at Munson Hwy - CORRIDOR 1

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2015	4,853	10,731	2,180	8,922
24 HR EST. AADT	2025	7,447	15,015	2,940	12,834
24 HR EST. AADT	2035	10,091	19,746	3,880	17,121

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	5.3%	6.0%	8.9%	9.4%	11.6%	13.1%	10.4%	11.0%
2015	Approach K30 factor	6.1%	6.6%	8.9%	9.3%	11.1%	12.3%	10.1%	10.6%
2025	Approach K30 factor	7.5%	7.8%	9.0%	9.2%	10.0%	10.6%	9.6%	9.8%
2035	Approach K30 factor	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	62.5%	59.3%	52.8%	55.3%	38.8%	42.0%	46.7%	44.2%
2015	Approach D30 Factor	59.0%	56.4%	53.2%	55.3%	42.0%	44.6%	46.4%	44.4%
2025	Approach D30 Factor	52.0%	50.7%	54.1%	55.1%	48.5%	49.8%	45.7%	44.7%
2035	Approach D30 Factor	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%

#21 - SR 87 Connector at Munson Hwy - CORRIDOR 1

A.M. DESIGN HR. TURNS		NORTH LEG RIGHT	NORTH LEG THRU	NORTH LEG LEFT	EAST LEG RIGHT	EAST LEG THRU	EAST LEG LEFT	SOUTH LEG RIGHT	SOUTH LEG THRU	SOUTH LEG LEFT	WEST LEG RIGHT	WEST LEG THRU	WEST LEG LEFT
2015	EST. TURNS	17	123	23	27	453	11	18	72	12	4	409	17
2025	EST. TURNS	39	151	59	95	620	5	18	123	10	1	546	50
2035	EST. TURNS	71	155	121	229	765	2	22	176	11	1	659	96

P.M. DESIGN HR. TURNS

2015	EST. TURNS	17	134	22	30	493	13	17	90	12	4	408	19
2025	EST. TURNS	40	149	59	96	649	4	17	139	10	1	546	50
2035	EST. TURNS	70	155	120	225	768	2	20	181	9	1	663	95

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	NORTH LEG TO	NORTH LEG LINK	EAST LEG FROM	EAST LEG TO	EAST LEG LINK	SOUTH LEG FROM	SOUTH LEG TO	SOUTH LEG LINK	WEST LEG FROM	WEST LEG TO	WEST LEG LINK
CONTROL LINK VOLUMES		150	90	240	470	420	890	90	140	230	412	468	880
2010	TURN SUMMARY	148	90	238	468	420	888	90	140	230	412	468	880
CONTROL LINK VOLUMES		174	116	290	510	450	960	102	138	240	418	482	900
2015	TURN SUMMARY	163	116	279	491	450	941	102	138	240	430	482	912
CONTROL LINK VOLUMES		292	268	560	728	622	1350	143	157	300	560	670	1230
2025	TURN SUMMARY	249	268	517	720	623	1343	151	157	308	597	669	1266
CONTROL LINK VOLUMES		409	501	910	977	803	1780	192	158	350	693	847	1540
2035	TURN SUMMARY	347	501	848	996	802	1798	209	158	367	756	847	1603

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		160	110	270	520	420	940	110	150	260	412	518	930
2010	TURN SUMMARY	158	110	268	518	420	938	110	150	260	412	518	930
CONTROL LINK VOLUMES		181	139	320	553	447	1000	119	151	270	418	522	940
2015	TURN SUMMARY	173	139	312	536	447	983	119	151	270	431	522	953
CONTROL LINK VOLUMES		295	285	580	758	622	1380	156	154	310	561	699	1260
2025	TURN SUMMARY	248	285	533	749	622	1371	166	154	320	597	699	1296
CONTROL LINK VOLUMES		409	501	910	977	803	1780	192	158	350	693	847	1540
2035	TURN SUMMARY	345	501	846	995	803	1798	210	158	368	759	847	1606

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

Pproject:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02; 4167484-22-90	BASE YEAR:	2010
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	OPENING YEAR:	2015
COUNTY / DISTRICT:	Santa Rosa County, FDOT District 3	INTERIM YEAR:	2025
PREPARED BY:	FEN	DESIGN YEAR:	2035
INTERSECTION:	#21 - SR 87 Connector at Munson Hwy - CORRIDOR 2		

ATEC
Advanced Transportation Engineering Consultants

Historical AADTs:

	YEAR	NORTH LEG AADT		EAST LEG AADT		SOUTH LEG AADT		WEST LEG AADT		TOTAL AADT	GROWTH
Actual AADT:	2010	4,500		10,000		2,000		8,500		25,000	
Open AADT:	2015	4,803		10,299		2,358		8,228		25,688	2.8%
Interim AADT:	2025	7,367		14,406		3,339		11,654		36,766	47.1%
Design AADT:	2035	9,978		19,138		4,662		15,470		49,248	97.0%
Future AADT:	2035	9,978		19,138		4,662		15,470		49,248	

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
2010 Model to 2035 Model Growth	3.24%		2.63%		3.44%		2.42%	
Recommended Growth Rate:	**3.24%**	**CGR**	**2.63%**	**CGR**	**3.44%**	**CGR**	**2.42%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years
2 = Linear Growth Throughout All Years
3 = Blend of Compound First Ten Years, Linear Thereafter

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		**1**		**1**		**1**
		2010		4,500		10,000		2,000		8,500
NO. YEARS	5	2015	1.173	4,803	1.139	10,299	1.184	2,358	1.127	8,228
NO. YEARS	15	2025	1.612	7,367	1.476	14,406	1.662	3,339	1.432	11,654
NO. YEARS	25	2035	2.217	9,978	1.914	19,138	2.331	4,662	1.820	15,470

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2010 2-WAY ADT		4,500			10,000			2,000			8,500		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	8,500	2,000	10,000	4,500	8,500	2,000	10,000	4,500	8,500	2,000	10,000	4,500
	41%	10%	49%	30%	57%	13%	43%	20%	37%	12%	61%	27%
2015 2-WAY ADT		4,803			10,299			2,358			8,228		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	8,228	2,358	10,299	4,803	8,228	2,358	10,299	4,803	8,228	2,358	10,299	4,803
	39%	11%	49%	31%	53%	15%	44%	21%	35%	14%	59%	28%
2025 2-WAY ADT		7,367			14,406			3,339			11,654		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	11,654	3,339	14,406	7,367	11,654	3,339	14,406	7,367	11,654	3,339	14,406	7,367
	40%	11%	49%	33%	52%	15%	43%	22%	35%	13%	57%	29%
2035 2-WAY ADT		9,978			19,138			4,662			15,470		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	15,470	4,662	19,138	9,978	15,470	4,662	19,138	9,978	15,470	4,662	19,138	9,978
	39%	12%	49%	33%	51%	15%	43%	22%	35%	14%	57%	30%

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
A.M.	2-Way Pk Hr Vol:	240			890			232			882			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT		TOTAL
AM Peak	10	130	10	10	450	10	10	70	10	2	400	10		1,122
% TURNS:	7%	87%	7%	2%	96%	2%	11%	78%	11%	0%	97%	2%		
P.M.	2-Way Pk Hr Vol:	270			940			262			932			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT		TOTAL
PM Peak	10	140	10	10	500	10	10	90	10	2	400	10		1,202
% TURNS:	6%	88%	6%	2%	96%	2%	9%	82%	9%	0%	97%	2%		

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		RIGHT	SB THRU	LEFT	RIGHT	WB THRU	LEFT	RIGHT	NB THRU	LEFT	RIGHT	EB THRU	LEFT
A.M.													
	2010	7%	87%	7%	2%	96%	2%	11%	78%	11%	0%	97%	2%
	2015	10%	79%	11%	5%	92%	3%	14%	72%	14%	2%	93%	5%
	2025	11%	77%	12%	6%	90%	4%	15%	71%	14%	2%	92%	6%
	2035	12%	74%	14%	7%	88%	4%	16%	69%	15%	3%	90%	7%
P.M.													
	2010	6%	88%	6%	2%	96%	2%	9%	82%	9%	0%	97%	2%
	2015	10%	80%	11%	5%	92%	3%	13%	76%	12%	2%	93%	5%
	2025	10%	78%	12%	6%	91%	4%	13%	74%	12%	2%	92%	6%
	2035	12%	75%	13%	7%	89%	4%	15%	72%	13%	3%	90%	7%

PROJECT MANAGER "TMTOOL" REPORT

DESIGN HOUR TURNS CALCULATIONS

PROJECT:	SR 87 Connector PD&E	DATE:	8/6/2012
FM NO.:	4167483-22-01/02; 4167484-22-01/02;	OPEN YEAR:	2015
PROJECT LIMITS:	From SR 87S at US 90 to SR 87 N	DESIGN YEAR:	2035
COUNTY/DISTRICT:	Santa Rosa County, FDOT District 3	PREPARED BY:	FEN

INTERSECTION: #21 - SR 87 Connector at Munson Hwy - CORRIDOR 2

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	FROM NORTH	FROM EAST	FROM SOUTH	FROM WEST
24 HR EST. AADT	2015	4,803	10,299	2,358	8,228
24 HR EST. AADT	2025	7,367	14,406	3,339	11,654
24 HR EST. AADT	2035	9,978	19,138	4,662	15,470

K & D FACTORS:

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH K FACTOF	5.3%	6.0%	8.9%	9.4%	11.6%	13.1%	10.4%	11.0%
2015	Approach K30 factor	6.1%	6.6%	8.9%	9.3%	11.1%	12.3%	10.1%	10.6%
2025	Approach K30 factor	7.5%	7.8%	9.0%	9.2%	10.0%	10.6%	9.6%	9.8%
2035	Approach K30 factor	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%

		AM	PM	AM	PM	AM	PM	AM	PM
2010	APPROACH D FACTOF	62.5%	59.3%	52.8%	55.3%	38.8%	42.0%	46.7%	44.2%
2015	Approach D30 Factor	59.0%	56.4%	53.2%	55.3%	42.0%	44.6%	46.4%	44.4%
2025	Approach D30 Factor	52.0%	50.7%	54.1%	55.1%	48.5%	49.8%	45.7%	44.7%
2035	Approach D30 Factor	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%

#21 - SR 87 Connector at Munson Hwy - CORRIDOR 2

A.M. DESIGN HR. TURNS		NORTH LEG RIGHT	NORTH LEG THRU	NORTH LEG LEFT	EAST LEG RIGHT	EAST LEG THRU	EAST LEG LEFT	SOUTH LEG RIGHT	SOUTH LEG THRU	SOUTH LEG LEFT	WEST LEG RIGHT	WEST LEG THRU	WEST LEG LEFT
2015	EST. TURNS	14	130	23	28	419	16	22	76	12	4	386	14
2025	EST. TURNS	29	166	57	93	562	9	25	132	11	2	509	36
2035	EST. TURNS	51	182	116	227	701	6	34	201	11	1	623	68

P.M. DESIGN HR. TURNS													
2015	EST. TURNS	14	139	22	30	458	18	22	96	12	5	386	15
2025	EST. TURNS	29	172	55	93	591	9	24	150	10	2	514	36
2035	EST. TURNS	49	183	114	223	704	5	31	207	10	1	628	66

LINK VOLUME CHECK

DESIGN HOUR A.M.:		NORTH LEG FROM	NORTH LEG TO	NORTH LEG LINK	EAST LEG FROM	EAST LEG TO	EAST LEG LINK	SOUTH LEG FROM	SOUTH LEG TO	SOUTH LEG LINK	WEST LEG FROM	WEST LEG TO	WEST LEG LINK
CONTROL LINK VOLUMES		150	90	240	470	420	890	90	140	230	412	468	880
2010	TURN SUMMARY	148	90	238	468	420	888	90	140	230	412	468	880
CONTROL LINK VOLUMES		172	118	290	489	431	920	110	150	260	385	445	830
2015	TURN SUMMARY	167	118	285	463	431	894	110	150	260	404	445	849
CONTROL LINK VOLUMES		289	261	550	699	591	1290	163	177	340	508	602	1110
2025	TURN SUMMARY	252	261	513	664	591	1255	168	177	345	547	602	1149
CONTROL LINK VOLUMES		404	496	900	947	773	1720	231	189	420	627	763	1390
2035	TURN SUMMARY	349	496	845	934	773	1707	246	189	435	692	763	1455

DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		160	110	270	520	420	940	110	150	260	412	518	930
2010	TURN SUMMARY	158	110	268	518	420	938	110	150	260	412	518	930
CONTROL LINK VOLUMES		179	141	320	530	430	960	129	161	290	386	484	870
2015	TURN SUMMARY	175	141	316	506	430	936	130	162	292	406	484	890
CONTROL LINK VOLUMES		291	279	570	727	593	1320	177	183	360	510	630	1140
2025	TURN SUMMARY	256	279	535	693	593	1286	184	183	367	552	630	1182
CONTROL LINK VOLUMES		404	496	900	947	773	1720	231	189	420	627	763	1390
2035	TURN SUMMARY	346	496	842	932	773	1705	248	189	437	695	763	1458

Note: Boxed number indicates manual adjustment.

Appendix: E

Intersection Turning Movement Volumes

FUTURE INTERSECTION TURNING VOLUMES - AM - NO BUILD

Location		AM - 2010 - EXISTING											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	232	168	63	11	65	67	189	120	174	80	179	38
	Ward Basin Rd	243	10	60	2	8	2	0	400	180	105	418	1
	Willing St	2	5	11	212	30	3	3	341	27	1	532	215
	Canal St	146	99	12	5	113	9	8	418	139	12	500	0
	SR 87N	0	0	0	283	0	337	261	382	0	0	483	212
	SR 89	4	10	12	150	70	618	403	625	13	28	683	118
SR 87N	SR 89/Dogwood Dr	22	232	5	2	271	11	527	2	8	11	10	4
	SR 89/Oriole St	53	696	0	0	374	6	23	0	98	0	0	0
	Langley St	9	103	686	23	184	0	0	0	0	118	0	8
	Munson Hwy/Oliver St	0	454	42	40	605	0	3	0	3	63	0	42
Munson Hwy at Broad St		0	1	43	0	4	4	1	43	0	73	153	0

Location		AM - 2015 - NO BUILD											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	302	211	95	15	66	63	160	113	243	125	169	39
	Ward Basin Rd	251	14	79	3	9	3	1	420	190	126	438	2
	Willing St	2	4	13	226	30	12	10	366	27	4	555	226
	Canal St	107	127	53	13	153	10	10	503	102	53	545	12
	SR 87N	0	0	0	334	0	365	278	404	0	0	509	257
	SR 89	5	10	12	162	67	623	405	614	19	27	683	124
SR 87N	SR 89/Dogwood Dr	6	373	4	8	296	31	808	2	2	2	6	23
	SR 89/Oriole St	116	785	0	0	406	15	40	0	218	0	0	0
	Langley St	8	188	697	83	269	0	0	0	0	76	0	40
	Munson Hwy/Oliver St	0	434	58	43	592	0	2	0	4	88	0	42
Munson Hwy at Broad St		18	1	41	0	3	7	1	50	15	82	217	0

Location		AM - 2025 - NO BUILD											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	356	240	103	18	75	75	194	129	288	135	191	43
	Ward Basin Rd	360	13	122	4	9	3	0	449	273	189	459	1
	Willing St	2	5	15	323	41	16	14	415	23	4	619	318
	Canal St	90	162	70	22	207	13	15	561	76	61	588	31
	SR 87N	0	0	0	357	0	395	306	413	0	0	527	273
	SR 89	7	11	12	166	71	701	455	651	27	32	734	121
SR 87N	SR 89/Dogwood Dr	8	452	2	8	360	42	937	1	3	3	7	25
	SR 89/Oriole St	160	886	0	0	450	23	56	0	290	0	0	0
	Langley St	8	209	835	97	301	0	0	0	0	94	0	48
	Munson Hwy/Oliver St	0	478	85	56	659	0	3	0	3	115	0	63
Munson Hwy at Broad St		74	1	38	0	2	9	1	51	63	89	252	0

Location		AM - 2035 - NO BUILD											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	433	277	114	22	85	86	225	141	352	150	211	48
	Ward Basin Rd	410	11	145	4	9	4	1	516	312	215	528	1
	Willing St	2	6	17	402	49	23	21	449	27	7	678	398
	Canal St	60	156	76	40	232	19	24	606	35	43	615	82
	SR 87N	0	0	0	354	0	475	381	421	0	0	558	250
	SR 89	9	10	12	169	73	794	513	747	35	31	854	119
SR 87N	SR 89/Dogwood Dr	8	495	1	8	394	46	1085	0	4	3	6	29
	SR 89/Oriole St	187	994	0	0	498	29	67	0	339	0	0	0
	Langley St	8	224	972	113	331	0	0	0	0	115	0	55
	Munson Hwy/Oliver St	0	530	110	77	725	0	3	0	3	147	0	93
Munson Hwy at Broad St		108	1	47	0	2	9	1	74	90	105	344	0

FUTURE INTERSECTION TURNING VOLUMES - PM - NO BUILD

Location		PM - 2010 - EXISTING											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	266	16	81	22	117	100	22	192	306	96	164	2
	Ward Basin Rd	176	9	43	0	3	3	4	559	253	27	555	1
	Willing St	16	25	15	255	12	13	13	532	14	1	511	292
	Canal St	191	125	3	8	108	18	10	557	175	13	539	3
	SR 87N	0	0	0	246	0	441	523	575	0	0	568	241
	SR 89	19	75	90	145	45	699	671	968	35	69	826	179
SR 87N	SR 89/Dogwood Dr	12	313	12	10	256	9	361	12	21	12	13	2
	SR 89/Oriole St	104	383	0	0	681	17	5	0	84	0	0	0
	Langley St	26	151	108	3	138	0	0	0	0	552	0	24
	Munson Hwy/Oliver St	0	666	103	39	544	0	18	0	69	68	0	55
Munson Hwy at Broad St		0	10	63	0	2	6	2	173	0	79	103	2

Location		PM - 2015 - NO BUILD											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	349	20	140	30	132	97	15	174	414	166	146	4
	Ward Basin Rd	186	8	56	0	3	3	4	592	263	42	584	1
	Willing St	16	23	21	272	12	21	21	571	14	4	534	308
	Canal St	150	160	42	18	154	16	12	683	131	60	588	17
	SR 87N	0	0	0	303	0	479	567	608	0	0	599	301
	SR 89	28	75	90	162	45	698	674	959	45	67	827	189
SR 87N	SR 89/Dogwood Dr	4	480	3	25	291	22	568	4	3	4	9	18
	SR 89/Oriole St	216	429	0	0	820	47	12	0	202	0	0	0
	Langley St	28	239	93	29	269	0	0	0	0	525	0	126
	Munson Hwy/Oliver St	0	634	139	39	529	0	16	0	72	95	0	57
Munson Hwy at Broad St		26	9	52	0	1	7	2	182	45	65	135	0

Location		PM - 2025 - NO BUILD											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	405	25	145	36	147	114	21	195	484	173	165	5
	Ward Basin Rd	259	15	89	0	4	4	5	663	369	74	646	2
	Willing St	16	29	25	394	17	29	32	649	9	3	597	442
	Canal St	130	207	60	30	211	21	18	759	102	70	642	40
	SR 87N	0	0	0	328	0	516	615	629	0	0	622	321
	SR 89	37	81	91	167	47	776	757	1004	55	66	890	183
SR 87N	SR 89/Dogwood Dr	5	574	5	30	350	27	655	5	4	4	9	22
	SR 89/Oriole St	293	487	0	0	922	76	19	0	277	0	0	0
	Langley St	29	255	116	33	287	0	0	0	0	619	0	142
	Munson Hwy/Oliver St	0	707	187	51	599	0	18	0	68	125	0	87
Munson Hwy at Broad St		75	9	49	0	1	8	3	204	108	49	149	0

Location		PM - 2035 - NO BUILD											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	495	27	161	44	165	137	23	212	598	198	182	6
	Ward Basin Rd	299	14	105	1	4	4	5	764	425	93	741	2
	Willing St	16	33	30	492	21	38	43	710	13	6	651	544
	Canal St	85	206	73	51	243	28	29	817	51	53	673	99
	SR 87N	0	0	0	323	0	601	738	630	0	0	660	283
	SR 89	51	80	93	169	49	870	851	1148	68	64	1042	180
SR 87N	SR 89/Dogwood Dr	5	634	6	34	393	32	767	6	5	4	8	27
	SR 89/Oriole St	334	549	0	0	1034	96	23	0	329	0	0	0
	Langley St	29	270	134	40	301	0	0	0	0	709	0	161
	Munson Hwy/Oliver St	0	774	252	69	665	0	20	0	64	160	0	128
Munson Hwy at Broad St		115	9	54	0	1	7	3	265	158	53	195	0

FUTURE INTERSECTION TURNING VOLUMES - AM - CORRIDOR 1

Location		AM - 2015 - CORRIDOR 1											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	234	442	148	32	153	72	110	57	234	222	79	49
	Ward Basin Rd	217	6	58	3	7	3	0	270	165	93	280	1
	Willing St	3	3	14	129	15	7	5	299	39	7	450	121
	Canal St	119	100	43	10	122	9	7	416	116	47	458	6
	SR 87N	0	0	0	235	0	340	259	431	0	0	532	172
	SR 89	5	10	12	161	67	619	401	619	19	28	688	125
SR 87N	SR 89/Dogwood Dr	13	131	1	3	162	27	599	1	5	3	11	7
	SR 89/Oriole St	152	817	0	0	417	16	41	0	293	0	0	0
	Langley St	8	194	718	80	281	0	0	0	0	81	0	36
	Munson Hwy/Oliver St	2	303	18	18	458	1	1	0	6	43	1	6
Munson Hwy at Broad St		0	0	11	2	4	1	2	43	0	10	85	0
SR 87 Connector & SR 87 N		0	737	0	0	192	336	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	605	0	336	0	0	0	0	51	0	0

Location		AM - 2025 - CORRIDOR 1											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	319	516	169	50	243	105	133	68	349	240	81	45
	Ward Basin Rd	273	13	92	4	8	3	1	310	207	141	315	1
	Willing St	3	4	16	182	22	11	8	356	38	8	536	173
	Canal St	112	135	67	16	166	11	10	475	105	69	508	16
	SR 87N	0	0	0	250	0	357	273	463	0	0	571	187
	SR 89	7	11	12	164	70	683	443	645	28	33	729	121
SR 87N	SR 89/Dogwood Dr	18	189	1	3	225	28	651	1	13	5	9	7
	SR 89/Oriole St	215	925	0	0	459	23	56	0	397	0	0	0
	Langley St	8	214	857	94	311	0	0	0	0	99	0	44
	Munson Hwy/Oliver St	2	335	35	24	487	1	1	0	5	64	1	13
Munson Hwy at Broad St		5	1	10	0	4	5	1	29	3	17	121	0
SR 87 Connector & SR 87 N		0	847	0	0	256	389	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	665	0	389	0	0	0	0	55	0	0

Location		AM - 2035 - CORRIDOR 1											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	364	536	209	70	346	138	155	92	420	264	94	50
	Ward Basin Rd	356	11	117	5	9	4	1	328	276	176	329	1
	Willing St	3	5	18	256	31	17	13	373	41	13	564	242
	Canal St	105	130	82	21	170	13	12	492	90	78	525	24
	SR 87N	1	0	0	216	0	427	332	506	(1)	0	645	146
	SR 89	9	10	14	165	69	725	459	777	34	35	873	125
SR 87N	SR 89/Dogwood Dr	21	233	2	4	269	34	752	2	21	6	7	7
	SR 89/Oriole St	263	1,045	0	0	515	29	67	0	482	0	0	0
	Langley St	8	234	994	109	345	0	0	0	0	121	0	49
	Munson Hwy/Oliver St	2	356	55	39	490	1	2	0	4	92	1	35
Munson Hwy at Broad St		43	0	14	0	2	10	2	44	36	33	190	0
SR 87 Connector & SR 87 N		0	992	0	0	307	429	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	775	0	429	0	0	0	0	62	0	0

FUTURE INTERSECTION TURNING VOLUMES - PM - CORRIDOR 1

Location		PM - 2015 - CORRIDOR 1											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	308	87	245	46	302	81	13	63	360	267	49	7
	Ward Basin Rd	158	8	41	0	3	3	4	398	219	31	390	1
	Willing St	19	18	22	145	6	12	11	461	19	6	437	160
	Canal St	161	127	33	14	121	15	9	566	146	52	493	10
	SR 87N	0	0	0	192	0	441	521	631	0	0	635	179
	SR 89	28	74	90	161	45	694	670	963	45	67	833	190
SR 87N	SR 89/Dogwood Dr	8	180	7	13	154	25	483	15	5	2	13	6
	SR 89/Oriole St	293	448	0	0	876	58	13	0	280	0	0	0
	Langley St	29	251	96	29	277	0	0	0	0	545	0	120
	Munson Hwy/Oliver St	2	444	39	19	379	1	7	0	88	45	0	9
Munson Hwy at Broad St		0	1	11	2	3	2	1	128	0	8	54	10
SR 87 Connector & SR 87 N		0	669	0	0	192	591	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	503	0	591	0	0	0	0	46	0	0

Location		PM - 2025 - CORRIDOR 1											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	405	231	230	77	420	130	40	71	452	264	61	19
	Ward Basin Rd	203	9	70	0	3	4	3	464	288	59	454	1
	Willing St	20	23	26	210	9	19	18	553	15	6	518	235
	Canal St	160	169	57	23	166	18	12	643	137	77	552	20
	SR 87N	0	0	0	202	0	465	545	678	0	0	686	190
	SR 89	36	80	93	165	47	755	736	998	55	68	881	184
SR 87N	SR 89/Dogwood Dr	15	229	2	13	207	30	565	5	14	3	10	4
	SR 89/Oriole St	400	509	0	0	998	87	18	0	396	0	0	0
	Langley St	29	274	114	33	297	0	0	0	0	643	0	136
	Munson Hwy/Oliver St	2	495	73	23	417	1	9	0	84	67	1	19
Munson Hwy at Broad St		6	7	11	0	2	7	5	109	11	20	77	1
SR 87 Connector & SR 87 N		0	798	0	0	250	684	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	584	0	684	0	0	0	0	55	0	0

Location		PM - 2035 - CORRIDOR 1											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	439	446	238	115	519	203	106	100	471	269	89	55
	Ward Basin Rd	264	14	81	1	3	4	6	500	366	74	495	2
	Willing St	20	29	30	299	13	27	28	583	18	9	542	333
	Canal St	146	170	78	28	172	20	15	671	118	88	572	31
	SR 87N	1	0	0	169	0	537	631	729	0	0	773	139
	SR 89	47	77	102	165	47	796	770	1,192	64	70	1,063	190
SR 87N	SR 89/Dogwood Dr	20	256	1	13	237	41	710	3	19	2	6	3
	SR 89/Oriole St	483	578	0	0	1,132	116	23	0	488	0	0	0
	Langley St	29	296	130	39	317	0	0	0	0	752	0	146
	Munson Hwy/Oliver St	1	515	134	36	431	1	15	2	71	96	1	52
Munson Hwy at Broad St		47	6	11	0	0	8	5	134	61	13	109	0
SR 87 Connector & SR 87 N		0	969	0	0	291	755	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	732	0	755	0	0	0	0	67	0	0

FUTURE INTERSECTION TURNING VOLUMES - AM - CORRIDOR 2

Location		AM - 2015 - CORRIDOR 2											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	246	429	147	32	148	71	110	59	246	220	81	47
	Ward Basin Rd	216	6	60	3	8	3	0	289	162	95	298	1
	Willing St	2	3	14	138	16	7	5	302	38	7	456	130
	Canal St	118	100	43	10	121	9	8	418	117	47	464	6
	SR 87N	0	0	0	240	0	346	264	430	0	0	535	177
	SR 89	5	10	12	161	67	619	401	619	19	28	688	125
SR 87N	SR 89/Dogwood Dr	6	181	0	4	166	35	707	0	1	1	8	16
	SR 89/Oriole St	47	645	0	0	359	6	17	0	104	0	0	0
	Langley St	8	200	718	80	285	0	0	0	0	82	0	36
	Munson Hwy/Oliver St	2	312	15	19	468	1	1	0	6	45	1	7
Munson Hwy at Broad St		0	0	6	0	4	4	2	28	0	9	81	0
SR 87 Connector & SR 87 N		0	904	0	0	205	400	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	708	0	400	0	0	0	0	49	0	0

Location		AM - 2025 - CORRIDOR 2											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	339	497	169	49	233	105	134	71	368	237	84	42
	Ward Basin Rd	252	12	92	3	9	3	1	335	191	141	341	2
	Willing St	3	5	15	198	25	12	9	345	36	7	523	192
	Canal St	126	136	66	16	167	12	10	460	117	70	501	14
	SR 87N	0	0	0	255	0	358	272	465	0	0	569	191
	SR 89	7	11	12	164	70	683	443	645	28	33	729	121
SR 87N	SR 89/Dogwood Dr	7	269	1	5	238	36	770	0	2	2	6	17
	SR 89/Oriole St	59	746	0	0	420	9	20	0	118	1	0	0
	Langley St	8	219	867	93	319	0	0	0	0	103	0	42
	Munson Hwy/Oliver St	2	346	38	28	494	1	2	0	5	70	1	18
Munson Hwy at Broad St		13	1	12	0	4	7	1	34	9	24	135	0
SR 87 Connector & SR 87 N		0	1,056	0	0	279	500	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	772	0	500	0	0	0	0	49	0	0

Location		AM - 2035 - CORRIDOR 2											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	375	535	207	70	342	142	160	94	428	263	97	51
	Ward Basin Rd	361	11	122	5	9	4	1	339	281	181	338	1
	Willing St	3	6	18	272	33	18	15	366	39	12	564	267
	Canal St	103	136	80	21	172	14	13	494	89	77	528	26
	SR 87N	0	0	0	219	0	430	333	505	0	0	639	146
	SR 89	9	10	14	165	69	725	459	777	34	35	873	125
SR 87N	SR 89/Dogwood Dr	7	325	1	7	286	39	865	1	3	2	4	18
	SR 89/Oriole St	57	840	0	0	476	9	22	0	128	1	0	0
	Langley St	8	238	1,003	108	350	0	0	0	0	123	0	48
	Munson Hwy/Oliver St	1	354	68	43	493	1	2	0	4	96	2	43
Munson Hwy at Broad St		57	0	12	0	2	11	2	42	50	32	198	0
SR 87 Connector & SR 87 N		0	1,208	0	0	332	600	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	869	0	600	0	0	0	0	50	0	0

FUTURE INTERSECTION TURNING VOLUMES - PM - CORRIDOR 2

Location		PM - 2015 - CORRIDOR 2											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	318	85	242	46	293	82	13	65	375	265	51	7
	Ward Basin Rd	158	8	43	0	3	3	4	414	226	34	411	1
	Willing St	18	18	22	157	6	13	12	468	18	6	440	176
	Canal St	159	128	34	14	121	14	9	576	145	53	498	10
	SR 87N	0	0	0	197	0	446	526	629	0	0	637	184
	SR 89	28	74	90	161	45	694	670	963	45	67	833	190
SR 87N	SR 89/Dogwood Dr	3	240	4	23	157	29	564	8	1	1	9	14
	SR 89/Oriole St	96	355	0	0	664	18	5	0	86	0	0	0
	Langley St	29	260	92	29	282	0	0	0	0	554	0	117
	Munson Hwy/Oliver St	2	453	47	19	392	1	7	0	88	47	0	10
Munson Hwy at Broad St		1	4	5	0	3	5	5	85	0	6	57	3
SR 87 Connector & SR 87 N		0	818	0	0	209	311	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	573	0	311	0	0	0	0	41	0	0

Location		PM - 2025 - CORRIDOR 2											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	425	222	227	77	406	133	41	75	475	262	65	18
	Ward Basin Rd	182	8	71	0	3	3	3	495	266	59	476	1
	Willing St	19	25	25	230	10	20	20	536	14	5	501	260
	Canal St	170	178	57	23	167	19	12	630	152	82	537	19
	SR 87N	0	0	0	209	0	467	549	678	0	0	683	197
	SR 89	36	80	93	165	47	755	736	998	55	68	881	184
SR 87N	SR 89/Dogwood Dr	5	318	1	17	218	37	667	2	2	1	7	10
	SR 89/Oriole St	111	411	0	0	770	22	6	0	97	0	0	0
	Langley St	29	279	119	34	303	0	0	0	0	651	0	137
	Munson Hwy/Oliver St	1	506	84	26	424	1	10	1	79	74	1	26
Munson Hwy at Broad St		18	7	11	0	1	8	5	107	26	15	86	0
SR 87 Connector & SR 87 N		0	995	0	0	272	311	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	671	0	311	0	0	0	0	49	0	0

Location		PM - 2035 - CORRIDOR 2											
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
US 90 @	SR 87S	449	445	235	115	513	208	110	102	479	268	92	56
	Ward Basin Rd	268	14	86	1	3	4	6	519	375	78	508	2
	Willing St	19	31	30	325	14	29	31	585	17	9	542	363
	Canal St	143	174	75	28	174	20	16	664	117	87	568	33
	SR 87N	1	0	0	171	0	545	642	720	0	0	770	139
	SR 89	47	77	102	165	47	796	770	1,192	64	70	1,063	190
SR 87N	SR 89/Dogwood Dr	6	355	0	16	251	44	817	1	3	1	4	8
	SR 89/Oriole St	118	463	0	0	873	26	8	0	105	1	0	0
	Langley St	29	306	133	40	326	0	0	0	0	765	0	149
	Munson Hwy/Oliver St	1	520	145	39	435	1	17	3	68	99	1	62
Munson Hwy at Broad St		61	6	11	0	0	8	6	140	72	12	117	0
SR 87 Connector & SR 87 N		0	1,180	0	0	311	311	0	0	0	0	0	0
SR 87 Connector & Munson Hwy		0	0	821	0	311	0	0	0	0	54	0	0

Appendix: F

SYNCHRO Printouts

HCM Signalized Intersection Capacity Analysis
1: US 90 & East Milton Rd

AM 2010 - EXISTING

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	122	177	81	183	39	237	172	64	11	66	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1850	1583
Flt Permitted	0.55	1.00	1.00	0.64	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1016	1845	1568	1157	1810	1538	3367	1827	1553		1850	1583
Peak-hour factor, PHF	0.65	0.65	0.65	0.91	0.91	0.91	0.71	0.71	0.71	0.52	0.52	0.52
Adj. Flow (vph)	297	188	272	89	201	43	334	242	90	21	127	131
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	0	0	0	114
Lane Group Flow (vph)	297	188	272	89	201	16	334	242	90	0	148	17
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	57.1	45.6	108.7	49.0	40.5	40.5	19.9	19.9	108.7		14.2	14.2
Effective Green, g (s)	57.1	45.6	108.7	49.0	40.5	40.5	19.9	19.9	108.7		14.2	14.2
Actuated g/C Ratio	0.53	0.42	1.00	0.45	0.37	0.37	0.18	0.18	1.00		0.13	0.13
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	626	774	1568	566	674	573	616	334	1553		242	207
v/s Ratio Prot	c0.06	0.10		0.01	0.11		0.10	c0.13			c0.08	
v/s Ratio Perm	c0.19		0.17	0.06		0.01			0.06			0.01
v/c Ratio	0.47	0.24	0.17	0.16	0.30	0.03	0.54	0.72	0.06		0.61	0.08
Uniform Delay, d1	14.9	20.4	0.0	17.3	24.1	21.6	40.3	41.8	0.0		44.6	41.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.7	0.2	0.1	1.1	0.1	1.0	7.6	0.1		4.5	0.2
Delay (s)	15.5	21.1	0.2	17.4	25.2	21.7	41.2	49.4	0.1		49.2	41.7
Level of Service	B	C	A	B	C	C	D	D	A		D	D
Approach Delay (s)		11.4			22.7			38.6			45.7	
Approach LOS		B			C			D			D	

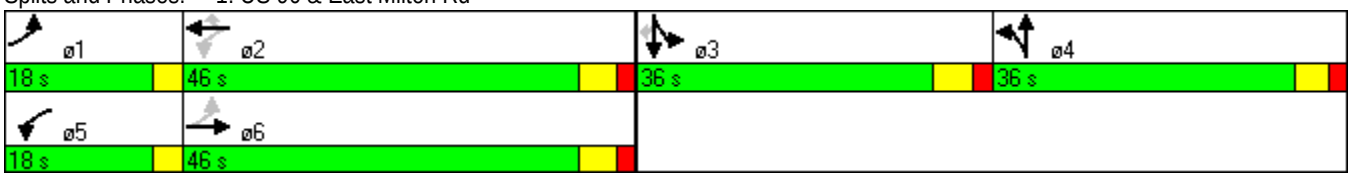
Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	108.7	Sum of lost time (s)	14.5
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	18	46	36	36	18	46
Maximum Split (%)	13.2%	33.8%	26.5%	26.5%	13.2%	33.8%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	18	64	100	0	18
End Time (s)	18	64	100	0	18	64
Yield/Force Off (s)	15	58	94	130.5	15	58
Yield/Force Off 170(s)	15	46	94	130.5	15	46
Local Start Time (s)	118	0	46	82	118	0
Local Yield (s)	133	40	76	112.5	133	40
Local Yield 170(s)	133	28	76	112.5	133	28

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & East Milton Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	407	184	107	426	1	248	10	62	2	8	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	4.0	6.0		6.0	6.0			6.0	
Lane Util. Factor		1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.94			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.97			0.99	
Satd. Flow (prot)		1827	1553	1736	3470		1665	1604			1803	
Flt Permitted		1.00	1.00	0.37	1.00		0.95	0.97			0.99	
Satd. Flow (perm)		1827	1553	681	3470		1665	1604			1803	
Peak-hour factor, PHF	0.90	0.90	0.90	0.93	0.93	0.93	0.77	0.77	0.77	0.55	0.55	0.55
Adj. Flow (vph)	0	452	204	115	458	1	322	13	81	4	15	4
RTOR Reduction (vph)	0	0	98	0	0	0	0	19	0	0	4	0
Lane Group Flow (vph)	0	452	106	115	459	0	213	184	0	0	19	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)		56.4	56.4	68.9	68.9		18.9	18.9			2.9	
Effective Green, g (s)		56.4	56.4	68.9	68.9		18.9	18.9			2.9	
Actuated g/C Ratio		0.52	0.52	0.63	0.63		0.17	0.17			0.03	
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		948	806	514	2199		289	279			48	
v/s Ratio Prot		c0.25		0.02	c0.13		c0.13	0.11			c0.01	
v/s Ratio Perm			0.07	0.12								
v/c Ratio		0.48	0.13	0.22	0.21		0.74	0.66			0.40	
Uniform Delay, d1		16.7	13.5	9.1	8.4		42.5	41.9			52.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.7	0.3	0.2	0.2		9.4	5.5			5.3	
Delay (s)		18.4	13.8	9.3	8.6		52.0	47.4			57.4	
Level of Service		B	B	A	A		D	D			E	
Approach Delay (s)		17.0			8.7			49.8			57.4	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	108.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	74	25	35	24	50
Maximum Split (%)	55.2%	18.7%	26.1%	17.9%	37.3%
Minimum Split (s)	25	12	29	11	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	0	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	74	99	0	24
End Time (s)	74	99	0	24	74
Yield/Force Off (s)	68	93	128	20	68
Yield/Force Off 170(s)	56	93	112	20	56
Local Start Time (s)	0	74	99	0	24
Local Yield (s)	68	93	128	20	68
Local Yield 170(s)	56	93	112	20	56

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	348	28	0	542	219	2	6	11	216	31	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.92			1.00	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1806			1756			1708			1766	
Flt Permitted	0.18	1.00			1.00			0.96			0.74	
Satd. Flow (perm)	329	1806			1756			1656			1356	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.71	0.71	0.71	0.86	0.86	0.86
Adj. Flow (vph)	3	405	33	0	589	238	3	8	15	251	36	3
RTOR Reduction (vph)	0	3	0	0	15	0	0	11	0	0	0	0
Lane Group Flow (vph)	3	435	0	0	812	0	0	15	0	0	290	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	51.2	51.2			51.2			24.7			24.7	
Effective Green, g (s)	51.2	51.2			51.2			24.7			24.7	
Actuated g/C Ratio	0.58	0.58			0.58			0.28			0.28	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	192	1052			1023			465			381	
v/s Ratio Prot		0.24			c0.46							
v/s Ratio Perm	0.01							0.01			c0.21	
v/c Ratio	0.02	0.41			0.79			0.03			0.76	
Uniform Delay, d1	7.7	10.1			14.3			22.9			28.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.9			5.5			0.1			10.2	
Delay (s)	7.8	11.0			19.8			23.0			39.1	
Level of Service	A	B			B			C			D	
Approach Delay (s)		11.0			19.8			23.0			39.1	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	87.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBT
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	36	71	36	71
Maximum Split (%)	33.6%	66.4%	33.6%	66.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	36
End Time (s)	36	0	36	0
Yield/Force Off (s)	30	101	30	101
Yield/Force Off 170(s)	18	101	18	101
Local Start Time (s)	0	36	0	36
Local Yield (s)	30	101	30	101
Local Yield 170(s)	18	101	18	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	65

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	426	142	12	509	0	149	101	12	6	116	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	1.00			0.99			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.97			1.00	
Satd. Flow (prot)	1736	1758		1736	1827			1783			1823	
Flt Permitted	0.29	1.00		0.18	1.00			0.76			0.98	
Satd. Flow (perm)	529	1758		328	1827			1393			1793	
Peak-hour factor, PHF	0.83	0.83	0.83	0.91	0.91	0.91	0.73	0.73	0.73	0.84	0.84	0.84
Adj. Flow (vph)	10	513	171	13	559	0	204	138	16	7	138	11
RTOR Reduction (vph)	0	16	0	0	0	0	0	1	0	0	2	0
Lane Group Flow (vph)	10	668	0	13	559	0	0	357	0	0	154	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.4	35.4		35.4	35.4			29.9			29.9	
Effective Green, g (s)	35.4	35.4		35.4	35.4			29.9			29.9	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.39			0.39	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	242	805		150	837			539			694	
v/s Ratio Prot		c0.38			0.31							
v/s Ratio Perm	0.02			0.04				c0.26			0.09	
v/c Ratio	0.04	0.83		0.09	0.67			0.66			0.22	
Uniform Delay, d1	11.6	18.3		11.8	16.4			19.5			15.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	7.6		0.3	2.2			4.0			0.3	
Delay (s)	11.7	25.9		12.2	18.6			23.6			16.2	
Level of Service	B	C		B	B			C			B	
Approach Delay (s)		25.7			18.4			23.6			16.2	
Approach LOS		C			B			C			B	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	36	71	36	71
Maximum Split (%)	33.6%	66.4%	33.6%	66.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	36
End Time (s)	36	0	36	0
Yield/Force Off (s)	30	101	30	101
Yield/Force Off 170(s)	30	101	30	101
Local Start Time (s)	0	36	0	36
Local Yield (s)	30	101	30	101
Local Yield 170(s)	30	101	30	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	266	389	492	216	288	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.77	0.77	0.81	0.81	0.80	0.80
Adj. Flow (vph)	345	505	607	267	360	429
RTOR Reduction (vph)	0	0	0	188	0	329
Lane Group Flow (vph)	345	505	607	79	360	100
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	14.1	40.2	20.1	20.1	15.8	15.8
Effective Green, g (s)	14.1	40.2	20.1	20.1	15.8	15.8
Actuated g/C Ratio	0.21	0.59	0.30	0.30	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	712	2092	1026	459	790	364
v/s Ratio Prot	c0.10	0.14	c0.17		c0.11	
v/s Ratio Perm				0.05		0.06
v/c Ratio	0.48	0.24	0.59	0.17	0.46	0.27
Uniform Delay, d1	23.7	6.6	20.4	17.8	22.4	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.9	0.2	0.6	0.6
Delay (s)	24.5	6.7	21.4	18.0	23.0	22.0
Level of Service	C	A	C	B	C	C
Approach Delay (s)		13.9	20.3		22.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	102	36	66	36
Maximum Split (%)	73.9%	26.1%	47.8%	26.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	36	102
End Time (s)	102	36	102	0
Yield/Force Off (s)	96	30	96	132
Yield/Force Off 170(s)	96	30	96	132
Local Start Time (s)	102	102	0	66
Local Yield (s)	60	132	60	96
Local Yield 170(s)	60	132	60	96

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: US 90 & SR 87 N

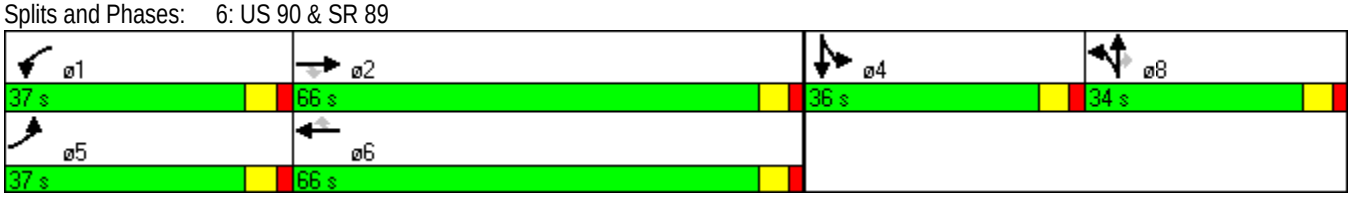
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	410	637	13	29	695	120	4	10	12	153	72	629
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1837	1583	1681	1737	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1837	1583	1681	1737	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.87	0.87	0.87	0.75	0.75	0.75	0.88	0.88	0.88
Adj. Flow (vph)	477	741	15	33	799	138	5	13	16	174	82	715
RTOR Reduction (vph)	0	0	4	0	0	88	0	0	16	0	0	0
Lane Group Flow (vph)	477	741	11	33	799	50	0	18	0	125	131	715
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	20.4	50.9	50.9	4.7	35.2	35.2		2.8	2.8	14.0	14.0	96.4
Effective Green, g (s)	20.4	50.9	50.9	4.7	35.2	35.2		2.8	2.8	14.0	14.0	96.4
Actuated g/C Ratio	0.21	0.53	0.53	0.05	0.37	0.37		0.03	0.03	0.15	0.15	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	726	1869	836	86	1292	578		53	46	244	252	1583
v/s Ratio Prot	c0.14	0.21		0.02	c0.23			0.01		0.07	0.08	
v/s Ratio Perm			0.01			0.03			0.00			c0.45
v/c Ratio	0.66	0.40	0.01	0.38	0.62	0.09		0.34	0.01	0.51	0.52	0.45
Uniform Delay, d1	34.8	13.6	10.8	44.4	25.1	20.1		45.9	45.5	38.0	38.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.2	0.0	2.8	1.0	0.1		5.2	0.1	1.8	1.8	0.9
Delay (s)	37.0	13.8	10.8	47.3	26.1	20.2		51.0	45.6	39.9	39.9	0.9
Level of Service	D	B	B	D	C	C		D	D	D	D	A
Approach Delay (s)		22.7			26.0			48.5			11.2	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	37	66	36	37	66	34
Maximum Split (%)	21.4%	38.2%	20.8%	21.4%	38.2%	19.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	37	103	0	37	139
End Time (s)	37	103	139	37	103	0
Yield/Force Off (s)	31	97	133	31	97	167
Yield/Force Off 170(s)	31	97	128	31	97	162
Local Start Time (s)	136	0	66	136	0	102
Local Yield (s)	167	60	96	167	60	130
Local Yield 170(s)	167	60	91	167	60	125

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	537	2	8	11	10	4	22	237	6	2	276	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88			0.98		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1634			1782		1752	3492		1770	3518	
Flt Permitted	0.95	1.00			0.98		0.57	1.00		0.58	1.00	
Satd. Flow (perm)	3433	1634			1782		1049	3492		1077	3518	
Peak-hour factor, PHF	0.87	0.87	0.87	0.58	0.58	0.58	0.86	0.86	0.86	0.96	0.96	0.93
Adj. Flow (vph)	617	2	9	19	17	7	26	276	7	2	288	12
RTOR Reduction (vph)	0	5	0	0	7	0	0	2	0	0	4	0
Lane Group Flow (vph)	617	6	0	0	36	0	26	281	0	2	296	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	32.6	32.6			4.3		12.1	12.1		12.1	12.1	
Effective Green, g (s)	32.6	32.6			4.3		12.1	12.1		12.1	12.1	
Actuated g/C Ratio	0.49	0.49			0.06		0.18	0.18		0.18	0.18	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1670	795			114		189	631		195	635	
v/s Ratio Prot	c0.18	0.00			c0.02			0.08			c0.08	
v/s Ratio Perm							0.02			0.00		
v/c Ratio	0.37	0.01			0.32		0.14	0.44		0.01	0.47	
Uniform Delay, d1	10.8	8.9			30.0		23.1	24.5		22.5	24.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.0			2.2		0.5	0.7		0.0	0.7	
Delay (s)	11.0	8.9			32.2		23.5	25.1		22.6	25.3	
Level of Service	B	A			C		C	C		C	C	
Approach Delay (s)		10.9			32.2			25.0			25.3	
Approach LOS		B			C			C			C	

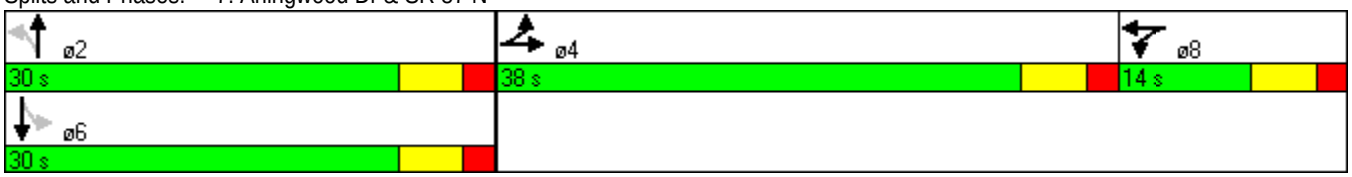
Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	30	38	30	14
Maximum Split (%)	36.6%	46.3%	36.6%	17.1%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	30	0	68
End Time (s)	30	68	30	0
Yield/Force Off (s)	24	62	24	76
Yield/Force Off 170(s)	24	42	24	76
Local Start Time (s)	0	30	0	68
Local Yield (s)	24	62	24	76
Local Yield 170(s)	24	42	24	76

Intersection Summary	
Cycle Length	82
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	23	100	54	708	0	381	7
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.78	0.78	0.92	0.92	0.84	0.84	0.84
Hourly flow rate (vph)	29	128	59	770	0	454	8
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	960	231	462		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	960	231	462		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	88	83	95		0		
cM capacity (veh/h)	237	765	1096		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	158	59	385	385	302	160	0
Volume Left	29	59	0	0	0	0	0
Volume Right	128	0	0	0	0	8	0
cSH	541	1096	1700	1700	1700	1700	1700
Volume to Capacity	0.29	0.05	0.23	0.23	0.18	0.09	0.00
Queue Length 95th (ft)	30	4	0	0	0	0	0
Control Delay (s)	14.4	8.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A					
Approach Delay (s)	14.4	0.6			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	120	8	9	105	699	23	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.62	1.00	1.00	0.67	1.00
Satd. Flow (perm)	3400	1568	1146	1845	1568	1210	3406
Peak-hour factor, PHF	0.74	0.74	0.82	0.82	0.82	0.90	0.90
Adj. Flow (vph)	162	11	11	128	852	26	208
RTOR Reduction (vph)	0	9	0	0	280	0	0
Lane Group Flow (vph)	162	2	11	128	572	26	208
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	9.5	9.5	44.0	44.0	44.0	44.0	44.0
Effective Green, g (s)	9.5	9.5	44.0	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.15	0.15	0.67	0.67	0.67	0.67	0.67
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	493	227	770	1239	1053	813	2288
v/s Ratio Prot				0.07			0.06
v/s Ratio Perm	c0.05	0.00	0.01		c0.37	0.02	
v/c Ratio	0.33	0.01	0.01	0.10	0.54	0.03	0.09
Uniform Delay, d1	25.1	24.0	3.6	3.8	5.6	3.6	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0	0.2	2.0	0.1	0.1
Delay (s)	25.7	24.0	3.6	4.0	7.6	3.7	3.8
Level of Service	C	C	A	A	A	A	A
Approach Delay (s)	25.6			7.1			3.8
Approach LOS	C			A			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	50	30	50
Maximum Split (%)	62.5%	37.5%	62.5%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	50	0
End Time (s)	50	0	50
Yield/Force Off (s)	44	74	44
Yield/Force Off 170(s)	44	74	44
Local Start Time (s)	0	50	0
Local Yield (s)	44	74	44
Local Yield 170(s)	44	74	44

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 9: Langley St & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	64	0	43	0	462	43	41	616	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.30	0.30	0.30	0.84	0.84	0.84	0.81	0.81	0.81	0.86	0.86	0.86
Hourly flow rate (vph)	10	0	10	76	0	51	0	570	53	48	716	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1148	1435	358	1060	1409	312	716			623		
vC1, stage 1 conf vol	812	812		597	597							
vC2, stage 2 conf vol	336	623		463	812							
vCu, unblocked vol	1148	1435	358	1060	1409	312	716			623		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	98	79	100	92	100			95		
cM capacity (veh/h)	293	298	638	366	311	681	874			947		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	10	10	127	380	243	48	358	358
Volume Left	10	0	76	0	0	48	0	0
Volume Right	0	10	51	0	53	0	0	0
cSH	293	638	450	1700	1700	947	1700	1700
Volume to Capacity	0.03	0.02	0.28	0.22	0.14	0.05	0.21	0.21
Queue Length 95th (ft)	3	1	29	0	0	4	0	0
Control Delay (s)	17.7	10.7	16.1	0.0	0.0	9.0	0.0	0.0
Lane LOS	C	B	C			A		
Approach Delay (s)	14.2		16.1	0.0		0.6		
Approach LOS	B		C					

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	44	0	75	156	0	0	1	44	0	4	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.83	0.83	0.83	0.85	0.85	0.85	0.40	0.40	0.40
Hourly flow rate (vph)	1	52	0	90	188	0	0	1	52	0	10	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	188			52			438	423	52	476	423	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	188			52			438	423	52	476	423	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			100	100	95	100	98	99
cM capacity (veh/h)	1380			1547			490	490	1012	452	491	854

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	54	278	53	20
Volume Left	1	90	0	0
Volume Right	0	0	52	10
cSH	1380	1547	989	624
Volume to Capacity	0.00	0.06	0.05	0.03
Queue Length 95th (ft)	0	5	4	2
Control Delay (s)	0.2	2.8	8.8	11.0
Lane LOS	A	A	A	B
Approach Delay (s)	0.2	2.8	8.8	11.0
Approach LOS			A	B

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 S

PM 2010 - EXISTING

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	196	311	98	167	2	271	17	83	22	119	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1848	1583
Flt Permitted	0.63	1.00	1.00	0.55	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1165	1845	1568	986	1810	1538	3367	1827	1553		1848	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.83	0.83	0.83	0.89	0.89	0.89	0.46	0.46	0.46
Adj. Flow (vph)	23	206	327	118	201	2	304	19	93	48	259	222
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	0	0	0	176
Lane Group Flow (vph)	23	206	327	118	201	1	304	19	93	0	307	46
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	45.6	41.8	111.1	55.1	48.3	48.3	15.4	15.4	111.1		23.1	23.1
Effective Green, g (s)	45.6	41.8	111.1	55.1	48.3	48.3	15.4	15.4	111.1		23.1	23.1
Actuated g/C Ratio	0.41	0.38	1.00	0.50	0.43	0.43	0.14	0.14	1.00		0.21	0.21
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	498	694	1568	557	787	669	467	253	1553		384	329
v/s Ratio Prot	0.00	c0.11		0.02	0.11		c0.09	0.01			c0.17	
v/s Ratio Perm	0.02		c0.21	0.09		0.00			0.06			0.03
v/c Ratio	0.05	0.30	0.21	0.21	0.26	0.00	0.65	0.08	0.06		0.80	0.14
Uniform Delay, d1	19.6	24.3	0.0	15.3	20.0	17.8	45.3	41.7	0.0		41.8	35.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	1.1	0.3	0.2	0.8	0.0	3.2	0.1	0.1		11.1	0.2
Delay (s)	19.6	25.4	0.3	15.5	20.7	17.8	48.5	41.8	0.1		52.9	36.1
Level of Service	B	C	A	B	C	B	D	D	A		D	D
Approach Delay (s)		10.4			18.8			37.4			45.8	
Approach LOS		B			B			D			D	

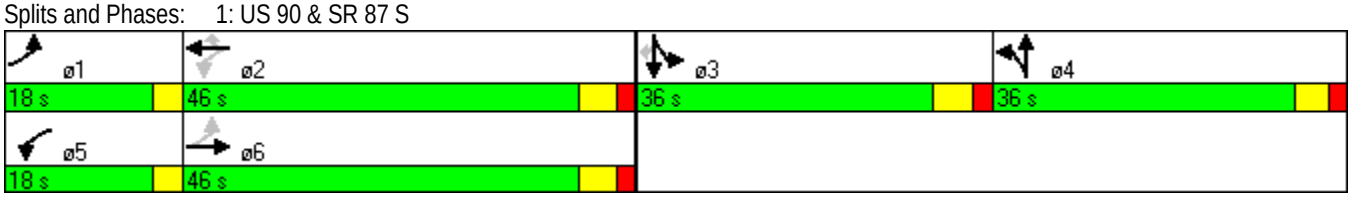
Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	17.5
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	18	46	36	36	18	46
Maximum Split (%)	13.2%	33.8%	26.5%	26.5%	13.2%	33.8%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	18	64	100	0	18
End Time (s)	18	64	100	0	18	64
Yield/Force Off (s)	15	58	94	130.5	15	58
Yield/Force Off 170(s)	15	46	94	130.5	15	46
Local Start Time (s)	118	0	46	82	118	0
Local Yield (s)	133	40	76	112.5	133	40
Local Yield 170(s)	133	28	76	112.5	133	28

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	75

Splits and Phases: 1: US 90 & SR 87 S



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	570	257	28	565	1	179	9	44	0	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97			1.00	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1608			1737	
Flt Permitted	0.39	1.00	1.00	0.30	1.00		0.95	0.97			1.00	
Satd. Flow (perm)	711	1827	1553	554	3470		1665	1608			1737	
Peak-hour factor, PHF	0.96	0.96	0.96	0.82	0.82	0.82	0.80	0.80	0.80	0.50	0.50	0.50
Adj. Flow (vph)	4	594	268	34	689	1	224	11	55	0	6	6
RTOR Reduction (vph)	0	0	110	0	0	0	0	19	0	0	6	0
Lane Group Flow (vph)	4	594	158	34	690	0	148	123	0	0	6	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	62.2	62.2	62.2	72.1	72.1		13.9	13.9			1.3	
Effective Green, g (s)	62.2	62.2	62.2	72.1	72.1		13.9	13.9			1.3	
Actuated g/C Ratio	0.59	0.59	0.59	0.68	0.68		0.13	0.13			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	420	1079	917	423	2376		220	212			21	
v/s Ratio Prot		c0.33		0.00	c0.20		c0.09	0.08			c0.00	
v/s Ratio Perm	0.01		0.10	0.05								
v/c Ratio	0.01	0.55	0.17	0.08	0.29		0.67	0.58			0.29	
Uniform Delay, d1	8.9	13.1	9.8	7.6	6.5		43.5	43.0			51.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	2.0	0.4	0.1	0.3		7.9	3.8			7.5	
Delay (s)	8.9	15.1	10.2	7.7	6.8		51.4	46.8			59.0	
Level of Service	A	B	B	A	A		D	D			E	
Approach Delay (s)		13.6			6.9			49.1			59.0	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	105.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	74	25	35	24	50
Maximum Split (%)	55.2%	18.7%	26.1%	17.9%	37.3%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	74	99	0	24
End Time (s)	74	99	0	24	74
Yield/Force Off (s)	68	93	128	18	68
Yield/Force Off 170(s)	56	93	112	18	56
Local Start Time (s)	0	74	99	0	24
Local Yield (s)	68	93	128	18	68
Local Yield 170(s)	56	93	112	18	56

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	542	14	0	520	297	17	25	15	260	12	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.96			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1820			1737			1770			1753	
Flt Permitted	0.11	1.00			1.00			0.87			0.69	
Satd. Flow (perm)	203	1820			1737			1560			1262	
Peak-hour factor, PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.52	0.52	0.52	0.83	0.83	0.83
Adj. Flow (vph)	14	596	15	0	591	338	33	48	29	313	14	16
RTOR Reduction (vph)	0	1	0	0	20	0	0	12	0	0	1	0
Lane Group Flow (vph)	14	610	0	0	909	0	0	98	0	0	342	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm						Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4						2			6		
Actuated Green, G (s)	59.4	59.4			59.4			30.1			30.1	
Effective Green, g (s)	59.4	59.4			59.4			30.1			30.1	
Actuated g/C Ratio	0.59	0.59			0.59			0.30			0.30	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	119	1065			1017			463			374	
v/s Ratio Prot		0.34			c0.52							
v/s Ratio Perm	0.07							0.06			c0.27	
v/c Ratio	0.12	0.57			0.89			0.21			0.91	
Uniform Delay, d1	9.4	13.1			18.3			26.8			34.4	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.6	1.8			11.6			0.5			27.2	
Delay (s)	10.9	14.9			29.9			27.3			61.6	
Level of Service	B	B			C			C			E	
Approach Delay (s)		14.8			29.9			27.3			61.6	
Approach LOS		B			C			C			E	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	101.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBT
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	36	71	36	71
Maximum Split (%)	33.6%	66.4%	33.6%	66.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	36
End Time (s)	36	0	36	0
Yield/Force Off (s)	30	101	30	101
Yield/Force Off 170(s)	18	101	18	101
Local Start Time (s)	0	36	0	36
Local Yield (s)	30	101	30	101
Local Yield 170(s)	18	101	18	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	568	178	13	549	3	195	128	3	8	110	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	1.00			1.00			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.97			1.00	
Satd. Flow (prot)	1736	1761		1736	1825			1789			1805	
Flt Permitted	0.26	1.00		0.12	1.00			0.72			0.97	
Satd. Flow (perm)	469	1761		227	1825			1318			1761	
Peak-hour factor, PHF	0.90	0.90	0.90	0.85	0.85	0.85	0.90	0.90	0.90	0.79	0.79	0.79
Adj. Flow (vph)	11	631	198	15	646	4	217	142	3	10	139	24
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	11	816	0	15	650	0	0	362	0	0	168	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	46.8	46.8		46.8	46.8			30.6			30.6	
Effective Green, g (s)	46.8	46.8		46.8	46.8			30.6			30.6	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.34			0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	246	922		119	955			451			603	
v/s Ratio Prot		c0.46			0.36							
v/s Ratio Perm	0.02			0.07				c0.27			0.10	
v/c Ratio	0.04	0.89		0.13	0.68			0.80			0.28	
Uniform Delay, d1	10.4	18.9		10.9	15.8			26.7			21.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	10.4		0.7	2.2			11.2			0.5	
Delay (s)	10.5	29.3		11.5	17.9			37.9			21.9	
Level of Service	B	C		B	B			D			C	
Approach Delay (s)		29.1			17.8			37.9			21.9	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	89.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	36	71	36	71
Maximum Split (%)	33.6%	66.4%	33.6%	66.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	36
End Time (s)	36	0	36	0
Yield/Force Off (s)	30	101	30	101
Yield/Force Off 170(s)	30	101	30	101
Local Start Time (s)	0	36	0	36
Local Yield (s)	30	101	30	101
Local Yield 170(s)	30	101	30	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	75

Splits and Phases: 4: US 90 & Canal St

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	532	585	579	245	251	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.91	0.91	0.88	0.88	0.86	0.86
Adj. Flow (vph)	585	643	658	278	292	522
RTOR Reduction (vph)	0	0	0	195	0	364
Lane Group Flow (vph)	585	643	658	83	292	158
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	21.3	51.3	24.0	24.0	17.2	17.2
Effective Green, g (s)	21.3	51.3	24.0	24.0	17.2	17.2
Actuated g/C Ratio	0.26	0.64	0.30	0.30	0.21	0.21
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	908	2255	1035	463	726	335
v/s Ratio Prot	c0.17	0.18	c0.19		0.09	
v/s Ratio Perm				0.05		c0.10
v/c Ratio	0.64	0.29	0.64	0.18	0.40	0.47
Uniform Delay, d1	26.2	6.5	24.5	20.9	27.2	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	1.3	0.2	0.5	1.4
Delay (s)	28.0	6.5	25.8	21.1	27.7	29.1
Level of Service	C	A	C	C	C	C
Approach Delay (s)		16.8	24.4		28.6	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	102	36	66	36
Maximum Split (%)	73.9%	26.1%	47.8%	26.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	36	102
End Time (s)	102	36	102	0
Yield/Force Off (s)	96	30	96	132
Yield/Force Off 170(s)	96	30	96	132
Local Start Time (s)	102	102	0	66
Local Yield (s)	60	132	60	96
Local Yield 170(s)	60	132	60	96

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: US 90 & SR 87 N

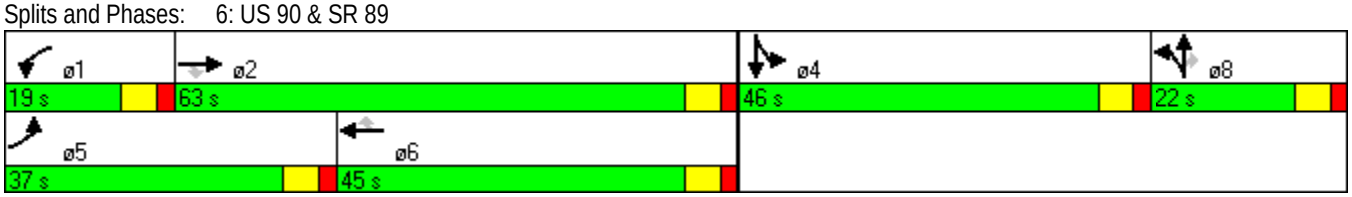
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	683	986	35	70	842	183	20	76	91	147	46	712
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1844	1583	1681	1724	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1844	1583	1681	1724	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.88	0.88	0.88	0.60	0.60	0.60	0.85	0.85	0.85
Adj. Flow (vph)	727	1049	37	80	957	208	33	127	152	173	54	838
RTOR Reduction (vph)	0	0	8	0	0	142	0	0	133	0	0	0
Lane Group Flow (vph)	727	1049	29	80	957	66	0	160	19	112	115	838
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	31.0	59.4	59.4	10.7	39.1	39.1		15.2	15.2	13.5	13.5	122.8
Effective Green, g (s)	31.0	59.4	59.4	10.7	39.1	39.1		15.2	15.2	13.5	13.5	122.8
Actuated g/C Ratio	0.25	0.48	0.48	0.09	0.32	0.32		0.12	0.12	0.11	0.11	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	867	1712	766	154	1127	504		228	196	185	190	1583
v/s Ratio Prot	c0.21	0.30		0.05	c0.27			0.09		0.07	0.07	
v/s Ratio Perm			0.02			0.04			0.01			c0.53
v/c Ratio	0.84	0.61	0.04	0.52	0.85	0.13		0.70	0.10	0.61	0.61	0.53
Uniform Delay, d1	43.5	23.3	16.7	53.6	39.1	29.8		51.6	47.7	52.1	52.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.8	0.0	2.9	6.4	0.2		10.0	0.3	5.5	5.4	1.3
Delay (s)	50.7	24.0	16.7	56.5	45.5	29.9		61.7	48.0	57.6	57.5	1.3
Level of Service	D	C	B	E	D	C		E	D	E	E	A
Approach Delay (s)		34.6			43.6			55.0			13.3	
Approach LOS		C			D			E			B	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	122.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	19	63	46	37	45	22
Maximum Split (%)	12.7%	42.0%	30.7%	24.7%	30.0%	14.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	19	82	0	37	128
End Time (s)	19	82	128	37	82	0
Yield/Force Off (s)	13	76	122	31	76	144
Yield/Force Off 170(s)	13	76	117	31	76	139
Local Start Time (s)	113	132	45	113	0	91
Local Yield (s)	126	39	85	144	39	107
Local Yield 170(s)	126	39	80	144	39	102

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	105

Splits and Phases: 6: US 90 & SR 89



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	12	21	12	13	2	12	319	12	10	261	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.90			0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1684			1804		1752	3485		1770	3521	
Flt Permitted	0.95	1.00			0.98		0.56	1.00		0.47	1.00	
Satd. Flow (perm)	3433	1684			1804		1031	3485		879	3521	
Peak-hour factor, PHF	0.90	0.90	0.90	0.69	0.69	0.69	0.77	0.77	0.77	0.85	0.85	0.85
Adj. Flow (vph)	408	13	23	17	19	3	16	414	16	12	307	11
RTOR Reduction (vph)	0	13	0	0	3	0	0	4	0	0	4	0
Lane Group Flow (vph)	408	23	0	0	36	0	16	426	0	12	314	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	26.7	26.7			2.7		13.8	13.8		13.8	13.8	
Effective Green, g (s)	26.7	26.7			2.7		13.8	13.8		13.8	13.8	
Actuated g/C Ratio	0.44	0.44			0.04		0.23	0.23		0.23	0.23	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1498	735			80		232	786		198	794	
v/s Ratio Prot	c0.12	0.01			c0.02			c0.12			0.09	
v/s Ratio Perm							0.02			0.01		
v/c Ratio	0.27	0.03			0.45		0.07	0.54		0.06	0.40	
Uniform Delay, d1	11.0	9.9			28.5		18.6	20.9		18.6	20.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0			5.4		0.2	1.0		0.2	0.4	
Delay (s)	11.2	9.9			34.0		18.8	21.9		18.8	20.6	
Level of Service	B	A			C		B	C		B	C	
Approach Delay (s)		11.1			34.0			21.8			20.5	
Approach LOS		B			C			C			C	

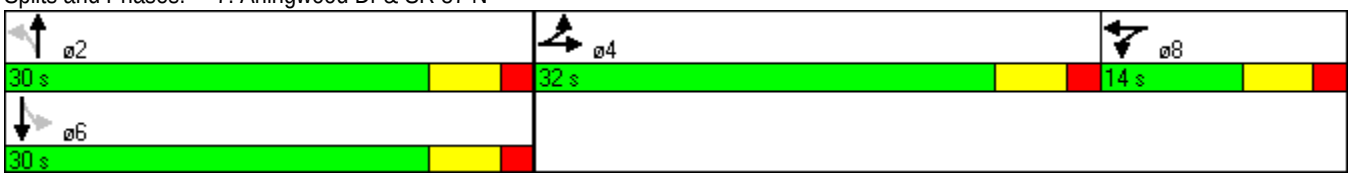
Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	30	32	30	14
Maximum Split (%)	39.5%	42.1%	39.5%	18.4%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	14		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	30	0	62
End Time (s)	30	62	30	0
Yield/Force Off (s)	24	56	24	70
Yield/Force Off 170(s)	24	42	24	70
Local Start Time (s)	0	30	0	62
Local Yield (s)	24	56	24	70
Local Yield 170(s)	24	42	24	70

Intersection Summary	
Cycle Length	76
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	6	86	106	391	0	694	18
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.83	0.83	0.94	0.94	0.87	0.87	0.87
Hourly flow rate (vph)	7	104	113	416	0	798	21
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1242	409	818		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1242	409	818		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	95	82	86		0		
cM capacity (veh/h)	141	586	806		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	111	113	208	208	532	287	0
Volume Left	7	113	0	0	0	0	0
Volume Right	104	0	0	0	0	21	0
cSH	486	806	1700	1700	1700	1700	1700
Volume to Capacity	0.23	0.14	0.12	0.12	0.31	0.17	0.00
Queue Length 95th (ft)	22	12	0	0	0	0	0
Control Delay (s)	14.6	10.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B					
Approach Delay (s)	14.6	2.2			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	562	24	26	154	110	3	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.66	1.00	1.00	0.65	1.00
Satd. Flow (perm)	3400	1568	1215	1845	1568	1169	3406
Peak-hour factor, PHF	0.82	0.82	0.93	0.93	0.93	0.96	0.96
Adj. Flow (vph)	685	29	28	166	118	3	147
RTOR Reduction (vph)	0	21	0	0	51	0	0
Lane Group Flow (vph)	685	8	28	166	67	3	147
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	21.0	21.0	44.1	44.1	44.1	44.1	44.1
Effective Green, g (s)	21.0	21.0	44.1	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.27	0.27	0.57	0.57	0.57	0.57	0.57
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	926	427	695	1055	897	669	1948
v/s Ratio Prot				c0.09			0.04
v/s Ratio Perm	c0.20	0.01	0.02		0.04	0.00	
v/c Ratio	0.74	0.02	0.04	0.16	0.08	0.00	0.08
Uniform Delay, d1	25.6	20.5	7.2	7.8	7.4	7.1	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.1	0.3	0.2	0.0	0.1
Delay (s)	28.9	20.5	7.3	8.1	7.5	7.1	7.5
Level of Service	C	C	A	A	A	A	A
Approach Delay (s)	28.6			7.8			7.4
Approach LOS	C			A			A

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	50	30	50
Maximum Split (%)	62.5%	37.5%	62.5%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	50	0
End Time (s)	50	0	50
Yield/Force Off (s)	44	74	44
Yield/Force Off 170(s)	44	74	44
Local Start Time (s)	0	50	0
Local Yield (s)	44	74	44
Local Yield 170(s)	44	74	44

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	0	70	69	0	56	0	679	105	40	554	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.32	0.32	0.32	0.81	0.81	0.81	0.95	0.95	0.95	0.83	0.83	0.83
Hourly flow rate (vph)	59	0	219	85	0	69	0	715	111	48	667	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1190	1589	334	1419	1534	413	667			825		
vC1, stage 1 conf vol	764	764		770	770							
vC2, stage 2 conf vol	427	825		649	764							
vCu, unblocked vol	1190	1589	334	1419	1534	413	667			825		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	100	67	60	100	88	100			94		
cM capacity (veh/h)	289	266	662	215	291	586	911			795		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	59	219	154	476	349	48	334	334
Volume Left	59	0	85	0	0	48	0	0
Volume Right	0	219	69	0	111	0	0	0
cSH	289	662	301	1700	1700	795	1700	1700
Volume to Capacity	0.21	0.33	0.51	0.28	0.21	0.06	0.20	0.20
Queue Length 95th (ft)	19	36	69	0	0	5	0	0
Control Delay (s)	20.7	13.1	29.0	0.0	0.0	9.8	0.0	0.0
Lane LOS	C	B	D			A		
Approach Delay (s)	14.7		29.0	0.0		0.7		
Approach LOS	B		D					

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	176	0	80	105	2	0	10	64	0	2	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.90	0.90	0.90	0.82	0.82	0.82	0.67	0.67	0.67
Hourly flow rate (vph)	2	198	0	89	117	2	0	12	78	0	3	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	119			198			510	499	198	582	498	118
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	119			198			510	499	198	582	498	118
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			100	97	91	100	99	99
cM capacity (veh/h)	1463			1369			441	441	841	358	443	934

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	200	208	90	13
Volume Left	2	89	0	0
Volume Right	0	2	78	10
cSH	1463	1369	749	749
Volume to Capacity	0.00	0.06	0.12	0.02
Queue Length 95th (ft)	0	5	10	1
Control Delay (s)	0.1	3.7	10.5	9.9
Lane LOS	A	A	B	A
Approach Delay (s)	0.1	3.7	10.5	9.9
Approach LOS			B	A

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & East Milton Rd

AM 2015 - OPENING

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	113	243	125	169	39	302	211	95	15	66	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1846	1583
Flt Permitted	0.61	1.00	1.00	0.68	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1133	1845	1568	1227	1810	1538	3367	1827	1553		1846	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	123	264	136	184	42	328	229	103	16	72	68
RTOR Reduction (vph)	0	0	0	0	0	25	0	0	0	0	0	61
Lane Group Flow (vph)	174	123	264	136	184	17	328	229	103	0	88	7
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	54.3	43.5	102.6	52.3	42.5	42.5	18.4	18.4	102.6		10.4	10.4
Effective Green, g (s)	54.3	43.5	102.6	52.3	42.5	42.5	18.4	18.4	102.6		10.4	10.4
Actuated g/C Ratio	0.53	0.42	1.00	0.51	0.41	0.41	0.18	0.18	1.00		0.10	0.10
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	665	782	1568	672	750	637	604	328	1553		187	160
v/s Ratio Prot	c0.03	0.07		0.02	0.10		0.10	c0.13			c0.05	
v/s Ratio Perm	c0.11		c0.17	0.08		0.01			0.07			0.00
v/c Ratio	0.26	0.16	0.17	0.20	0.25	0.03	0.54	0.70	0.07		0.47	0.04
Uniform Delay, d1	12.6	18.2	0.0	13.4	19.6	17.8	38.3	39.5	0.0		43.5	41.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.4	0.2	0.1	0.8	0.1	1.0	6.4	0.1		1.9	0.1
Delay (s)	12.9	18.7	0.2	13.5	20.4	17.9	39.3	45.8	0.1		45.4	41.7
Level of Service	B	B	A	B	C	B	D	D	A		D	D
Approach Delay (s)		8.2			17.5			35.4			43.8	
Approach LOS		A			B			D			D	

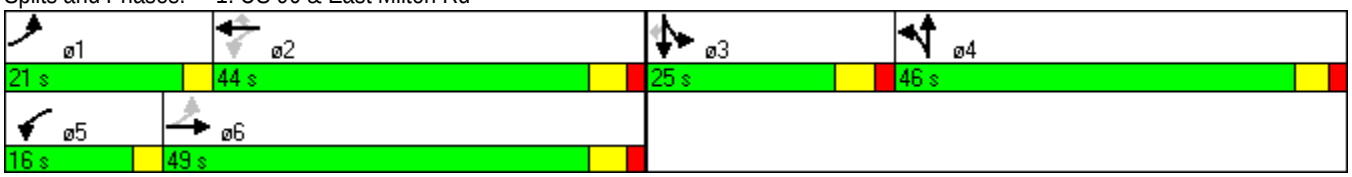
Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	102.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	21	44	25	46	16	49
Maximum Split (%)	15.4%	32.4%	18.4%	33.8%	11.8%	36.0%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	65	90	0	16
End Time (s)	21	65	90	0	16	65
Yield/Force Off (s)	18	59	84	130.5	13	59
Yield/Force Off 170(s)	18	47	84	130.5	13	47
Local Start Time (s)	115	0	44	69	115	131
Local Yield (s)	133	38	63	109.5	128	38
Local Yield 170(s)	133	26	63	109.5	128	26

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & East Milton Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	420	190	126	438	2	251	14	79	3	9	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3469		1665	1593			1799	
Flt Permitted	0.48	1.00	1.00	0.37	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	875	1827	1553	683	3469		1665	1593			1799	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	457	207	137	476	2	273	15	86	3	10	3
RTOR Reduction (vph)	0	0	92	0	0	0	0	26	0	0	3	0
Lane Group Flow (vph)	1	457	115	137	478	0	191	157	0	0	13	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	65.4	65.4	65.4	79.7	79.7		18.3	18.3			2.2	
Effective Green, g (s)	65.4	65.4	65.4	79.7	79.7		18.3	18.3			2.2	
Actuated g/C Ratio	0.55	0.55	0.55	0.67	0.67		0.15	0.15			0.02	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	484	1011	859	534	2339		258	247			33	
v/s Ratio Prot		c0.25		c0.02	0.14		c0.11	0.10			c0.01	
v/s Ratio Perm	0.00		0.07	0.15								
v/c Ratio	0.00	0.45	0.13	0.26	0.20		0.74	0.63			0.40	
Uniform Delay, d1	11.8	15.7	12.7	8.4	7.3		47.7	46.8			57.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.5	0.3	0.3	0.2		10.8	5.3			7.6	
Delay (s)	11.8	17.2	13.1	8.7	7.5		58.5	52.1			65.0	
Level of Service	B	B	B	A	A		E	D			E	
Approach Delay (s)		15.9			7.7			55.4			65.0	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	118.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	85	12	37	16	69
Maximum Split (%)	63.4%	9.0%	27.6%	11.9%	51.5%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	85	97	0	16
End Time (s)	85	97	0	16	85
Yield/Force Off (s)	79	91	128	10	79
Yield/Force Off 170(s)	67	91	112	10	67
Local Start Time (s)	0	85	97	0	16
Local Yield (s)	79	91	128	10	79
Local Yield 170(s)	67	91	112	10	67

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	366	27	4	555	226	2	4	13	226	30	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.91			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.96	
Satd. Flow (prot)	1736	1808			1755			1678			1759	
Flt Permitted	0.29	1.00			1.00			0.97			0.75	
Satd. Flow (perm)	531	1808			1753			1638			1367	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	398	29	4	603	246	2	4	14	246	33	13
RTOR Reduction (vph)	0	3	0	0	14	0	0	10	0	0	1	0
Lane Group Flow (vph)	11	424	0	0	839	0	0	10	0	0	291	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.6	51.6			51.6			25.3			25.3	
Effective Green, g (s)	51.6	51.6			51.6			25.3			25.3	
Actuated g/C Ratio	0.58	0.58			0.58			0.28			0.28	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	308	1049			1017			466			389	
v/s Ratio Prot		0.23										
v/s Ratio Perm	0.02				c0.48			0.01			c0.21	
v/c Ratio	0.04	0.40			0.83			0.02			0.75	
Uniform Delay, d1	8.0	10.2			15.0			22.9			28.9	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.9			6.8			0.0			9.1	
Delay (s)	8.2	11.1			21.8			22.9			38.0	
Level of Service	A	B			C			C			D	
Approach Delay (s)		11.1			21.8			22.9			38.0	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	38	69	38	69
Maximum Split (%)	35.5%	64.5%	35.5%	64.5%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	38
End Time (s)	38	0	38	0
Yield/Force Off (s)	32	101	32	101
Yield/Force Off 170(s)	20	101	20	101
Local Start Time (s)	0	38	0	38
Local Yield (s)	32	101	32	101
Local Yield 170(s)	20	101	20	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	65

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	503	102	53	545	12	107	127	53	13	153	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1781		1736	1821			1766			1824	
Flt Permitted	0.26	1.00		0.22	1.00			0.81			0.97	
Satd. Flow (perm)	481	1781		397	1821			1459			1768	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	547	111	58	592	13	116	138	58	14	166	11
RTOR Reduction (vph)	0	7	0	0	1	0	0	8	0	0	2	0
Lane Group Flow (vph)	11	651	0	58	604	0	0	304	0	0	189	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.4	33.4		33.4	33.4			26.0			26.0	
Effective Green, g (s)	33.4	33.4		33.4	33.4			26.0			26.0	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	225	833		186	852			531			644	
v/s Ratio Prot		c0.37			0.33							
v/s Ratio Perm	0.02			0.15				c0.21			0.11	
v/c Ratio	0.05	0.78		0.31	0.71			0.57			0.29	
Uniform Delay, d1	10.3	15.9		11.8	15.1			18.2			16.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	5.1		1.3	2.9			2.4			0.5	
Delay (s)	10.5	21.0		13.1	18.0			20.6			16.7	
Level of Service	B	C		B	B			C			B	
Approach Delay (s)		20.8			17.6			20.6			16.7	
Approach LOS		C			B			C			B	

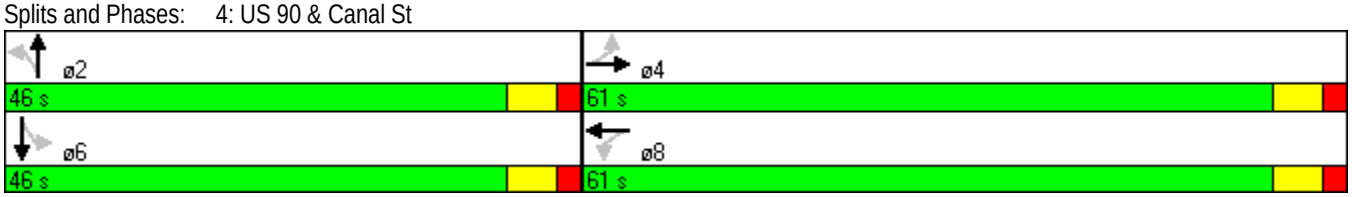
Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	46	61	46	61
Maximum Split (%)	43.0%	57.0%	43.0%	57.0%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	46	0	46
End Time (s)	46	0	46	0
Yield/Force Off (s)	40	101	40	101
Yield/Force Off 170(s)	40	101	40	101
Local Start Time (s)	0	46	0	46
Local Yield (s)	40	101	40	101
Local Yield 170(s)	40	101	40	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	278	404	509	257	334	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	302	439	553	279	363	397
RTOR Reduction (vph)	0	0	0	202	0	300
Lane Group Flow (vph)	302	439	553	77	363	97
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	12.9	36.8	17.9	17.9	15.7	15.7
Effective Green, g (s)	12.9	36.8	17.9	17.9	15.7	15.7
Actuated g/C Ratio	0.20	0.57	0.28	0.28	0.24	0.24
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	687	2019	963	431	828	382
v/s Ratio Prot	c0.09	0.12	c0.16		c0.11	
v/s Ratio Perm				0.05		0.06
v/c Ratio	0.44	0.22	0.57	0.18	0.44	0.25
Uniform Delay, d1	22.6	6.8	20.0	17.7	20.7	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.8	0.2	0.5	0.5
Delay (s)	23.2	6.8	20.9	17.9	21.2	20.2
Level of Service	C	A	C	B	C	C
Approach Delay (s)		13.5	19.9		20.6	
Approach LOS		B	B		C	

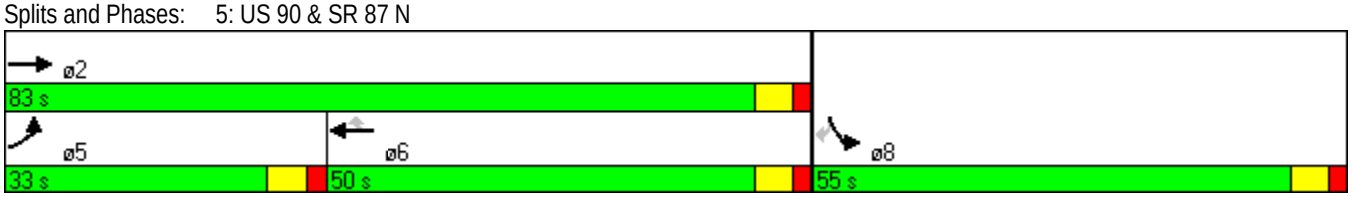
Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	83	33	50	55
Maximum Split (%)	60.1%	23.9%	36.2%	39.9%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	33	83
End Time (s)	83	33	83	0
Yield/Force Off (s)	77	27	77	132
Yield/Force Off 170(s)	77	27	77	132
Local Start Time (s)	105	105	0	50
Local Yield (s)	44	132	44	99
Local Yield 170(s)	44	132	44	99

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 5: US 90 & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	405	614	19	27	683	124	5	10	12	162	67	623
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1733	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1733	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	440	667	21	29	742	135	5	11	13	176	73	677
RTOR Reduction (vph)	0	0	8	0	0	86	0	0	13	0	0	0
Lane Group Flow (vph)	440	667	13	29	742	49	0	16	0	123	126	677
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	18.5	46.9	46.9	4.5	32.9	32.9		2.7	2.7	13.3	13.3	91.4
Effective Green, g (s)	18.5	46.9	46.9	4.5	32.9	32.9		2.7	2.7	13.3	13.3	91.4
Actuated g/C Ratio	0.20	0.51	0.51	0.05	0.36	0.36		0.03	0.03	0.15	0.15	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	695	1816	812	87	1274	570		54	47	245	252	1583
v/s Ratio Prot	c0.13	0.19		0.02	c0.21			0.01		0.07	0.07	
v/s Ratio Perm			0.01			0.03			0.00			c0.43
v/c Ratio	0.63	0.37	0.02	0.33	0.58	0.09		0.30	0.01	0.50	0.50	0.43
Uniform Delay, d1	33.3	13.3	10.9	42.0	23.7	19.3		43.4	43.1	36.0	36.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.0	2.3	0.8	0.1		4.2	0.1	1.6	1.6	0.8
Delay (s)	35.2	13.5	10.9	44.3	24.5	19.4		47.6	43.1	37.6	37.5	0.8
Level of Service	D	B	B	D	C	B		D	D	D	D	A
Approach Delay (s)		21.9			24.4			45.6			10.7	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	16	99	34	46	69	24
Maximum Split (%)	9.2%	57.2%	19.7%	26.6%	39.9%	13.9%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	115	0	46	149
End Time (s)	16	115	149	46	115	0
Yield/Force Off (s)	10	109	143	40	109	167
Yield/Force Off 170(s)	10	109	138	40	109	162
Local Start Time (s)	127	143	69	127	0	103
Local Yield (s)	137	63	97	167	63	121
Local Yield 170(s)	137	63	92	167	63	116

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	808	2	2	2	6	23	6	373	4	8	296	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.93			0.90		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1723			1673		1752	3500		1770	3489	
Flt Permitted	0.95	1.00			1.00		0.53	1.00		0.46	1.00	
Satd. Flow (perm)	3433	1723			1673		973	3500		862	3489	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	878	2	2	2	7	25	7	405	4	9	322	34
RTOR Reduction (vph)	0	1	0	0	24	0	0	1	0	0	10	0
Lane Group Flow (vph)	878	3	0	0	10	0	7	408	0	9	346	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	33.4	33.4			2.8		14.2	14.2		14.2	14.2	
Effective Green, g (s)	33.4	33.4			2.8		14.2	14.2		14.2	14.2	
Actuated g/C Ratio	0.49	0.49			0.04		0.21	0.21		0.21	0.21	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1676	841			68		202	727		179	724	
v/s Ratio Prot	c0.26	0.00			c0.01			c0.12			0.10	
v/s Ratio Perm							0.01			0.01		
v/c Ratio	0.52	0.00			0.15		0.03	0.56		0.05	0.48	
Uniform Delay, d1	12.0	9.0			31.6		21.6	24.3		21.7	23.8	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.0			1.4		0.1	1.2		0.2	0.7	
Delay (s)	12.4	9.0			33.0		21.7	25.5		21.9	24.5	
Level of Service	B	A			C		C	C		C	C	
Approach Delay (s)		12.4			33.0			25.5			24.5	
Approach LOS		B			C			C			C	

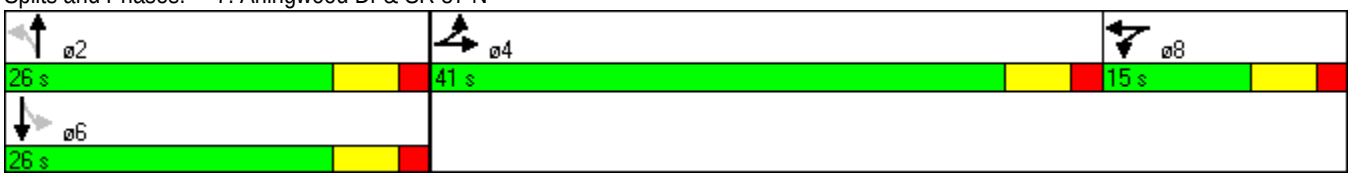
Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	26	41	26	15
Maximum Split (%)	31.7%	50.0%	31.7%	18.3%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	26	0	67
End Time (s)	26	67	26	0
Yield/Force Off (s)	20	61	20	76
Yield/Force Off 170(s)	20	41	20	76
Local Start Time (s)	0	26	0	67
Local Yield (s)	20	61	20	76
Local Yield 170(s)	20	41	20	76

Intersection Summary	
Cycle Length	82
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	40	218	116	785	0	406	15
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	237	126	853	0	441	16
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1128	229	458		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1128	229	458		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	75	69	89		0		
cM capacity (veh/h)	173	768	1100		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	280	126	427	427	294	163	0
Volume Left	43	126	0	0	0	0	0
Volume Right	237	0	0	0	0	16	0
cSH	500	1100	1700	1700	1700	1700	1700
Volume to Capacity	0.56	0.11	0.25	0.25	0.17	0.10	0.00
Queue Length 95th (ft)	85	10	0	0	0	0	0
Control Delay (s)	21.0	8.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	21.0	1.1			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	76	40	9	188	697	83	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.57	1.00	1.00	0.63	1.00
Satd. Flow (perm)	3400	1568	1057	1845	1568	1129	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	43	10	204	758	90	292
RTOR Reduction (vph)	0	37	0	0	240	0	0
Lane Group Flow (vph)	83	6	10	204	518	90	292
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.4	8.4	44.0	44.0	44.0	44.0	44.0
Effective Green, g (s)	8.4	8.4	44.0	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.13	0.13	0.68	0.68	0.68	0.68	0.68
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	443	205	722	1261	1071	771	2327
v/s Ratio Prot				0.11			0.09
v/s Ratio Perm	c0.02	0.00	0.01		c0.33	0.08	
v/c Ratio	0.19	0.03	0.01	0.16	0.48	0.12	0.13
Uniform Delay, d1	25.0	24.4	3.3	3.6	4.8	3.5	3.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.0	0.3	1.6	0.3	0.1
Delay (s)	25.2	24.5	3.3	3.9	6.4	3.8	3.6
Level of Service	C	C	A	A	A	A	A
Approach Delay (s)	25.0			5.8			3.7
Approach LOS	C			A			A

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	50	30	50
Maximum Split (%)	62.5%	37.5%	62.5%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	50	0
End Time (s)	50	0	50
Yield/Force Off (s)	44	74	44
Yield/Force Off 170(s)	44	74	44
Local Start Time (s)	0	50	0
Local Yield (s)	44	74	44
Local Yield 170(s)	44	74	44

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	4	88	0	42	0	434	58	43	592	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	4	96	0	46	0	472	63	47	643	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1018	1272	322	923	1240	267	643			535		
vC1, stage 1 conf vol	737	737		503	503							
vC2, stage 2 conf vol	282	535		420	737							
vCu, unblocked vol	1018	1272	322	923	1240	267	643			535		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	77	100	94	100			95		
cM capacity (veh/h)	330	334	674	416	346	728	931			1022		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	2	4	141	314	220	47	322	322
Volume Left	2	0	96	0	0	47	0	0
Volume Right	0	4	46	0	63	0	0	0
cSH	330	674	482	1700	1700	1022	1700	1700
Volume to Capacity	0.01	0.01	0.29	0.18	0.13	0.05	0.19	0.19
Queue Length 95th (ft)	0	0	30	0	0	4	0	0
Control Delay (s)	16.0	10.4	15.5	0.0	0.0	8.7	0.0	0.0
Lane LOS	C	B	C			A		
Approach Delay (s)	12.2		15.5	0.0		0.6		
Approach LOS	B		C					

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	50	15	82	217	0	18	1	41	0	3	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	54	16	89	236	0	20	1	45	0	3	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	236			71			488	479	62	524	487	236
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	236			71			488	479	62	524	487	236
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			96	100	96	100	99	99
cM capacity (veh/h)	1325			1523			459	456	999	422	452	803

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	72	325	65	11
Volume Left	1	89	20	0
Volume Right	16	0	45	8
cSH	1325	1523	728	652
Volume to Capacity	0.00	0.06	0.09	0.02
Queue Length 95th (ft)	0	5	7	1
Control Delay (s)	0.1	2.4	10.4	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	2.4	10.4	10.6
Approach LOS			B	B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 S

PM 2015 - OPENING YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	174	414	166	146	4	349	20	140	30	132	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1845	1583
Flt Permitted	0.66	1.00	1.00	0.57	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1211	1845	1568	1031	1810	1538	3367	1827	1553		1845	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	189	450	180	159	4	379	22	152	33	143	105
RTOR Reduction (vph)	0	0	0	0	0	2	0	0	0	0	0	90
Lane Group Flow (vph)	16	189	450	180	159	2	379	22	152	0	176	15
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	41.2	39.4	104.0	54.2	49.4	49.4	17.0	17.0	104.0		15.3	15.3
Effective Green, g (s)	41.2	39.4	104.0	54.2	49.4	49.4	17.0	17.0	104.0		15.3	15.3
Actuated g/C Ratio	0.40	0.38	1.00	0.52	0.47	0.47	0.16	0.16	1.00		0.15	0.15
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	489	699	1568	615	860	731	550	299	1553		271	233
v/s Ratio Prot	0.00	0.10		0.03	0.09		c0.11	0.01			c0.10	
v/s Ratio Perm	0.01		c0.29	0.12		0.00			0.10			0.01
v/c Ratio	0.03	0.27	0.29	0.29	0.18	0.00	0.69	0.07	0.10		0.65	0.07
Uniform Delay, d1	19.1	22.4	0.0	13.4	15.7	14.4	41.0	36.8	0.0		41.8	38.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	1.0	0.5	0.3	0.5	0.0	3.6	0.1	0.1		5.3	0.1
Delay (s)	19.2	23.3	0.5	13.7	16.2	14.4	44.6	36.9	0.1		47.1	38.3
Level of Service	B	C	A	B	B	B	D	D	A		D	D
Approach Delay (s)		7.5			14.9			32.1			43.8	
Approach LOS		A			B			C			D	

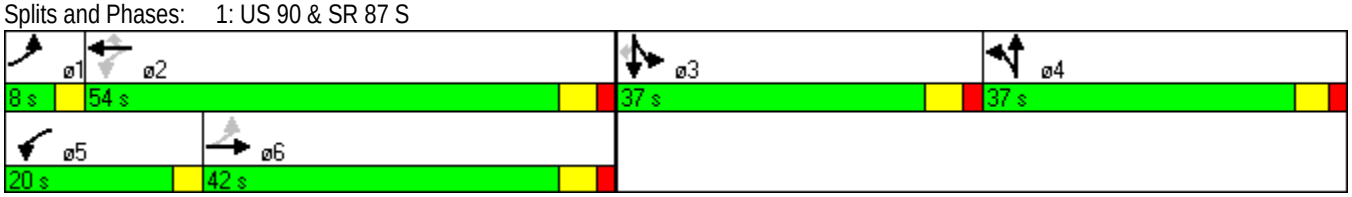
Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	104.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	54	37	37	20	42
Maximum Split (%)	5.9%	39.7%	27.2%	27.2%	14.7%	30.9%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	62	99	0	20
End Time (s)	8	62	99	0	20	62
Yield/Force Off (s)	5	56	93	130.5	17	56
Yield/Force Off 170(s)	5	44	93	130.5	17	44
Local Start Time (s)	128	0	54	91	128	12
Local Yield (s)	133	48	85	122.5	9	48
Local Yield 170(s)	133	36	85	122.5	9	36

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 S



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	592	263	42	584	1	186	8	56	0	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			1.00	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1594			1737	
Flt Permitted	0.41	1.00	1.00	0.30	1.00		0.95	0.98			1.00	
Satd. Flow (perm)	750	1827	1553	541	3470		1665	1594			1737	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	643	286	46	635	1	202	9	61	0	3	3
RTOR Reduction (vph)	0	0	104	0	0	0	0	25	0	0	3	0
Lane Group Flow (vph)	4	643	182	46	636	0	139	108	0	0	3	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	78.3	78.3	78.3	89.1	89.1		15.0	15.0			1.1	
Effective Green, g (s)	78.3	78.3	78.3	89.1	89.1		15.0	15.0			1.1	
Actuated g/C Ratio	0.64	0.64	0.64	0.72	0.72		0.12	0.12			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	477	1161	987	438	2510		203	194			16	
v/s Ratio Prot		c0.35		0.00	c0.18		c0.08	0.07			c0.00	
v/s Ratio Perm	0.01		0.12	0.07								
v/c Ratio	0.01	0.55	0.18	0.11	0.25		0.68	0.56			0.19	
Uniform Delay, d1	8.2	12.6	9.3	7.5	5.8		51.8	51.0			60.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.9	0.4	0.1	0.2		9.2	3.5			5.7	
Delay (s)	8.3	14.5	9.7	7.6	6.0		61.0	54.4			66.3	
Level of Service	A	B	A	A	A		E	D			E	
Approach Delay (s)		13.0			6.1			57.8			66.3	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	123.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	92	12	31	12	80
Maximum Split (%)	68.1%	8.9%	23.0%	8.9%	59.3%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	92	104	0	12
End Time (s)	92	104	0	12	92
Yield/Force Off (s)	86	98	129	6	86
Yield/Force Off 170(s)	74	98	113	6	74
Local Start Time (s)	0	92	104	0	12
Local Yield (s)	86	98	129	6	86
Local Yield 170(s)	74	98	113	6	74

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	571	14	4	534	308	16	23	21	272	12	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1820			1737			1751			1749	
Flt Permitted	0.26	1.00			1.00			0.89			0.70	
Satd. Flow (perm)	484	1820			1733			1574			1284	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	621	15	4	580	335	17	25	23	296	13	23
RTOR Reduction (vph)	0	1	0	0	20	0	0	16	0	0	3	0
Lane Group Flow (vph)	23	635	0	0	899	0	0	49	0	0	329	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	57.8	57.8			57.8			29.4			29.4	
Effective Green, g (s)	57.8	57.8			57.8			29.4			29.4	
Actuated g/C Ratio	0.58	0.58			0.58			0.30			0.30	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	282	1060			1010			466			381	
v/s Ratio Prot		0.35										
v/s Ratio Perm	0.05				c0.52			0.03			c0.26	
v/c Ratio	0.08	0.60			0.89			0.10			0.86	
Uniform Delay, d1	9.1	13.3			18.0			25.3			33.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	2.0			11.4			0.2			19.4	
Delay (s)	9.5	15.3			29.3			25.6			52.4	
Level of Service	A	B			C			C			D	
Approach Delay (s)		15.1			29.3			25.6			52.4	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	99.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	38	69	38	69
Maximum Split (%)	35.5%	64.5%	35.5%	64.5%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	38
End Time (s)	38	0	38	0
Yield/Force Off (s)	32	101	32	101
Yield/Force Off 170(s)	20	101	20	101
Local Start Time (s)	0	38	0	38
Local Yield (s)	32	101	32	101
Local Yield 170(s)	20	101	20	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	683	131	60	588	17	150	160	42	18	154	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	1.00			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1783		1736	1819			1777			1815	
Flt Permitted	0.26	1.00		0.10	1.00			0.74			0.95	
Satd. Flow (perm)	477	1783		183	1819			1340			1725	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	742	142	65	639	18	163	174	46	20	167	17
RTOR Reduction (vph)	0	6	0	0	1	0	0	5	0	0	3	0
Lane Group Flow (vph)	13	878	0	65	656	0	0	378	0	0	201	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.9	51.9		51.9	51.9			32.0			32.0	
Effective Green, g (s)	51.9	51.9		51.9	51.9			32.0			32.0	
Actuated g/C Ratio	0.54	0.54		0.54	0.54			0.33			0.33	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	258	965		99	984			447			576	
v/s Ratio Prot		c0.49			0.36							
v/s Ratio Perm	0.03			0.36				c0.28			0.12	
v/c Ratio	0.05	0.91		0.66	0.67			0.85			0.35	
Uniform Delay, d1	10.4	19.9		15.7	15.8			29.7			24.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	12.4		16.1	1.9			15.1			0.8	
Delay (s)	10.5	32.2		31.7	17.7			44.7			24.9	
Level of Service	B	C		C	B			D			C	
Approach Delay (s)		31.9			18.9			44.7			24.9	
Approach LOS		C			B			D			C	

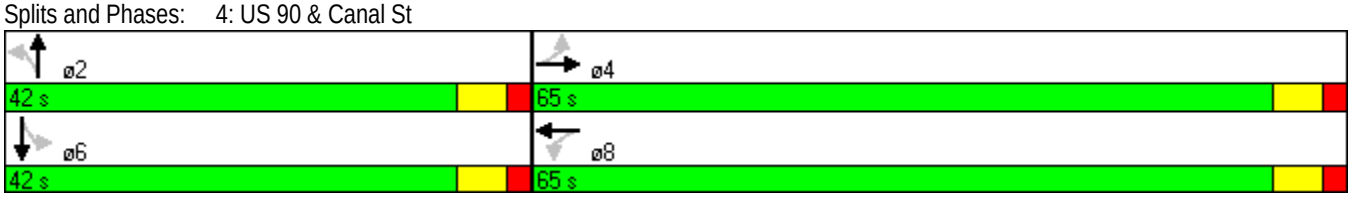
Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	42	65	42	65
Maximum Split (%)	39.3%	60.7%	39.3%	60.7%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	42	0	42
End Time (s)	42	0	42	0
Yield/Force Off (s)	36	101	36	101
Yield/Force Off 170(s)	36	101	36	101
Local Start Time (s)	0	42	0	42
Local Yield (s)	36	101	36	101
Local Yield 170(s)	36	101	36	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	567	608	599	301	303	479
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	616	661	651	327	329	521
RTOR Reduction (vph)	0	0	0	232	0	409
Lane Group Flow (vph)	616	661	651	95	329	112
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	23.3	53.4	24.1	24.1	17.9	17.9
Effective Green, g (s)	23.3	53.4	24.1	24.1	17.9	17.9
Actuated g/C Ratio	0.28	0.64	0.29	0.29	0.21	0.21
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	960	2269	1004	449	731	337
v/s Ratio Prot	c0.18	0.19	c0.19		c0.10	
v/s Ratio Perm				0.06		0.07
v/c Ratio	0.64	0.29	0.65	0.21	0.45	0.33
Uniform Delay, d1	26.3	6.6	25.9	22.4	28.4	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1	1.5	0.2	0.6	0.8
Delay (s)	28.0	6.7	27.3	22.6	29.0	28.4
Level of Service	C	A	C	C	C	C
Approach Delay (s)		17.0	25.8		28.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	83.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	91	44	47	47
Maximum Split (%)	65.9%	31.9%	34.1%	34.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	44	91
End Time (s)	91	44	91	0
Yield/Force Off (s)	85	38	85	132
Yield/Force Off 170(s)	85	38	85	132
Local Start Time (s)	94	94	0	47
Local Yield (s)	41	132	41	88
Local Yield 170(s)	41	132	41	88

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	674	959	45	67	827	189	28	75	90	162	45	698
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1838	1583	1681	1721	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1838	1583	1681	1721	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	733	1042	49	73	899	205	30	82	98	176	49	759
RTOR Reduction (vph)	0	0	13	0	0	138	0	0	87	0	0	0
Lane Group Flow (vph)	733	1042	36	73	899	67	0	112	11	111	114	759
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	32.5	65.1	65.1	8.1	40.7	40.7		13.7	13.7	13.6	13.6	124.5
Effective Green, g (s)	32.5	65.1	65.1	8.1	40.7	40.7		13.7	13.7	13.6	13.6	124.5
Actuated g/C Ratio	0.26	0.52	0.52	0.07	0.33	0.33		0.11	0.11	0.11	0.11	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	896	1851	828	115	1157	517		202	174	184	188	1583
v/s Ratio Prot	c0.21	0.29		0.04	c0.25			0.06		0.07	0.07	
v/s Ratio Perm			0.02			0.04			0.01			c0.48
v/c Ratio	0.82	0.56	0.04	0.63	0.78	0.13		0.55	0.06	0.60	0.61	0.48
Uniform Delay, d1	43.2	20.1	14.5	56.8	37.8	29.5		52.5	49.6	52.9	52.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	0.5	0.0	10.9	3.5	0.2		4.0	0.2	5.5	5.4	1.0
Delay (s)	49.1	20.6	14.5	67.7	41.4	29.6		56.5	49.8	58.4	58.3	1.0
Level of Service	D	C	B	E	D	C		E	D	E	E	A
Approach Delay (s)		31.9			40.9			53.4			14.1	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	124.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	18	85	24	48	55	23
Maximum Split (%)	12.0%	56.7%	16.0%	32.0%	36.7%	15.3%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	18	103	0	48	127
End Time (s)	18	103	127	48	103	0
Yield/Force Off (s)	12	97	121	42	97	144
Yield/Force Off 170(s)	12	97	116	42	97	139
Local Start Time (s)	102	120	55	102	0	79
Local Yield (s)	114	49	73	144	49	96
Local Yield 170(s)	114	49	68	144	49	91

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	568	4	3	4	9	18	4	480	3	25	291	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.94			0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1743			1705		1752	3502		1770	3502	
Flt Permitted	0.95	1.00			0.99		0.55	1.00		0.38	1.00	
Satd. Flow (perm)	3433	1743			1705		1009	3502		705	3502	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	617	4	3	4	10	20	4	522	3	27	316	24
RTOR Reduction (vph)	0	2	0	0	19	0	0	1	0	0	8	0
Lane Group Flow (vph)	617	5	0	0	15	0	4	524	0	27	332	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	26.9	26.9			2.6		15.2	15.2		15.2	15.2	
Effective Green, g (s)	26.9	26.9			2.6		15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.43	0.43			0.04		0.24	0.24		0.24	0.24	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1473	748			71		245	849		171	849	
v/s Ratio Prot	c0.18	0.00			c0.01			c0.15			0.09	
v/s Ratio Perm							0.00			0.04		
v/c Ratio	0.42	0.01			0.21		0.02	0.62		0.16	0.39	
Uniform Delay, d1	12.5	10.3			29.1		18.1	21.2		18.7	19.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.0			2.0		0.0	1.5		0.6	0.4	
Delay (s)	12.7	10.3			31.1		18.1	22.7		19.3	20.3	
Level of Service	B	B			C		B	C		B	C	
Approach Delay (s)		12.7			31.1			22.7			20.2	
Approach LOS		B			C			C			C	

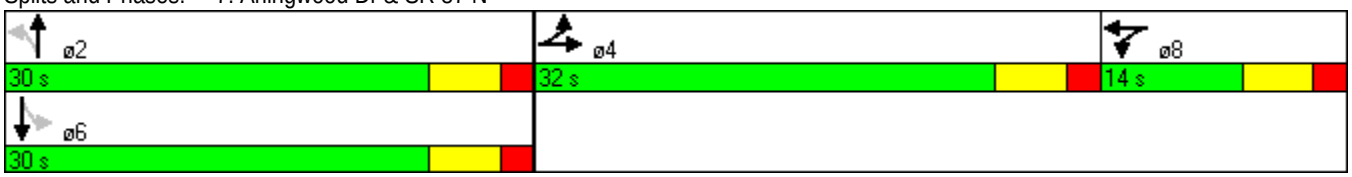
Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	30	32	30	14
Maximum Split (%)	39.5%	42.1%	39.5%	18.4%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	14		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	30	0	62
End Time (s)	30	62	30	0
Yield/Force Off (s)	24	56	24	70
Yield/Force Off 170(s)	24	42	24	70
Local Start Time (s)	0	30	0	62
Local Yield (s)	24	56	24	70
Local Yield 170(s)	24	42	24	70

Intersection Summary	
Cycle Length	76
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	12	202	216	429	0	820	47
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	220	235	466	0	891	51
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1620	471	942		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1620	471	942		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	79	59	68		0		
cM capacity (veh/h)	62	534	723		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	233	235	233	233	594	348	0
Volume Left	13	235	0	0	0	0	0
Volume Right	220	0	0	0	0	51	0
cSH	374	723	1700	1700	1700	1700	1700
Volume to Capacity	0.62	0.32	0.14	0.14	0.35	0.20	0.00
Queue Length 95th (ft)	100	35	0	0	0	0	0
Control Delay (s)	29.1	12.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	B					
Approach Delay (s)	29.1	4.1			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	525	126	28	239	93	29	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.57	1.00	1.00	0.60	1.00
Satd. Flow (perm)	3400	1568	1057	1845	1568	1073	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	571	137	30	260	101	32	292
RTOR Reduction (vph)	0	99	0	0	47	0	0
Lane Group Flow (vph)	571	38	30	260	54	32	292
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	17.6	17.6	34.1	34.1	34.1	34.1	34.1
Effective Green, g (s)	17.6	17.6	34.1	34.1	34.1	34.1	34.1
Actuated g/C Ratio	0.28	0.28	0.54	0.54	0.54	0.54	0.54
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	939	433	566	988	839	574	1823
v/s Ratio Prot				c0.14			0.09
v/s Ratio Perm	c0.17	0.02	0.03		0.03	0.03	
v/c Ratio	0.61	0.09	0.05	0.26	0.06	0.06	0.16
Uniform Delay, d1	20.1	17.1	7.1	8.0	7.1	7.1	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.2	0.6	0.1	0.2	0.2
Delay (s)	21.3	17.2	7.3	8.7	7.3	7.3	7.7
Level of Service	C	B	A	A	A	A	A
Approach Delay (s)	20.5			8.2			7.7
Approach LOS	C			A			A

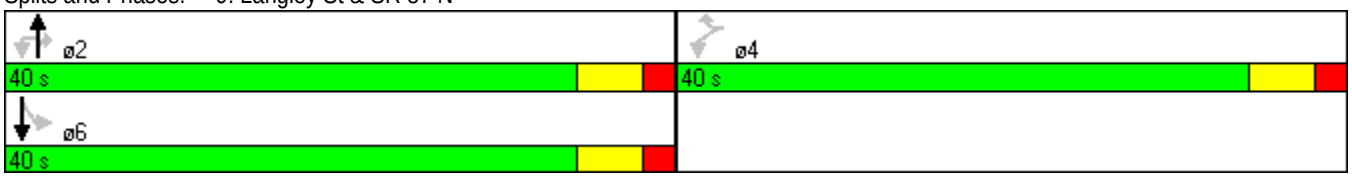
Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	40	40	40
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	40	0
End Time (s)	40	0	40
Yield/Force Off (s)	34	74	34
Yield/Force Off 170(s)	34	74	34
Local Start Time (s)	0	40	0
Local Yield (s)	34	74	34
Local Yield 170(s)	34	74	34

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	0	72	95	0	57	0	634	139	39	529	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	0	78	103	0	62	0	689	151	42	575	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1066	1500	288	1215	1424	420	575			840		
vC1, stage 1 conf vol	660	660		765	765							
vC2, stage 2 conf vol	407	840		451	660							
vCu, unblocked vol	1066	1500	288	1215	1424	420	575			840		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	89	65	100	89	100			95		
cM capacity (veh/h)	330	280	709	299	314	579	987			784		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	17	78	165	459	381	42	288	288
Volume Left	17	0	103	0	0	42	0	0
Volume Right	0	78	62	0	151	0	0	0
cSH	330	709	365	1700	1700	784	1700	1700
Volume to Capacity	0.05	0.11	0.45	0.27	0.22	0.05	0.17	0.17
Queue Length 95th (ft)	4	9	57	0	0	4	0	0
Control Delay (s)	16.5	10.7	22.8	0.0	0.0	9.9	0.0	0.0
Lane LOS	C	B	C			A		
Approach Delay (s)	11.8		22.8	0.0		0.7		
Approach LOS	B		C					

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	182	45	65	135	0	26	9	52	0	1	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	198	49	71	147	0	28	10	57	0	1	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	147			247			523	515	222	576	539	147
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	147			247			523	515	222	576	539	147
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			94	98	93	100	100	99
cM capacity (veh/h)	1429			1313			439	437	815	375	424	900

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	249	217	95	9
Volume Left	2	71	28	0
Volume Right	49	0	57	8
cSH	1429	1313	606	790
Volume to Capacity	0.00	0.05	0.16	0.01
Queue Length 95th (ft)	0	4	14	1
Control Delay (s)	0.1	2.9	12.0	9.6
Lane LOS	A	A	B	A
Approach Delay (s)	0.1	2.9	12.0	9.6
Approach LOS			B	A

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

AM 2015 - ALT 1 - OPENING YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	56	220	227	82	56	228	469	149	30	139	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3363	
Flt Permitted	0.70	1.00	1.00	0.63	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1290	1845	1568	1146	1810	1538	1736	3471	1553	1770	3363	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	61	239	247	89	61	248	510	162	33	151	75
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	68	0
Lane Group Flow (vph)	124	61	239	247	89	22	248	510	162	33	158	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	26.5	22.6	75.5	34.5	27.6	27.6	16.5	16.5	75.5	7.0	7.0	
Effective Green, g (s)	26.5	22.6	75.5	34.5	27.6	27.6	16.5	16.5	75.5	7.0	7.0	
Actuated g/C Ratio	0.35	0.30	1.00	0.46	0.37	0.37	0.22	0.22	1.00	0.09	0.09	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	477	552	1568	591	662	562	379	759	1553	164	312	
v/s Ratio Prot	0.01	0.03		c0.05	0.05		0.14	c0.15		0.02	c0.05	
v/s Ratio Perm	0.08		0.15	c0.14		0.01			0.10			
v/c Ratio	0.26	0.11	0.15	0.42	0.13	0.04	0.65	0.67	0.10	0.20	0.51	
Uniform Delay, d1	17.1	19.2	0.0	13.1	16.0	15.4	26.9	27.0	0.0	31.7	32.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.4	0.2	0.5	0.4	0.1	4.0	2.4	0.1	0.6	1.3	
Delay (s)	17.4	19.6	0.2	13.6	16.4	15.6	30.9	29.4	0.1	32.3	33.9	
Level of Service	B	B	A	B	B	B	C	C	A	C	C	
Approach Delay (s)		8.0			14.5			24.6			33.7	
Approach LOS		A			B			C			C	

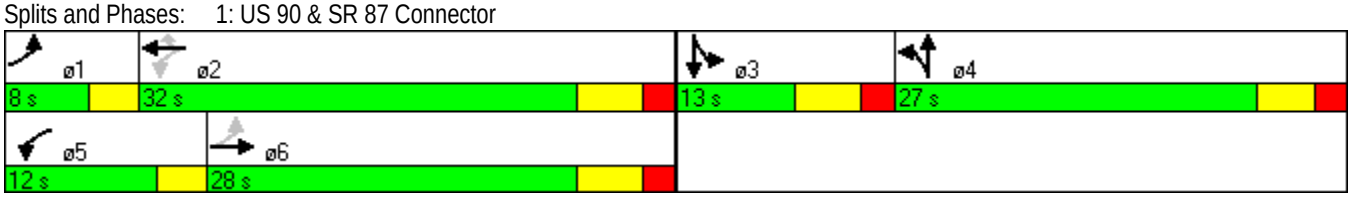
Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	14.5
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	32	13	27	12	28
Maximum Split (%)	10.0%	40.0%	16.3%	33.8%	15.0%	35.0%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	40	53	0	12
End Time (s)	8	40	53	0	12	40
Yield/Force Off (s)	5	34	47	74.5	9	34
Yield/Force Off 170(s)	5	22	47	74.5	9	22
Local Start Time (s)	72	0	32	45	72	4
Local Yield (s)	77	26	39	66.5	1	26
Local Yield 170(s)	77	14	39	66.5	1	14

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	270	165	93	280	1	217	6	58	3	7	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	4.0	6.0		6.0	6.0			6.0	
Lane Util. Factor		1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.94			0.97	
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.97			0.99	
Satd. Flow (prot)		1827	1553	1736	3469		1665	1599			1790	
Flt Permitted		1.00	1.00	0.52	1.00		0.95	0.97			0.99	
Satd. Flow (perm)		1827	1553	944	3469		1665	1599			1790	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	293	179	101	304	1	236	7	63	3	8	3
RTOR Reduction (vph)	0	0	78	0	0	0	0	23	0	0	3	0
Lane Group Flow (vph)	0	293	101	101	305	0	156	127	0	0	11	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)		61.1	61.1	72.7	72.7		15.1	15.1			2.6	
Effective Green, g (s)		61.1	61.1	72.7	72.7		15.1	15.1			2.6	
Actuated g/C Ratio		0.56	0.56	0.67	0.67		0.14	0.14			0.02	
Clearance Time (s)		6.0	6.0	4.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		1030	875	689	2327		232	223			43	
v/s Ratio Prot		c0.16		c0.01	0.09		c0.09	0.08			c0.01	
v/s Ratio Perm			0.06	0.09								
v/c Ratio		0.28	0.12	0.15	0.13		0.67	0.57			0.26	
Uniform Delay, d1		12.3	11.0	6.5	6.4		44.3	43.6			52.0	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.7	0.3	0.1	0.1		7.5	3.3			3.2	
Delay (s)		13.0	11.3	6.6	6.6		51.8	46.9			55.1	
Level of Service		B	B	A	A		D	D			E	
Approach Delay (s)		12.3			6.6			49.4			55.1	
Approach LOS		B			A			D			E	

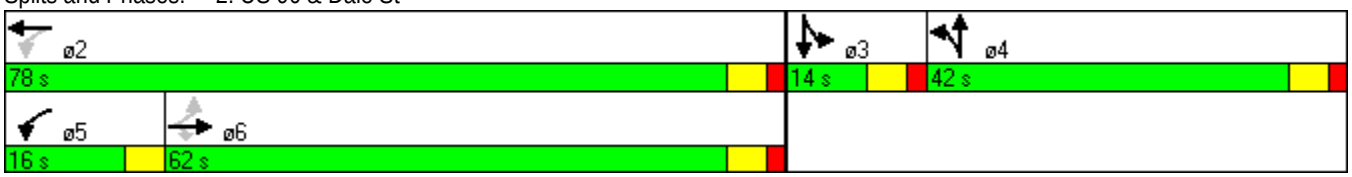
Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	108.4	Sum of lost time (s)	22.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	78	14	42	16	62
Maximum Split (%)	58.2%	10.4%	31.3%	11.9%	46.3%
Minimum Split (s)	25	12	29	11	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	0	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	78	92	0	16
End Time (s)	78	92	0	16	78
Yield/Force Off (s)	72	86	128	12	72
Yield/Force Off 170(s)	60	86	112	12	60
Local Start Time (s)	0	78	92	0	16
Local Yield (s)	72	86	128	12	72
Local Yield 170(s)	60	86	112	12	60

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	299	39	7	450	121	3	3	14	129	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.97			0.90			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1796			1774			1671			1757	
Flt Permitted	0.40	1.00			1.00			0.96			0.74	
Satd. Flow (perm)	735	1796			1766			1610			1360	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	325	42	8	489	132	3	3	15	140	16	8
RTOR Reduction (vph)	0	5	0	0	10	0	0	11	0	0	2	0
Lane Group Flow (vph)	5	362	0	0	619	0	0	10	0	0	162	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.4	34.4			34.4			15.2			15.2	
Effective Green, g (s)	34.4	34.4			34.4			15.2			15.2	
Actuated g/C Ratio	0.56	0.56			0.56			0.25			0.25	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	410	1003			986			397			336	
v/s Ratio Prot		0.20										
v/s Ratio Perm	0.01				c0.35			0.01			c0.12	
v/c Ratio	0.01	0.36			0.63			0.02			0.48	
Uniform Delay, d1	6.0	7.5			9.2			17.6			19.8	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.8			2.5			0.1			2.3	
Delay (s)	6.1	8.3			11.7			17.6			22.1	
Level of Service	A	A			B			B			C	
Approach Delay (s)		8.3			11.7			17.6			22.1	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	36	71	36	71
Maximum Split (%)	33.6%	66.4%	33.6%	66.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	36
End Time (s)	36	0	36	0
Yield/Force Off (s)	30	101	30	101
Yield/Force Off 170(s)	18	101	18	101
Local Start Time (s)	0	36	0	36
Local Yield (s)	30	101	30	101
Local Yield 170(s)	18	101	18	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	416	116	47	458	6	119	100	43	10	122	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1767		1736	1823			1764			1822	
Flt Permitted	0.34	1.00		0.28	1.00			0.80			0.97	
Satd. Flow (perm)	630	1767		503	1823			1436			1774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	452	126	51	498	7	129	109	47	11	133	10
RTOR Reduction (vph)	0	11	0	0	1	0	0	7	0	0	3	0
Lane Group Flow (vph)	8	567	0	51	504	0	0	278	0	0	151	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.9	27.9		27.9	27.9			23.3			23.3	
Effective Green, g (s)	27.9	27.9		27.9	27.9			23.3			23.3	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.37			0.37	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	278	780		222	805			529			654	
v/s Ratio Prot		c0.32			0.28							
v/s Ratio Perm	0.01			0.10				c0.19			0.09	
v/c Ratio	0.03	0.73		0.23	0.63			0.53			0.23	
Uniform Delay, d1	10.0	14.5		11.0	13.6			15.6			13.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.6		0.7	1.7			1.8			0.4	
Delay (s)	10.0	18.2		11.7	15.4			17.4			14.2	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		18.0			15.0			17.4			14.2	
Approach LOS		B			B			B			B	

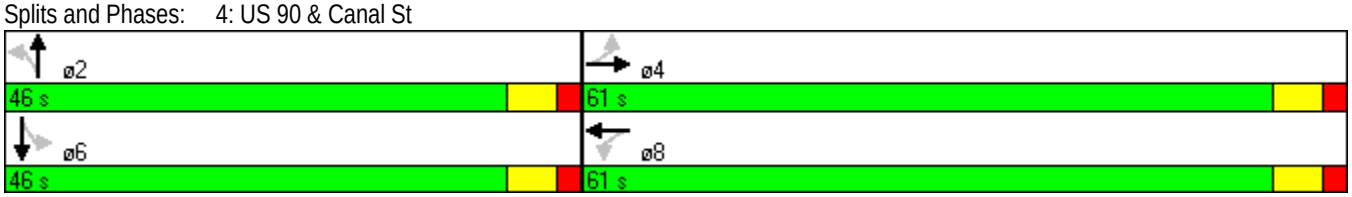
Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	46	61	46	61
Maximum Split (%)	43.0%	57.0%	43.0%	57.0%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	46	0	46
End Time (s)	46	0	46	0
Yield/Force Off (s)	40	101	40	101
Yield/Force Off 170(s)	40	101	40	101
Local Start Time (s)	0	46	0	46
Local Yield (s)	40	101	40	101
Local Yield 170(s)	40	101	40	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	259	431	532	172	235	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	468	578	187	255	370
RTOR Reduction (vph)	0	0	0	133	0	293
Lane Group Flow (vph)	282	468	578	54	255	77
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	12.1	35.3	17.2	17.2	12.4	12.4
Effective Green, g (s)	12.1	35.3	17.2	17.2	12.4	12.4
Actuated g/C Ratio	0.20	0.59	0.29	0.29	0.21	0.21
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	696	2093	1000	447	706	326
v/s Ratio Prot	c0.08	0.13	c0.17		c0.08	
v/s Ratio Perm				0.03		0.05
v/c Ratio	0.41	0.22	0.58	0.12	0.36	0.24
Uniform Delay, d1	20.7	5.7	18.2	15.7	20.3	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.8	0.1	0.4	0.5
Delay (s)	21.2	5.8	19.0	15.8	20.7	20.2
Level of Service	C	A	B	B	C	C
Approach Delay (s)		11.6	18.2		20.4	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	85	32	53	53
Maximum Split (%)	61.6%	23.2%	38.4%	38.4%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	32	85
End Time (s)	85	32	85	0
Yield/Force Off (s)	79	26	79	132
Yield/Force Off 170(s)	79	26	79	132
Local Start Time (s)	106	106	0	53
Local Yield (s)	47	132	47	100
Local Yield 170(s)	47	132	47	100

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	401	619	19	28	688	125	5	10	12	161	67	619
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1733	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1733	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	436	673	21	30	748	136	5	11	13	175	73	673
RTOR Reduction (vph)	0	0	8	0	0	87	0	0	13	0	0	0
Lane Group Flow (vph)	436	673	13	30	748	49	0	16	0	122	126	673
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	18.4	46.9	46.9	4.5	33.0	33.0		2.7	2.7	13.2	13.2	91.3
Effective Green, g (s)	18.4	46.9	46.9	4.5	33.0	33.0		2.7	2.7	13.2	13.2	91.3
Actuated g/C Ratio	0.20	0.51	0.51	0.05	0.36	0.36		0.03	0.03	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	692	1818	813	87	1279	572		54	47	243	251	1583
v/s Ratio Prot	c0.13	0.19		0.02	c0.21			0.01		0.07	0.07	
v/s Ratio Perm			0.01			0.03			0.00			c0.43
v/c Ratio	0.63	0.37	0.02	0.34	0.58	0.09		0.30	0.01	0.50	0.50	0.43
Uniform Delay, d1	33.3	13.3	10.9	42.0	23.6	19.2		43.4	43.0	36.0	36.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.0	2.4	0.8	0.1		4.2	0.1	1.6	1.6	0.8
Delay (s)	35.2	13.5	10.9	44.4	24.4	19.3		47.5	43.1	37.6	37.6	0.8
Level of Service	D	B	B	D	C	B		D	D	D	D	A
Approach Delay (s)		21.8			24.3			45.5			10.7	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	16	99	34	46	69	24
Maximum Split (%)	9.2%	57.2%	19.7%	26.6%	39.9%	13.9%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	115	0	46	149
End Time (s)	16	115	149	46	115	0
Yield/Force Off (s)	10	109	143	40	109	167
Yield/Force Off 170(s)	10	109	138	40	109	162
Local Start Time (s)	127	143	69	127	0	103
Local Yield (s)	137	63	97	167	63	121
Local Yield 170(s)	137	63	92	167	63	116

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	599	1	5	3	11	7	13	131	1	3	162	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88			0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1630			1764		1752	3501		1770	3464	
Flt Permitted	0.95	1.00			0.99		0.62	1.00		0.66	1.00	
Satd. Flow (perm)	3433	1630			1764		1150	3501		1232	3464	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	651	1	5	3	12	8	14	142	1	3	176	29
RTOR Reduction (vph)	0	4	0	0	8	0	0	0	0	0	7	0
Lane Group Flow (vph)	651	2	0	0	15	0	14	143	0	3	198	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	33.2	33.2			5.2		63.6	63.6		63.6	63.6	
Effective Green, g (s)	33.2	33.2			5.2		63.6	63.6		63.6	63.6	
Actuated g/C Ratio	0.28	0.28			0.04		0.53	0.53		0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	950	451			76		610	1856		653	1836	
v/s Ratio Prot	c0.19	0.00			c0.01			0.04			c0.06	
v/s Ratio Perm							0.01			0.00		
v/c Ratio	0.69	0.01			0.20		0.02	0.08		0.00	0.11	
Uniform Delay, d1	38.7	31.4			55.4		13.4	13.8		13.3	14.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.46	1.29	
Incremental Delay, d2	2.2	0.0			1.8		0.1	0.1		0.0	0.0	
Delay (s)	41.0	31.4			57.2		13.5	13.9		19.3	18.1	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		40.9			57.2			13.9			18.1	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	37	63	37	20
Maximum Split (%)	30.8%	52.5%	30.8%	16.7%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	37	0	100
End Time (s)	37	100	37	0
Yield/Force Off (s)	31	94	31	114
Yield/Force Off 170(s)	22	74	31	114
Local Start Time (s)	0	37	0	100
Local Yield (s)	31	94	31	114
Local Yield 170(s)	22	74	31	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	41	293	152	817	0	417	16
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	318	165	888	0	453	17
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1236	235	471		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1236	235	471		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	68	58	85		0		
cM capacity (veh/h)	140	760	1087		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	363	165	444	444	302	168	0
Volume Left	45	165	0	0	0	0	0
Volume Right	318	0	0	0	0	17	0
cSH	493	1087	1700	1700	1700	1700	1700
Volume to Capacity	0.74	0.15	0.26	0.26	0.18	0.10	0.00
Queue Length 95th (ft)	152	13	0	0	0	0	0
Control Delay (s)	30.1	8.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	A					
Approach Delay (s)	30.1	1.4			0.0		
Approach LOS	D						

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	81	36	8	194	718	80	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.57	1.00	1.00	0.63	1.00
Satd. Flow (perm)	3400	1568	1044	1845	1568	1122	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	39	9	211	780	87	305
RTOR Reduction (vph)	0	31	0	0	390	0	0
Lane Group Flow (vph)	88	8	9	211	390	87	305
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.20	0.20	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	680	314	522	923	784	561	1703
v/s Ratio Prot				0.11			0.09
v/s Ratio Perm	c0.03	0.00	0.01		c0.25	0.08	
v/c Ratio	0.13	0.02	0.02	0.23	0.50	0.16	0.18
Uniform Delay, d1	13.1	12.9	5.0	5.6	6.7	5.4	5.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1	0.6	2.3	0.6	0.2
Delay (s)	13.3	12.9	5.1	6.2	8.9	6.0	5.7
Level of Service	B	B	A	A	A	A	A
Approach Delay (s)	13.2			8.3			5.8
Approach LOS	B			A			A

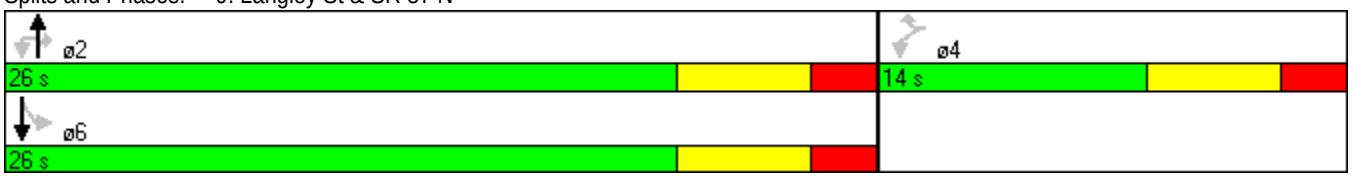
Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	26	14	26
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	26	0
End Time (s)	26	0	26
Yield/Force Off (s)	20	34	20
Yield/Force Off 170(s)	20	34	20
Local Start Time (s)	0	26	0
Local Yield (s)	20	34	20
Local Yield 170(s)	20	34	20

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	6	43	1	6	2	303	18	18	458	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	7	47	1	7	2	329	20	20	498	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	714	891	249	638	882	174	499			349		
vC1, stage 1 conf vol	538	538		343	343							
vC2, stage 2 conf vol	176	353		295	538							
vCu, unblocked vol	714	891	249	638	882	174	499			349		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	91	100	99	100			98		
cM capacity (veh/h)	460	447	750	540	449	836	1054			1199		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	1	7	54	167	184	20	332	167
Volume Left	1	0	47	2	0	20	0	0
Volume Right	0	7	7	0	20	0	0	1
cSH	460	750	561	1054	1700	1199	1700	1700
Volume to Capacity	0.00	0.01	0.10	0.00	0.11	0.02	0.20	0.10
Queue Length 95th (ft)	0	1	8	0	0	1	0	0
Control Delay (s)	12.9	9.8	12.1	0.1	0.0	8.1	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	10.3		12.1	0.1		0.3		
Approach LOS	B		B					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	43	0	10	85	0	0	0	11	2	4	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	47	0	11	92	0	0	0	12	2	4	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	92			47			168	165	47	177	165	92
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			47			168	165	47	177	165	92
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	99	100
cM capacity (veh/h)	1496			1554			784	719	1020	771	721	965

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	49	103	12	8
Volume Left	2	11	0	2
Volume Right	0	0	12	1
cSH	1496	1554	1020	763
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (ft)	0	1	1	1
Control Delay (s)	0.3	0.8	8.6	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	0.8	8.6	9.8
Approach LOS			A	A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	53	2	14	17	148	5	541	76	110	529	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1853		1770	1863	1583	1770	3474		1770	3517	
Flt Permitted	0.75	1.00		0.72	1.00	1.00	0.43	1.00		0.35	1.00	
Satd. Flow (perm)	1389	1853		1337	1863	1583	792	3474		648	3517	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	58	2	15	18	161	5	588	83	120	575	25
RTOR Reduction (vph)	0	1	0	0	0	149	0	6	0	0	2	0
Lane Group Flow (vph)	18	59	0	15	18	12	5	665	0	120	599	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	10.8	9.2		10.8	9.2	9.2	78.9	77.7		91.2	84.0	
Effective Green, g (s)	10.8	9.2		10.8	9.2	9.2	78.9	77.7		91.2	84.0	
Actuated g/C Ratio	0.09	0.08		0.09	0.08	0.08	0.66	0.65		0.76	0.70	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	130	142		126	143	121	531	2249		563	2462	
v/s Ratio Prot	c0.00	c0.03		0.00	0.01		0.00	c0.19		c0.01	c0.17	
v/s Ratio Perm	0.01			0.01		0.01	0.01			0.15		
v/c Ratio	0.14	0.42		0.12	0.13	0.10	0.01	0.30		0.21	0.24	
Uniform Delay, d1	50.2	52.8		50.1	51.7	51.6	7.1	9.2		4.2	6.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	2.91	2.83		1.00	1.00	
Incremental Delay, d2	0.5	2.0		0.4	0.4	0.4	0.0	0.3		0.2	0.2	
Delay (s)	50.7	54.8		50.5	52.0	51.9	20.5	26.4		4.4	6.7	
Level of Service	D	D		D	D	D	C	C		A	A	
Approach Delay (s)		53.9			51.8			26.4			6.4	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	20	57	10	33	10	67	10	33
Maximum Split (%)	16.7%	47.5%	8.3%	27.5%	8.3%	55.8%	8.3%	27.5%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	100	0	57	67	100	110	57	67
End Time (s)	0	57	67	100	110	57	67	100
Yield/Force Off (s)	114	51	61	94	104	51	61	94
Yield/Force Off 170(s)	114	40	61	83	104	40	61	83
Local Start Time (s)	100	0	57	67	100	110	57	67
Local Yield (s)	114	51	61	94	104	51	61	94
Local Yield 170(s)	114	40	61	83	104	40	61	83

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	415	4	11	450	29	12	96	18	22	101	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	451	4	12	489	32	13	104	20	24	110	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	521			455			834	1037	228	865	1023	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521			455			834	1037	228	865	1023	260
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			92	53	97	84	52	97
cM capacity (veh/h)	1042			1102			154	223	775	150	227	738

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	245	230	257	276	137	152
Volume Left	20	0	12	0	13	24
Volume Right	0	4	0	32	20	18
cSH	1042	1700	1102	1700	237	228
Volume to Capacity	0.02	0.14	0.01	0.16	0.58	0.67
Queue Length 95th (ft)	1	0	1	0	81	105
Control Delay (s)	0.9	0.0	0.5	0.0	39.1	47.7
Lane LOS	A		A		E	E
Approach Delay (s)	0.4		0.2		39.1	47.7
Approach LOS					E	E

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

PM 2015 - ALT 1 - OPENING YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	63	360	267	49	7	308	87	245	46	302	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3427	
Flt Permitted	0.72	1.00	1.00	0.64	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1333	1845	1568	1149	1810	1538	1736	3471	1553	1770	3427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	68	391	290	53	8	335	95	266	50	328	88
RTOR Reduction (vph)	0	0	0	0	0	5	0	0	0	0	20	0
Lane Group Flow (vph)	14	68	391	290	53	3	335	95	266	50	396	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	26.4	24.6	103.1	44.0	39.2	39.2	25.0	25.0	103.1	16.6	16.6	
Effective Green, g (s)	26.4	24.6	103.1	44.0	39.2	39.2	25.0	25.0	103.1	16.6	16.6	
Actuated g/C Ratio	0.26	0.24	1.00	0.43	0.38	0.38	0.24	0.24	1.00	0.16	0.16	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	349	440	1568	581	688	585	421	842	1553	285	552	
v/s Ratio Prot	0.00	0.04		c0.08	0.03		c0.19	0.03		0.03	c0.12	
v/s Ratio Perm	0.01		c0.25	c0.13		0.00			0.17			
v/c Ratio	0.04	0.15	0.25	0.50	0.08	0.01	0.80	0.11	0.17	0.18	0.72	
Uniform Delay, d1	28.8	31.0	0.0	20.4	20.4	19.8	36.7	30.4	0.0	37.3	41.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.7	0.4	0.7	0.2	0.0	10.0	0.1	0.2	0.3	4.4	
Delay (s)	28.8	31.8	0.4	21.1	20.6	19.9	46.7	30.5	0.2	37.6	45.4	
Level of Service	C	C	A	C	C	B	D	C	A	D	D	
Approach Delay (s)		5.7			21.0			26.7			44.6	
Approach LOS		A			C			C			D	

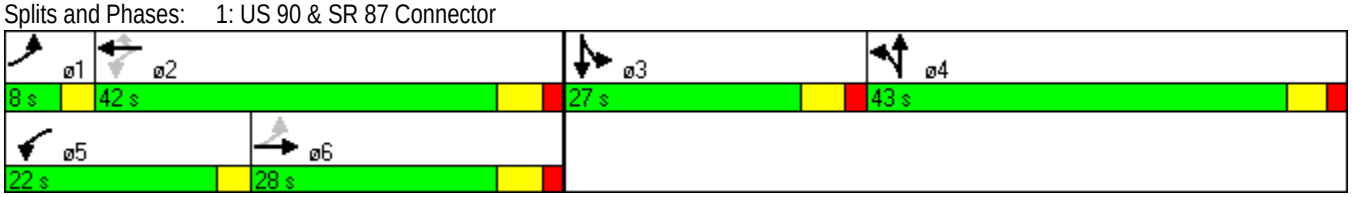
Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	42	27	43	22	28
Maximum Split (%)	6.7%	35.0%	22.5%	35.8%	18.3%	23.3%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	50	77	0	22
End Time (s)	8	50	77	0	22	50
Yield/Force Off (s)	5	44	71	114.5	19	44
Yield/Force Off 170(s)	5	32	71	114.5	19	32
Local Start Time (s)	112	0	42	69	112	14
Local Yield (s)	117	36	63	106.5	11	36
Local Yield 170(s)	117	24	63	106.5	11	24

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	398	219	31	390	1	158	8	41	0	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97			1.00	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1605			1737	
Flt Permitted	0.50	1.00	1.00	0.43	1.00		0.95	0.97			1.00	
Satd. Flow (perm)	921	1827	1553	782	3470		1665	1605			1737	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	433	238	34	424	1	172	9	45	0	3	3
RTOR Reduction (vph)	0	0	85	0	0	0	0	20	0	0	3	0
Lane Group Flow (vph)	4	433	153	34	425	0	115	91	0	0	3	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	75.9	75.9	75.9	85.7	85.7		12.9	12.9			1.2	
Effective Green, g (s)	75.9	75.9	75.9	85.7	85.7		12.9	12.9			1.2	
Actuated g/C Ratio	0.64	0.64	0.64	0.73	0.73		0.11	0.11			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	593	1177	1001	600	2524		182	176			18	
v/s Ratio Prot		c0.24		0.00	c0.12		c0.07	0.06			c0.00	
v/s Ratio Perm	0.00		0.10	0.04								
v/c Ratio	0.01	0.37	0.15	0.06	0.17		0.63	0.51			0.17	
Uniform Delay, d1	7.5	9.8	8.3	5.2	5.0		50.2	49.5			57.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.9	0.3	0.0	0.1		7.0	2.5			4.4	
Delay (s)	7.5	10.7	8.6	5.3	5.1		57.2	52.0			62.2	
Level of Service	A	B	A	A	A		E	D			E	
Approach Delay (s)		9.9			5.1			54.6			62.2	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	117.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	86	13	35	13	73
Maximum Split (%)	64.2%	9.7%	26.1%	9.7%	54.5%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	86	99	0	13
End Time (s)	86	99	0	13	86
Yield/Force Off (s)	80	93	128	7	80
Yield/Force Off 170(s)	68	93	112	7	68
Local Start Time (s)	0	86	99	0	13
Local Yield (s)	80	93	128	7	80
Local Yield 170(s)	68	93	112	7	68

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	461	19	6	437	160	19	18	22	145	6	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.98			0.96	
Satd. Flow (prot)	1736	1816			1761			1742			1749	
Flt Permitted	0.38	1.00			0.99			0.87			0.70	
Satd. Flow (perm)	699	1816			1752			1543			1285	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	501	21	7	475	174	21	20	24	158	7	13
RTOR Reduction (vph)	0	2	0	0	14	0	0	18	0	0	3	0
Lane Group Flow (vph)	12	520	0	0	642	0	0	47	0	0	175	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.8	35.8			35.8			16.8			16.8	
Effective Green, g (s)	35.8	35.8			35.8			16.8			16.8	
Actuated g/C Ratio	0.55	0.55			0.55			0.26			0.26	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	387	1006			971			401			334	
v/s Ratio Prot		0.29										
v/s Ratio Perm	0.02				c0.37			0.03			c0.14	
v/c Ratio	0.03	0.52			0.66			0.12			0.52	
Uniform Delay, d1	6.5	9.0			10.1			18.2			20.5	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.1	1.5			3.1			0.3			2.8	
Delay (s)	6.6	10.5			13.2			18.5			23.3	
Level of Service	A	B			B			B			C	
Approach Delay (s)		10.4			13.2			18.5			23.3	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	36	71	36	71
Maximum Split (%)	33.6%	66.4%	33.6%	66.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	36
End Time (s)	36	0	36	0
Yield/Force Off (s)	30	101	30	101
Yield/Force Off 170(s)	18	101	18	101
Local Start Time (s)	0	36	0	36
Local Yield (s)	30	101	30	101
Local Yield 170(s)	18	101	18	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	566	146	52	493	10	161	127	33	14	121	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.99			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1771		1736	1821			1774			1812	
Flt Permitted	0.33	1.00		0.15	1.00			0.77			0.95	
Satd. Flow (perm)	602	1771		277	1821			1398			1736	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	615	159	57	536	11	175	138	36	15	132	16
RTOR Reduction (vph)	0	9	0	0	0	0	0	4	0	0	4	0
Lane Group Flow (vph)	10	765	0	57	547	0	0	345	0	0	159	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	42.4	42.4		42.4	42.4			29.3			29.3	
Effective Green, g (s)	42.4	42.4		42.4	42.4			29.3			29.3	
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.35			0.35	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	305	897		140	922			489			608	
v/s Ratio Prot		c0.43			0.30							
v/s Ratio Perm	0.02			0.21				c0.25			0.09	
v/c Ratio	0.03	0.85		0.41	0.59			0.71			0.26	
Uniform Delay, d1	10.4	17.9		12.8	14.6			23.5			19.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	8.2		2.6	1.2			5.8			0.5	
Delay (s)	10.4	26.1		15.5	15.8			29.2			19.9	
Level of Service	B	C		B	B			C			B	
Approach Delay (s)		25.9			15.7			29.2			19.9	
Approach LOS		C			B			C			B	

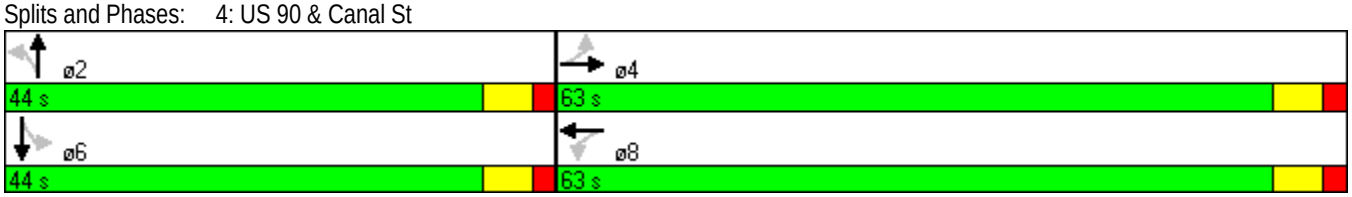
Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	44	63	44	63
Maximum Split (%)	41.1%	58.9%	41.1%	58.9%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	44	0	44
End Time (s)	44	0	44	0
Yield/Force Off (s)	38	101	38	101
Yield/Force Off 170(s)	38	101	38	101
Local Start Time (s)	0	44	0	44
Local Yield (s)	38	101	38	101
Local Yield 170(s)	38	101	38	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	521	631	635	179	192	441
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	566	686	690	195	209	479
RTOR Reduction (vph)	0	0	0	135	0	391
Lane Group Flow (vph)	566	686	690	60	209	88
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	20.8	50.2	23.4	23.4	14.0	14.0
Effective Green, g (s)	20.8	50.2	23.4	23.4	14.0	14.0
Actuated g/C Ratio	0.27	0.66	0.31	0.31	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	937	2331	1066	477	625	288
v/s Ratio Prot	c0.16	0.19	c0.20		c0.06	
v/s Ratio Perm				0.04		0.06
v/c Ratio	0.60	0.29	0.65	0.13	0.33	0.31
Uniform Delay, d1	24.1	5.5	22.8	19.0	27.0	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	1.4	0.1	0.4	0.8
Delay (s)	25.4	5.6	24.2	19.1	27.5	27.7
Level of Service	C	A	C	B	C	C
Approach Delay (s)		14.5	23.1		27.6	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	91	41	50	47
Maximum Split (%)	65.9%	29.7%	36.2%	34.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	41	91
End Time (s)	91	41	91	0
Yield/Force Off (s)	85	35	85	132
Yield/Force Off 170(s)	85	35	85	132
Local Start Time (s)	97	97	0	50
Local Yield (s)	44	132	44	91
Local Yield 170(s)	44	132	44	91

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	670	963	45	67	833	190	28	74	90	161	45	694
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1838	1583	1681	1721	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1838	1583	1681	1721	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	728	1047	49	73	905	207	30	80	98	175	49	754
RTOR Reduction (vph)	0	0	12	0	0	137	0	0	87	0	0	0
Lane Group Flow (vph)	728	1047	37	73	905	70	0	110	11	110	114	754
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	34.9	70.9	70.9	8.9	44.9	44.9		14.3	14.3	14.3	14.3	132.4
Effective Green, g (s)	34.9	70.9	70.9	8.9	44.9	44.9		14.3	14.3	14.3	14.3	132.4
Actuated g/C Ratio	0.26	0.54	0.54	0.07	0.34	0.34		0.11	0.11	0.11	0.11	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	905	1895	848	119	1200	537		199	171	182	186	1583
v/s Ratio Prot	c0.21	0.30		0.04	c0.26			0.06		0.07	0.07	
v/s Ratio Perm			0.02			0.04			0.01			c0.48
v/c Ratio	0.80	0.55	0.04	0.61	0.75	0.13		0.55	0.06	0.60	0.61	0.48
Uniform Delay, d1	45.6	20.3	14.6	60.1	38.8	30.3		56.0	53.0	56.4	56.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.4	0.0	9.0	2.9	0.2		4.1	0.2	5.6	5.9	1.0
Delay (s)	50.8	20.7	14.7	69.1	41.8	30.4		60.1	53.2	61.9	62.3	1.0
Level of Service	D	C	B	E	D	C		E	D	E	E	A
Approach Delay (s)		32.6			41.5			56.9			15.0	
Approach LOS		C			D			E			B	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	132.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	20	104	25	55	69	24
Maximum Split (%)	11.6%	60.1%	14.5%	31.8%	39.9%	13.9%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	20	124	0	55	149
End Time (s)	20	124	149	55	124	0
Yield/Force Off (s)	14	118	143	49	118	167
Yield/Force Off 170(s)	14	118	138	49	118	162
Local Start Time (s)	118	138	69	118	0	94
Local Yield (s)	132	63	88	167	63	112
Local Yield 170(s)	132	63	83	167	63	107

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	483	15	5	2	13	6	8	180	7	13	154	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.96			0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1796			1778		1752	3484		1770	3465	
Flt Permitted	0.95	1.00			1.00		0.63	1.00		0.62	1.00	
Satd. Flow (perm)	3433	1796			1778		1162	3484		1162	3465	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	525	16	5	2	14	7	9	196	8	14	167	27
RTOR Reduction (vph)	0	4	0	0	7	0	0	1	0	0	7	0
Lane Group Flow (vph)	525	17	0	0	16	0	9	203	0	14	187	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	32.0	32.0			5.2		64.8	64.8		64.8	64.8	
Effective Green, g (s)	32.0	32.0			5.2		64.8	64.8		64.8	64.8	
Actuated g/C Ratio	0.27	0.27			0.04		0.54	0.54		0.54	0.54	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	915	479			77		627	1881		627	1871	
v/s Ratio Prot	c0.15	0.01			c0.01			c0.06			0.05	
v/s Ratio Perm							0.01			0.01		
v/c Ratio	0.57	0.04			0.21		0.01	0.11		0.02	0.10	
Uniform Delay, d1	38.1	32.6			55.4		12.8	13.5		12.9	13.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.0			1.9		0.0	0.1		0.0	0.0	
Delay (s)	39.1	32.6			57.3		12.8	13.6		12.9	13.5	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		38.9			57.3			13.6			13.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	39	60	39	21
Maximum Split (%)	32.5%	50.0%	32.5%	17.5%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	39	0	99
End Time (s)	39	99	39	0
Yield/Force Off (s)	33	93	33	114
Yield/Force Off 170(s)	24	73	33	114
Local Start Time (s)	0	39	0	99
Local Yield (s)	33	93	33	114
Local Yield 170(s)	24	73	33	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	50
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	13	280	293	448	0	876	58
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	304	318	487	0	952	63
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1864	508	1015		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1864	508	1015		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	58	40	53		0		
cM capacity (veh/h)	33	505	679		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	318	318	243	243	635	380	0
Volume Left	14	318	0	0	0	0	0
Volume Right	304	0	0	0	0	63	0
cSH	311	679	1700	1700	1700	1700	1700
Volume to Capacity	1.03	0.47	0.14	0.14	0.37	0.22	0.00
Queue Length 95th (ft)	286	63	0	0	0	0	0
Control Delay (s)	95.7	14.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s)	95.7	5.9			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	16.5		
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	545	120	29	251	96	29	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.57	1.00	1.00	0.59	1.00
Satd. Flow (perm)	3400	1568	1048	1845	1568	1060	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	592	130	32	273	104	32	301
RTOR Reduction (vph)	0	88	0	0	66	0	0
Lane Group Flow (vph)	592	42	32	273	38	32	301
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	12.3	12.3	14.0	14.0	14.0	14.0	14.0
Effective Green, g (s)	12.3	12.3	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.32	0.32	0.37	0.37	0.37	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1092	504	383	674	573	387	1245
v/s Ratio Prot				c0.15			0.09
v/s Ratio Perm	c0.17	0.03	0.03		0.02	0.03	
v/c Ratio	0.54	0.08	0.08	0.41	0.07	0.08	0.24
Uniform Delay, d1	10.7	9.1	8.0	9.0	7.9	7.9	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.4	1.8	0.2	0.4	0.5
Delay (s)	11.4	9.2	8.4	10.9	8.1	8.4	8.9
Level of Service	B	A	A	B	A	A	A
Approach Delay (s)	11.0			10.0			8.9
Approach LOS	B			A			A

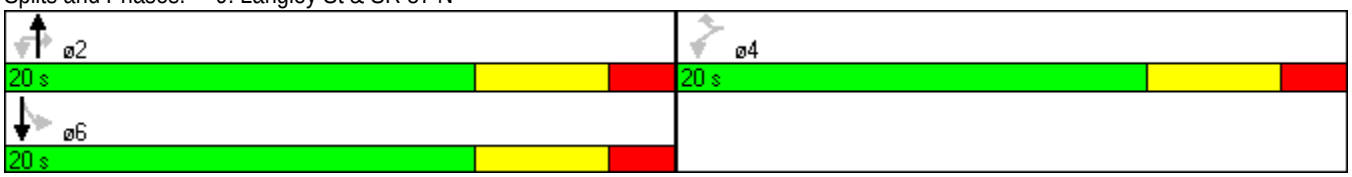
Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	20	0
End Time (s)	20	0	20
Yield/Force Off (s)	14	34	14
Yield/Force Off 170(s)	14	34	14
Local Start Time (s)	0	20	0
Local Yield (s)	14	34	14
Local Yield 170(s)	14	34	14

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	0	88	45	0	9	2	444	39	19	379	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	96	49	0	10	2	483	42	21	412	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	709	983	207	851	962	262	413			525		
vC1, stage 1 conf vol	454	454		508	508							
vC2, stage 2 conf vol	255	529		343	454							
vCu, unblocked vol	709	983	207	851	962	262	413			525		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	88	88	100	99	100			98		
cM capacity (veh/h)	489	422	800	416	433	733	1135			1031		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	8	96	59	243	284	21	275	138
Volume Left	8	0	49	2	0	21	0	0
Volume Right	0	96	10	0	42	0	0	1
cSH	489	800	448	1135	1700	1031	1700	1700
Volume to Capacity	0.02	0.12	0.13	0.00	0.17	0.02	0.16	0.08
Queue Length 95th (ft)	1	10	11	0	0	2	0	0
Control Delay (s)	12.5	10.1	14.2	0.1	0.0	8.6	0.0	0.0
Lane LOS	B	B	B	A		A		
Approach Delay (s)	10.3		14.2	0.0		0.4		
Approach LOS	B		B					

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	128	0	8	54	10	0	1	11	2	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	139	0	9	59	11	0	1	12	2	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	70			139			227	228	139	235	223	64
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	70			139			227	228	139	235	223	64
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1525			1438			719	665	906	705	671	1000

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	140	78	13	8
Volume Left	1	9	0	2
Volume Right	0	11	12	2
cSH	1525	1438	880	752
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.1	0.9	9.2	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	0.1	0.9	9.2	9.8
Approach LOS			A	A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	47	2	17	50	188	3	790	73	111	594	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1852		1770	1863	1583	1770	3495		1770	3526	
Flt Permitted	0.72	1.00		0.72	1.00	1.00	0.40	1.00		0.26	1.00	
Satd. Flow (perm)	1345	1852		1346	1863	1583	745	3495		487	3526	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	51	2	18	54	204	3	859	79	121	646	16
RTOR Reduction (vph)	0	1	0	0	0	149	0	3	0	0	1	0
Lane Group Flow (vph)	18	52	0	18	54	55	3	935	0	121	661	0
Turn Type	pm+pt			pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	10.9	8.5		10.9	8.5	16.1	108.6	107.5		121.1	114.0	
Effective Green, g (s)	10.9	8.5		10.9	8.5	16.1	108.6	107.5		121.1	114.0	
Actuated g/C Ratio	0.07	0.06		0.07	0.06	0.11	0.72	0.72		0.81	0.76	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	105	105		105	106	233	547	2505		458	2680	
v/s Ratio Prot	c0.00	0.03		0.00	c0.03	c0.01	0.00	c0.27		c0.01	0.19	
v/s Ratio Perm	0.01			0.01		0.02	0.00			0.20		
v/c Ratio	0.17	0.50		0.17	0.51	0.24	0.01	0.37		0.26	0.25	
Uniform Delay, d1	65.2	68.7		65.2	68.7	61.3	5.7	8.2		4.1	5.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	3.6		0.8	3.8	0.5	0.0	0.4		0.3	0.2	
Delay (s)	65.9	72.3		65.9	72.5	61.8	5.7	8.6		4.4	5.5	
Level of Service	E	E		E	E	E	A	A		A	A	
Approach Delay (s)		70.7			64.2			8.6			5.4	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	30	86	10	24	10	106	10	24
Maximum Split (%)	20.0%	57.3%	6.7%	16.0%	6.7%	70.7%	6.7%	16.0%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	120	0	86	96	120	130	86	96
End Time (s)	0	86	96	120	130	86	96	120
Yield/Force Off (s)	144	80	90	114	124	80	90	114
Yield/Force Off 170(s)	144	69	90	103	124	69	90	103
Local Start Time (s)	120	0	86	96	120	130	86	96
Local Yield (s)	144	80	90	114	124	80	90	114
Local Yield 170(s)	144	69	90	103	124	69	90	103

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Coordinated
Natural Cycle	65
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	408	4	13	493	30	12	90	17	22	134	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	443	4	14	536	33	13	98	18	24	146	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	568			448			874	1084	224	911	1070	284
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	568			448			874	1084	224	911	1070	284
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			87	53	98	83	31	97
cM capacity (veh/h)	1000			1109			104	208	779	138	213	713

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	242	226	282	301	129	188
Volume Left	21	0	14	0	13	24
Volume Right	0	4	0	33	18	18
cSH	1000	1700	1109	1700	209	213
Volume to Capacity	0.02	0.13	0.01	0.18	0.62	0.88
Queue Length 95th (ft)	2	0	1	0	90	175
Control Delay (s)	0.9	0.0	0.5	0.0	46.7	82.0
Lane LOS	A		A		E	F
Approach Delay (s)	0.5		0.3		46.7	82.0
Approach LOS					E	F

Intersection Summary			
Average Delay	16.0		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

AM 2015 - ALT 2 - OPENING YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	59	246	220	81	47	246	429	147	32	148	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3367	
Flt Permitted	0.70	1.00	1.00	0.65	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1291	1845	1568	1182	1810	1538	1736	3471	1553	1770	3367	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	64	267	239	88	51	267	466	160	35	161	77
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	0	0	50	0
Lane Group Flow (vph)	120	64	267	239	88	20	267	466	160	35	188	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	39.1	31.5	96.7	47.9	37.3	37.3	20.6	20.6	96.7	10.7	10.7	
Effective Green, g (s)	39.1	31.5	96.7	47.9	37.3	37.3	20.6	20.6	96.7	10.7	10.7	
Actuated g/C Ratio	0.40	0.33	1.00	0.50	0.39	0.39	0.21	0.21	1.00	0.11	0.11	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	558	601	1568	660	698	593	370	739	1553	196	373	
v/s Ratio Prot	0.02	0.03		c0.05	0.05		c0.15	0.13		0.02	c0.06	
v/s Ratio Perm	0.07		0.17	c0.13		0.01			0.10			
v/c Ratio	0.22	0.11	0.17	0.36	0.13	0.03	0.72	0.63	0.10	0.18	0.50	
Uniform Delay, d1	18.4	22.8	0.0	14.4	19.2	18.5	35.4	34.6	0.0	39.0	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4	0.2	0.3	0.4	0.1	6.8	1.8	0.1	0.4	1.1	
Delay (s)	18.6	23.1	0.2	14.7	19.5	18.6	42.2	36.4	0.1	39.5	41.6	
Level of Service	B	C	A	B	B	B	D	D	A	D	D	
Approach Delay (s)		8.4			16.4			31.6			41.3	
Approach LOS		A			B			C			D	

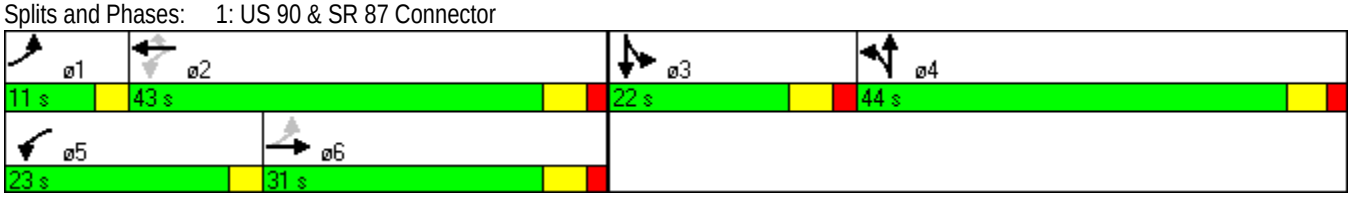
Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	14.5
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	11	43	22	44	23	31
Maximum Split (%)	9.2%	35.8%	18.3%	36.7%	19.2%	25.8%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	11	54	76	0	23
End Time (s)	11	54	76	0	23	54
Yield/Force Off (s)	8	48	70	114.5	20	48
Yield/Force Off 170(s)	8	36	70	114.5	20	36
Local Start Time (s)	109	0	43	65	109	12
Local Yield (s)	117	37	59	103.5	9	37
Local Yield 170(s)	117	25	59	103.5	9	25

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	289	162	95	298	1	216	6	60	3	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor		1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.94			0.97	
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.97			0.99	
Satd. Flow (prot)		1827	1553	1736	3470		1665	1597			1795	
Flt Permitted		1.00	1.00	0.48	1.00		0.95	0.97			0.99	
Satd. Flow (perm)		1827	1553	879	3470		1665	1597			1795	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	314	176	103	324	1	235	7	65	3	9	3
RTOR Reduction (vph)	0	0	79	0	0	0	0	24	0	0	3	0
Lane Group Flow (vph)	0	314	97	103	325	0	157	126	0	0	12	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)		61.3	61.3	74.8	74.8		15.3	15.3			2.7	
Effective Green, g (s)		61.3	61.3	74.8	74.8		15.3	15.3			2.7	
Actuated g/C Ratio		0.55	0.55	0.68	0.68		0.14	0.14			0.02	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		1011	859	651	2343		230	221			44	
v/s Ratio Prot		c0.17		0.01	c0.09		c0.09	0.08			c0.01	
v/s Ratio Perm			0.06	0.10								
v/c Ratio		0.31	0.11	0.16	0.14		0.68	0.57			0.27	
Uniform Delay, d1		13.4	11.8	6.8	6.5		45.4	44.7			53.1	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		0.8	0.3	0.1	0.1		8.1	3.3			3.4	
Delay (s)		14.2	12.1	6.9	6.6		53.5	48.0			56.5	
Level of Service		B	B	A	A		D	D			E	
Approach Delay (s)		13.4			6.6			50.8			56.5	
Approach LOS		B			A			D			E	

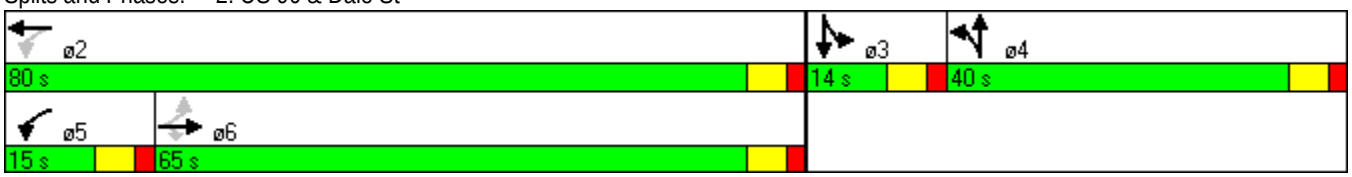
Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	80	14	40	15	65
Maximum Split (%)	59.7%	10.4%	29.9%	11.2%	48.5%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	80	94	0	15
End Time (s)	80	94	0	15	80
Yield/Force Off (s)	74	88	128	9	74
Yield/Force Off 170(s)	62	88	112	9	62
Local Start Time (s)	0	80	94	0	15
Local Yield (s)	74	88	128	9	74
Local Yield 170(s)	62	88	112	9	62

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	302	38	7	456	130	2	3	14	138	16	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.97			0.90			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.96	
Satd. Flow (prot)	1736	1796			1772			1666			1758	
Flt Permitted	0.39	1.00			1.00			0.97			0.74	
Satd. Flow (perm)	716	1796			1764			1625			1361	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	328	41	8	496	141	2	3	15	150	17	8
RTOR Reduction (vph)	0	5	0	0	11	0	0	11	0	0	1	0
Lane Group Flow (vph)	5	364	0	0	634	0	0	9	0	0	174	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.3	35.3			35.3			15.9			15.9	
Effective Green, g (s)	35.3	35.3			35.3			15.9			15.9	
Actuated g/C Ratio	0.56	0.56			0.56			0.25			0.25	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	400	1003			985			409			342	
v/s Ratio Prot		0.20										
v/s Ratio Perm	0.01				c0.36			0.01			c0.13	
v/c Ratio	0.01	0.36			0.64			0.02			0.51	
Uniform Delay, d1	6.2	7.7			9.6			17.8			20.3	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.8			2.8			0.0			2.5	
Delay (s)	6.2	8.5			12.4			17.8			22.8	
Level of Service	A	A			B			B			C	
Approach Delay (s)		8.5			12.4			17.8			22.8	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	63.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	35	72	35	72
Maximum Split (%)	32.7%	67.3%	32.7%	67.3%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	35	0	35
End Time (s)	35	0	35	0
Yield/Force Off (s)	29	101	29	101
Yield/Force Off 170(s)	17	101	17	101
Local Start Time (s)	0	35	0	35
Local Yield (s)	29	101	29	101
Local Yield 170(s)	17	101	17	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	418	117	47	464	6	118	100	43	10	121	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1767		1736	1823			1764			1822	
Flt Permitted	0.34	1.00		0.27	1.00			0.80			0.97	
Satd. Flow (perm)	621	1767		500	1823			1438			1773	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	454	127	51	504	7	128	109	47	11	132	10
RTOR Reduction (vph)	0	11	0	0	1	0	0	6	0	0	3	0
Lane Group Flow (vph)	9	570	0	51	510	0	0	278	0	0	150	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.1	28.1		28.1	28.1			23.3			23.3	
Effective Green, g (s)	28.1	28.1		28.1	28.1			23.3			23.3	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.37			0.37	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	275	783		222	808			528			652	
v/s Ratio Prot		c0.32			0.28							
v/s Ratio Perm	0.01			0.10				c0.19			0.08	
v/c Ratio	0.03	0.73		0.23	0.63			0.53			0.23	
Uniform Delay, d1	10.0	14.5		10.9	13.6			15.7			13.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	3.6		0.7	1.8			1.8			0.4	
Delay (s)	10.0	18.1		11.7	15.5			17.5			14.2	
Level of Service	B	B		B	B			B			B	
Approach Delay (s)		18.0			15.1			17.5			14.2	
Approach LOS		B			B			B			B	

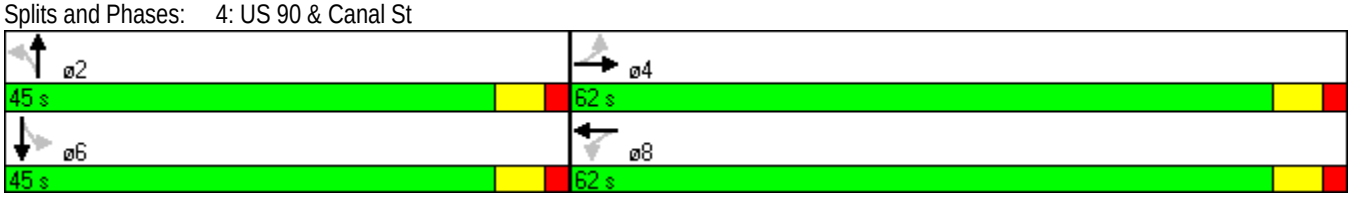
Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	63.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	45	62	45	62
Maximum Split (%)	42.1%	57.9%	42.1%	57.9%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	45	0	45
End Time (s)	45	0	45	0
Yield/Force Off (s)	39	101	39	101
Yield/Force Off 170(s)	39	101	39	101
Local Start Time (s)	0	45	0	45
Local Yield (s)	39	101	39	101
Local Yield 170(s)	39	101	39	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	264	430	535	177	240	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	287	467	582	192	261	376
RTOR Reduction (vph)	0	0	0	137	0	296
Lane Group Flow (vph)	287	467	582	55	261	80
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	12.2	35.6	17.4	17.4	12.8	12.8
Effective Green, g (s)	12.2	35.6	17.4	17.4	12.8	12.8
Actuated g/C Ratio	0.20	0.59	0.29	0.29	0.21	0.21
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	693	2086	1000	447	721	332
v/s Ratio Prot	c0.08	0.13	c0.17		c0.08	
v/s Ratio Perm				0.04		0.05
v/c Ratio	0.41	0.22	0.58	0.12	0.36	0.24
Uniform Delay, d1	21.0	5.9	18.4	15.9	20.3	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.9	0.1	0.4	0.5
Delay (s)	21.5	5.9	19.3	16.0	20.7	20.3
Level of Service	C	A	B	B	C	C
Approach Delay (s)		11.9	18.4		20.5	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	84	32	52	54
Maximum Split (%)	60.9%	23.2%	37.7%	39.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	32	84
End Time (s)	84	32	84	0
Yield/Force Off (s)	78	26	78	132
Yield/Force Off 170(s)	78	26	78	132
Local Start Time (s)	106	106	0	52
Local Yield (s)	46	132	46	100
Local Yield 170(s)	46	132	46	100

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	401	619	19	28	688	125	5	10	12	161	67	619
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1733	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1733	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	436	673	21	30	748	136	5	11	13	175	73	673
RTOR Reduction (vph)	0	0	8	0	0	87	0	0	13	0	0	0
Lane Group Flow (vph)	436	673	13	30	748	49	0	16	0	122	126	673
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	18.4	46.9	46.9	4.5	33.0	33.0		2.7	2.7	13.2	13.2	91.3
Effective Green, g (s)	18.4	46.9	46.9	4.5	33.0	33.0		2.7	2.7	13.2	13.2	91.3
Actuated g/C Ratio	0.20	0.51	0.51	0.05	0.36	0.36		0.03	0.03	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	692	1818	813	87	1279	572		54	47	243	251	1583
v/s Ratio Prot	c0.13	0.19		0.02	c0.21			0.01		0.07	0.07	
v/s Ratio Perm			0.01			0.03			0.00			c0.43
v/c Ratio	0.63	0.37	0.02	0.34	0.58	0.09		0.30	0.01	0.50	0.50	0.43
Uniform Delay, d1	33.3	13.3	10.9	42.0	23.6	19.2		43.4	43.0	36.0	36.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.0	2.4	0.8	0.1		4.2	0.1	1.6	1.6	0.8
Delay (s)	35.2	13.5	10.9	44.4	24.4	19.3		47.5	43.1	37.6	37.6	0.8
Level of Service	D	B	B	D	C	B		D	D	D	D	A
Approach Delay (s)		21.8			24.3			45.5			10.7	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	16	99	34	46	69	24
Maximum Split (%)	9.2%	57.2%	19.7%	26.6%	39.9%	13.9%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	115	0	46	149
End Time (s)	16	115	149	46	115	0
Yield/Force Off (s)	10	109	143	40	109	167
Yield/Force Off 170(s)	10	109	138	40	109	162
Local Start Time (s)	127	143	69	127	0	103
Local Yield (s)	137	63	97	167	63	121
Local Yield 170(s)	137	63	92	167	63	116

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	707	0	1	1	8	16	6	181	0	4	166	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.92		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1583			1701		1752	3505		1770	3447	
Flt Permitted	0.95	1.00			1.00		0.62	1.00		0.63	1.00	
Satd. Flow (perm)	3433	1583			1701		1135	3505		1170	3447	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	768	0	1	1	9	17	7	197	0	4	180	38
RTOR Reduction (vph)	0	1	0	0	16	0	0	0	0	0	9	0
Lane Group Flow (vph)	768	0	0	0	11	0	7	197	0	4	209	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	36.2	36.2			5.2		60.6	60.6		60.6	60.6	
Effective Green, g (s)	36.2	36.2			5.2		60.6	60.6		60.6	60.6	
Actuated g/C Ratio	0.30	0.30			0.04		0.51	0.51		0.51	0.51	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1036	478			74		573	1770		591	1741	
v/s Ratio Prot	c0.22	0.00			c0.01			0.06			c0.06	
v/s Ratio Perm							0.01			0.00		
v/c Ratio	0.74	0.00			0.15		0.01	0.11		0.01	0.12	
Uniform Delay, d1	37.7	29.3			55.3		14.8	15.6		14.8	15.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	0.0			1.2		0.0	0.1		0.0	0.0	
Delay (s)	40.8	29.3			56.5		14.8	15.7		14.8	15.7	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		40.8			56.5			15.7			15.7	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	33	67	33	20
Maximum Split (%)	27.5%	55.8%	27.5%	16.7%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	33	0	100
End Time (s)	33	100	33	0
Yield/Force Off (s)	27	94	27	114
Yield/Force Off 170(s)	18	74	27	114
Local Start Time (s)	0	33	0	100
Local Yield (s)	27	94	27	114
Local Yield 170(s)	18	74	27	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	17	104	47	645	0	359	6
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	113	51	701	0	390	7
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked					0.00		
vC, conflicting volume	846	198	397		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	846	198	397		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	93	86	96		0		
cM capacity (veh/h)	284	803	1158		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	132	51	351	351	260	137	0
Volume Left	18	51	0	0	0	0	0
Volume Right	113	0	0	0	0	7	0
cSH	639	1158	1700	1700	1700	1700	1700
Volume to Capacity	0.21	0.04	0.21	0.21	0.15	0.08	0.00
Queue Length 95th (ft)	19	3	0	0	0	0	0
Control Delay (s)	12.1	8.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A					
Approach Delay (s)	12.1	0.6			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	82	36	8	200	718	80	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.56	1.00	1.00	0.62	1.00
Satd. Flow (perm)	3400	1568	1039	1845	1568	1116	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	39	9	217	780	87	310
RTOR Reduction (vph)	0	31	0	0	390	0	0
Lane Group Flow (vph)	89	8	9	217	390	87	310
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.20	0.20	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	680	314	520	923	784	558	1703
v/s Ratio Prot				0.12			0.09
v/s Ratio Perm	c0.03	0.00	0.01		c0.25	0.08	
v/c Ratio	0.13	0.02	0.02	0.24	0.50	0.16	0.18
Uniform Delay, d1	13.1	12.9	5.0	5.7	6.7	5.4	5.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1	0.6	2.3	0.6	0.2
Delay (s)	13.3	12.9	5.1	6.3	8.9	6.0	5.7
Level of Service	B	B	A	A	A	A	A
Approach Delay (s)	13.2			8.3			5.8
Approach LOS	B			A			A

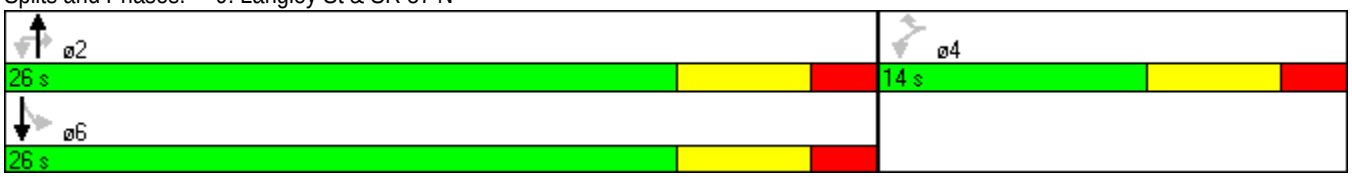
Intersection Summary			
HCM Average Control Delay	8.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	26	14	26
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	26	0
End Time (s)	26	0	26
Yield/Force Off (s)	20	34	20
Yield/Force Off 170(s)	20	34	20
Local Start Time (s)	0	26	0
Local Yield (s)	20	34	20
Local Yield 170(s)	20	34	20

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	6	45	1	7	2	312	15	19	468	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	7	49	1	8	2	339	16	21	509	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	733	910	255	654	903	178	510			355		
vC1, stage 1 conf vol	551	551		352	352							
vC2, stage 2 conf vol	182	360		302	551							
vCu, unblocked vol	733	910	255	654	903	178	510			355		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	91	100	99	100			98		
cM capacity (veh/h)	451	440	744	532	442	831	1045			1193		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	1	7	58	172	186	21	339	171
Volume Left	1	0	49	2	0	21	0	0
Volume Right	0	7	8	0	16	0	0	1
cSH	451	744	556	1045	1700	1193	1700	1700
Volume to Capacity	0.00	0.01	0.10	0.00	0.11	0.02	0.20	0.10
Queue Length 95th (ft)	0	1	9	0	0	1	0	0
Control Delay (s)	13.0	9.9	12.2	0.1	0.0	8.1	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	10.3		12.2	0.1		0.3		
Approach LOS	B		B					

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	28	0	9	81	0	0	0	6	0	4	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	30	0	10	88	0	0	0	7	0	4	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	88			30			149	142	30	149	142	88
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	88			30			149	142	30	149	142	88
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	99	100
cM capacity (veh/h)	1501			1576			805	741	1041	809	743	970

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	33	98	7	9
Volume Left	2	10	0	0
Volume Right	0	0	7	4
cSH	1501	1576	1041	842
Volume to Capacity	0.00	0.01	0.01	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	0.5	0.8	8.5	9.3
Lane LOS	A	A	A	A
Approach Delay (s)	0.5	0.8	8.5	9.3
Approach LOS			A	A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

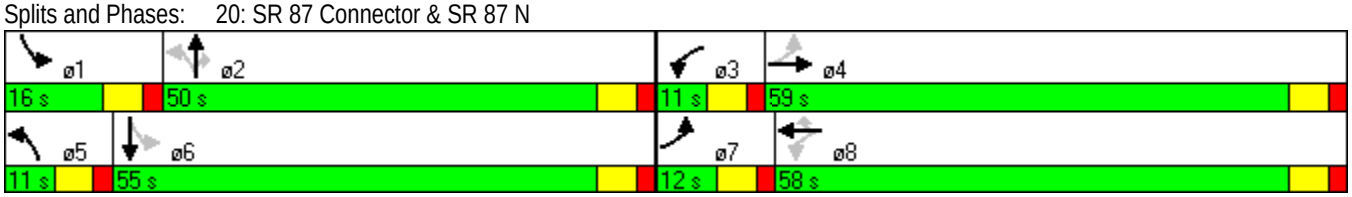
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	77	6	15	263	80	8	411	25	55	449	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1841		1770	1863	1583	1770	3539	1583	1770	3510	
Flt Permitted	0.30	1.00		0.70	1.00	1.00	0.46	1.00	1.00	0.43	1.00	
Satd. Flow (perm)	553	1841		1300	1863	1583	859	3539	1583	803	3510	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	84	7	16	286	87	9	447	27	60	488	28
RTOR Reduction (vph)	0	3	0	0	0	69	0	0	14	0	2	0
Lane Group Flow (vph)	34	88	0	16	286	18	9	447	13	60	514	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	25.9	22.7		22.9	21.2	21.2	51.0	50.2	50.2	60.6	55.0	
Effective Green, g (s)	25.9	22.7		22.9	21.2	21.2	51.0	50.2	50.2	60.6	55.0	
Actuated g/C Ratio	0.25	0.22		0.22	0.20	0.20	0.49	0.48	0.48	0.58	0.53	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	175	401		293	379	322	427	1705	763	519	1853	
v/s Ratio Prot	c0.01	0.05		0.00	c0.15		0.00	0.13		c0.01	c0.15	
v/s Ratio Perm	0.04			0.01		0.01	0.01		0.01	0.06		
v/c Ratio	0.19	0.22		0.05	0.75	0.05	0.02	0.26	0.02	0.12	0.28	
Uniform Delay, d1	30.6	33.5		32.0	39.1	33.4	13.7	16.0	14.1	9.7	13.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.3		0.1	8.3	0.1	0.0	0.4	0.0	0.1	0.4	
Delay (s)	31.2	33.7		32.1	47.3	33.5	13.7	16.4	14.1	9.8	14.0	
Level of Service	C	C		C	D	C	B	B	B	A	B	
Approach Delay (s)		33.0			43.6			16.2			13.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	104.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	16	50	11	59	11	55	12	58
Maximum Split (%)	11.8%	36.8%	8.1%	43.4%	8.1%	40.4%	8.8%	42.6%
Minimum Split (s)	10	28	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	66	77	0	11	66	78
End Time (s)	16	66	77	0	11	66	78	0
Yield/Force Off (s)	10	60	71	130	5	60	72	130
Yield/Force Off 170(s)	10	49	71	119	5	49	72	119
Local Start Time (s)	120	0	50	61	120	131	50	62
Local Yield (s)	130	44	55	114	125	44	56	114
Local Yield 170(s)	130	33	55	103	125	33	56	103

Intersection Summary	
Cycle Length	136
Control Type	Semi Act-Uncoord
Natural Cycle	70

Splits and Phases: 20: SR 87 Connector & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	386	4	16	419	28	12	76	22	23	130	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	420	4	17	455	30	13	83	24	25	141	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	486			424			801	973	212	811	960	243
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	486			424			801	973	212	811	960	243
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			91	66	97	87	43	98
cM capacity (veh/h)	1073			1132			145	243	793	190	248	758

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	225	214	245	258	120	182
Volume Left	15	0	17	0	13	25
Volume Right	0	4	0	30	24	15
cSH	1073	1700	1132	1700	260	251
Volume to Capacity	0.01	0.13	0.02	0.15	0.46	0.72
Queue Length 95th (ft)	1	0	1	0	56	124
Control Delay (s)	0.7	0.0	0.7	0.0	30.1	49.4
Lane LOS	A		A		D	E
Approach Delay (s)	0.4		0.4		30.1	49.4
Approach LOS					D	E

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

PM 2015 - ALT 2 - OPENING YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	65	375	265	51	7	318	85	242	46	293	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3423	
Flt Permitted	0.72	1.00	1.00	0.64	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1330	1845	1568	1150	1810	1538	1736	3471	1553	1770	3423	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	71	408	288	55	8	346	92	263	50	318	89
RTOR Reduction (vph)	0	0	0	0	0	5	0	0	0	0	22	0
Lane Group Flow (vph)	14	71	408	288	55	3	346	92	263	50	385	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	27.2	25.4	103.8	44.3	39.5	39.5	25.7	25.7	103.8	16.3	16.3	
Effective Green, g (s)	27.2	25.4	103.8	44.3	39.5	39.5	25.7	25.7	103.8	16.3	16.3	
Actuated g/C Ratio	0.26	0.24	1.00	0.43	0.38	0.38	0.25	0.25	1.00	0.16	0.16	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	356	451	1568	578	689	585	430	859	1553	278	538	
v/s Ratio Prot	0.00	0.04		c0.08	0.03		c0.20	0.03		0.03	c0.11	
v/s Ratio Perm	0.01		c0.26	c0.14		0.00			0.17			
v/c Ratio	0.04	0.16	0.26	0.50	0.08	0.01	0.80	0.11	0.17	0.18	0.72	
Uniform Delay, d1	28.5	30.8	0.0	20.5	20.5	20.0	36.7	30.2	0.0	38.0	41.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.7	0.4	0.7	0.2	0.0	10.5	0.1	0.2	0.3	4.5	
Delay (s)	28.5	31.5	0.4	21.2	20.8	20.0	47.2	30.2	0.2	38.3	46.1	
Level of Service	C	C	A	C	C	B	D	C	A	D	D	
Approach Delay (s)		5.7			21.1			27.3			45.2	
Approach LOS		A			C			C			D	

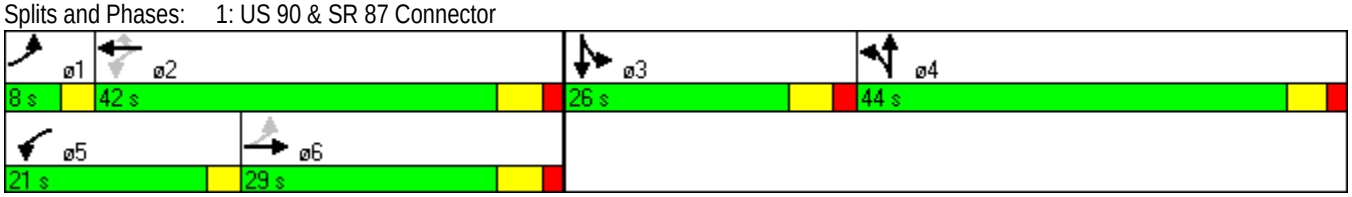
Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	103.8	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	42	26	44	21	29
Maximum Split (%)	6.7%	35.0%	21.7%	36.7%	17.5%	24.2%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	50	76	0	21
End Time (s)	8	50	76	0	21	50
Yield/Force Off (s)	5	44	70	114.5	18	44
Yield/Force Off 170(s)	5	32	70	114.5	18	32
Local Start Time (s)	112	0	42	68	112	13
Local Yield (s)	117	36	62	106.5	10	36
Local Yield 170(s)	117	24	62	106.5	10	24

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	414	226	34	411	1	158	8	43	0	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			1.00	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1601			1737	
Flt Permitted	0.49	1.00	1.00	0.42	1.00		0.95	0.98			1.00	
Satd. Flow (perm)	901	1827	1553	762	3470		1665	1601			1737	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	450	246	37	447	1	172	9	47	0	3	3
RTOR Reduction (vph)	0	0	88	0	0	0	0	22	0	0	3	0
Lane Group Flow (vph)	4	450	158	37	448	0	117	89	0	0	3	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	75.9	75.9	75.9	85.7	85.7		13.0	13.0			1.2	
Effective Green, g (s)	75.9	75.9	75.9	85.7	85.7		13.0	13.0			1.2	
Actuated g/C Ratio	0.64	0.64	0.64	0.73	0.73		0.11	0.11			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	580	1176	1000	585	2522		184	177			18	
v/s Ratio Prot		c0.25		0.00	c0.13		c0.07	0.06			c0.00	
v/s Ratio Perm	0.00		0.10	0.04								
v/c Ratio	0.01	0.38	0.16	0.06	0.18		0.64	0.50			0.17	
Uniform Delay, d1	7.5	9.9	8.3	5.4	5.0		50.2	49.4			57.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.9	0.3	0.0	0.2		7.0	2.2			4.4	
Delay (s)	7.5	10.9	8.7	5.4	5.2		57.2	51.6			62.3	
Level of Service	A	B	A	A	A		E	D			E	
Approach Delay (s)		10.1			5.2			54.5			62.3	
Approach LOS		B			A			D			E	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	117.9	Sum of lost time (s)	24.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	86	13	35	13	73
Maximum Split (%)	64.2%	9.7%	26.1%	9.7%	54.5%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	86	99	0	13
End Time (s)	86	99	0	13	86
Yield/Force Off (s)	80	93	128	7	80
Yield/Force Off 170(s)	68	93	112	7	68
Local Start Time (s)	0	86	99	0	13
Local Yield (s)	80	93	128	7	80
Local Yield 170(s)	68	93	112	7	68

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	468	18	6	440	176	18	18	22	157	6	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.98			0.96	
Satd. Flow (prot)	1736	1817			1756			1741			1749	
Flt Permitted	0.37	1.00			0.99			0.88			0.70	
Satd. Flow (perm)	673	1817			1748			1550			1285	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	509	20	7	478	191	20	20	24	171	7	14
RTOR Reduction (vph)	0	1	0	0	14	0	0	18	0	0	3	0
Lane Group Flow (vph)	13	528	0	0	662	0	0	46	0	0	189	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.4	37.4			37.4			18.3			18.3	
Effective Green, g (s)	37.4	37.4			37.4			18.3			18.3	
Actuated g/C Ratio	0.55	0.55			0.55			0.27			0.27	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	372	1004			966			419			347	
v/s Ratio Prot		0.29										
v/s Ratio Perm	0.02				c0.38			0.03			c0.15	
v/c Ratio	0.03	0.53			0.68			0.11			0.54	
Uniform Delay, d1	6.9	9.6			10.9			18.6			21.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.1	1.5			3.5			0.2			3.1	
Delay (s)	7.1	11.1			14.4			18.8			24.2	
Level of Service	A	B			B			B			C	
Approach Delay (s)		11.0			14.4			18.8			24.2	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	38	69	38	69
Maximum Split (%)	35.5%	64.5%	35.5%	64.5%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	38
End Time (s)	38	0	38	0
Yield/Force Off (s)	32	101	32	101
Yield/Force Off 170(s)	20	101	20	101
Local Start Time (s)	0	38	0	38
Local Yield (s)	32	101	32	101
Local Yield 170(s)	20	101	20	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	576	145	53	498	10	159	128	34	14	121	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.99			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1772		1736	1821			1774			1813	
Flt Permitted	0.33	1.00		0.15	1.00			0.77			0.95	
Satd. Flow (perm)	598	1772		268	1821			1401			1736	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	626	158	58	541	11	173	139	37	15	132	15
RTOR Reduction (vph)	0	9	0	0	0	0	0	4	0	0	3	0
Lane Group Flow (vph)	10	775	0	58	552	0	0	345	0	0	159	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.0	43.0		43.0	43.0			29.3			29.3	
Effective Green, g (s)	43.0	43.0		43.0	43.0			29.3			29.3	
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.35			0.35	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	305	904		137	929			487			603	
v/s Ratio Prot		c0.44			0.30							
v/s Ratio Perm	0.02			0.22				c0.25			0.09	
v/c Ratio	0.03	0.86		0.42	0.59			0.71			0.26	
Uniform Delay, d1	10.3	18.0		12.9	14.5			23.8			19.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	8.4		2.9	1.2			5.9			0.5	
Delay (s)	10.3	26.4		15.8	15.7			29.7			20.2	
Level of Service	B	C		B	B			C			C	
Approach Delay (s)		26.2			15.7			29.7			20.2	
Approach LOS		C			B			C			C	

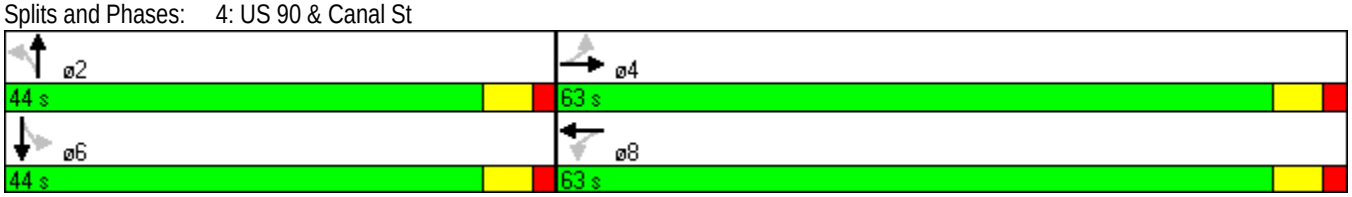
Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	44	63	44	63
Maximum Split (%)	41.1%	58.9%	41.1%	58.9%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	44	0	44
End Time (s)	44	0	44	0
Yield/Force Off (s)	38	101	38	101
Yield/Force Off 170(s)	38	101	38	101
Local Start Time (s)	0	44	0	44
Local Yield (s)	38	101	38	101
Local Yield 170(s)	38	101	38	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	526	629	637	184	197	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	572	684	692	200	214	485
RTOR Reduction (vph)	0	0	0	139	0	396
Lane Group Flow (vph)	572	684	692	61	214	89
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	21.1	50.6	23.5	23.5	14.1	14.1
Effective Green, g (s)	21.1	50.6	23.5	23.5	14.1	14.1
Actuated g/C Ratio	0.28	0.66	0.31	0.31	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	944	2335	1063	476	625	288
v/s Ratio Prot	c0.17	0.19	c0.20		c0.06	
v/s Ratio Perm				0.04		0.06
v/c Ratio	0.61	0.29	0.65	0.13	0.34	0.31
Uniform Delay, d1	24.2	5.5	23.0	19.2	27.3	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	1.4	0.1	0.4	0.8
Delay (s)	25.5	5.6	24.5	19.3	27.7	27.9
Level of Service	C	A	C	B	C	C
Approach Delay (s)		14.6	23.3		27.9	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	92	42	50	46
Maximum Split (%)	66.7%	30.4%	36.2%	33.3%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	42	92
End Time (s)	92	42	92	0
Yield/Force Off (s)	86	36	86	132
Yield/Force Off 170(s)	86	36	86	132
Local Start Time (s)	96	96	0	50
Local Yield (s)	44	132	44	90
Local Yield 170(s)	44	132	44	90

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	670	963	45	67	833	190	28	74	90	161	45	694
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1838	1583	1681	1721	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1838	1583	1681	1721	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	728	1047	49	73	905	207	30	80	98	175	49	754
RTOR Reduction (vph)	0	0	12	0	0	137	0	0	87	0	0	0
Lane Group Flow (vph)	728	1047	37	73	905	70	0	110	11	110	114	754
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	34.9	70.9	70.9	8.9	44.9	44.9		14.3	14.3	14.3	14.3	132.4
Effective Green, g (s)	34.9	70.9	70.9	8.9	44.9	44.9		14.3	14.3	14.3	14.3	132.4
Actuated g/C Ratio	0.26	0.54	0.54	0.07	0.34	0.34		0.11	0.11	0.11	0.11	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	905	1895	848	119	1200	537		199	171	182	186	1583
v/s Ratio Prot	c0.21	0.30		0.04	c0.26			0.06		0.07	0.07	
v/s Ratio Perm			0.02			0.04			0.01			c0.48
v/c Ratio	0.80	0.55	0.04	0.61	0.75	0.13		0.55	0.06	0.60	0.61	0.48
Uniform Delay, d1	45.6	20.3	14.6	60.1	38.8	30.3		56.0	53.0	56.4	56.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	0.4	0.0	9.0	2.9	0.2		4.1	0.2	5.6	5.9	1.0
Delay (s)	50.8	20.7	14.7	69.1	41.8	30.4		60.1	53.2	61.9	62.3	1.0
Level of Service	D	C	B	E	D	C		E	D	E	E	A
Approach Delay (s)		32.6			41.5			56.9			15.0	
Approach LOS		C			D			E			B	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	132.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	20	104	25	55	69	24
Maximum Split (%)	11.6%	60.1%	14.5%	31.8%	39.9%	13.9%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	20	124	0	55	149
End Time (s)	20	124	149	55	124	0
Yield/Force Off (s)	14	118	143	49	118	167
Yield/Force Off 170(s)	14	118	138	49	118	162
Local Start Time (s)	118	138	69	118	0	94
Local Yield (s)	132	63	88	167	63	112
Local Yield 170(s)	132	63	83	167	63	107

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	564	8	1	1	9	14	3	240	4	23	157	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.98			0.92		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1835			1714		1752	3497		1770	3456	
Flt Permitted	0.95	1.00			1.00		0.62	1.00		0.59	1.00	
Satd. Flow (perm)	3433	1835			1714		1152	3497		1096	3456	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	613	9	1	1	10	15	3	261	4	25	171	32
RTOR Reduction (vph)	0	1	0	0	14	0	0	0	0	0	8	0
Lane Group Flow (vph)	613	9	0	0	12	0	3	265	0	25	195	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	32.7	32.7			5.2		64.1	64.1		64.1	64.1	
Effective Green, g (s)	32.7	32.7			5.2		64.1	64.1		64.1	64.1	
Actuated g/C Ratio	0.27	0.27			0.04		0.53	0.53		0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	935	500			74		615	1868		585	1846	
v/s Ratio Prot	c0.18	0.01			c0.01			c0.08			0.06	
v/s Ratio Perm							0.00			0.02		
v/c Ratio	0.66	0.02			0.16		0.00	0.14		0.04	0.11	
Uniform Delay, d1	38.7	31.9			55.3		13.1	14.1		13.3	13.8	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.0			1.4		0.0	0.2		0.0	0.0	
Delay (s)	40.5	31.9			56.6		13.1	14.2		13.4	13.8	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		40.4			56.6			14.2			13.8	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	37	62	37	21
Maximum Split (%)	30.8%	51.7%	30.8%	17.5%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	37	0	99
End Time (s)	37	99	37	0
Yield/Force Off (s)	31	93	31	114
Yield/Force Off 170(s)	22	73	31	114
Local Start Time (s)	0	37	0	99
Local Yield (s)	31	93	31	114
Local Yield 170(s)	22	73	31	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	5	86	96	355	0	664	18
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	93	104	386	0	722	20
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked	0.98	0.98	0.98		0.00		
vC, conflicting volume	1133	371	741		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1095	317	695		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	97	86	88		0		
cM capacity (veh/h)	177	660	879		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	99	104	193	193	481	260	0
Volume Left	5	104	0	0	0	0	0
Volume Right	93	0	0	0	0	20	0
cSH	574	879	1700	1700	1700	1700	1700
Volume to Capacity	0.17	0.12	0.11	0.11	0.28	0.15	0.00
Queue Length 95th (ft)	15	10	0	0	0	0	0
Control Delay (s)	12.6	9.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A					
Approach Delay (s)	12.6	2.1			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	554	117	29	260	92	29	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.56	1.00	1.00	0.59	1.00
Satd. Flow (perm)	3400	1568	1042	1845	1568	1051	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	602	127	32	283	100	32	307
RTOR Reduction (vph)	0	86	0	0	63	0	0
Lane Group Flow (vph)	602	41	32	283	37	32	307
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	12.3	12.3	14.0	14.0	14.0	14.0	14.0
Effective Green, g (s)	12.3	12.3	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.32	0.32	0.37	0.37	0.37	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1092	504	381	674	573	384	1245
v/s Ratio Prot				c0.15			0.09
v/s Ratio Perm	c0.18	0.03	0.03		0.02	0.03	
v/c Ratio	0.55	0.08	0.08	0.42	0.06	0.08	0.25
Uniform Delay, d1	10.7	9.1	8.0	9.1	7.9	8.0	8.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.4	1.9	0.2	0.4	0.5
Delay (s)	11.5	9.2	8.4	11.0	8.1	8.4	8.9
Level of Service	B	A	A	B	A	A	A
Approach Delay (s)	11.1			10.1			8.9
Approach LOS	B			B			A

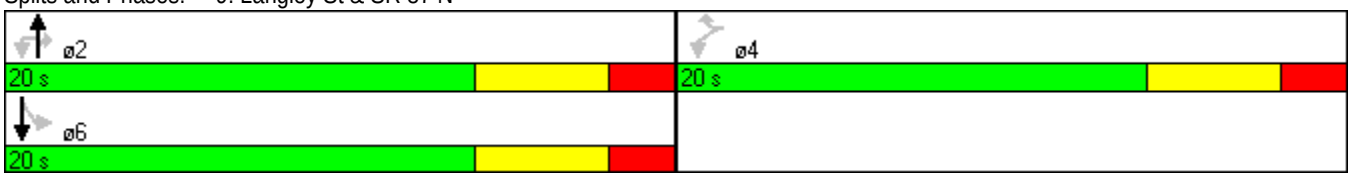
Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	38.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	20	0
End Time (s)	20	0	20
Yield/Force Off (s)	14	34	14
Yield/Force Off 170(s)	14	34	14
Local Start Time (s)	0	20	0
Local Yield (s)	14	34	14
Local Yield 170(s)	14	34	14

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	0	88	47	0	10	2	453	47	19	392	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	96	51	0	11	2	492	51	21	426	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	729	1016	214	872	991	272	427			543		
vC1, stage 1 conf vol	468	468		522	522							
vC2, stage 2 conf vol	261	548		350	468							
vCu, unblocked vol	729	1016	214	872	991	272	427			543		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	88	87	100	98	100			98		
cM capacity (veh/h)	479	412	791	408	425	723	1122			1015		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	8	96	62	248	297	21	284	143
Volume Left	8	0	51	2	0	21	0	0
Volume Right	0	96	11	0	51	0	0	1
cSH	479	791	442	1122	1700	1015	1700	1700
Volume to Capacity	0.02	0.12	0.14	0.00	0.17	0.02	0.17	0.08
Queue Length 95th (ft)	1	10	12	0	0	2	0	0
Control Delay (s)	12.6	10.2	14.5	0.1	0.0	8.6	0.0	0.0
Lane LOS	B	B	B	A		A		
Approach Delay (s)	10.4		14.5	0.0		0.4		
Approach LOS	B		B					

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	85	0	6	57	3	1	4	5	0	3	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	92	0	7	62	3	1	4	5	0	3	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	65			92			187	182	92	188	180	64
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	65			92			187	182	92	188	180	64
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	99	99	100	100	99
cM capacity (veh/h)	1530			1496			760	705	962	760	708	1001

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	98	72	11	9
Volume Left	5	7	1	0
Volume Right	0	3	5	5
cSH	1530	1496	821	867
Volume to Capacity	0.00	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	1	1
Control Delay (s)	0.4	0.7	9.4	9.2
Lane LOS	A	A	A	A
Approach Delay (s)	0.4	0.7	9.4	9.2
Approach LOS			A	A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	15.6%	ICU Level of Service	A
Analysis Period (min)	15		

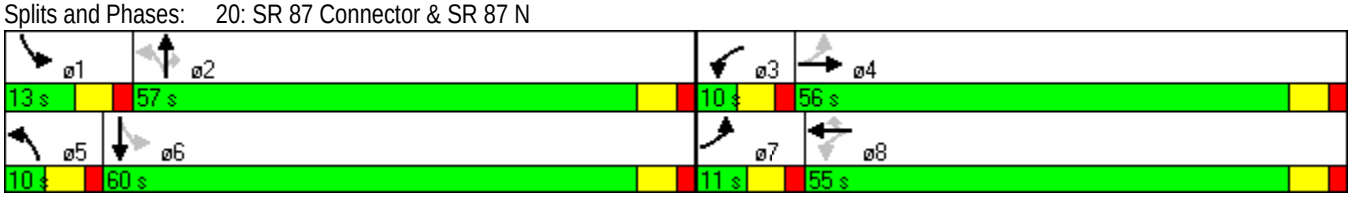
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	77	6	14	263	84	9	526	26	54	415	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1841		1770	1863	1583	1770	3539	1583	1770	3509	
Flt Permitted	0.29	1.00		0.70	1.00	1.00	0.48	1.00	1.00	0.37	1.00	
Satd. Flow (perm)	538	1841		1300	1863	1583	892	3539	1583	688	3509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	84	7	15	286	91	10	572	28	59	451	27
RTOR Reduction (vph)	0	2	0	0	0	73	0	0	14	0	2	0
Lane Group Flow (vph)	36	89	0	15	286	18	10	572	14	59	476	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	26.4	23.7		23.8	22.4	22.4	57.1	56.4	56.4	66.1	60.9	
Effective Green, g (s)	26.4	23.7		23.8	22.4	22.4	57.1	56.4	56.4	66.1	60.9	
Actuated g/C Ratio	0.24	0.21		0.21	0.20	0.20	0.52	0.51	0.51	0.60	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	158	394		285	377	320	466	1803	807	462	1930	
v/s Ratio Prot	c0.01	0.05		0.00	c0.15		0.00	c0.16		c0.01	c0.14	
v/s Ratio Perm	0.05			0.01		0.01	0.01		0.01	0.07		
v/c Ratio	0.23	0.22		0.05	0.76	0.06	0.02	0.32	0.02	0.13	0.25	
Uniform Delay, d1	33.4	35.9		34.4	41.6	35.6	13.1	15.9	13.4	9.7	13.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.3		0.1	8.5	0.1	0.0	0.5	0.0	0.1	0.3	
Delay (s)	34.2	36.2		34.5	50.1	35.7	13.1	16.3	13.5	9.9	13.3	
Level of Service	C	D		C	D	D	B	B	B	A	B	
Approach Delay (s)		35.6			46.2			16.2			12.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	110.7	Sum of lost time (s)	30.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	13	57	10	56	10	60	11	55
Maximum Split (%)	9.6%	41.9%	7.4%	41.2%	7.4%	44.1%	8.1%	40.4%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	13	70	80	0	10	70	81
End Time (s)	13	70	80	0	10	70	81	0
Yield/Force Off (s)	7	64	74	130	4	64	75	130
Yield/Force Off 170(s)	7	53	74	119	4	53	75	119
Local Start Time (s)	123	0	57	67	123	133	57	68
Local Yield (s)	130	51	61	117	127	51	62	117
Local Yield 170(s)	130	40	61	106	127	40	62	106

Intersection Summary	
Cycle Length	136
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 20: SR 87 Connector & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	386	5	18	458	30	12	96	22	22	139	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	420	5	20	498	33	13	104	24	24	151	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	530			425			834	1024	212	872	1011	265
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530			425			834	1024	212	872	1011	265
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			89	54	97	84	34	98
cM capacity (veh/h)	1033			1131			118	226	793	148	230	733

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	226	215	268	282	141	190
Volume Left	16	0	20	0	13	24
Volume Right	0	5	0	33	24	15
cSH	1033	1700	1131	1700	235	227
Volume to Capacity	0.02	0.13	0.02	0.17	0.60	0.84
Queue Length 95th (ft)	1	0	1	0	87	161
Control Delay (s)	0.8	0.0	0.8	0.0	41.1	70.0
Lane LOS	A		A		E	F
Approach Delay (s)	0.4		0.4		41.1	70.0
Approach LOS					E	F

Intersection Summary			
Average Delay	14.7		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & East Milton Rd

AM 2025 - INTERIM YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	129	288	135	191	43	356	240	103	18	75	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1845	1583
Flt Permitted	0.55	1.00	1.00	0.67	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1021	1845	1568	1208	1810	1538	3367	1827	1553		1845	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	140	313	147	208	47	387	261	112	20	82	82
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	0	0	73
Lane Group Flow (vph)	211	140	313	147	208	18	387	261	112	0	102	9
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	56.9	44.4	107.0	51.5	41.7	41.7	20.9	20.9	107.0		11.4	11.4
Effective Green, g (s)	56.9	44.4	107.0	51.5	41.7	41.7	20.9	20.9	107.0		11.4	11.4
Actuated g/C Ratio	0.53	0.41	1.00	0.48	0.39	0.39	0.20	0.20	1.00		0.11	0.11
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	628	766	1568	628	705	599	658	357	1553		197	169
v/s Ratio Prot	c0.04	0.08		0.02	0.11		0.11	c0.14			c0.06	
v/s Ratio Perm	c0.14		0.20	0.09		0.01			0.07			0.01
v/c Ratio	0.34	0.18	0.20	0.23	0.30	0.03	0.59	0.73	0.07		0.52	0.05
Uniform Delay, d1	13.5	19.8	0.0	15.7	22.5	20.2	39.1	40.4	0.0		45.2	42.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.5	0.3	0.2	1.1	0.1	1.3	7.5	0.1		2.3	0.1
Delay (s)	13.8	20.3	0.3	15.9	23.6	20.3	40.5	47.9	0.1		47.5	43.1
Level of Service	B	C	A	B	C	C	D	D	A		D	D
Approach Delay (s)		8.8			20.4			37.1			45.5	
Approach LOS		A			C			D			D	

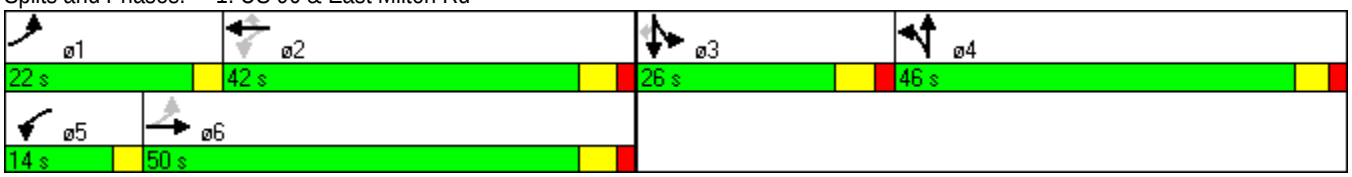
Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	22	42	26	46	14	50
Maximum Split (%)	16.2%	30.9%	19.1%	33.8%	10.3%	36.8%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	22	64	90	0	14
End Time (s)	22	64	90	0	14	64
Yield/Force Off (s)	19	58	84	130.5	11	58
Yield/Force Off 170(s)	19	46	84	130.5	11	46
Local Start Time (s)	114	0	42	68	114	128
Local Yield (s)	133	36	62	108.5	125	36
Local Yield 170(s)	133	24	62	108.5	125	24

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & East Milton Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	449	273	189	459	1	360	13	122	4	9	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor		1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.92			0.98	
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)		1827	1553	1736	3470		1665	1584			1797	
Flt Permitted		1.00	1.00	0.32	1.00		0.95	0.98			0.99	
Satd. Flow (perm)		1827	1553	586	3470		1665	1584			1797	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	488	297	205	499	1	391	14	133	4	10	3
RTOR Reduction (vph)	0	0	149	0	0	0	0	30	0	0	3	0
Lane Group Flow (vph)	0	488	148	205	500	0	278	230	0	0	14	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)		60.1	60.1	75.9	75.9		24.5	24.5			2.1	
Effective Green, g (s)		60.1	60.1	75.9	75.9		24.5	24.5			2.1	
Actuated g/C Ratio		0.50	0.50	0.63	0.63		0.20	0.20			0.02	
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		911	775	463	2186		339	322			31	
v/s Ratio Prot		c0.27		c0.04	0.14		c0.17	0.15			c0.01	
v/s Ratio Perm			0.10	0.24								
v/c Ratio		0.54	0.19	0.44	0.23		0.82	0.71			0.45	
Uniform Delay, d1		20.7	16.7	12.1	9.6		45.9	44.7			58.6	
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.3	0.5	0.7	0.2		14.6	7.3			10.2	
Delay (s)		22.9	17.3	12.8	9.9		60.5	52.0			68.8	
Level of Service		C	B	B	A		E	D			E	
Approach Delay (s)		20.8			10.7			56.4			68.8	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	81	12	42	17	64
Maximum Split (%)	60.0%	8.9%	31.1%	12.6%	47.4%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	81	93	0	17
End Time (s)	81	93	0	17	81
Yield/Force Off (s)	75	87	129	11	75
Yield/Force Off 170(s)	63	87	113	11	63
Local Start Time (s)	0	81	93	0	17
Local Yield (s)	75	87	129	11	75
Local Yield 170(s)	63	87	113	11	63

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	415	23	4	619	318	2	5	15	323	41	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.95			0.91			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.96	
Satd. Flow (prot)	1736	1813			1743			1681			1760	
Flt Permitted	0.23	1.00			1.00			0.97			0.74	
Satd. Flow (perm)	427	1813			1741			1640			1361	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	451	25	4	673	346	2	5	16	351	45	17
RTOR Reduction (vph)	0	2	0	0	17	0	0	11	0	0	1	0
Lane Group Flow (vph)	15	474	0	0	1006	0	0	12	0	0	412	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	63.0	63.0			63.0			32.0			32.0	
Effective Green, g (s)	63.0	63.0			63.0			32.0			32.0	
Actuated g/C Ratio	0.59	0.59			0.59			0.30			0.30	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	251	1067			1025			490			407	
v/s Ratio Prot		0.26										
v/s Ratio Perm	0.04				c0.58			0.01			c0.30	
v/c Ratio	0.06	0.44			0.98			0.02			1.01	
Uniform Delay, d1	9.4	12.3			21.4			26.5			37.5	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	1.0			23.9			0.0			47.5	
Delay (s)	9.7	13.3			45.3			26.5			85.0	
Level of Service	A	B			D			C			F	
Approach Delay (s)		13.2			45.3			26.5			85.0	
Approach LOS		B			D			C			F	

Intersection Summary			
HCM Average Control Delay	45.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	38	69	38	69
Maximum Split (%)	35.5%	64.5%	35.5%	64.5%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	38
End Time (s)	38	0	38	0
Yield/Force Off (s)	32	101	32	101
Yield/Force Off 170(s)	20	101	20	101
Local Start Time (s)	0	38	0	38
Local Yield (s)	32	101	32	101
Local Yield 170(s)	20	101	20	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	561	76	61	588	31	90	162	70	22	207	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1736	1794		1736	1813			1766			1823	
Flt Permitted	0.21	1.00		0.19	1.00			0.82			0.95	
Satd. Flow (perm)	381	1794		351	1813			1466			1734	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	610	83	66	639	34	98	176	76	24	225	14
RTOR Reduction (vph)	0	5	0	0	2	0	0	10	0	0	2	0
Lane Group Flow (vph)	16	688	0	66	671	0	0	340	0	0	261	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.9	35.9		35.9	35.9			27.5			27.5	
Effective Green, g (s)	35.9	35.9		35.9	35.9			27.5			27.5	
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	181	854		167	863			535			632	
v/s Ratio Prot		c0.38			0.37							
v/s Ratio Perm	0.04			0.19				c0.23			0.15	
v/c Ratio	0.09	0.81		0.40	0.78			0.64			0.41	
Uniform Delay, d1	10.8	16.8		12.7	16.4			19.8			17.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	5.9		2.1	4.7			3.4			0.9	
Delay (s)	11.1	22.7		14.8	21.1			23.3			18.8	
Level of Service	B	C		B	C			C			B	
Approach Delay (s)		22.4			20.6			23.3			18.8	
Approach LOS		C			C			C			B	

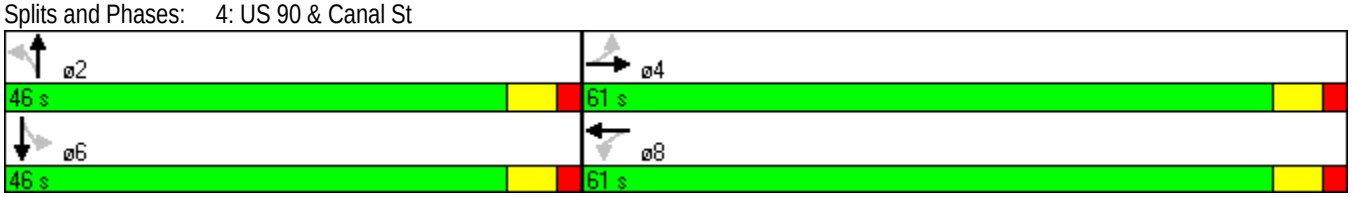
Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	75.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	46	61	46	61
Maximum Split (%)	43.0%	57.0%	43.0%	57.0%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	46	0	46
End Time (s)	46	0	46	0
Yield/Force Off (s)	40	101	40	101
Yield/Force Off 170(s)	40	101	40	101
Local Start Time (s)	0	46	0	46
Local Yield (s)	40	101	40	101
Local Yield 170(s)	40	101	40	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	306	413	527	273	357	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	333	449	573	297	388	429
RTOR Reduction (vph)	0	0	0	214	0	321
Lane Group Flow (vph)	333	449	573	83	388	108
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	13.9	38.9	19.0	19.0	17.2	17.2
Effective Green, g (s)	13.9	38.9	19.0	19.0	17.2	17.2
Actuated g/C Ratio	0.20	0.57	0.28	0.28	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	701	2022	968	433	859	396
v/s Ratio Prot	c0.10	0.13	c0.17		c0.11	
v/s Ratio Perm				0.05		0.07
v/c Ratio	0.48	0.22	0.59	0.19	0.45	0.27
Uniform Delay, d1	23.9	7.2	21.2	18.7	21.5	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	1.0	0.2	0.5	0.5
Delay (s)	24.6	7.2	22.2	18.9	22.0	20.9
Level of Service	C	A	C	B	C	C
Approach Delay (s)		14.6	21.1		21.4	
Approach LOS		B	C		C	

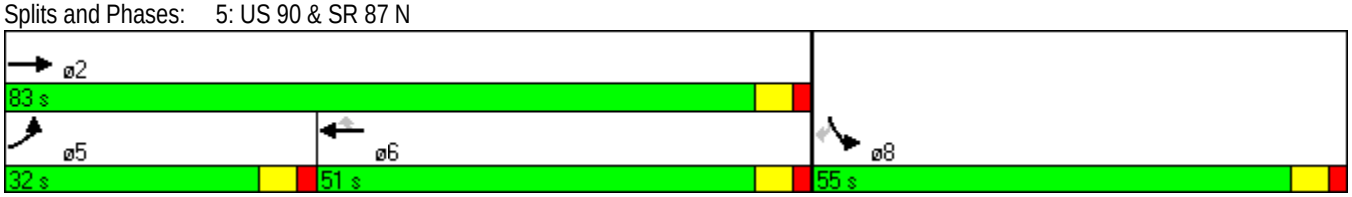
Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	83	32	51	55
Maximum Split (%)	60.1%	23.2%	37.0%	39.9%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	32	83
End Time (s)	83	32	83	0
Yield/Force Off (s)	77	26	77	132
Yield/Force Off 170(s)	77	26	77	132
Local Start Time (s)	106	106	0	51
Local Yield (s)	45	132	45	100
Local Yield 170(s)	45	132	45	100

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: US 90 & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	455	651	27	32	734	121	7	11	12	166	71	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1826	1583	1681	1734	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1826	1583	1681	1734	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	495	708	29	35	798	132	8	12	13	180	77	762
RTOR Reduction (vph)	0	0	11	0	0	84	0	0	13	0	0	0
Lane Group Flow (vph)	495	708	18	35	798	48	0	20	0	126	131	762
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	21.0	51.6	51.6	4.7	35.3	35.3		2.8	2.8	14.0	14.0	97.1
Effective Green, g (s)	21.0	51.6	51.6	4.7	35.3	35.3		2.8	2.8	14.0	14.0	97.1
Actuated g/C Ratio	0.22	0.53	0.53	0.05	0.36	0.36		0.03	0.03	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	742	1881	841	86	1287	575		53	46	242	250	1583
v/s Ratio Prot	c0.14	0.20		0.02	c0.23			0.01		0.07	0.08	
v/s Ratio Perm			0.01			0.03			0.00			c0.48
v/c Ratio	0.67	0.38	0.02	0.41	0.62	0.08		0.38	0.01	0.52	0.52	0.48
Uniform Delay, d1	34.8	13.3	10.8	44.8	25.4	20.3		46.3	45.8	38.4	38.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.2	0.0	3.1	1.1	0.1		6.0	0.1	2.0	2.0	1.1
Delay (s)	37.1	13.5	10.8	48.0	26.5	20.4		52.3	45.9	40.5	40.4	1.1
Level of Service	D	B	B	D	C	C		D	D	D	D	A
Approach Delay (s)		22.9			26.4			49.8			11.0	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	17	102	32	48	71	22
Maximum Split (%)	9.8%	59.0%	18.5%	27.7%	41.0%	12.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	17	119	0	48	151
End Time (s)	17	119	151	48	119	0
Yield/Force Off (s)	11	113	145	42	113	167
Yield/Force Off 170(s)	11	113	140	42	113	162
Local Start Time (s)	125	142	71	125	0	103
Local Yield (s)	136	65	97	167	65	119
Local Yield 170(s)	136	65	92	167	65	114

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	937	1	3	3	7	25	8	452	2	8	360	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89			0.90		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1653			1677		1752	3503		1770	3483	
Flt Permitted	0.95	1.00			1.00		0.43	1.00		0.37	1.00	
Satd. Flow (perm)	3433	1653			1677		791	3503		689	3483	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1018	1	3	3	8	27	9	491	2	9	391	46
RTOR Reduction (vph)	0	2	0	0	25	0	0	0	0	0	12	0
Lane Group Flow (vph)	1018	2	0	0	13	0	9	493	0	9	425	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	34.0	34.0			4.2		16.0	16.0		16.0	16.0	
Effective Green, g (s)	34.0	34.0			4.2		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.47	0.47			0.06		0.22	0.22		0.22	0.22	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1617	778			98		175	776		153	772	
v/s Ratio Prot	c0.30	0.00			c0.01			c0.14			0.12	
v/s Ratio Perm							0.01			0.01		
v/c Ratio	0.63	0.00			0.13		0.05	0.64		0.06	0.55	
Uniform Delay, d1	14.4	10.1			32.3		22.1	25.5		22.2	24.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.0			0.8		0.2	1.9		0.2	1.1	
Delay (s)	15.2	10.1			33.1		22.3	27.4		22.4	26.0	
Level of Service	B	B			C		C	C		C	C	
Approach Delay (s)		15.2			33.1			27.3			25.9	
Approach LOS		B			C			C			C	

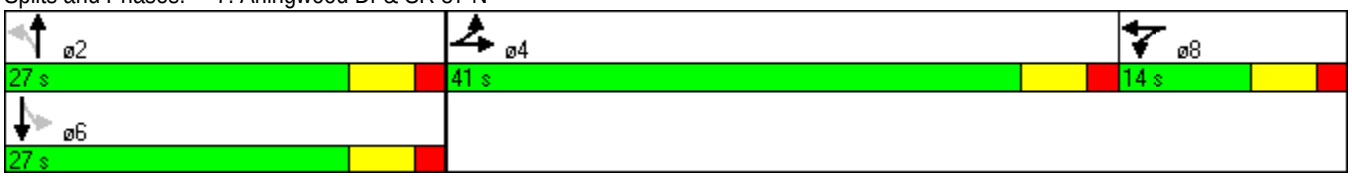
Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	27	41	27	14
Maximum Split (%)	32.9%	50.0%	32.9%	17.1%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	27	0	68
End Time (s)	27	68	27	0
Yield/Force Off (s)	21	62	21	76
Yield/Force Off 170(s)	21	42	21	76
Local Start Time (s)	0	27	0	68
Local Yield (s)	21	62	21	76
Local Yield 170(s)	21	42	21	76

Intersection Summary	
Cycle Length	82
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	56	290	160	886	0	450	23
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	315	174	963	0	489	25
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1331	257	514		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1331	257	514		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	49	57	83		0		
cM capacity (veh/h)	120	736	1048		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	376	174	482	482	326	188	0
Volume Left	61	174	0	0	0	0	0
Volume Right	315	0	0	0	0	25	0
cSH	401	1048	1700	1700	1700	1700	1700
Volume to Capacity	0.94	0.17	0.28	0.28	0.19	0.11	0.00
Queue Length 95th (ft)	260	15	0	0	0	0	0
Control Delay (s)	63.1	9.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	A					
Approach Delay (s)	63.1	1.4			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	12.5		
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	94	48	9	209	835	97	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.55	1.00	1.00	0.62	1.00
Satd. Flow (perm)	3400	1568	1022	1845	1568	1106	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	52	10	227	908	105	327
RTOR Reduction (vph)	0	45	0	0	290	0	0
Lane Group Flow (vph)	102	7	10	227	618	105	327
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.6	8.6	44.0	44.0	44.0	44.0	44.0
Effective Green, g (s)	8.6	8.6	44.0	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.13	0.13	0.68	0.68	0.68	0.68	0.68
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	453	209	696	1257	1068	753	2320
v/s Ratio Prot				0.12			0.10
v/s Ratio Perm	c0.03	0.00	0.01		c0.39	0.09	
v/c Ratio	0.23	0.03	0.01	0.18	0.58	0.14	0.14
Uniform Delay, d1	25.0	24.4	3.3	3.7	5.4	3.6	3.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.0	0.3	2.3	0.4	0.1
Delay (s)	25.4	24.5	3.4	4.1	7.7	4.0	3.8
Level of Service	C	C	A	A	A	A	A
Approach Delay (s)	25.1			7.0			3.8
Approach LOS	C			A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	50	30	50
Maximum Split (%)	62.5%	37.5%	62.5%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	50	0
End Time (s)	50	0	50
Yield/Force Off (s)	44	74	44
Yield/Force Off 170(s)	44	74	44
Local Start Time (s)	0	50	0
Local Yield (s)	44	74	44
Local Yield 170(s)	44	74	44

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 9: Langley St & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	115	0	63	0	478	85	56	659	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	125	0	68	0	520	92	61	716	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1166	1450	358	1049	1404	306	716			612		
vC1, stage 1 conf vol	838	838		566	566							
vC2, stage 2 conf vol	328	612		483	838							
vCu, unblocked vol	1166	1450	358	1049	1404	306	716			612		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	66	100	90	100			94		
cM capacity (veh/h)	278	289	638	370	305	687	874			956		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	3	3	193	346	266	61	358	358
Volume Left	3	0	125	0	0	61	0	0
Volume Right	0	3	68	0	92	0	0	0
cSH	278	638	443	1700	1700	956	1700	1700
Volume to Capacity	0.01	0.01	0.44	0.20	0.16	0.06	0.21	0.21
Queue Length 95th (ft)	1	0	54	0	0	5	0	0
Control Delay (s)	18.1	10.7	19.3	0.0	0.0	9.0	0.0	0.0
Lane LOS	C	B	C			A		
Approach Delay (s)	14.4		19.3	0.0		0.7		
Approach LOS	B		C					

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	51	63	89	252	0	74	1	38	0	2	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	55	68	97	274	0	80	1	41	0	2	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	274			124			570	559	90	601	593	274
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274			124			570	559	90	601	593	274
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			80	100	96	100	99	99
cM capacity (veh/h)	1283			1457			402	407	965	373	390	765

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	125	371	123	12
Volume Left	1	97	80	0
Volume Right	68	0	41	10
cSH	1283	1457	500	651
Volume to Capacity	0.00	0.07	0.25	0.02
Queue Length 95th (ft)	0	5	24	1
Control Delay (s)	0.1	2.4	14.5	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	2.4	14.5	10.6
Approach LOS			B	B

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 S

PM 2025 - INTERIM YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	195	484	173	165	5	405	25	145	36	147	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1845	1583
Flt Permitted	0.64	1.00	1.00	0.53	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1189	1845	1568	963	1810	1538	3367	1827	1553		1845	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	212	526	188	179	5	440	27	158	39	160	124
RTOR Reduction (vph)	0	0	0	0	0	3	0	0	0	0	0	105
Lane Group Flow (vph)	23	212	526	188	179	2	440	27	158	0	199	19
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	41.8	39.0	108.4	54.5	48.7	48.7	19.4	19.4	108.4		17.0	17.0
Effective Green, g (s)	41.8	39.0	108.4	54.5	48.7	48.7	19.4	19.4	108.4		17.0	17.0
Actuated g/C Ratio	0.39	0.36	1.00	0.50	0.45	0.45	0.18	0.18	1.00		0.16	0.16
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	473	664	1568	571	813	691	603	327	1553		289	248
v/s Ratio Prot	0.00	0.11		0.04	0.10		c0.13	0.01			c0.11	
v/s Ratio Perm	0.02		c0.34	0.13		0.00			0.10			0.01
v/c Ratio	0.05	0.32	0.34	0.33	0.22	0.00	0.73	0.08	0.10		0.69	0.08
Uniform Delay, d1	20.7	25.1	0.0	15.3	18.2	16.5	42.0	37.1	0.0		43.2	39.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	1.3	0.6	0.3	0.6	0.0	4.4	0.1	0.1		6.7	0.1
Delay (s)	20.8	26.4	0.6	15.6	18.9	16.5	46.4	37.2	0.1		49.9	39.1
Level of Service	C	C	A	B	B	B	D	D	A		D	D
Approach Delay (s)		8.4			17.2			34.3			45.8	
Approach LOS		A			B			C			D	

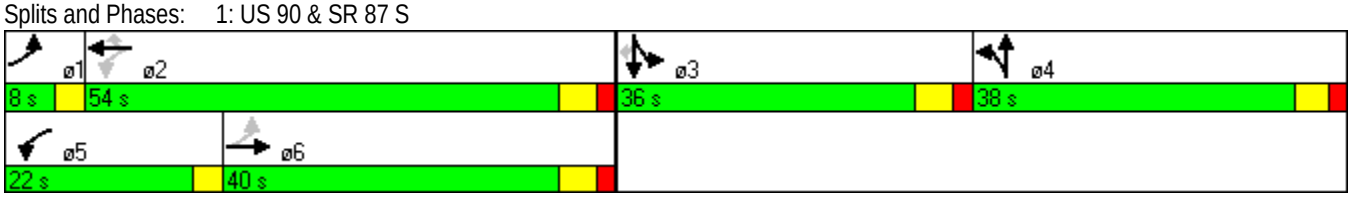
Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	108.4	Sum of lost time (s)	11.5
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	54	36	38	22	40
Maximum Split (%)	5.9%	39.7%	26.5%	27.9%	16.2%	29.4%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	62	98	0	22
End Time (s)	8	62	98	0	22	62
Yield/Force Off (s)	5	56	92	130.5	19	56
Yield/Force Off 170(s)	5	44	92	130.5	19	44
Local Start Time (s)	128	0	54	90	128	14
Local Yield (s)	133	48	84	122.5	11	48
Local Yield 170(s)	133	36	84	122.5	11	36

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 S



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	663	369	74	646	2	259	15	89	0	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			1.00	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1587			1737	
Flt Permitted	0.38	1.00	1.00	0.23	1.00		0.95	0.98			1.00	
Satd. Flow (perm)	701	1827	1553	427	3470		1665	1587			1737	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	721	401	80	702	2	282	16	97	0	4	4
RTOR Reduction (vph)	0	0	158	0	0	0	0	29	0	0	4	0
Lane Group Flow (vph)	5	721	243	80	704	0	203	163	0	0	4	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	75.0	75.0	75.0	85.7	85.7		19.1	19.1			1.0	
Effective Green, g (s)	75.0	75.0	75.0	85.7	85.7		19.1	19.1			1.0	
Actuated g/C Ratio	0.61	0.61	0.61	0.69	0.69		0.15	0.15			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	425	1107	941	345	2402		257	245			14	
v/s Ratio Prot		c0.39		0.01	c0.20		c0.12	0.10			c0.00	
v/s Ratio Perm	0.01		0.16	0.15								
v/c Ratio	0.01	0.65	0.26	0.23	0.29		0.79	0.67			0.29	
Uniform Delay, d1	9.7	15.9	11.4	11.0	7.4		50.4	49.3			61.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	3.0	0.7	0.3	0.3		14.8	6.7			11.1	
Delay (s)	9.7	18.9	12.1	11.3	7.7		65.3	56.0			72.1	
Level of Service	A	B	B	B	A		E	E			E	
Approach Delay (s)		16.4			8.0			60.8			72.1	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	123.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	90	12	33	12	78
Maximum Split (%)	66.7%	8.9%	24.4%	8.9%	57.8%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	90	102	0	12
End Time (s)	90	102	0	12	90
Yield/Force Off (s)	84	96	129	6	84
Yield/Force Off 170(s)	72	96	113	6	72
Local Start Time (s)	0	90	102	0	12
Local Yield (s)	84	96	129	6	84
Local Yield 170(s)	72	96	113	6	72

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 2: US 90 & Dale St

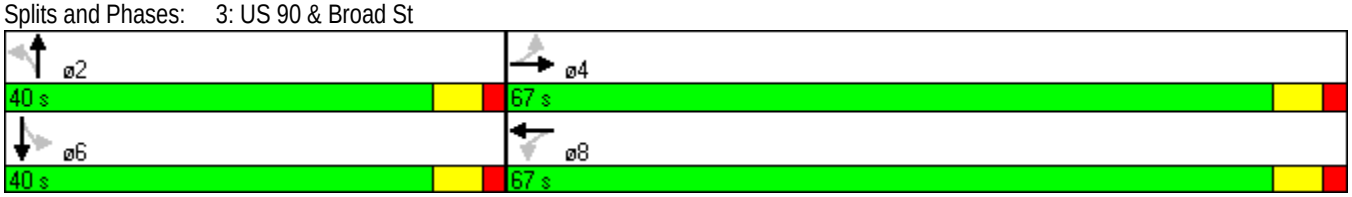
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	649	9	3	597	442	16	29	25	394	17	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.94			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1823			1722			1754			1750	
Flt Permitted	0.20	1.00			1.00			0.90			0.71	
Satd. Flow (perm)	360	1823			1720			1594			1306	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	705	10	3	649	480	17	32	27	428	18	32
RTOR Reduction (vph)	0	0	0	0	25	0	0	18	0	0	3	0
Lane Group Flow (vph)	35	715	0	0	1107	0	0	58	0	0	475	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	61.0	61.0			61.0			34.0			34.0	
Effective Green, g (s)	61.0	61.0			61.0			34.0			34.0	
Actuated g/C Ratio	0.57	0.57			0.57			0.32			0.32	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	205	1039			981			507			415	
v/s Ratio Prot		0.39										
v/s Ratio Perm	0.10				c0.64			0.04			c0.36	
v/c Ratio	0.17	0.69			1.13			0.11			1.15	
Uniform Delay, d1	11.0	16.3			23.0			25.8			36.5	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.4	3.3			71.0			0.2			90.1	
Delay (s)	12.4	19.6			94.0			26.0			126.6	
Level of Service	B	B			F			C			F	
Approach Delay (s)		19.3			94.0			26.0			126.6	
Approach LOS		B			F			C			F	

Intersection Summary			
HCM Average Control Delay	75.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	40	67	40	67
Maximum Split (%)	37.4%	62.6%	37.4%	62.6%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	40	0	40
End Time (s)	40	0	40	0
Yield/Force Off (s)	34	101	34	101
Yield/Force Off 170(s)	22	101	22	101
Local Start Time (s)	0	40	0	40
Local Yield (s)	34	101	34	101
Local Yield 170(s)	22	101	22	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	120

Splits and Phases: 3: US 90 & Broad St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	759	102	70	642	40	130	207	60	30	211	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1736	1794		1736	1811			1778			1814	
Flt Permitted	0.20	1.00		0.07	1.00			0.70			0.91	
Satd. Flow (perm)	370	1794		128	1811			1273			1664	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	825	111	76	698	43	141	225	65	33	229	23
RTOR Reduction (vph)	0	5	0	0	2	0	0	6	0	0	3	0
Lane Group Flow (vph)	20	931	0	76	739	0	0	425	0	0	282	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	57.0	57.0		57.0	57.0			35.1			35.1	
Effective Green, g (s)	57.0	57.0		57.0	57.0			35.1			35.1	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.34			0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	203	982		70	992			429			561	
v/s Ratio Prot		0.52			0.41							
v/s Ratio Perm	0.05			c0.59				c0.33			0.17	
v/c Ratio	0.10	0.95		1.09	0.74			0.99			0.50	
Uniform Delay, d1	11.3	22.2		23.5	18.0			34.3			27.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	17.6		133.0	3.3			41.0			1.5	
Delay (s)	11.6	39.8		156.6	21.3			75.3			29.0	
Level of Service	B	D		F	C			E			C	
Approach Delay (s)		39.2			33.9			75.3			29.0	
Approach LOS		D			C			E			C	

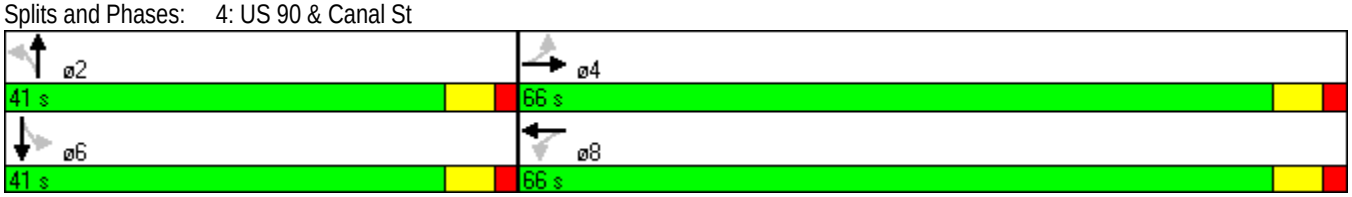
Intersection Summary			
HCM Average Control Delay	42.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	104.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	41	66	41	66
Maximum Split (%)	38.3%	61.7%	38.3%	61.7%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	41	0	41
End Time (s)	41	0	41	0
Yield/Force Off (s)	35	101	35	101
Yield/Force Off 170(s)	35	101	35	101
Local Start Time (s)	0	41	0	41
Local Yield (s)	35	101	35	101
Local Yield 170(s)	35	101	35	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	615	629	622	321	328	516
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	668	684	676	349	357	561
RTOR Reduction (vph)	0	0	0	246	0	431
Lane Group Flow (vph)	668	684	676	103	357	130
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	25.9	58.4	26.5	26.5	19.8	19.8
Effective Green, g (s)	25.9	58.4	26.5	26.5	19.8	19.8
Actuated g/C Ratio	0.29	0.65	0.29	0.29	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	986	2291	1020	456	746	344
v/s Ratio Prot	c0.19	0.19	c0.19		c0.11	
v/s Ratio Perm				0.07		0.08
v/c Ratio	0.68	0.30	0.66	0.22	0.48	0.38
Uniform Delay, d1	28.5	6.9	27.9	24.1	30.7	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	1.6	0.3	0.7	1.0
Delay (s)	30.5	7.0	29.6	24.3	31.4	30.9
Level of Service	C	A	C	C	C	C
Approach Delay (s)		18.6	27.8		31.1	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	91	44	47	47
Maximum Split (%)	65.9%	31.9%	34.1%	34.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	44	91
End Time (s)	91	44	91	0
Yield/Force Off (s)	85	38	85	132
Yield/Force Off 170(s)	85	38	85	132
Local Start Time (s)	94	94	0	47
Local Yield (s)	41	132	41	88
Local Yield 170(s)	41	132	41	88

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	757	1004	55	66	890	183	37	81	91	167	47	776
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1721	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1721	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	823	1091	60	72	967	199	40	88	99	182	51	843
RTOR Reduction (vph)	0	0	15	0	0	131	0	0	88	0	0	0
Lane Group Flow (vph)	823	1091	45	72	967	68	0	128	11	115	118	843
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	36.5	73.7	73.7	8.3	45.5	45.5		14.2	14.2	13.5	13.5	133.7
Effective Green, g (s)	36.5	73.7	73.7	8.3	45.5	45.5		14.2	14.2	13.5	13.5	133.7
Actuated g/C Ratio	0.27	0.55	0.55	0.06	0.34	0.34		0.11	0.11	0.10	0.10	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	937	1951	873	110	1204	539		195	168	170	174	1583
v/s Ratio Prot	c0.24	0.31		0.04	c0.27			0.07		0.07	0.07	
v/s Ratio Perm			0.03			0.04			0.01			c0.53
v/c Ratio	0.88	0.56	0.05	0.65	0.80	0.13		0.66	0.06	0.68	0.68	0.53
Uniform Delay, d1	46.5	19.5	13.9	61.3	40.0	30.4		57.4	53.8	58.0	58.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.4	0.4	0.0	13.1	4.2	0.1		8.5	0.2	10.2	10.0	1.3
Delay (s)	55.9	19.9	13.9	74.4	44.2	30.5		65.9	54.0	68.2	68.0	1.3
Level of Service	E	B	B	E	D	C		E	D	E	E	A
Approach Delay (s)		34.7			43.8			60.7			15.8	
Approach LOS		C			D			E			B	

Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	133.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	18	88	22	48	58	22
Maximum Split (%)	12.0%	58.7%	14.7%	32.0%	38.7%	14.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	18	106	0	48	128
End Time (s)	18	106	128	48	106	0
Yield/Force Off (s)	12	100	122	42	100	144
Yield/Force Off 170(s)	12	100	117	42	100	139
Local Start Time (s)	102	120	58	102	0	80
Local Yield (s)	114	52	74	144	52	96
Local Yield 170(s)	114	52	69	144	52	91

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	105

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	655	5	4	4	9	22	5	574	5	30	350	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.93			0.91		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1739			1695		1752	3501		1770	3502	
Flt Permitted	0.95	1.00			0.99		0.50	1.00		0.31	1.00	
Satd. Flow (perm)	3433	1739			1695		921	3501		571	3502	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	712	5	4	4	10	24	5	624	5	33	380	29
RTOR Reduction (vph)	0	2	0	0	23	0	0	1	0	0	8	0
Lane Group Flow (vph)	712	7	0	0	15	0	5	628	0	33	401	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	26.8	26.8			2.6		18.1	18.1		18.1	18.1	
Effective Green, g (s)	26.8	26.8			2.6		18.1	18.1		18.1	18.1	
Actuated g/C Ratio	0.41	0.41			0.04		0.28	0.28		0.28	0.28	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1405	712			67		255	967		158	968	
v/s Ratio Prot	c0.21	0.00			c0.01			c0.18			0.11	
v/s Ratio Perm							0.01			0.06		
v/c Ratio	0.51	0.01			0.22		0.02	0.65		0.21	0.41	
Uniform Delay, d1	14.4	11.5			30.5		17.2	20.9		18.2	19.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.0			2.3		0.0	1.7		0.9	0.4	
Delay (s)	14.8	11.5			32.8		17.3	22.6		19.1	19.8	
Level of Service	B	B			C		B	C		B	B	
Approach Delay (s)		14.8			32.8			22.6			19.7	
Approach LOS		B			C			C			B	

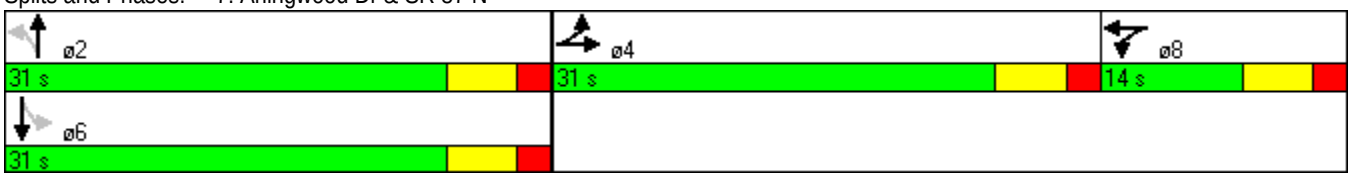
Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	31	31	31	14
Maximum Split (%)	40.8%	40.8%	40.8%	18.4%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	14		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	31	0	62
End Time (s)	31	62	31	0
Yield/Force Off (s)	25	56	25	70
Yield/Force Off 170(s)	25	42	25	70
Local Start Time (s)	0	31	0	62
Local Yield (s)	25	56	25	70
Local Yield 170(s)	25	42	25	70

Intersection Summary	
Cycle Length	76
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	19	277	293	487	0	922	76
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	301	318	529	0	1002	83
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1945	542	1085		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1945	542	1085		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	26	37	50		0		
cM capacity (veh/h)	28	479	639		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	322	318	265	265	668	417	0
Volume Left	21	318	0	0	0	0	0
Volume Right	301	0	0	0	0	83	0
cSH	235	639	1700	1700	1700	1700	1700
Volume to Capacity	1.37	0.50	0.16	0.16	0.39	0.25	0.00
Queue Length 95th (ft)	442	70	0	0	0	0	0
Control Delay (s)	232.0	16.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	C					
Approach Delay (s)	232.0	6.1			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	35.4		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	619	142	29	255	116	33	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.56	1.00	1.00	0.59	1.00
Satd. Flow (perm)	3400	1568	1037	1845	1568	1056	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	673	154	32	277	126	36	312
RTOR Reduction (vph)	0	107	0	0	62	0	0
Lane Group Flow (vph)	673	47	32	277	64	36	312
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	20.1	20.1	33.2	33.2	33.2	33.2	33.2
Effective Green, g (s)	20.1	20.1	33.2	33.2	33.2	33.2	33.2
Actuated g/C Ratio	0.31	0.31	0.51	0.51	0.51	0.51	0.51
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1047	483	527	938	797	537	1732
v/s Ratio Prot				c0.15			0.09
v/s Ratio Perm	c0.20	0.03	0.03		0.04	0.03	
v/c Ratio	0.64	0.10	0.06	0.30	0.08	0.07	0.18
Uniform Delay, d1	19.5	16.1	8.1	9.3	8.2	8.2	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.2	0.8	0.2	0.2	0.2
Delay (s)	21.0	16.3	8.4	10.1	8.4	8.4	8.9
Level of Service	C	B	A	B	A	A	A
Approach Delay (s)	20.1			9.5			8.9
Approach LOS	C			A			A

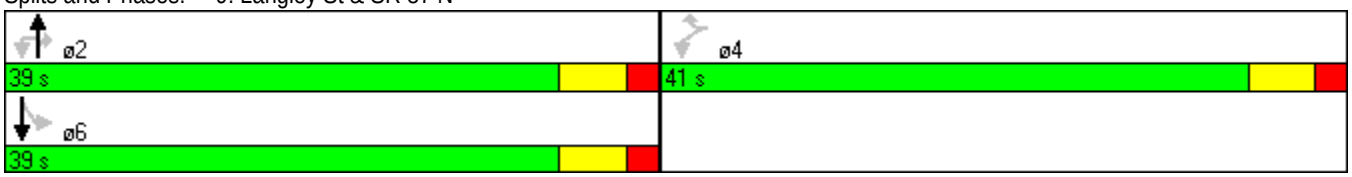
Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	39	41	39
Maximum Split (%)	48.8%	51.3%	48.8%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	39	0
End Time (s)	39	0	39
Yield/Force Off (s)	33	74	33
Yield/Force Off 170(s)	33	74	33
Local Start Time (s)	0	39	0
Local Yield (s)	33	74	33
Local Yield 170(s)	33	74	33

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	0	68	125	0	87	0	707	187	51	599	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	0	74	136	0	95	0	768	203	55	651	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1241	1734	326	1380	1632	486	651			972		
vC1, stage 1 conf vol	762	762		870	870							
vC2, stage 2 conf vol	479	972		510	762							
vCu, unblocked vol	1241	1734	326	1380	1632	486	651			972		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	89	47	100	82	100			92		
cM capacity (veh/h)	265	229	670	256	271	525	924			699		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	20	74	230	512	459	55	326	326
Volume Left	20	0	136	0	0	55	0	0
Volume Right	0	74	95	0	203	0	0	0
cSH	265	670	324	1700	1700	699	1700	1700
Volume to Capacity	0.07	0.11	0.71	0.30	0.27	0.08	0.19	0.19
Queue Length 95th (ft)	6	9	128	0	0	6	0	0
Control Delay (s)	19.7	11.0	39.2	0.0	0.0	10.6	0.0	0.0
Lane LOS	C	B	E			B		
Approach Delay (s)	12.8		39.2	0.0		0.8		
Approach LOS	B		E					

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	204	108	49	149	0	75	9	49	0	1	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	222	117	53	162	0	82	10	53	0	1	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	162			339			565	555	280	614	614	162
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	162			339			565	555	280	614	614	162
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			80	98	93	100	100	99
cM capacity (veh/h)	1411			1214			414	418	756	356	388	883

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	342	215	145	10
Volume Left	3	53	82	0
Volume Right	117	0	53	9
cSH	1411	1214	497	773
Volume to Capacity	0.00	0.04	0.29	0.01
Queue Length 95th (ft)	0	3	30	1
Control Delay (s)	0.1	2.3	15.2	9.7
Lane LOS	A	A	C	A
Approach Delay (s)	0.1	2.3	15.2	9.7
Approach LOS			C	A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

AM 2025 - ALT 1 - INTERIM YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	57	288	250	90	68	294	641	148	45	189	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3364	
Flt Permitted	0.69	1.00	1.00	0.64	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1279	1845	1568	1164	1810	1538	1736	3471	1553	1770	3364	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	62	313	272	98	74	320	697	161	49	205	101
RTOR Reduction (vph)	0	0	0	0	0	51	0	0	0	0	52	0
Lane Group Flow (vph)	172	62	313	272	98	23	320	697	161	49	254	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	36.8	26.3	102.2	44.9	31.4	31.4	27.0	27.0	102.2	12.8	12.8	
Effective Green, g (s)	36.8	26.3	102.2	44.9	31.4	31.4	27.0	27.0	102.2	12.8	12.8	
Actuated g/C Ratio	0.36	0.26	1.00	0.44	0.31	0.31	0.26	0.26	1.00	0.13	0.13	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	509	475	1568	596	556	473	459	917	1553	222	421	
v/s Ratio Prot	0.03	0.03		c0.07	0.05		0.18	c0.20		0.03	c0.08	
v/s Ratio Perm	0.09		0.20	c0.13		0.01			0.10			
v/c Ratio	0.34	0.13	0.20	0.46	0.18	0.05	0.70	0.76	0.10	0.22	0.60	
Uniform Delay, d1	23.2	29.2	0.0	19.1	25.9	24.9	33.9	34.6	0.0	40.2	42.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.6	0.3	0.6	0.7	0.2	4.6	3.8	0.1	0.5	2.4	
Delay (s)	23.6	29.7	0.3	19.7	26.6	25.1	38.5	38.4	0.1	40.7	44.8	
Level of Service	C	C	A	B	C	C	D	D	A	D	D	
Approach Delay (s)		11.0			22.1			33.2			44.2	
Approach LOS		B			C			C			D	

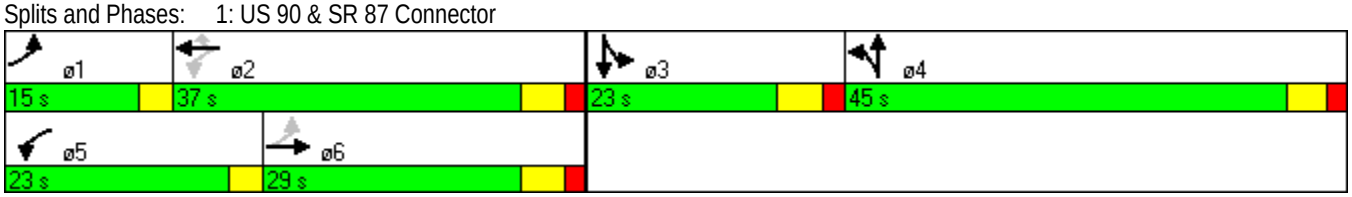
Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	15	37	23	45	23	29
Maximum Split (%)	12.5%	30.8%	19.2%	37.5%	19.2%	24.2%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	52	75	0	23
End Time (s)	15	52	75	0	23	52
Yield/Force Off (s)	12	46	69	114.5	20	46
Yield/Force Off 170(s)	12	34	69	114.5	20	34
Local Start Time (s)	105	0	37	60	105	8
Local Yield (s)	117	31	54	99.5	5	31
Local Yield 170(s)	117	19	54	99.5	5	19

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	310	207	141	315	1	273	13	92	4	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1587			1793	
Flt Permitted	0.55	1.00	1.00	0.45	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	997	1827	1553	820	3470		1665	1587			1793	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	337	225	153	342	1	297	14	100	4	9	3
RTOR Reduction (vph)	0	0	109	0	0	0	0	31	0	0	3	0
Lane Group Flow (vph)	1	337	116	153	343	0	211	169	0	0	13	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	58.0	58.0	58.0	72.8	72.8		18.9	18.9			2.5	
Effective Green, g (s)	58.0	58.0	58.0	72.8	72.8		18.9	18.9			2.5	
Actuated g/C Ratio	0.52	0.52	0.52	0.65	0.65		0.17	0.17			0.02	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	515	944	803	604	2251		280	267			40	
v/s Ratio Prot		c0.18		c0.02	0.10		c0.13	0.11			c0.01	
v/s Ratio Perm	0.00		0.07	0.14								
v/c Ratio	0.00	0.36	0.14	0.25	0.15		0.75	0.63			0.33	
Uniform Delay, d1	13.1	16.1	14.2	8.4	7.7		44.4	43.4			54.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.1	0.4	0.2	0.1		10.9	4.9			4.7	
Delay (s)	13.1	17.1	14.5	8.6	7.8		55.3	48.3			58.8	
Level of Service	B	B	B	A	A		E	D			E	
Approach Delay (s)		16.1			8.1			51.9			58.8	
Approach LOS		B			A			D			E	

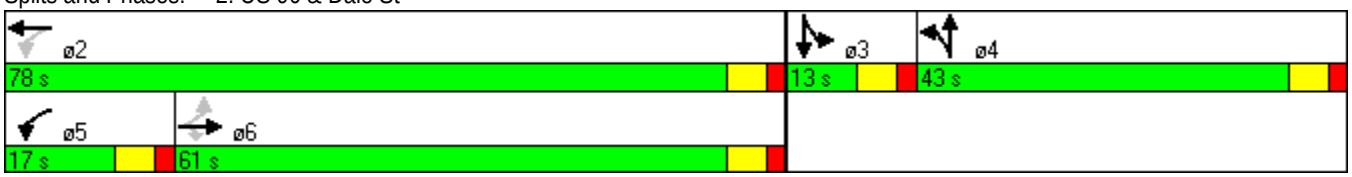
Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	78	13	43	17	61
Maximum Split (%)	58.2%	9.7%	32.1%	12.7%	45.5%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	78	91	0	17
End Time (s)	78	91	0	17	78
Yield/Force Off (s)	72	85	128	11	72
Yield/Force Off 170(s)	60	85	112	11	60
Local Start Time (s)	0	78	91	0	17
Local Yield (s)	72	85	128	11	72
Local Yield 170(s)	60	85	112	11	60

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	356	38	8	536	173	3	4	16	182	22	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.97			0.90			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1801			1766			1674			1758	
Flt Permitted	0.32	1.00			0.99			0.96			0.74	
Satd. Flow (perm)	593	1801			1758			1622			1359	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	387	41	9	583	188	3	4	17	198	24	12
RTOR Reduction (vph)	0	4	0	0	11	0	0	12	0	0	2	0
Lane Group Flow (vph)	9	424	0	0	769	0	0	12	0	0	232	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	45.2	45.2			45.2			21.1			21.1	
Effective Green, g (s)	45.2	45.2			45.2			21.1			21.1	
Actuated g/C Ratio	0.58	0.58			0.58			0.27			0.27	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	342	1040			1015			437			366	
v/s Ratio Prot		0.24										
v/s Ratio Perm	0.02				c0.44			0.01			c0.17	
v/c Ratio	0.03	0.41			0.76			0.03			0.63	
Uniform Delay, d1	7.1	9.2			12.4			21.0			25.2	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.9			4.7			0.1			4.9	
Delay (s)	7.2	10.1			17.1			21.1			30.1	
Level of Service	A	B			B			C			C	
Approach Delay (s)		10.0			17.1			21.1			30.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	37	70	37	70
Maximum Split (%)	34.6%	65.4%	34.6%	65.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	37	0	37
End Time (s)	37	0	37	0
Yield/Force Off (s)	31	101	31	101
Yield/Force Off 170(s)	19	101	19	101
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	101	31	101
Local Yield 170(s)	19	101	19	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	475	105	69	508	16	112	135	67	16	166	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1777		1736	1819			1760			1823	
Flt Permitted	0.28	1.00		0.23	1.00			0.80			0.96	
Satd. Flow (perm)	520	1777		421	1819			1442			1754	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	516	114	75	552	17	122	147	73	17	180	12
RTOR Reduction (vph)	0	8	0	0	1	0	0	9	0	0	2	0
Lane Group Flow (vph)	11	622	0	75	568	0	0	333	0	0	207	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.8	32.8		32.8	32.8			27.1			27.1	
Effective Green, g (s)	32.8	32.8		32.8	32.8			27.1			27.1	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.38			0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	237	811		192	830			544			661	
v/s Ratio Prot		c0.35			0.31							
v/s Ratio Perm	0.02			0.18				c0.23			0.12	
v/c Ratio	0.05	0.77		0.39	0.68			0.61			0.31	
Uniform Delay, d1	10.9	16.4		12.9	15.5			18.1			15.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	4.6		1.8	2.5			2.9			0.6	
Delay (s)	11.0	21.0		14.7	18.0			21.1			16.4	
Level of Service	B	C		B	B			C			B	
Approach Delay (s)		20.8			17.6			21.1			16.4	
Approach LOS		C			B			C			B	

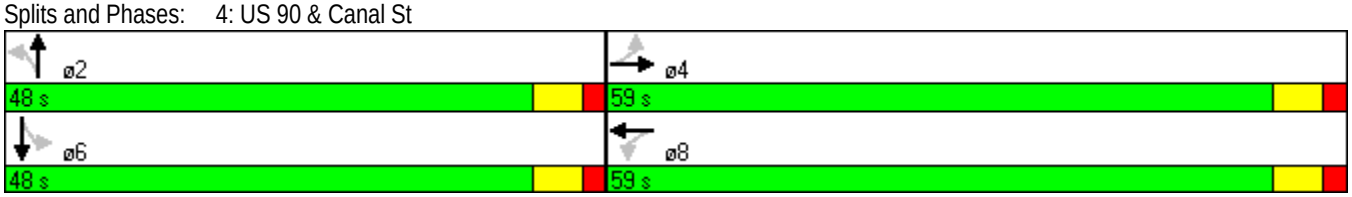
Intersection Summary			
HCM Average Control Delay	19.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	48	59	48	59
Maximum Split (%)	44.9%	55.1%	44.9%	55.1%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	48	0	48
End Time (s)	48	0	48	0
Yield/Force Off (s)	42	101	42	101
Yield/Force Off 170(s)	42	101	42	101
Local Start Time (s)	0	48	0	48
Local Yield (s)	42	101	42	101
Local Yield 170(s)	42	101	42	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	273	463	571	187	250	357
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	297	503	621	203	272	388
RTOR Reduction (vph)	0	0	0	142	0	305
Lane Group Flow (vph)	297	503	621	61	272	83
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	12.6	37.3	18.7	18.7	13.4	13.4
Effective Green, g (s)	12.6	37.3	18.7	18.7	13.4	13.4
Actuated g/C Ratio	0.20	0.59	0.30	0.30	0.21	0.21
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	690	2105	1035	463	727	335
v/s Ratio Prot	c0.09	0.14	c0.18		c0.08	
v/s Ratio Perm				0.04		0.05
v/c Ratio	0.43	0.24	0.60	0.13	0.37	0.25
Uniform Delay, d1	21.9	6.0	18.8	16.1	21.1	20.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.9	0.1	0.4	0.5
Delay (s)	22.5	6.1	19.7	16.2	21.5	21.0
Level of Service	C	A	B	B	C	C
Approach Delay (s)		12.2	18.9		21.2	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	85	31	54	53
Maximum Split (%)	61.6%	22.5%	39.1%	38.4%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	31	85
End Time (s)	85	31	85	0
Yield/Force Off (s)	79	25	79	132
Yield/Force Off 170(s)	79	25	79	132
Local Start Time (s)	107	107	0	54
Local Yield (s)	48	132	48	101
Local Yield 170(s)	48	132	48	101

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	443	645	28	33	729	121	7	11	12	164	70	683
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1826	1583	1681	1734	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1826	1583	1681	1734	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	482	701	30	36	792	132	8	12	13	178	76	742
RTOR Reduction (vph)	0	0	11	0	0	84	0	0	13	0	0	0
Lane Group Flow (vph)	482	701	19	36	792	48	0	20	0	125	129	742
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	20.5	50.7	50.7	4.7	34.9	34.9		2.8	2.8	13.8	13.8	96.0
Effective Green, g (s)	20.5	50.7	50.7	4.7	34.9	34.9		2.8	2.8	13.8	13.8	96.0
Actuated g/C Ratio	0.21	0.53	0.53	0.05	0.36	0.36		0.03	0.03	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	733	1869	836	87	1287	575		53	46	242	249	1583
v/s Ratio Prot	c0.14	0.20		0.02	c0.22			0.01		0.07	0.07	
v/s Ratio Perm			0.01			0.03			0.00			c0.47
v/c Ratio	0.66	0.38	0.02	0.41	0.62	0.08		0.38	0.01	0.52	0.52	0.47
Uniform Delay, d1	34.5	13.3	10.8	44.3	25.0	20.1		45.7	45.3	38.0	38.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2	0.0	3.2	1.0	0.1		6.0	0.1	1.9	1.8	1.0
Delay (s)	36.7	13.5	10.8	47.5	26.1	20.1		51.8	45.3	39.9	39.8	1.0
Level of Service	D	B	B	D	C	C		D	D	D	D	A
Approach Delay (s)		22.6			26.0			49.3			10.9	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	17	100	34	47	70	22
Maximum Split (%)	9.8%	57.8%	19.7%	27.2%	40.5%	12.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	17	117	0	47	151
End Time (s)	17	117	151	47	117	0
Yield/Force Off (s)	11	111	145	41	111	167
Yield/Force Off 170(s)	11	111	140	41	111	162
Local Start Time (s)	126	143	70	126	0	104
Local Yield (s)	137	64	98	167	64	120
Local Yield 170(s)	137	64	93	167	64	115

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	651	1	13	5	9	7	18	189	1	3	225	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.86			0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1602			1756		1752	3502		1770	3481	
Flt Permitted	0.95	1.00			0.99		0.58	1.00		0.62	1.00	
Satd. Flow (perm)	3433	1602			1756		1075	3502		1160	3481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	708	1	14	5	10	8	20	205	1	3	245	30
RTOR Reduction (vph)	0	10	0	0	8	0	0	0	0	0	5	0
Lane Group Flow (vph)	708	5	0	0	15	0	20	206	0	3	270	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	34.5	34.5			5.2		62.3	62.3		62.3	62.3	
Effective Green, g (s)	34.5	34.5			5.2		62.3	62.3		62.3	62.3	
Actuated g/C Ratio	0.29	0.29			0.04		0.52	0.52		0.52	0.52	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	987	461			76		558	1818		602	1807	
v/s Ratio Prot	c0.21	0.00			c0.01			0.06			c0.08	
v/s Ratio Perm							0.02			0.00		
v/c Ratio	0.72	0.01			0.20		0.04	0.11		0.00	0.15	
Uniform Delay, d1	38.4	30.6			55.4		14.1	14.7		13.9	15.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.60	1.37	
Incremental Delay, d2	2.7	0.0			1.8		0.1	0.1		0.0	0.1	
Delay (s)	41.1	30.6			57.2		14.3	14.9		22.2	20.7	
Level of Service	D	C			E		B	B		C	C	
Approach Delay (s)		40.8			57.2			14.8			20.7	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	37	64	37	19
Maximum Split (%)	30.8%	53.3%	30.8%	15.8%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	37	0	101
End Time (s)	37	101	37	0
Yield/Force Off (s)	31	95	31	114
Yield/Force Off 170(s)	22	75	31	114
Local Start Time (s)	0	37	0	101
Local Yield (s)	31	95	31	114
Local Yield 170(s)	22	75	31	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	56	397	215	925	0	459	23
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	432	234	1005	0	499	25
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1482	262	524		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1482	262	524		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	31	41	78		0		
cM capacity (veh/h)	88	731	1039		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	492	234	503	503	333	191	0
Volume Left	61	234	0	0	0	0	0
Volume Right	432	0	0	0	0	25	0
cSH	385	1039	1700	1700	1700	1700	1700
Volume to Capacity	1.28	0.22	0.30	0.30	0.20	0.11	0.00
Queue Length 95th (ft)	548	22	0	0	0	0	0
Control Delay (s)	174.3	9.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	A					
Approach Delay (s)	174.3	1.8			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	39.0		
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	99	44	8	214	857	94	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.55	1.00	1.00	0.61	1.00
Satd. Flow (perm)	3400	1568	1011	1845	1568	1100	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	48	9	233	932	102	338
RTOR Reduction (vph)	0	38	0	0	466	0	0
Lane Group Flow (vph)	108	10	9	233	466	102	338
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.20	0.20	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	680	314	506	923	784	550	1703
v/s Ratio Prot				0.13			0.10
v/s Ratio Perm	c0.03	0.01	0.01		c0.30	0.09	
v/c Ratio	0.16	0.03	0.02	0.25	0.59	0.19	0.20
Uniform Delay, d1	13.2	12.9	5.0	5.7	7.1	5.5	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.1	0.7	3.3	0.7	0.3
Delay (s)	13.4	12.9	5.1	6.4	10.4	6.3	5.8
Level of Service	B	B	A	A	B	A	A
Approach Delay (s)	13.2			9.6			5.9
Approach LOS	B			A			A

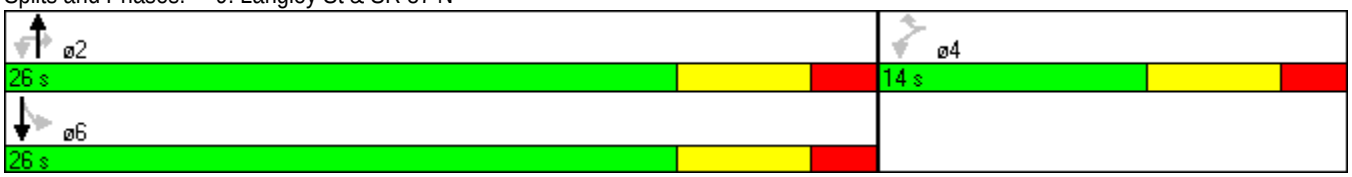
Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	26	14	26
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	26	0
End Time (s)	26	0	26
Yield/Force Off (s)	20	34	20
Yield/Force Off 170(s)	20	34	20
Local Start Time (s)	0	26	0
Local Yield (s)	20	34	20
Local Yield 170(s)	20	34	20

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	5	64	1	13	2	335	35	24	487	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	5	70	1	14	2	364	38	26	529	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	783	989	265	710	970	201	530			402		
vC1, stage 1 conf vol	582	582		388	388							
vC2, stage 2 conf vol	201	407		322	583							
vCu, unblocked vol	783	989	265	710	970	201	530			402		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	86	100	98	100			98		
cM capacity (veh/h)	427	416	733	505	422	803	1026			1146		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	1	5	85	184	220	26	353	178
Volume Left	1	0	70	2	0	26	0	0
Volume Right	0	5	14	0	38	0	0	1
cSH	427	733	536	1026	1700	1146	1700	1700
Volume to Capacity	0.00	0.01	0.16	0.00	0.13	0.02	0.21	0.10
Queue Length 95th (ft)	0	1	14	0	0	2	0	0
Control Delay (s)	13.5	9.9	13.0	0.1	0.0	8.2	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	10.5		13.0	0.1		0.4		
Approach LOS	B		B					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	29	3	17	121	0	5	1	10	0	4	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	32	3	18	132	0	5	1	11	0	4	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	132			35			211	204	33	215	205	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	132			35			211	204	33	215	205	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	100	99	99
cM capacity (veh/h)	1447			1570			728	682	1037	726	682	918

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	150	17	10
Volume Left	1	18	5	0
Volume Right	3	0	11	5
cSH	1447	1570	890	796
Volume to Capacity	0.00	0.01	0.02	0.01
Queue Length 95th (ft)	0	1	1	1
Control Delay (s)	0.2	1.0	9.1	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	0.2	1.0	9.1	9.6
Approach LOS			A	A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	130	2	25	39	334	7	646	194	206	708	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1859		1770	1863	1583	1770	3417		1770	3512	
Flt Permitted	0.73	1.00		0.52	1.00	1.00	0.35	1.00		0.23	1.00	
Satd. Flow (perm)	1359	1859		975	1863	1583	644	3417		432	3512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	141	2	27	42	363	8	702	211	224	770	41
RTOR Reduction (vph)	0	1	0	0	0	312	0	17	0	0	2	0
Lane Group Flow (vph)	25	142	0	27	42	51	8	896	0	224	809	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	16.9	14.5		16.9	14.5	14.5	68.9	67.7		85.1	77.9	
Effective Green, g (s)	16.9	14.5		16.9	14.5	14.5	68.9	67.7		85.1	77.9	
Actuated g/C Ratio	0.14	0.12		0.14	0.12	0.12	0.57	0.56		0.71	0.65	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	225		153	225	191	381	1928		433	2280	
v/s Ratio Prot	0.00	c0.08		c0.00	0.02		0.00	0.26		c0.05	0.23	
v/s Ratio Perm	0.02			0.02		0.03	0.01			c0.32		
v/c Ratio	0.12	0.63		0.18	0.19	0.27	0.02	0.46		0.52	0.35	
Uniform Delay, d1	44.9	50.2		45.0	47.4	47.9	10.9	15.4		8.3	9.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	2.32	2.57		1.00	1.00	
Incremental Delay, d2	0.3	5.7		0.6	0.4	0.8	0.0	0.8		1.0	0.4	
Delay (s)	45.2	55.9		45.6	47.8	48.7	25.4	40.5		9.3	10.0	
Level of Service	D	E		D	D	D	C	D		A	B	
Approach Delay (s)		54.3			48.4			40.4			9.9	
Approach LOS		D			D			D			A	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	25	52	10	33	10	67	10	33
Maximum Split (%)	20.8%	43.3%	8.3%	27.5%	8.3%	55.8%	8.3%	27.5%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	95	0	52	62	95	105	52	62
End Time (s)	0	52	62	95	105	52	62	95
Yield/Force Off (s)	114	46	56	89	99	46	56	89
Yield/Force Off 170(s)	114	35	56	78	99	35	56	78
Local Start Time (s)	95	0	52	62	95	105	52	62
Local Yield (s)	114	46	56	89	99	46	56	89
Local Yield 170(s)	114	35	56	78	99	35	56	78

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	70
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	561	1	5	606	92	9	137	16	62	141	42
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	610	1	5	659	100	10	149	17	67	153	46
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	759			611			1182	1489	305	1225	1439	379
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	759			611			1182	1489	305	1225	1439	379
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			99			0	0	97	0	0	93
cM capacity (veh/h)	849			964			0	114	691	0	123	618

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	359	306	335	429	176	266
Volume Left	54	0	5	0	10	67
Volume Right	0	1	0	100	17	46
cSH	849	1700	964	1700	0	0
Volume to Capacity	0.06	0.18	0.01	0.25	Err	Err
Queue Length 95th (ft)	5	0	0	0	Err	Err
Control Delay (s)	2.1	0.0	0.2	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	1.1		0.1		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

PM 2025 - ALT 1 - INTERIM YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	71	452	264	61	19	405	231	230	77	420	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3414	
Flt Permitted	0.71	1.00	1.00	0.62	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1317	1845	1568	1123	1810	1538	1736	3471	1553	1770	3414	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	77	491	287	66	21	440	251	250	84	457	141
RTOR Reduction (vph)	0	0	0	0	0	15	0	0	0	0	25	0
Lane Group Flow (vph)	43	77	491	287	66	6	440	251	250	84	573	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	24.4	21.6	111.0	39.1	33.3	33.3	32.1	32.1	111.0	22.3	22.3	
Effective Green, g (s)	24.4	21.6	111.0	39.1	33.3	33.3	32.1	32.1	111.0	22.3	22.3	
Actuated g/C Ratio	0.22	0.19	1.00	0.35	0.30	0.30	0.29	0.29	1.00	0.20	0.20	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	300	359	1568	473	543	461	502	1004	1553	356	686	
v/s Ratio Prot	0.00	0.04		c0.08	0.04		c0.25	0.07		0.05	c0.17	
v/s Ratio Perm	0.03		0.31	c0.13		0.00			0.16			
v/c Ratio	0.14	0.21	0.31	0.61	0.12	0.01	0.88	0.25	0.16	0.24	0.84	
Uniform Delay, d1	34.6	37.6	0.0	28.0	28.2	27.3	37.6	30.2	0.0	37.2	42.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.4	0.5	2.2	0.5	0.1	15.7	0.1	0.2	0.3	8.7	
Delay (s)	34.9	38.9	0.5	30.2	28.7	27.4	53.3	30.4	0.2	37.5	51.3	
Level of Service	C	D	A	C	C	C	D	C	A	D	D	
Approach Delay (s)		7.8			29.8			33.1			49.6	
Approach LOS		A			C			C			D	

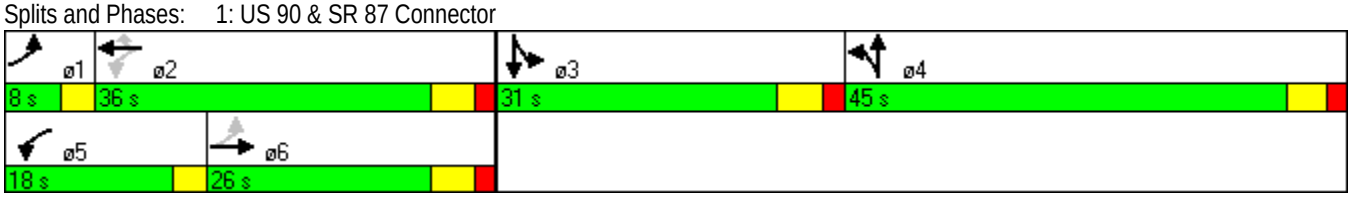
Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	36	31	45	18	26
Maximum Split (%)	6.7%	30.0%	25.8%	37.5%	15.0%	21.7%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	44	75	0	18
End Time (s)	8	44	75	0	18	44
Yield/Force Off (s)	5	38	69	114.5	15	38
Yield/Force Off 170(s)	5	26	69	114.5	15	26
Local Start Time (s)	112	0	36	67	112	10
Local Yield (s)	117	30	61	106.5	7	30
Local Yield 170(s)	117	18	61	106.5	7	18

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	464	288	59	454	1	203	9	70	0	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			1.00	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1585			1719	
Flt Permitted	0.47	1.00	1.00	0.37	1.00		0.95	0.98			1.00	
Satd. Flow (perm)	861	1827	1553	673	3470		1665	1585			1719	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	504	313	64	493	1	221	10	76	0	3	4
RTOR Reduction (vph)	0	0	122	0	0	0	0	30	0	0	4	0
Lane Group Flow (vph)	3	504	191	64	494	0	157	120	0	0	3	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	72.0	72.0	72.0	83.3	83.3		15.8	15.8			1.0	
Effective Green, g (s)	72.0	72.0	72.0	83.3	83.3		15.8	15.8			1.0	
Actuated g/C Ratio	0.61	0.61	0.61	0.71	0.71		0.13	0.13			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	525	1114	947	522	2448		223	212			15	
v/s Ratio Prot		c0.28		0.01	c0.14		c0.09	0.08			c0.00	
v/s Ratio Perm	0.00		0.12	0.08								
v/c Ratio	0.01	0.45	0.20	0.12	0.20		0.70	0.56			0.20	
Uniform Delay, d1	9.0	12.4	10.3	6.8	6.0		48.9	47.9			58.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.3	0.5	0.1	0.2		9.7	3.4			6.6	
Delay (s)	9.0	13.8	10.7	6.9	6.2		58.6	51.3			64.7	
Level of Service	A	B	B	A	A		E	D			E	
Approach Delay (s)		12.6			6.2			55.0			64.7	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	87	12	35	13	74
Maximum Split (%)	64.9%	9.0%	26.1%	9.7%	55.2%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	87	99	0	13
End Time (s)	87	99	0	13	87
Yield/Force Off (s)	81	93	128	7	81
Yield/Force Off 170(s)	69	93	112	7	69
Local Start Time (s)	0	87	99	0	13
Local Yield (s)	81	93	128	7	81
Local Yield 170(s)	69	93	112	7	69

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	553	15	6	518	235	20	23	26	210	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.96			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1820			1750			1743			1748	
Flt Permitted	0.30	1.00			1.00			0.88			0.70	
Satd. Flow (perm)	555	1820			1742			1551			1275	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	601	16	7	563	255	22	25	28	228	10	21
RTOR Reduction (vph)	0	1	0	0	16	0	0	20	0	0	3	0
Lane Group Flow (vph)	20	616	0	0	809	0	0	55	0	0	256	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	49.2	49.2			49.2			23.6			23.6	
Effective Green, g (s)	49.2	49.2			49.2			23.6			23.6	
Actuated g/C Ratio	0.58	0.58			0.58			0.28			0.28	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	322	1056			1011			432			355	
v/s Ratio Prot		0.34										
v/s Ratio Perm	0.04				c0.46			0.04			c0.20	
v/c Ratio	0.06	0.58			0.80			0.13			0.72	
Uniform Delay, d1	7.8	11.3			14.0			22.9			27.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.3	1.9			5.8			0.3			8.6	
Delay (s)	8.0	13.2			19.7			23.2			36.2	
Level of Service	A	B			B			C			D	
Approach Delay (s)		13.0			19.7			23.2			36.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	38	69	38	69
Maximum Split (%)	35.5%	64.5%	35.5%	64.5%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	38
End Time (s)	38	0	38	0
Yield/Force Off (s)	32	101	32	101
Yield/Force Off 170(s)	20	101	20	101
Local Start Time (s)	0	38	0	38
Local Yield (s)	32	101	32	101
Local Yield 170(s)	20	101	20	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	65

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	643	137	77	552	20	160	169	57	23	166	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1736	1779		1736	1817			1771			1812	
Flt Permitted	0.27	1.00		0.10	1.00			0.73			0.93	
Satd. Flow (perm)	490	1779		182	1817			1323			1700	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	699	149	84	600	22	174	184	62	25	180	20
RTOR Reduction (vph)	0	7	0	0	1	0	0	6	0	0	3	0
Lane Group Flow (vph)	13	841	0	84	621	0	0	414	0	0	222	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.4	50.4		50.4	50.4			35.1			35.1	
Effective Green, g (s)	50.4	50.4		50.4	50.4			35.1			35.1	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	253	920		94	939			476			612	
v/s Ratio Prot		c0.47			0.34							
v/s Ratio Perm	0.03			0.46				c0.31			0.13	
v/c Ratio	0.05	0.91		0.89	0.66			0.87			0.36	
Uniform Delay, d1	11.7	21.6		21.1	17.3			29.1			23.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	13.5		60.3	1.9			17.0			0.8	
Delay (s)	11.8	35.0		81.4	19.2			46.1			23.7	
Level of Service	B	D		F	B			D			C	
Approach Delay (s)		34.7			26.6			46.1			23.7	
Approach LOS		C			C			D			C	

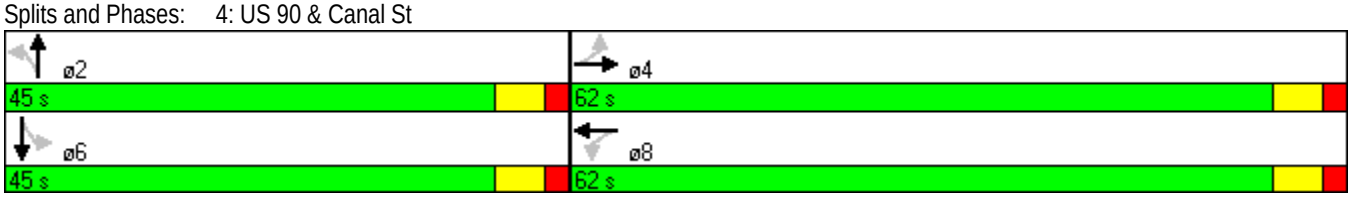
Intersection Summary			
HCM Average Control Delay	33.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	116.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	45	62	45	62
Maximum Split (%)	42.1%	57.9%	42.1%	57.9%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	45	0	45
End Time (s)	45	0	45	0
Yield/Force Off (s)	39	101	39	101
Yield/Force Off 170(s)	39	101	39	101
Local Start Time (s)	0	45	0	45
Local Yield (s)	39	101	39	101
Local Yield 170(s)	39	101	39	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	545	678	686	190	202	465
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	592	737	746	207	220	505
RTOR Reduction (vph)	0	0	0	141	0	408
Lane Group Flow (vph)	592	737	746	66	220	97
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	22.5	54.5	26.0	26.0	14.7	14.7
Effective Green, g (s)	22.5	54.5	26.0	26.0	14.7	14.7
Actuated g/C Ratio	0.28	0.67	0.32	0.32	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	951	2375	1111	497	616	284
v/s Ratio Prot	c0.17	0.21	c0.21		c0.06	
v/s Ratio Perm				0.04		0.06
v/c Ratio	0.62	0.31	0.67	0.13	0.36	0.34
Uniform Delay, d1	25.6	5.5	23.9	19.6	29.1	29.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.1	1.6	0.1	0.5	1.0
Delay (s)	27.1	5.6	25.5	19.7	29.6	30.0
Level of Service	C	A	C	B	C	C
Approach Delay (s)		15.2	24.3		29.9	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	81.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	91	40	51	47
Maximum Split (%)	65.9%	29.0%	37.0%	34.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	40	91
End Time (s)	91	40	91	0
Yield/Force Off (s)	85	34	85	132
Yield/Force Off 170(s)	85	34	85	132
Local Start Time (s)	98	98	0	51
Local Yield (s)	45	132	45	92
Local Yield 170(s)	45	132	45	92

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	736	998	55	68	881	184	36	80	93	165	47	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1722	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1722	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	800	1085	60	74	958	200	39	87	101	179	51	821
RTOR Reduction (vph)	0	0	14	0	0	133	0	0	90	0	0	0
Lane Group Flow (vph)	800	1085	46	74	958	67	0	126	11	115	115	821
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	39.5	75.3	75.3	11.4	47.2	47.2		15.6	15.6	15.1	15.1	141.4
Effective Green, g (s)	39.5	75.3	75.3	11.4	47.2	47.2		15.6	15.6	15.1	15.1	141.4
Actuated g/C Ratio	0.28	0.53	0.53	0.08	0.33	0.33		0.11	0.11	0.11	0.11	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	959	1885	843	143	1181	528		202	175	180	184	1583
v/s Ratio Prot	c0.23	0.31		0.04	c0.27			0.07		0.07	0.07	
v/s Ratio Perm			0.03			0.04			0.01			c0.52
v/c Ratio	0.83	0.58	0.05	0.52	0.81	0.13		0.62	0.06	0.64	0.62	0.52
Uniform Delay, d1	47.9	22.3	15.9	62.4	43.0	32.8		60.1	56.4	60.5	60.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	0.5	0.0	3.1	4.6	0.1		6.7	0.2	7.2	6.5	1.2
Delay (s)	54.2	22.8	15.9	65.5	47.6	32.9		66.7	56.6	67.8	66.9	1.2
Level of Service	D	C	B	E	D	C		E	E	E	E	A
Approach Delay (s)		35.5			46.3			62.2			15.7	
Approach LOS		D			D			E			B	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	141.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	20	102	26	56	66	25
Maximum Split (%)	11.6%	59.0%	15.0%	32.4%	38.2%	14.5%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	20	122	0	56	148
End Time (s)	20	122	148	56	122	0
Yield/Force Off (s)	14	116	142	50	116	167
Yield/Force Off 170(s)	14	116	137	50	116	162
Local Start Time (s)	117	137	66	117	0	92
Local Yield (s)	131	60	86	167	60	111
Local Yield 170(s)	131	60	81	167	60	106

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	105

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	565	5	14	3	10	4	15	229	2	13	207	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89			0.97		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1653			1792		1752	3501		1770	3471	
Flt Permitted	0.95	1.00			0.99		0.59	1.00		0.60	1.00	
Satd. Flow (perm)	3433	1653			1792		1092	3501		1111	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	614	5	15	3	11	4	16	249	2	14	225	33
RTOR Reduction (vph)	0	11	0	0	4	0	0	0	0	0	6	0
Lane Group Flow (vph)	614	9	0	0	14	0	16	251	0	14	252	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	32.7	32.7			3.5		65.8	65.8		65.8	65.8	
Effective Green, g (s)	32.7	32.7			3.5		65.8	65.8		65.8	65.8	
Actuated g/C Ratio	0.27	0.27			0.03		0.55	0.55		0.55	0.55	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	935	450			52		599	1920		609	1903	
v/s Ratio Prot	c0.18	0.01			c0.01			0.07			c0.07	
v/s Ratio Perm							0.01			0.01		
v/c Ratio	0.66	0.02			0.27		0.03	0.13		0.02	0.13	
Uniform Delay, d1	38.7	31.9			57.0		12.4	13.2		12.4	13.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.0			3.8		0.1	0.1		0.0	0.0	
Delay (s)	40.5	32.0			60.8		12.5	13.3		12.4	13.2	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		40.3			60.8			13.3			13.2	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	38	62	38	20
Maximum Split (%)	31.7%	51.7%	31.7%	16.7%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	100
End Time (s)	38	100	38	0
Yield/Force Off (s)	32	94	32	114
Yield/Force Off 170(s)	23	74	32	114
Local Start Time (s)	0	38	0	100
Local Yield (s)	32	94	32	114
Local Yield 170(s)	23	74	32	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	18	396	400	509	0	998	87
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	430	435	553	0	1085	95
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	2278	590	1179		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2278	590	1179		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	0	4	26		0		
cM capacity (veh/h)	9	446	588		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	450	435	277	277	723	456	0
Volume Left	20	435	0	0	0	0	0
Volume Right	430	0	0	0	0	95	0
cSH	138	588	1700	1700	1700	1700	1700
Volume to Capacity	3.26	0.74	0.16	0.16	0.43	0.27	0.00
Queue Length 95th (ft)	Err	160	0	0	0	0	0
Control Delay (s)	Err	26.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	D					
Approach Delay (s)	Err	11.7			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	1723.5		
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	643	136	29	274	114	33	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.56	1.00	1.00	0.58	1.00
Satd. Flow (perm)	3400	1568	1026	1845	1568	1036	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	699	148	32	298	124	36	323
RTOR Reduction (vph)	0	96	0	0	82	0	0
Lane Group Flow (vph)	699	52	32	298	42	36	323
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	13.5	13.5	13.0	13.0	13.0	13.0	13.0
Effective Green, g (s)	13.5	13.5	13.0	13.0	13.0	13.0	13.0
Actuated g/C Ratio	0.35	0.35	0.34	0.34	0.34	0.34	0.34
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1192	550	346	623	529	350	1150
v/s Ratio Prot				c0.16			0.09
v/s Ratio Perm	c0.21	0.03	0.03		0.03	0.03	
v/c Ratio	0.59	0.09	0.09	0.48	0.08	0.10	0.28
Uniform Delay, d1	10.2	8.4	8.7	10.1	8.7	8.7	9.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.5	2.6	0.3	0.6	0.6
Delay (s)	11.1	8.5	9.2	12.7	9.0	9.3	9.9
Level of Service	B	A	A	B	A	A	A
Approach Delay (s)	10.6			11.4			9.9
Approach LOS	B			B			A

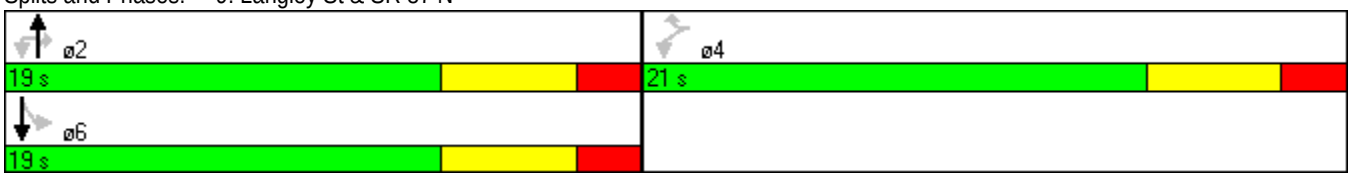
Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	38.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	19	21	19
Maximum Split (%)	47.5%	52.5%	47.5%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	19	0
End Time (s)	19	0	19
Yield/Force Off (s)	13	34	13
Yield/Force Off 170(s)	13	34	13
Local Start Time (s)	0	19	0
Local Yield (s)	13	34	13
Local Yield 170(s)	13	34	13

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	0	84	67	1	19	2	495	73	23	417	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	91	73	1	21	2	538	79	25	453	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	798	1126	227	950	1086	309	454			617		
vC1, stage 1 conf vol	504	504		582	582							
vC2, stage 2 conf vol	295	622		368	504							
vCu, unblocked vol	798	1126	227	950	1086	309	454			617		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	88	81	100	97	100			97		
cM capacity (veh/h)	445	378	776	380	397	684	1096			952		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	10	91	95	271	348	25	302	152
Volume Left	10	0	73	2	0	25	0	0
Volume Right	0	91	21	0	79	0	0	1
cSH	445	776	421	1096	1700	952	1700	1700
Volume to Capacity	0.02	0.12	0.22	0.00	0.20	0.03	0.18	0.09
Queue Length 95th (ft)	2	10	21	0	0	2	0	0
Control Delay (s)	13.3	10.3	16.0	0.1	0.0	8.9	0.0	0.0
Lane LOS	B	B	C	A		A		
Approach Delay (s)	10.6		16.0	0.0		0.5		
Approach LOS	B		C					

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	109	11	20	77	1	6	7	11	0	2	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	118	12	22	84	1	7	8	12	0	2	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	85			130			272	264	124	279	269	84
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	85			130			272	264	124	279	269	84
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			99	99	99	100	100	99
cM capacity (veh/h)	1505			1449			662	628	924	649	625	975

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	136	107	26	10
Volume Left	5	22	7	0
Volume Right	12	1	12	8
cSH	1505	1449	747	867
Volume to Capacity	0.00	0.02	0.03	0.01
Queue Length 95th (ft)	0	1	3	1
Control Delay (s)	0.3	1.6	10.0	9.2
Lane LOS	A	A	A	A
Approach Delay (s)	0.3	1.6	10.0	9.2
Approach LOS			A	A

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	25.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	112	2	27	94	380	4	869	182	184	694	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1858		1770	1863	1583	1770	3447		1770	3524	
Flt Permitted	0.59	1.00		0.50	1.00	1.00	0.36	1.00		0.16	1.00	
Satd. Flow (perm)	1105	1858		923	1863	1583	666	3447		306	3524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	122	2	29	102	413	4	945	198	200	754	23
RTOR Reduction (vph)	0	0	0	0	0	85	0	9	0	0	1	0
Lane Group Flow (vph)	23	124	0	29	102	328	4	1134	0	200	776	0
Turn Type	pm+pt			pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	17.3	14.9		17.3	14.9	36.4	88.0	87.2		114.7	107.9	
Effective Green, g (s)	17.3	14.9		17.3	14.9	36.4	88.0	87.2		114.7	107.9	
Actuated g/C Ratio	0.12	0.10		0.12	0.10	0.24	0.59	0.58		0.76	0.72	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	138	185		120	185	447	397	2004		444	2535	
v/s Ratio Prot	0.00	0.07		c0.00	0.05	c0.11	0.00	c0.33		0.06	0.22	
v/s Ratio Perm	0.02			0.02		0.10	0.01			0.28		
v/c Ratio	0.17	0.67		0.24	0.55	0.73	0.01	0.57		0.45	0.31	
Uniform Delay, d1	59.5	65.2		59.7	64.4	52.3	12.8	19.6		10.5	7.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	9.2		1.0	3.5	6.2	0.0	1.2		0.7	0.3	
Delay (s)	60.1	74.3		60.8	67.9	58.5	12.9	20.8		11.2	7.9	
Level of Service	E	E		E	E	E	B	C		B	A	
Approach Delay (s)		72.1			60.4			20.7			8.6	
Approach LOS		E			E			C			A	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	40	75	10	25	10	105	10	25
Maximum Split (%)	26.7%	50.0%	6.7%	16.7%	6.7%	70.0%	6.7%	16.7%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	110	0	75	85	110	120	75	85
End Time (s)	0	75	85	110	120	75	85	110
Yield/Force Off (s)	144	69	79	104	114	69	79	104
Yield/Force Off 170(s)	144	58	79	93	114	58	79	93
Local Start Time (s)	110	0	75	85	110	120	75	85
Local Yield (s)	144	69	79	104	114	69	79	104
Local Yield 170(s)	144	58	79	93	114	58	79	93

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	546	1	4	649	96	10	139	17	59	149	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	593	1	4	705	104	11	151	18	64	162	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	810			595			1189	1521	297	1266	1470	405
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	810			595			1189	1521	297	1266	1470	405
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			0	0	97	0	0	93
cM capacity (veh/h)	812			978			0	109	699	0	117	595

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	351	298	357	457	180	270
Volume Left	54	0	4	0	11	64
Volume Right	0	1	0	104	18	43
cSH	812	1700	978	1700	0	0
Volume to Capacity	0.07	0.18	0.00	0.27	Err	Err
Queue Length 95th (ft)	5	0	0	0	Err	Err
Control Delay (s)	2.2	0.0	0.2	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	1.2		0.1		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

AM 2025 - ALT 2 - INTERIM YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	71	368	237	84	42	339	497	169	49	233	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3374	
Flt Permitted	0.70	1.00	1.00	0.63	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1288	1845	1568	1139	1810	1538	1736	3471	1553	1770	3374	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	77	400	258	91	46	368	540	184	53	253	114
RTOR Reduction (vph)	0	0	0	0	0	32	0	0	0	0	44	0
Lane Group Flow (vph)	146	77	400	258	91	14	368	540	184	53	323	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	33.0	24.4	102.0	42.1	30.5	30.5	27.7	27.7	102.0	14.7	14.7	
Effective Green, g (s)	33.0	24.4	102.0	42.1	30.5	30.5	27.7	27.7	102.0	14.7	14.7	
Actuated g/C Ratio	0.32	0.24	1.00	0.41	0.30	0.30	0.27	0.27	1.00	0.14	0.14	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	456	441	1568	554	541	460	471	943	1553	255	486	
v/s Ratio Prot	0.03	0.04		c0.07	0.05		c0.21	0.16		0.03	c0.10	
v/s Ratio Perm	0.08		0.26	c0.13		0.01			0.12			
v/c Ratio	0.32	0.17	0.26	0.47	0.17	0.03	0.78	0.57	0.12	0.21	0.67	
Uniform Delay, d1	25.5	30.8	0.0	20.7	26.4	25.3	34.3	32.0	0.0	38.5	41.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.9	0.4	0.6	0.7	0.1	8.2	0.8	0.2	0.4	3.4	
Delay (s)	25.9	31.7	0.4	21.4	27.1	25.4	42.6	32.9	0.2	38.9	44.7	
Level of Service	C	C	A	C	C	C	D	C	A	D	D	
Approach Delay (s)		10.2			23.2			30.6			44.0	
Approach LOS		B			C			C			D	

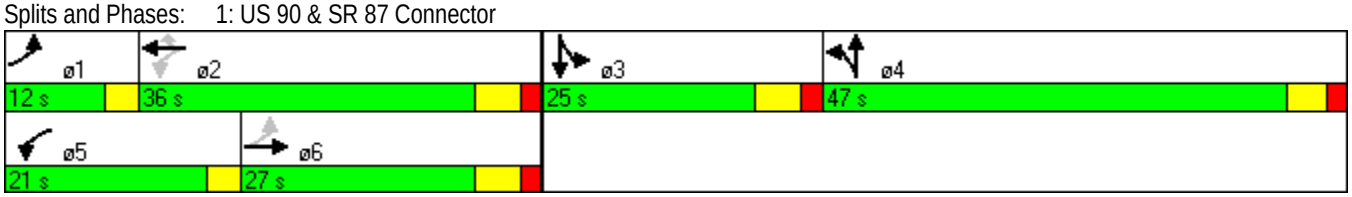
Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	12	36	25	47	21	27
Maximum Split (%)	10.0%	30.0%	20.8%	39.2%	17.5%	22.5%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	12	48	73	0	21
End Time (s)	12	48	73	0	21	48
Yield/Force Off (s)	9	42	67	114.5	18	42
Yield/Force Off 170(s)	9	30	67	114.5	18	30
Local Start Time (s)	108	0	36	61	108	9
Local Yield (s)	117	30	55	102.5	6	30
Local Yield 170(s)	117	18	55	102.5	6	18

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	335	191	141	341	2	252	12	92	3	9	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3468		1665	1581			1799	
Flt Permitted	0.53	1.00	1.00	0.43	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	968	1827	1553	788	3468		1665	1581			1799	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	364	208	153	371	2	274	13	100	3	10	3
RTOR Reduction (vph)	0	0	99	0	0	0	0	35	0	0	3	0
Lane Group Flow (vph)	1	364	109	153	373	0	200	152	0	0	13	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	59.8	59.8	59.8	74.8	74.8		18.4	18.4			2.5	
Effective Green, g (s)	59.8	59.8	59.8	74.8	74.8		18.4	18.4			2.5	
Actuated g/C Ratio	0.53	0.53	0.53	0.66	0.66		0.16	0.16			0.02	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	509	961	817	593	2281		269	256			40	
v/s Ratio Prot		c0.20		c0.02	0.11		c0.12	0.10			c0.01	
v/s Ratio Perm	0.00		0.07	0.15								
v/c Ratio	0.00	0.38	0.13	0.26	0.16		0.74	0.59			0.33	
Uniform Delay, d1	12.8	16.0	13.7	8.3	7.5		45.4	44.2			54.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.1	0.3	0.2	0.2		10.6	3.7			4.7	
Delay (s)	12.8	17.1	14.1	8.5	7.6		56.0	47.8			59.5	
Level of Service	B	B	B	A	A		E	D			E	
Approach Delay (s)		16.0			7.9			52.0			59.5	
Approach LOS		B			A			D			E	

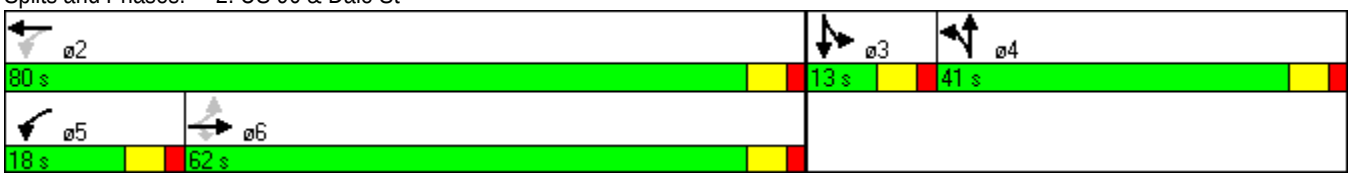
Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	113.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	80	13	41	18	62
Maximum Split (%)	59.7%	9.7%	30.6%	13.4%	46.3%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	80	93	0	18
End Time (s)	80	93	0	18	80
Yield/Force Off (s)	74	87	128	12	74
Yield/Force Off 170(s)	62	87	112	12	62
Local Start Time (s)	0	80	93	0	18
Local Yield (s)	74	87	128	12	74
Local Yield 170(s)	62	87	112	12	62

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	345	36	7	523	192	3	5	15	198	25	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.91			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1801			1760			1685			1758	
Flt Permitted	0.32	1.00			1.00			0.96			0.74	
Satd. Flow (perm)	584	1801			1754			1631			1361	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	375	39	8	568	209	3	5	16	215	27	13
RTOR Reduction (vph)	0	4	0	0	13	0	0	12	0	0	2	0
Lane Group Flow (vph)	10	410	0	0	772	0	0	12	0	0	253	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	46.5	46.5			46.5			22.3			22.3	
Effective Green, g (s)	46.5	46.5			46.5			22.3			22.3	
Actuated g/C Ratio	0.58	0.58			0.58			0.28			0.28	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	336	1036			1009			450			376	
v/s Ratio Prot		0.23										
v/s Ratio Perm	0.02				c0.44			0.01			c0.19	
v/c Ratio	0.03	0.40			0.77			0.03			0.67	
Uniform Delay, d1	7.4	9.4			13.0			21.3			26.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.1	0.9			4.9			0.1			6.1	
Delay (s)	7.5	10.3			17.9			21.4			32.1	
Level of Service	A	B			B			C			C	
Approach Delay (s)		10.2			17.9			21.4			32.1	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	37	70	37	70
Maximum Split (%)	34.6%	65.4%	34.6%	65.4%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	37	0	37
End Time (s)	37	0	37	0
Yield/Force Off (s)	31	101	31	101
Yield/Force Off 170(s)	19	101	19	101
Local Start Time (s)	0	37	0	37
Local Yield (s)	31	101	31	101
Local Yield 170(s)	19	101	19	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	460	117	70	501	14	126	136	66	16	167	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	1.00			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			1.00	
Satd. Flow (prot)	1736	1771		1736	1820			1761			1822	
Flt Permitted	0.29	1.00		0.23	1.00			0.79			0.96	
Satd. Flow (perm)	529	1771		419	1820			1418			1752	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	500	127	76	545	15	137	148	72	17	182	13
RTOR Reduction (vph)	0	9	0	0	1	0	0	9	0	0	2	0
Lane Group Flow (vph)	11	618	0	76	559	0	0	348	0	0	210	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.1	33.1		33.1	33.1			27.9			27.9	
Effective Green, g (s)	33.1	33.1		33.1	33.1			27.9			27.9	
Actuated g/C Ratio	0.45	0.45		0.45	0.45			0.38			0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	240	803		190	825			542			670	
v/s Ratio Prot		c0.35			0.31							
v/s Ratio Perm	0.02			0.18				c0.25			0.12	
v/c Ratio	0.05	0.77		0.40	0.68			0.64			0.31	
Uniform Delay, d1	11.1	16.7		13.3	15.7			18.5			15.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	4.7		1.9	2.4			3.6			0.6	
Delay (s)	11.2	21.5		15.2	18.2			22.0			16.4	
Level of Service	B	C		B	B			C			B	
Approach Delay (s)		21.3			17.8			22.0			16.4	
Approach LOS		C			B			C			B	

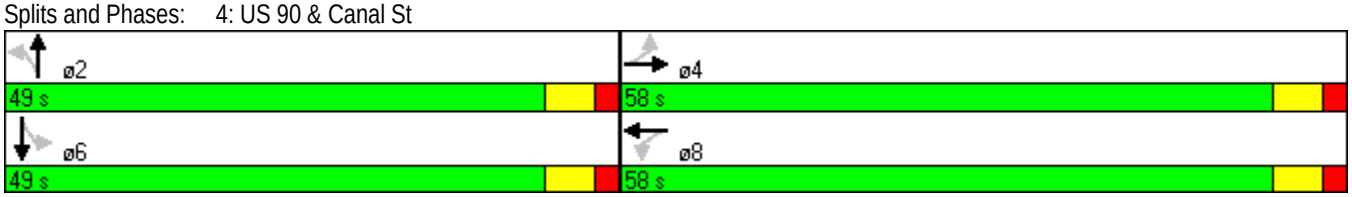
Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	49	58	49	58
Maximum Split (%)	45.8%	54.2%	45.8%	54.2%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	49	0	49
End Time (s)	49	0	49	0
Yield/Force Off (s)	43	101	43	101
Yield/Force Off 170(s)	43	101	43	101
Local Start Time (s)	0	49	0	49
Local Yield (s)	43	101	43	101
Local Yield 170(s)	43	101	43	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	272	465	569	191	255	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	296	505	618	208	277	389
RTOR Reduction (vph)	0	0	0	147	0	304
Lane Group Flow (vph)	296	505	618	61	277	85
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	12.7	37.3	18.6	18.6	13.7	13.7
Effective Green, g (s)	12.7	37.3	18.6	18.6	13.7	13.7
Actuated g/C Ratio	0.20	0.59	0.30	0.30	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	692	2095	1025	459	739	341
v/s Ratio Prot	c0.09	0.14	c0.18		c0.08	
v/s Ratio Perm				0.04		0.05
v/c Ratio	0.43	0.24	0.60	0.13	0.37	0.25
Uniform Delay, d1	22.0	6.1	19.0	16.3	21.0	20.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	1.0	0.1	0.4	0.5
Delay (s)	22.6	6.2	20.0	16.4	21.4	20.9
Level of Service	C	A	C	B	C	C
Approach Delay (s)		12.2	19.1		21.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	85	31	54	53
Maximum Split (%)	61.6%	22.5%	39.1%	38.4%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	31	85
End Time (s)	85	31	85	0
Yield/Force Off (s)	79	25	79	132
Yield/Force Off 170(s)	79	25	79	132
Local Start Time (s)	107	107	0	54
Local Yield (s)	48	132	48	101
Local Yield 170(s)	48	132	48	101

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	443	645	28	33	729	121	7	11	12	164	70	683
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1826	1583	1681	1734	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1826	1583	1681	1734	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	482	701	30	36	792	132	8	12	13	178	76	742
RTOR Reduction (vph)	0	0	11	0	0	84	0	0	13	0	0	0
Lane Group Flow (vph)	482	701	19	36	792	48	0	20	0	125	129	742
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	20.5	50.7	50.7	4.7	34.9	34.9		2.8	2.8	13.8	13.8	96.0
Effective Green, g (s)	20.5	50.7	50.7	4.7	34.9	34.9		2.8	2.8	13.8	13.8	96.0
Actuated g/C Ratio	0.21	0.53	0.53	0.05	0.36	0.36		0.03	0.03	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	733	1869	836	87	1287	575		53	46	242	249	1583
v/s Ratio Prot	c0.14	0.20		0.02	c0.22			0.01		0.07	0.07	
v/s Ratio Perm			0.01			0.03			0.00			c0.47
v/c Ratio	0.66	0.38	0.02	0.41	0.62	0.08		0.38	0.01	0.52	0.52	0.47
Uniform Delay, d1	34.5	13.3	10.8	44.3	25.0	20.1		45.7	45.3	38.0	38.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2	0.0	3.2	1.0	0.1		6.0	0.1	1.9	1.8	1.0
Delay (s)	36.7	13.5	10.8	47.5	26.1	20.1		51.8	45.3	39.9	39.8	1.0
Level of Service	D	B	B	D	C	C		D	D	D	D	A
Approach Delay (s)		22.6			26.0			49.3			10.9	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	17	100	34	47	70	22
Maximum Split (%)	9.8%	57.8%	19.7%	27.2%	40.5%	12.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	17	117	0	47	151
End Time (s)	17	117	151	47	117	0
Yield/Force Off (s)	11	111	145	41	111	167
Yield/Force Off 170(s)	11	111	140	41	111	162
Local Start Time (s)	126	143	70	126	0	104
Local Yield (s)	137	64	98	167	64	120
Local Yield 170(s)	137	64	93	167	64	115

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	770	0	2	2	6	17	7	269	1	5	238	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.91		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1583			1689		1752	3503		1770	3470	
Flt Permitted	0.95	1.00			1.00		0.57	1.00		0.57	1.00	
Satd. Flow (perm)	3433	1583			1689		1051	3503		1067	3470	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	837	0	2	2	7	18	8	292	1	5	259	39
RTOR Reduction (vph)	0	1	0	0	17	0	0	0	0	0	7	0
Lane Group Flow (vph)	837	1	0	0	10	0	8	293	0	5	291	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	38.7	38.7			5.1		58.2	58.2		58.2	58.2	
Effective Green, g (s)	38.7	38.7			5.1		58.2	58.2		58.2	58.2	
Actuated g/C Ratio	0.32	0.32			0.04		0.49	0.49		0.49	0.49	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1107	511			72		510	1699		517	1683	
v/s Ratio Prot	c0.24	0.00			c0.01			0.08			c0.08	
v/s Ratio Perm							0.01			0.00		
v/c Ratio	0.76	0.00			0.14		0.02	0.17		0.01	0.17	
Uniform Delay, d1	36.4	27.6			55.3		16.0	17.4		16.0	17.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	0.0			1.2		0.1	0.2		0.0	0.1	
Delay (s)	39.6	27.6			56.5		16.1	17.6		16.0	17.4	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		39.6			56.5			17.5			17.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	35	67	35	18
Maximum Split (%)	29.2%	55.8%	29.2%	15.0%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	35	0	102
End Time (s)	35	102	35	0
Yield/Force Off (s)	29	96	29	114
Yield/Force Off 170(s)	20	76	29	114
Local Start Time (s)	0	35	0	102
Local Yield (s)	29	96	29	114
Local Yield 170(s)	20	76	29	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	20	118	59	746	0	420	9
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	128	64	811	0	457	10
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked	1.00	1.00	1.00		0.00		
vC, conflicting volume	995	233	466		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	986	221	455		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	90	83	94		0		
cM capacity (veh/h)	226	774	1097		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	150	64	405	405	304	162	0
Volume Left	22	64	0	0	0	0	0
Volume Right	128	0	0	0	0	10	0
cSH	573	1097	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.06	0.24	0.24	0.18	0.10	0.00
Queue Length 95th (ft)	26	5	0	0	0	0	0
Control Delay (s)	13.5	8.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A					
Approach Delay (s)	13.5	0.6			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	103	42	8	219	867	93	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.54	1.00	1.00	0.61	1.00
Satd. Flow (perm)	3400	1568	1003	1845	1568	1095	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	46	9	238	942	101	347
RTOR Reduction (vph)	0	37	0	0	471	0	0
Lane Group Flow (vph)	112	9	9	238	471	101	347
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.20	0.20	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	680	314	502	923	784	548	1703
v/s Ratio Prot				0.13			0.10
v/s Ratio Perm	c0.03	0.01	0.01		c0.30	0.09	
v/c Ratio	0.16	0.03	0.02	0.26	0.60	0.18	0.20
Uniform Delay, d1	13.2	12.9	5.0	5.7	7.1	5.5	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.1	0.7	3.4	0.7	0.3
Delay (s)	13.4	12.9	5.1	6.4	10.5	6.2	5.8
Level of Service	B	B	A	A	B	A	A
Approach Delay (s)	13.3			9.7			5.9
Approach LOS	B			A			A

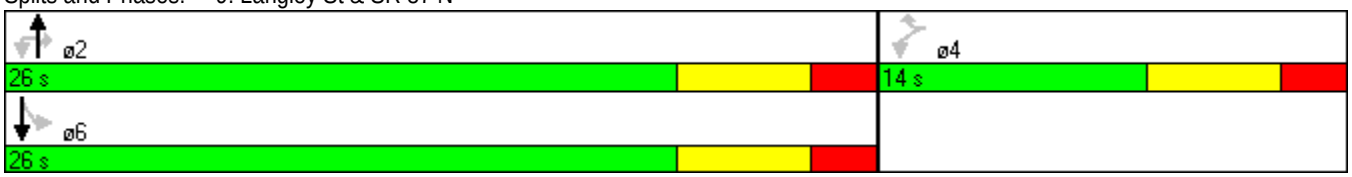
Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	26	14	26
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	26	0
End Time (s)	26	0	26
Yield/Force Off (s)	20	34	20
Yield/Force Off 170(s)	20	34	20
Local Start Time (s)	0	26	0
Local Yield (s)	20	34	20
Local Yield 170(s)	20	34	20

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	5	70	1	18	2	346	38	28	494	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	5	76	1	20	2	376	41	30	537	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	811	1020	269	736	1000	209	538			417		
vC1, stage 1 conf vol	598	598		401	401							
vC2, stage 2 conf vol	212	422		335	599							
vCu, unblocked vol	811	1020	269	736	1000	209	538			417		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	85	100	98	100			97		
cM capacity (veh/h)	414	405	729	492	412	794	1019			1131		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	2	5	97	190	229	30	358	180
Volume Left	2	0	76	2	0	30	0	0
Volume Right	0	5	20	0	41	0	0	1
cSH	414	729	532	1019	1700	1131	1700	1700
Volume to Capacity	0.01	0.01	0.18	0.00	0.13	0.03	0.21	0.11
Queue Length 95th (ft)	0	1	16	0	0	2	0	0
Control Delay (s)	13.7	10.0	13.3	0.1	0.0	8.3	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	11.1		13.3	0.1		0.4		
Approach LOS	B		B					

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	34	9	24	135	0	13	1	12	0	4	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	37	10	26	147	0	14	1	13	0	4	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	147			47			253	243	42	257	248	147
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	147			47			253	243	42	257	248	147
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			98	100	99	100	99	99
cM capacity (veh/h)	1429			1554			680	646	1026	678	643	900

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	173	28	12
Volume Left	1	26	14	0
Volume Right	10	0	13	8
cSH	1429	1554	803	786
Volume to Capacity	0.00	0.02	0.04	0.02
Queue Length 95th (ft)	0	1	3	1
Control Delay (s)	0.2	1.2	9.6	9.7
Lane LOS	A	A	A	A
Approach Delay (s)	0.2	1.2	9.6	9.7
Approach LOS			A	A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

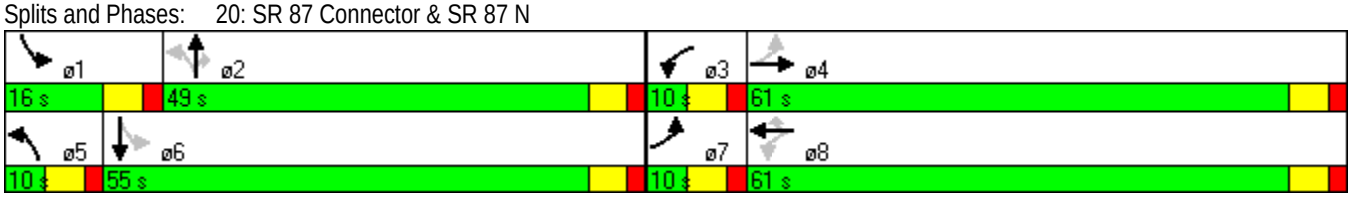
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	229	9	27	334	134	9	437	69	88	533	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1852		1770	1863	1583	1770	3539	1583	1770	3514	
Flt Permitted	0.24	1.00		0.45	1.00	1.00	0.42	1.00	1.00	0.40	1.00	
Satd. Flow (perm)	445	1852		830	1863	1583	785	3539	1583	738	3514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	249	10	29	363	146	10	475	75	96	579	29
RTOR Reduction (vph)	0	1	0	0	0	110	0	0	41	0	2	0
Lane Group Flow (vph)	46	258	0	29	363	36	10	475	34	96	606	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	30.9	27.9		29.3	27.1	27.1	49.8	49.1	49.1	61.4	54.9	
Effective Green, g (s)	30.9	27.9		29.3	27.1	27.1	49.8	49.1	49.1	61.4	54.9	
Actuated g/C Ratio	0.28	0.25		0.27	0.25	0.25	0.45	0.45	0.45	0.56	0.50	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	162	471		241	460	391	363	1584	709	474	1759	
v/s Ratio Prot	c0.01	0.14		0.00	c0.19		0.00	0.13		c0.01	c0.17	
v/s Ratio Perm	0.07			0.03		0.02	0.01		0.02	0.10		
v/c Ratio	0.28	0.55		0.12	0.79	0.09	0.03	0.30	0.05	0.20	0.34	
Uniform Delay, d1	30.2	35.4		30.2	38.6	31.8	16.4	19.3	17.1	11.7	16.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	1.3		0.2	8.7	0.1	0.0	0.5	0.1	0.2	0.5	
Delay (s)	31.2	36.7		30.4	47.4	31.9	16.5	19.8	17.2	11.9	17.1	
Level of Service	C	D		C	D	C	B	B	B	B	B	
Approach Delay (s)		35.9			42.3			19.4			16.4	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	16	49	10	61	10	55	10	61
Maximum Split (%)	11.8%	36.0%	7.4%	44.9%	7.4%	40.4%	7.4%	44.9%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	65	75	0	10	65	75
End Time (s)	16	65	75	0	10	65	75	0
Yield/Force Off (s)	10	59	69	130	4	59	69	130
Yield/Force Off 170(s)	10	48	69	119	4	48	69	119
Local Start Time (s)	120	0	49	59	120	130	49	59
Local Yield (s)	130	43	53	114	124	43	53	114
Local Yield 170(s)	130	32	53	103	124	32	53	103

Intersection Summary	
Cycle Length	136
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 20: SR 87 Connector & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	509	2	9	562	93	11	132	25	57	166	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	553	2	10	611	101	12	143	27	62	180	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	712			555			1079	1364	278	1135	1315	356
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	712			555			1079	1364	278	1135	1315	356
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			0	0	96	0	0	95
cM capacity (veh/h)	884			1011			0	139	720	0	148	640

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	316	279	315	407	183	274
Volume Left	39	0	10	0	12	62
Volume Right	0	2	0	101	27	32
cSH	884	1700	1011	1700	0	0
Volume to Capacity	0.04	0.16	0.01	0.24	Err	Err
Queue Length 95th (ft)	3	0	1	0	Err	Err
Control Delay (s)	1.6	0.0	0.4	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	0.8		0.2		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

PM 2025 - ALT 2 - INTERIM YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	41	75	475	262	65	18	425	222	227	77	406	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3408	
Flt Permitted	0.71	1.00	1.00	0.62	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1311	1845	1568	1121	1810	1538	1736	3471	1553	1770	3408	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	82	516	285	71	20	462	241	247	84	441	145
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	27	0
Lane Group Flow (vph)	45	82	516	285	71	6	462	241	247	84	559	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	25.9	22.0	111.2	38.7	31.8	31.8	33.7	33.7	111.2	21.3	21.3	
Effective Green, g (s)	25.9	22.0	111.2	38.7	31.8	31.8	33.7	33.7	111.2	21.3	21.3	
Actuated g/C Ratio	0.23	0.20	1.00	0.35	0.29	0.29	0.30	0.30	1.00	0.19	0.19	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	321	365	1568	464	518	440	526	1052	1553	339	653	
v/s Ratio Prot	0.00	0.04		c0.08	0.04		c0.27	0.07		0.05	c0.16	
v/s Ratio Perm	0.03		0.33	c0.14		0.00			0.16			
v/c Ratio	0.14	0.22	0.33	0.61	0.14	0.01	0.88	0.23	0.16	0.25	0.86	
Uniform Delay, d1	33.6	37.4	0.0	28.5	29.5	28.5	36.8	29.0	0.0	38.2	43.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.4	0.6	2.4	0.6	0.1	15.3	0.1	0.2	0.4	10.7	
Delay (s)	33.8	38.9	0.6	30.9	30.1	28.5	52.1	29.1	0.2	38.5	54.2	
Level of Service	C	D	A	C	C	C	D	C	A	D	D	
Approach Delay (s)		7.8			30.6			32.8			52.2	
Approach LOS		A			C			C			D	

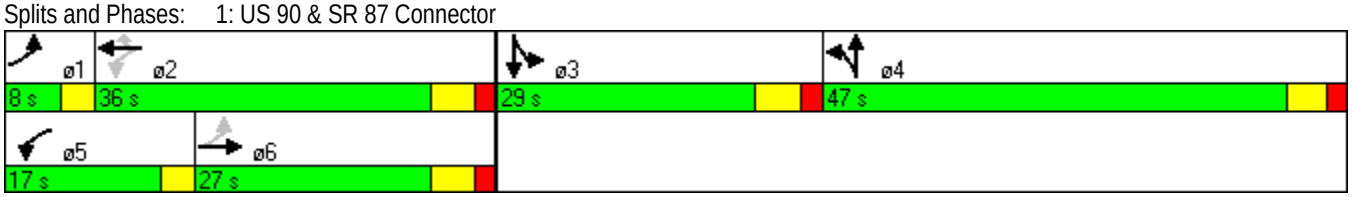
Intersection Summary			
HCM Average Control Delay	31.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	14.5
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	36	29	47	17	27
Maximum Split (%)	6.7%	30.0%	24.2%	39.2%	14.2%	22.5%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	44	73	0	17
End Time (s)	8	44	73	0	17	44
Yield/Force Off (s)	5	38	67	114.5	14	38
Yield/Force Off 170(s)	5	26	67	114.5	14	26
Local Start Time (s)	112	0	36	65	112	9
Local Yield (s)	117	30	59	106.5	6	30
Local Yield 170(s)	117	18	59	106.5	6	18

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	495	266	59	476	1	182	8	71	0	3	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			1.00	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1575			1737	
Flt Permitted	0.46	1.00	1.00	0.35	1.00		0.95	0.98			1.00	
Satd. Flow (perm)	841	1827	1553	641	3470		1665	1575			1737	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	538	289	64	517	1	198	9	77	0	3	3
RTOR Reduction (vph)	0	0	110	0	0	0	0	38	0	0	3	0
Lane Group Flow (vph)	3	538	179	64	518	0	147	99	0	0	3	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	74.3	74.3	74.3	85.6	85.6		15.3	15.3			1.1	
Effective Green, g (s)	74.3	74.3	74.3	85.6	85.6		15.3	15.3			1.1	
Actuated g/C Ratio	0.62	0.62	0.62	0.71	0.71		0.13	0.13			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	521	1131	962	506	2475		212	201			16	
v/s Ratio Prot		c0.29		0.01	c0.15		c0.09	0.06			c0.00	
v/s Ratio Perm	0.00		0.12	0.08								
v/c Ratio	0.01	0.48	0.19	0.13	0.21		0.69	0.49			0.19	
Uniform Delay, d1	8.7	12.3	9.8	6.8	5.8		50.1	48.8			59.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.4	0.4	0.1	0.2		9.4	1.9			5.7	
Delay (s)	8.8	13.8	10.3	6.9	6.0		59.5	50.7			64.7	
Level of Service	A	B	B	A	A		E	D			E	
Approach Delay (s)		12.5			6.1			55.3			64.7	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	89	12	34	13	76
Maximum Split (%)	65.9%	8.9%	25.2%	9.6%	56.3%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	89	101	0	13
End Time (s)	89	101	0	13	89
Yield/Force Off (s)	83	95	129	7	83
Yield/Force Off 170(s)	71	95	113	7	71
Local Start Time (s)	0	89	101	0	13
Local Yield (s)	83	95	129	7	83
Local Yield 170(s)	71	95	113	7	71

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	536	14	5	501	260	19	25	25	230	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1820			1743			1748			1748	
Flt Permitted	0.30	1.00			1.00			0.88			0.70	
Satd. Flow (perm)	544	1820			1738			1561			1274	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	583	15	5	545	283	21	27	27	250	11	22
RTOR Reduction (vph)	0	1	0	0	18	0	0	19	0	0	3	0
Lane Group Flow (vph)	22	597	0	0	815	0	0	56	0	0	280	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.5	50.5			50.5			25.0			25.0	
Effective Green, g (s)	50.5	50.5			50.5			25.0			25.0	
Actuated g/C Ratio	0.58	0.58			0.58			0.29			0.29	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	314	1050			1003			446			364	
v/s Ratio Prot		0.33										
v/s Ratio Perm	0.04				c0.47			0.04			c0.22	
v/c Ratio	0.07	0.57			0.81			0.12			0.77	
Uniform Delay, d1	8.2	11.6			14.7			23.1			28.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.3	1.8			6.3			0.3			11.0	
Delay (s)	8.5	13.4			21.1			23.4			39.7	
Level of Service	A	B			C			C			D	
Approach Delay (s)		13.2			21.1			23.4			39.7	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	38	69	38	69
Maximum Split (%)	35.5%	64.5%	35.5%	64.5%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	38
End Time (s)	38	0	38	0
Yield/Force Off (s)	32	101	32	101
Yield/Force Off 170(s)	20	101	20	101
Local Start Time (s)	0	38	0	38
Local Yield (s)	32	101	32	101
Local Yield 170(s)	20	101	20	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	65

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	630	152	82	537	19	170	178	57	23	167	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1736	1774		1736	1817			1772			1812	
Flt Permitted	0.28	1.00		0.10	1.00			0.73			0.93	
Satd. Flow (perm)	510	1774		175	1817			1313			1697	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	685	165	89	584	21	185	193	62	25	182	21
RTOR Reduction (vph)	0	8	0	0	1	0	0	6	0	0	3	0
Lane Group Flow (vph)	13	842	0	89	604	0	0	434	0	0	225	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.5	51.5		51.5	51.5			36.4			36.4	
Effective Green, g (s)	51.5	51.5		51.5	51.5			36.4			36.4	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	263	915		90	937			478			618	
v/s Ratio Prot		0.47			0.33							
v/s Ratio Perm	0.03			c0.51				c0.33			0.13	
v/c Ratio	0.05	0.92		0.99	0.64			0.91			0.36	
Uniform Delay, d1	12.0	22.3		23.9	17.6			30.2			23.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.1	14.2		90.5	1.7			22.0			0.8	
Delay (s)	12.1	36.5		114.5	19.3			52.1			24.0	
Level of Service	B	D		F	B			D			C	
Approach Delay (s)		36.1			31.5			52.1			24.0	
Approach LOS		D			C			D			C	

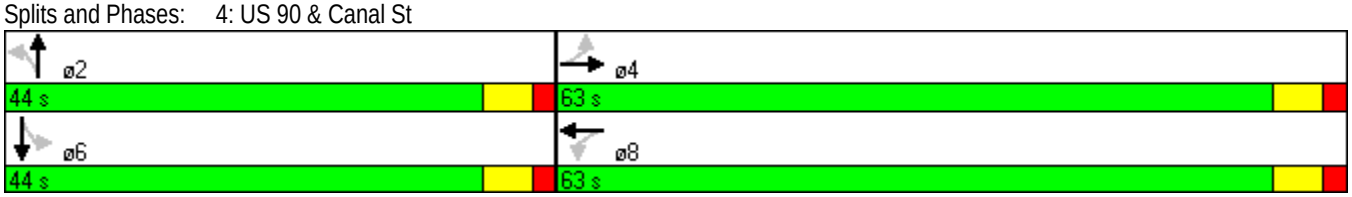
Intersection Summary			
HCM Average Control Delay	36.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	44	63	44	63
Maximum Split (%)	41.1%	58.9%	41.1%	58.9%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	44	0	44
End Time (s)	44	0	44	0
Yield/Force Off (s)	38	101	38	101
Yield/Force Off 170(s)	38	101	38	101
Local Start Time (s)	0	44	0	44
Local Yield (s)	38	101	38	101
Local Yield 170(s)	38	101	38	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	75

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	549	678	683	197	209	467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	597	737	742	214	227	508
RTOR Reduction (vph)	0	0	0	146	0	415
Lane Group Flow (vph)	597	737	742	68	227	93
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	22.7	54.6	25.9	25.9	15.0	15.0
Effective Green, g (s)	22.7	54.6	25.9	25.9	15.0	15.0
Actuated g/C Ratio	0.28	0.67	0.32	0.32	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	955	2368	1102	493	625	288
v/s Ratio Prot	c0.17	0.21	c0.21		c0.07	
v/s Ratio Perm				0.04		0.06
v/c Ratio	0.63	0.31	0.67	0.14	0.36	0.32
Uniform Delay, d1	25.7	5.6	24.2	19.9	29.1	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	1.6	0.1	0.5	0.9
Delay (s)	27.2	5.7	25.8	20.0	29.6	29.8
Level of Service	C	A	C	C	C	C
Approach Delay (s)		15.3	24.5		29.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	91	41	50	47
Maximum Split (%)	65.9%	29.7%	36.2%	34.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	41	91
End Time (s)	91	41	91	0
Yield/Force Off (s)	85	35	85	132
Yield/Force Off 170(s)	85	35	85	132
Local Start Time (s)	97	97	0	50
Local Yield (s)	44	132	44	91
Local Yield 170(s)	44	132	44	91

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	736	998	55	68	881	184	36	80	93	165	47	755
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1722	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1834	1583	1681	1722	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	800	1085	60	74	958	200	39	87	101	179	51	821
RTOR Reduction (vph)	0	0	14	0	0	133	0	0	90	0	0	0
Lane Group Flow (vph)	800	1085	46	74	958	67	0	126	11	115	115	821
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	39.5	75.3	75.3	11.4	47.2	47.2		15.6	15.6	15.1	15.1	141.4
Effective Green, g (s)	39.5	75.3	75.3	11.4	47.2	47.2		15.6	15.6	15.1	15.1	141.4
Actuated g/C Ratio	0.28	0.53	0.53	0.08	0.33	0.33		0.11	0.11	0.11	0.11	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	959	1885	843	143	1181	528		202	175	180	184	1583
v/s Ratio Prot	c0.23	0.31		0.04	c0.27			0.07		0.07	0.07	
v/s Ratio Perm			0.03			0.04			0.01			c0.52
v/c Ratio	0.83	0.58	0.05	0.52	0.81	0.13		0.62	0.06	0.64	0.62	0.52
Uniform Delay, d1	47.9	22.3	15.9	62.4	43.0	32.8		60.1	56.4	60.5	60.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	0.5	0.0	3.1	4.6	0.1		6.7	0.2	7.2	6.5	1.2
Delay (s)	54.2	22.8	15.9	65.5	47.6	32.9		66.7	56.6	67.8	66.9	1.2
Level of Service	D	C	B	E	D	C		E	E	E	E	A
Approach Delay (s)		35.5			46.3			62.2			15.7	
Approach LOS		D			D			E			B	

Intersection Summary			
HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	141.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	20	102	26	56	66	25
Maximum Split (%)	11.6%	59.0%	15.0%	32.4%	38.2%	14.5%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	20	122	0	56	148
End Time (s)	20	122	148	56	122	0
Yield/Force Off (s)	14	116	142	50	116	167
Yield/Force Off 170(s)	14	116	137	50	116	162
Local Start Time (s)	117	137	66	117	0	92
Local Yield (s)	131	60	86	167	60	111
Local Yield 170(s)	131	60	81	167	60	106

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	105

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	667	2	2	1	7	10	5	318	1	17	218	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.93			0.93		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1723			1720		1752	3503		1770	3463	
Flt Permitted	0.95	1.00			1.00		0.58	1.00		0.54	1.00	
Satd. Flow (perm)	3433	1723			1720		1073	3503		1007	3463	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	725	2	2	1	8	11	5	346	1	18	237	40
RTOR Reduction (vph)	0	1	0	0	11	0	0	0	0	0	8	0
Lane Group Flow (vph)	725	3	0	0	9	0	5	347	0	18	269	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	34.9	34.9			3.4		63.7	63.7		63.7	63.7	
Effective Green, g (s)	34.9	34.9			3.4		63.7	63.7		63.7	63.7	
Actuated g/C Ratio	0.29	0.29			0.03		0.53	0.53		0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	998	501			49		570	1860		535	1838	
v/s Ratio Prot	c0.21	0.00			c0.01			c0.10			0.08	
v/s Ratio Perm							0.00			0.02		
v/c Ratio	0.73	0.01			0.19		0.01	0.19		0.03	0.15	
Uniform Delay, d1	38.3	30.2			57.0		13.3	14.7		13.4	14.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.8	0.0			2.6		0.0	0.2		0.0	0.1	
Delay (s)	41.1	30.2			59.5		13.3	14.9		13.5	14.4	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		41.0			59.5			14.9			14.3	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	39	62	39	19
Maximum Split (%)	32.5%	51.7%	32.5%	15.8%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	39	0	101
End Time (s)	39	101	39	0
Yield/Force Off (s)	33	95	33	114
Yield/Force Off 170(s)	24	75	33	114
Local Start Time (s)	0	39	0	101
Local Yield (s)	33	95	33	114
Local Yield 170(s)	24	75	33	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	6	97	111	411	0	770	22
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	105	121	447	0	837	24
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked	0.95	0.95	0.95		0.00		
vC, conflicting volume	1314	430	861		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1231	304	756		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	95	84	85		0		
cM capacity (veh/h)	135	654	811		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	112	121	223	223	558	303	0
Volume Left	7	121	0	0	0	0	0
Volume Right	105	0	0	0	0	24	0
cSH	535	811	1700	1700	1700	1700	1700
Volume to Capacity	0.21	0.15	0.13	0.13	0.33	0.18	0.00
Queue Length 95th (ft)	20	13	0	0	0	0	0
Control Delay (s)	13.5	10.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B					
Approach Delay (s)	13.5	2.2			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	651	137	29	279	119	34	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.55	1.00	1.00	0.58	1.00
Satd. Flow (perm)	3400	1568	1020	1845	1568	1031	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	708	149	32	303	129	37	329
RTOR Reduction (vph)	0	99	0	0	83	0	0
Lane Group Flow (vph)	708	50	32	303	46	37	329
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	13.0	13.0	14.0	14.0	14.0	14.0	14.0
Effective Green, g (s)	13.0	13.0	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.33	0.33	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1133	523	366	662	563	370	1223
v/s Ratio Prot				c0.16			0.10
v/s Ratio Perm	c0.21	0.03	0.03		0.03	0.04	
v/c Ratio	0.62	0.09	0.09	0.46	0.08	0.10	0.27
Uniform Delay, d1	10.9	8.9	8.3	9.6	8.3	8.3	8.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.5	2.3	0.3	0.5	0.5
Delay (s)	12.2	9.1	8.7	11.9	8.5	8.9	9.4
Level of Service	B	A	A	B	A	A	A
Approach Delay (s)	11.6			10.7			9.4
Approach LOS	B			B			A

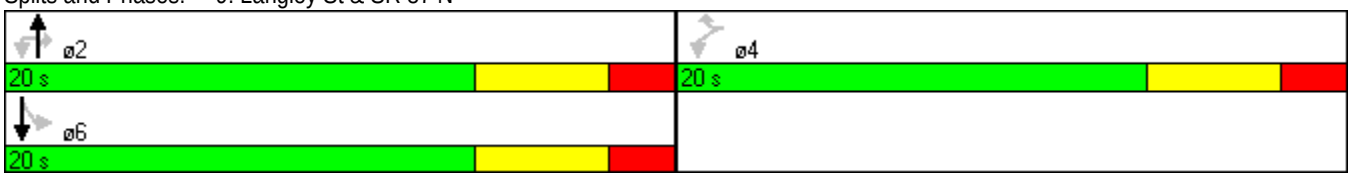
Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	20	0
End Time (s)	20	0	20
Yield/Force Off (s)	14	34	14
Yield/Force Off 170(s)	14	34	14
Local Start Time (s)	0	20	0
Local Yield (s)	14	34	14
Local Yield 170(s)	14	34	14

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	79	74	1	26	1	506	84	26	424	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1	86	80	1	28	1	550	91	28	461	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	824	1161	231	971	1116	321	462			641		
vC1, stage 1 conf vol	518	518		598	598							
vC2, stage 2 conf vol	306	643		373	518							
vCu, unblocked vol	824	1161	231	971	1116	321	462			641		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	89	78	100	96	100			97		
cM capacity (veh/h)	432	367	771	374	389	672	1088			932		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	87	110	276	366	28	307	155
Volume Left	11	0	80	1	0	28	0	0
Volume Right	0	86	28	0	91	0	0	1
cSH	432	761	422	1088	1700	932	1700	1700
Volume to Capacity	0.03	0.11	0.26	0.00	0.22	0.03	0.18	0.09
Queue Length 95th (ft)	2	10	26	0	0	2	0	0
Control Delay (s)	13.6	10.3	16.5	0.0	0.0	9.0	0.0	0.0
Lane LOS	B	B	C	A		A		
Approach Delay (s)	10.7		16.5	0.0		0.5		
Approach LOS	B		C					

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	107	26	15	86	0	18	7	11	0	1	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	116	28	16	93	0	20	8	12	0	1	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	93			145			277	267	130	283	282	93
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	93			145			277	267	130	283	282	93
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	99	99	100	100	99
cM capacity (veh/h)	1495			1432			659	627	916	647	618	964

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	150	110	39	10
Volume Left	5	16	20	0
Volume Right	28	0	12	9
cSH	1495	1432	713	907
Volume to Capacity	0.00	0.01	0.05	0.01
Queue Length 95th (ft)	0	1	4	1
Control Delay (s)	0.3	1.2	10.3	9.0
Lane LOS	A	A	B	A
Approach Delay (s)	0.3	1.2	10.3	9.0
Approach LOS			B	A

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

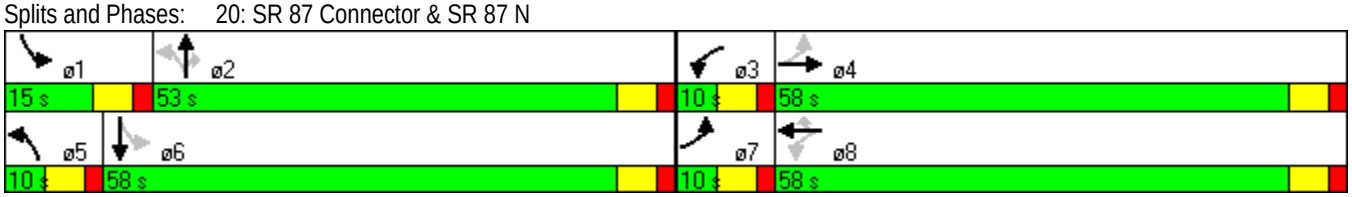
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	232	8	24	335	145	9	566	74	80	459	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1853		1770	1863	1583	1770	3539	1583	1770	3512	
Flt Permitted	0.23	1.00		0.43	1.00	1.00	0.46	1.00	1.00	0.33	1.00	
Satd. Flow (perm)	429	1853		809	1863	1583	851	3539	1583	608	3512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	252	9	26	364	158	10	615	80	87	499	27
RTOR Reduction (vph)	0	1	0	0	0	119	0	0	43	0	2	0
Lane Group Flow (vph)	49	260	0	26	364	39	10	615	37	87	524	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	31.8	28.8		30.2	28.0	28.0	53.6	52.9	52.9	64.6	58.4	
Effective Green, g (s)	31.8	28.8		30.2	28.0	28.0	53.6	52.9	52.9	64.6	58.4	
Actuated g/C Ratio	0.28	0.25		0.26	0.25	0.25	0.47	0.46	0.46	0.57	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	155	468		233	457	388	405	1641	734	407	1798	
v/s Ratio Prot	c0.01	0.14		0.00	c0.20		0.00	c0.17		c0.01	c0.15	
v/s Ratio Perm	0.08			0.03		0.02	0.01		0.02	0.11		
v/c Ratio	0.32	0.55		0.11	0.80	0.10	0.02	0.37	0.05	0.21	0.29	
Uniform Delay, d1	31.8	37.1		31.6	40.4	33.3	16.1	19.9	16.8	12.1	16.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.4		0.2	9.3	0.1	0.0	0.7	0.1	0.3	0.4	
Delay (s)	33.0	38.5		31.8	49.7	33.4	16.2	20.5	16.9	12.4	16.4	
Level of Service	C	D		C	D	C	B	C	B	B	B	
Approach Delay (s)		37.6			44.2			20.1			15.8	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	114.1	Sum of lost time (s)	30.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	15	53	10	58	10	58	10	58
Maximum Split (%)	11.0%	39.0%	7.4%	42.6%	7.4%	42.6%	7.4%	42.6%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	68	78	0	10	68	78
End Time (s)	15	68	78	0	10	68	78	0
Yield/Force Off (s)	9	62	72	130	4	62	72	130
Yield/Force Off 170(s)	9	51	72	119	4	51	72	119
Local Start Time (s)	121	0	53	63	121	131	53	63
Local Yield (s)	130	47	57	115	125	47	57	115
Local Yield 170(s)	130	36	57	104	125	36	57	104

Intersection Summary	
Cycle Length	136
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 20: SR 87 Connector & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	514	2	9	591	93	10	150	24	55	172	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	559	2	10	642	101	11	163	26	60	187	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	743			561			1104	1401	280	1178	1352	372
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	743			561			1104	1401	280	1178	1352	372
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			0	0	96	0	0	95
cM capacity (veh/h)	860			1006			0	131	717	0	141	626

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	318	282	331	422	200	278
Volume Left	39	0	10	0	11	60
Volume Right	0	2	0	101	26	32
cSH	860	1700	1006	1700	0	0
Volume to Capacity	0.05	0.17	0.01	0.25	Err	Err
Queue Length 95th (ft)	4	0	1	0	Err	Err
Control Delay (s)	1.6	0.0	0.4	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	0.9		0.2		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & East Milton Rd

AM 2035 - DESIGN YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	141	352	150	211	48	433	277	114	22	85	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1844	1583
Flt Permitted	0.51	1.00	1.00	0.66	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	941	1845	1568	1194	1810	1538	3367	1827	1553		1844	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	153	383	163	229	52	471	301	124	24	92	93
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	83
Lane Group Flow (vph)	245	153	383	163	229	19	471	301	124	0	116	10
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	57.7	44.5	112.0	50.6	40.4	40.4	24.3	24.3	112.0		12.5	12.5
Effective Green, g (s)	57.7	44.5	112.0	50.6	40.4	40.4	24.3	24.3	112.0		12.5	12.5
Actuated g/C Ratio	0.52	0.40	1.00	0.45	0.36	0.36	0.22	0.22	1.00		0.11	0.11
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	588	733	1568	587	653	555	731	396	1553		206	177
v/s Ratio Prot	c0.05	0.08		0.03	0.13		0.14	c0.16			c0.06	
v/s Ratio Perm	c0.16		0.24	0.10		0.01			0.08			0.01
v/c Ratio	0.42	0.21	0.24	0.28	0.35	0.03	0.64	0.76	0.08		0.56	0.06
Uniform Delay, d1	15.6	22.2	0.0	18.6	26.2	23.2	39.9	41.1	0.0		47.2	44.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.6	0.4	0.3	1.5	0.1	2.0	8.3	0.1		3.5	0.1
Delay (s)	16.1	22.8	0.4	18.9	27.7	23.3	41.9	49.5	0.1		50.7	44.6
Level of Service	B	C	A	B	C	C	D	D	A		D	D
Approach Delay (s)		9.7			23.9			38.6			48.0	
Approach LOS		A			C			D			D	

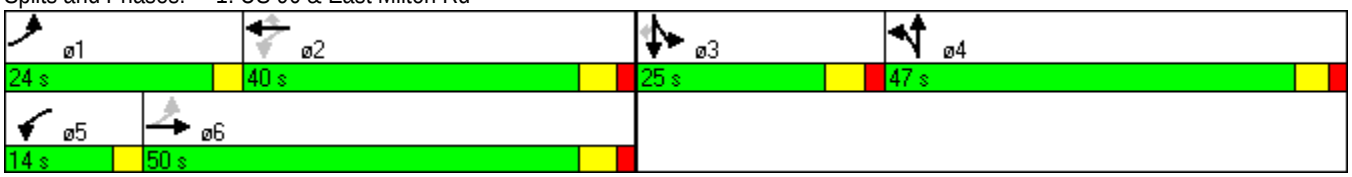
Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	24	40	25	47	14	50
Maximum Split (%)	17.6%	29.4%	18.4%	34.6%	10.3%	36.8%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	24	64	89	0	14
End Time (s)	24	64	89	0	14	64
Yield/Force Off (s)	21	58	83	130.5	11	58
Yield/Force Off 170(s)	21	46	83	130.5	11	46
Local Start Time (s)	112	0	40	65	112	126
Local Yield (s)	133	34	59	106.5	123	34
Local Yield 170(s)	133	22	59	106.5	123	22

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & East Milton Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	516	312	215	528	1	410	11	145	4	9	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1579			1787	
Flt Permitted	0.44	1.00	1.00	0.25	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	796	1827	1553	457	3470		1665	1579			1787	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	561	339	234	574	1	446	12	158	4	10	4
RTOR Reduction (vph)	0	0	177	0	0	0	0	31	0	0	4	0
Lane Group Flow (vph)	1	561	162	234	575	0	317	268	0	0	14	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	59.3	59.3	59.3	76.8	76.8		27.1	27.1			2.1	
Effective Green, g (s)	59.3	59.3	59.3	76.8	76.8		27.1	27.1			2.1	
Actuated g/C Ratio	0.48	0.48	0.48	0.62	0.62		0.22	0.22			0.02	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	381	874	743	402	2149		364	345			30	
v/s Ratio Prot		c0.31		c0.05	0.17		c0.19	0.17			c0.01	
v/s Ratio Perm	0.00		0.10	0.31								
v/c Ratio	0.00	0.64	0.22	0.58	0.27		0.87	0.78			0.47	
Uniform Delay, d1	16.9	24.4	18.8	15.2	10.8		46.8	45.6			60.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	3.6	0.7	2.1	0.3		19.7	10.5			11.1	
Delay (s)	16.9	28.0	19.5	17.4	11.1		66.5	56.0			71.5	
Level of Service	B	C	B	B	B		E	E			E	
Approach Delay (s)		24.8			12.9			61.4			71.5	
Approach LOS		C			B			E			E	

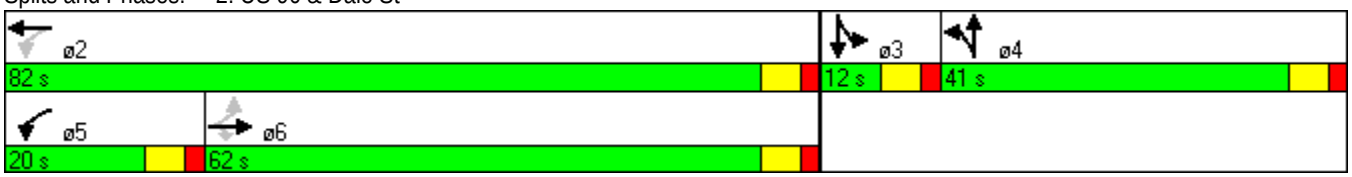
Intersection Summary			
HCM Average Control Delay	30.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	124.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	82	12	41	20	62
Maximum Split (%)	60.7%	8.9%	30.4%	14.8%	45.9%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	82	94	0	20
End Time (s)	82	94	0	20	82
Yield/Force Off (s)	76	88	129	14	76
Yield/Force Off 170(s)	64	88	113	14	64
Local Start Time (s)	0	82	94	0	20
Local Yield (s)	76	88	129	14	76
Local Yield 170(s)	64	88	113	14	64

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 2: US 90 & Dale St



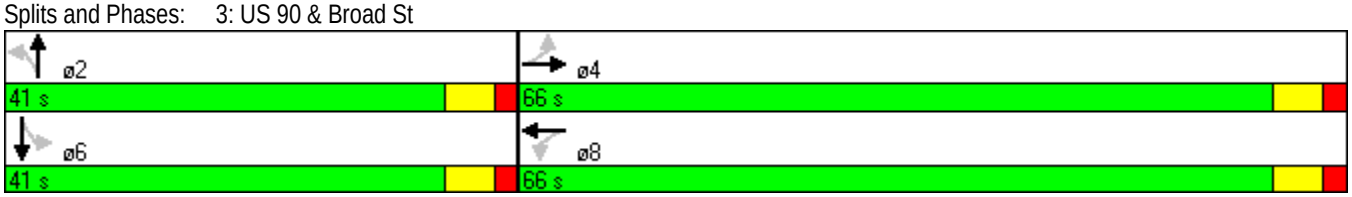
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	449	27	7	678	398	2	6	17	402	49	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.95			0.91			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.96	
Satd. Flow (prot)	1736	1812			1736			1689			1758	
Flt Permitted	0.18	1.00			1.00			0.97			0.74	
Satd. Flow (perm)	334	1812			1730			1648			1355	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	488	29	8	737	433	2	7	18	437	53	25
RTOR Reduction (vph)	0	2	0	0	20	0	0	12	0	0	2	0
Lane Group Flow (vph)	23	515	0	0	1158	0	0	15	0	0	513	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	60.0	60.0			60.0			35.0			35.0	
Effective Green, g (s)	60.0	60.0			60.0			35.0			35.0	
Actuated g/C Ratio	0.56	0.56			0.56			0.33			0.33	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	187	1016			970			539			443	
v/s Ratio Prot		0.28										
v/s Ratio Perm	0.07				c0.67			0.01			c0.38	
v/c Ratio	0.12	0.51			1.19			0.03			1.16	
Uniform Delay, d1	11.1	14.4			23.5			24.4			36.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	1.1	1.4			97.5			0.0			93.7	
Delay (s)	12.1	15.8			121.0			24.5			129.7	
Level of Service	B	B			F			C			F	
Approach Delay (s)		15.7			121.0			24.5			129.7	
Approach LOS		B			F			C			F	

Intersection Summary			
HCM Average Control Delay	96.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	41	66	41	66
Maximum Split (%)	38.3%	61.7%	38.3%	61.7%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	41	0	41
End Time (s)	41	0	41	0
Yield/Force Off (s)	35	101	35	101
Yield/Force Off 170(s)	23	101	23	101
Local Start Time (s)	0	41	0	41
Local Yield (s)	35	101	35	101
Local Yield 170(s)	23	101	23	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	140

Splits and Phases: 3: US 90 & Broad St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	606	35	43	615	82	60	156	76	40	232	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.96			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1736	1812		1736	1795			1762			1816	
Flt Permitted	0.17	1.00		0.22	1.00			0.85			0.92	
Satd. Flow (perm)	315	1812		399	1795			1519			1683	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	659	38	47	668	89	65	170	83	43	252	21
RTOR Reduction (vph)	0	2	0	0	5	0	0	12	0	0	3	0
Lane Group Flow (vph)	26	695	0	47	752	0	0	306	0	0	313	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	39.1	39.1		39.1	39.1			25.6			25.6	
Effective Green, g (s)	39.1	39.1		39.1	39.1			25.6			25.6	
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.33			0.33	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	161	924		203	915			507			562	
v/s Ratio Prot		0.38			c0.42							
v/s Ratio Perm	0.08			0.12				c0.20			0.19	
v/c Ratio	0.16	0.75		0.23	0.82			0.60			0.56	
Uniform Delay, d1	10.0	14.9		10.4	15.9			21.3			20.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.6	3.7		0.8	6.3			3.0			2.0	
Delay (s)	10.7	18.7		11.2	22.2			24.3			23.0	
Level of Service	B	B		B	C			C			C	
Approach Delay (s)		18.4			21.5			24.3			23.0	
Approach LOS		B			C			C			C	

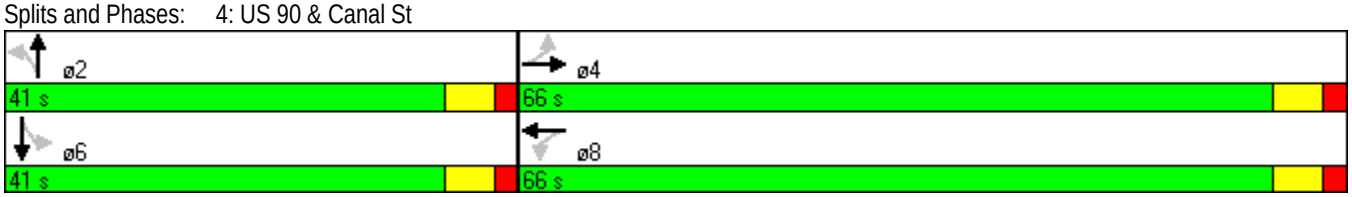
Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	41	66	41	66
Maximum Split (%)	38.3%	61.7%	38.3%	61.7%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	41	0	41
End Time (s)	41	0	41	0
Yield/Force Off (s)	35	101	35	101
Yield/Force Off 170(s)	35	101	35	101
Local Start Time (s)	0	41	0	41
Local Yield (s)	35	101	35	101
Local Yield 170(s)	35	101	35	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	381	421	558	250	354	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	414	458	607	272	385	516
RTOR Reduction (vph)	0	0	0	196	0	360
Lane Group Flow (vph)	414	458	607	76	385	156
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	16.5	43.3	20.8	20.8	18.8	18.8
Effective Green, g (s)	16.5	43.3	20.8	20.8	18.8	18.8
Actuated g/C Ratio	0.22	0.58	0.28	0.28	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	764	2068	974	436	863	398
v/s Ratio Prot	c0.12	0.13	c0.17		c0.11	
v/s Ratio Perm				0.05		0.10
v/c Ratio	0.54	0.22	0.62	0.18	0.45	0.39
Uniform Delay, d1	25.5	7.4	23.2	20.2	23.3	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	1.3	0.2	0.5	0.9
Delay (s)	26.4	7.4	24.5	20.4	23.8	23.8
Level of Service	C	A	C	C	C	C
Approach Delay (s)		16.4	23.2		23.8	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	82	34	48	56
Maximum Split (%)	59.4%	24.6%	34.8%	40.6%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	34	82
End Time (s)	82	34	82	0
Yield/Force Off (s)	76	28	76	132
Yield/Force Off 170(s)	76	28	76	132
Local Start Time (s)	104	104	0	48
Local Yield (s)	42	132	42	98
Local Yield 170(s)	42	132	42	98

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	513	747	35	31	854	119	9	10	12	169	73	794
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1819	1583	1681	1734	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1819	1583	1681	1734	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	558	812	38	34	928	129	10	11	13	184	79	863
RTOR Reduction (vph)	0	0	12	0	0	80	0	0	12	0	0	0
Lane Group Flow (vph)	558	812	26	34	928	49	0	21	1	129	134	863
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	25.0	63.1	63.1	4.3	42.4	42.4		4.5	4.5	15.2	15.2	111.1
Effective Green, g (s)	25.0	63.1	63.1	4.3	42.4	42.4		4.5	4.5	15.2	15.2	111.1
Actuated g/C Ratio	0.23	0.57	0.57	0.04	0.38	0.38		0.04	0.04	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	773	2010	899	69	1351	604		74	64	230	237	1583
v/s Ratio Prot	c0.16	0.23		0.02	c0.26			0.01		0.08	0.08	
v/s Ratio Perm			0.02			0.03			0.00			c0.55
v/c Ratio	0.72	0.40	0.03	0.49	0.69	0.08		0.28	0.01	0.56	0.57	0.55
Uniform Delay, d1	39.8	13.5	10.5	52.3	28.8	21.9		51.7	51.2	44.8	44.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.2	0.0	5.4	1.6	0.1		2.9	0.1	3.1	3.1	1.4
Delay (s)	43.2	13.6	10.6	57.8	30.4	22.0		54.6	51.2	47.9	47.9	1.4
Level of Service	D	B	B	E	C	C		D	D	D	D	A
Approach Delay (s)		25.3			30.2			53.3			12.2	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	15	106	30	47	74	22
Maximum Split (%)	8.7%	61.3%	17.3%	27.2%	42.8%	12.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	121	0	47	151
End Time (s)	15	121	151	47	121	0
Yield/Force Off (s)	9	115	145	41	115	167
Yield/Force Off 170(s)	9	115	140	41	115	162
Local Start Time (s)	126	141	74	126	0	104
Local Yield (s)	135	68	98	167	68	120
Local Yield 170(s)	135	68	93	167	68	115

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1085	0	4	3	6	29	8	495	1	8	394	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.85			0.90		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1583			1665		1752	3504		1770	3484	
Flt Permitted	0.95	1.00			1.00		0.38	1.00		0.32	1.00	
Satd. Flow (perm)	3433	1583			1665		699	3504		592	3484	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1179	0	4	3	7	32	9	538	1	9	428	50
RTOR Reduction (vph)	0	2	0	0	30	0	0	0	0	0	11	0
Lane Group Flow (vph)	1179	2	0	0	12	0	9	539	0	9	467	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	35.5	35.5			4.2		16.2	16.2		16.2	16.2	
Effective Green, g (s)	35.5	35.5			4.2		16.2	16.2		16.2	16.2	
Actuated g/C Ratio	0.48	0.48			0.06		0.22	0.22		0.22	0.22	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1649	760			95		153	768		130	764	
v/s Ratio Prot	c0.34	0.00			c0.01			c0.15			0.13	
v/s Ratio Perm							0.01			0.02		
v/c Ratio	0.71	0.00			0.12		0.06	0.70		0.07	0.61	
Uniform Delay, d1	15.2	10.0			33.1		22.8	26.6		22.9	26.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.0			0.8		0.2	3.1		0.3	1.7	
Delay (s)	16.8	10.0			33.9		23.0	29.7		23.2	27.7	
Level of Service	B	A			C		C	C		C	C	
Approach Delay (s)		16.8			33.9			29.6			27.6	
Approach LOS		B			C			C			C	

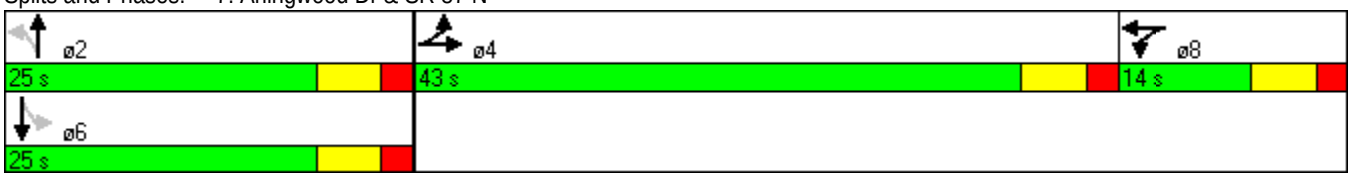
Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	25	43	25	14
Maximum Split (%)	30.5%	52.4%	30.5%	17.1%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	25	0	68
End Time (s)	25	68	25	0
Yield/Force Off (s)	19	62	19	76
Yield/Force Off 170(s)	19	42	19	76
Local Start Time (s)	0	25	0	68
Local Yield (s)	19	62	19	76
Local Yield 170(s)	19	42	19	76

Intersection Summary	
Cycle Length	82
Control Type	Actuated-Uncoordinated
Natural Cycle	65

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	67	339	187	994	0	498	29
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	368	203	1080	0	541	32
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1504	286	573		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1504	286	573		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	17	48	80		0		
cM capacity (veh/h)	88	704	996		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	441	203	540	540	361	212	0
Volume Left	73	203	0	0	0	0	0
Volume Right	368	0	0	0	0	32	0
cSH	326	996	1700	1700	1700	1700	1700
Volume to Capacity	1.35	0.20	0.32	0.32	0.21	0.12	0.00
Queue Length 95th (ft)	549	19	0	0	0	0	0
Control Delay (s)	210.4	9.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	A					
Approach Delay (s)	210.4	1.5			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	41.3		
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	115	55	9	224	972	113	331
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.54	1.00	1.00	0.61	1.00
Satd. Flow (perm)	3400	1568	990	1845	1568	1090	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	60	10	243	1057	123	360
RTOR Reduction (vph)	0	52	0	0	340	0	0
Lane Group Flow (vph)	125	8	10	243	717	123	360
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.9	8.9	44.0	44.0	44.0	44.0	44.0
Effective Green, g (s)	8.9	8.9	44.0	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.14	0.14	0.68	0.68	0.68	0.68	0.68
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	466	215	671	1251	1063	739	2309
v/s Ratio Prot				0.13			0.11
v/s Ratio Perm	c0.04	0.01	0.01		c0.46	0.11	
v/c Ratio	0.27	0.04	0.01	0.19	0.67	0.17	0.16
Uniform Delay, d1	25.1	24.3	3.4	3.9	6.2	3.8	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	0.0	0.3	3.4	0.5	0.1
Delay (s)	25.5	24.4	3.4	4.2	9.6	4.3	3.9
Level of Service	C	C	A	A	A	A	A
Approach Delay (s)	25.1			8.6			4.0
Approach LOS	C			A			A

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	50	30	50
Maximum Split (%)	62.5%	37.5%	62.5%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	50	0
End Time (s)	50	0	50
Yield/Force Off (s)	44	74	44
Yield/Force Off 170(s)	44	74	44
Local Start Time (s)	0	50	0
Local Yield (s)	44	74	44
Local Yield 170(s)	44	74	44

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 9: Langley St & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	147	0	93	0	530	110	77	725	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	3	160	0	101	0	576	120	84	788	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1345	1651	394	1201	1591	348	788			696		
vC1, stage 1 conf vol	955	955		636	636							
vC2, stage 2 conf vol	389	696		565	955							
vCu, unblocked vol	1345	1651	394	1201	1591	348	788			696		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	50	100	84	100			91		
cM capacity (veh/h)	223	241	605	321	261	645	821			889		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	3	3	261	384	312	84	394	394
Volume Left	3	0	160	0	0	84	0	0
Volume Right	0	3	101	0	120	0	0	0
cSH	223	605	399	1700	1700	889	1700	1700
Volume to Capacity	0.01	0.01	0.65	0.23	0.18	0.09	0.23	0.23
Queue Length 95th (ft)	1	0	113	0	0	8	0	0
Control Delay (s)	21.4	11.0	29.6	0.0	0.0	9.5	0.0	0.0
Lane LOS	C	B	D			A		
Approach Delay (s)	16.2		29.6	0.0		0.9		
Approach LOS	C		D					

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	74	90	105	344	0	108	1	47	0	2	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	80	98	114	374	0	117	1	51	0	2	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	374			178			745	734	129	785	783	374
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374			178			745	734	129	785	783	374
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			92			61	100	94	100	99	99
cM capacity (veh/h)	1179			1392			302	318	918	274	299	672

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	179	488	170	12
Volume Left	1	114	117	0
Volume Right	98	0	51	10
cSH	1179	1392	379	548
Volume to Capacity	0.00	0.08	0.45	0.02
Queue Length 95th (ft)	0	7	56	2
Control Delay (s)	0.1	2.5	22.0	11.7
Lane LOS	A	A	C	B
Approach Delay (s)	0.1	2.5	22.0	11.7
Approach LOS			C	B

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 S

PM 2035 - DESIGN YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	212	598	198	182	6	495	27	161	44	165	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	3367	1827	1553		1843	1583
Flt Permitted	0.63	1.00	1.00	0.48	1.00	1.00	0.95	1.00	1.00		0.99	1.00
Satd. Flow (perm)	1168	1845	1568	874	1810	1538	3367	1827	1553		1843	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	230	650	215	198	7	538	29	175	48	179	149
RTOR Reduction (vph)	0	0	0	0	0	4	0	0	0	0	0	124
Lane Group Flow (vph)	25	230	650	215	198	3	538	29	175	0	227	25
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			3
Actuated Green, G (s)	38.1	35.3	111.9	52.1	46.3	46.3	23.2	23.2	111.9		19.1	19.1
Effective Green, g (s)	38.1	35.3	111.9	52.1	46.3	46.3	23.2	23.2	111.9		19.1	19.1
Actuated g/C Ratio	0.34	0.32	1.00	0.47	0.41	0.41	0.21	0.21	1.00		0.17	0.17
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5			6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	412	582	1568	511	749	636	698	379	1553		315	270
v/s Ratio Prot	0.00	0.12		0.05	0.11		c0.16	0.02			c0.12	
v/s Ratio Perm	0.02		c0.41	0.14		0.00			0.11			0.02
v/c Ratio	0.06	0.40	0.41	0.42	0.26	0.00	0.77	0.08	0.11		0.72	0.09
Uniform Delay, d1	24.7	30.0	0.0	18.6	21.6	19.3	41.8	35.7	0.0		43.9	39.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	2.0	0.8	0.6	0.9	0.0	5.3	0.1	0.1		7.9	0.2
Delay (s)	24.8	32.0	0.8	19.2	22.5	19.3	47.1	35.8	0.1		51.8	39.3
Level of Service	C	C	A	B	C	B	D	D	A		D	D
Approach Delay (s)		9.4			20.7			35.6			46.8	
Approach LOS		A			C			D			D	

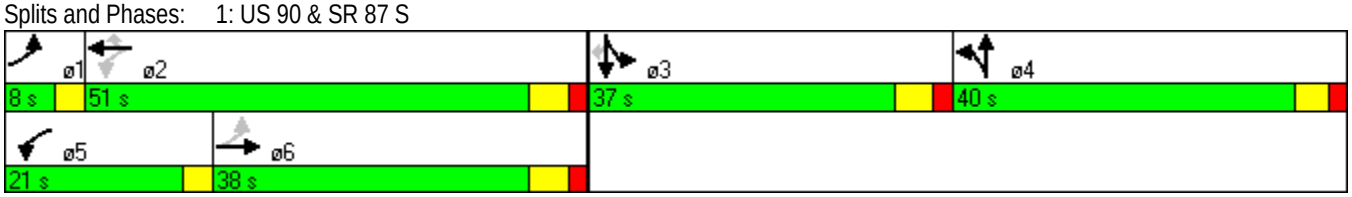
Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	111.9	Sum of lost time (s)	11.5
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	8	51	37	40	21	38
Maximum Split (%)	5.9%	37.5%	27.2%	29.4%	15.4%	27.9%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	8	59	96	0	21
End Time (s)	8	59	96	0	21	59
Yield/Force Off (s)	5	53	90	130.5	18	53
Yield/Force Off 170(s)	5	41	90	130.5	18	41
Local Start Time (s)	128	0	51	88	128	13
Local Yield (s)	133	45	82	122.5	10	45
Local Yield 170(s)	133	33	82	122.5	10	33

Intersection Summary	
Cycle Length	136
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 S



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	764	425	93	741	2	299	14	105	1	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1583			1741	
Flt Permitted	0.35	1.00	1.00	0.16	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	634	1827	1553	286	3470		1665	1583			1741	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	830	462	101	805	2	325	15	114	1	4	4
RTOR Reduction (vph)	0	0	191	0	0	0	0	29	0	0	4	0
Lane Group Flow (vph)	5	830	271	101	807	0	234	191	0	0	5	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	74.3	74.3	74.3	86.3	86.3		21.2	21.2			1.1	
Effective Green, g (s)	74.3	74.3	74.3	86.3	86.3		21.2	21.2			1.1	
Actuated g/C Ratio	0.59	0.59	0.59	0.68	0.68		0.17	0.17			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	372	1072	911	264	2365		279	265			15	
v/s Ratio Prot		c0.45		0.02	c0.23		c0.14	0.12			c0.00	
v/s Ratio Perm	0.01		0.17	0.24								
v/c Ratio	0.01	0.77	0.30	0.38	0.34		0.84	0.72			0.34	
Uniform Delay, d1	10.9	19.8	13.1	16.2	8.4		51.0	49.9			62.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	5.5	0.8	0.9	0.4		19.3	9.3			12.8	
Delay (s)	11.0	25.3	13.9	17.1	8.8		70.3	59.1			75.2	
Level of Service	B	C	B	B	A		E	E			E	
Approach Delay (s)		21.2			9.7			64.9			75.2	
Approach LOS		C			A			E			E	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	126.6	Sum of lost time (s)	24.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	92	12	31	12	80
Maximum Split (%)	68.1%	8.9%	23.0%	8.9%	59.3%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	92	104	0	12
End Time (s)	92	104	0	12	92
Yield/Force Off (s)	86	98	129	6	86
Yield/Force Off 170(s)	74	98	113	6	74
Local Start Time (s)	0	92	104	0	12
Local Yield (s)	86	98	129	6	86
Local Yield 170(s)	74	98	113	6	74

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	100

Splits and Phases: 2: US 90 & Dale St

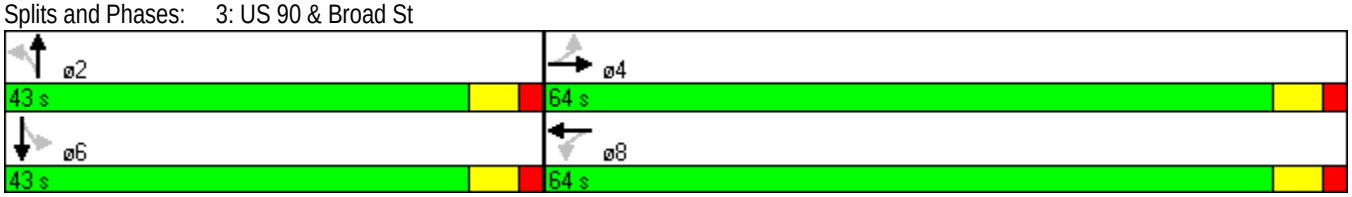
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	710	13	6	651	544	16	33	30	492	21	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.94			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1822			1715			1749			1749	
Flt Permitted	0.15	1.00			1.00			0.90			0.72	
Satd. Flow (perm)	271	1822			1708			1595			1311	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	772	14	7	708	591	17	36	33	535	23	41
RTOR Reduction (vph)	0	0	0	0	28	0	0	21	0	0	3	0
Lane Group Flow (vph)	47	786	0	0	1278	0	0	65	0	0	596	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	58.0	58.0			58.0			37.0			37.0	
Effective Green, g (s)	58.0	58.0			58.0			37.0			37.0	
Actuated g/C Ratio	0.54	0.54			0.54			0.35			0.35	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	147	988			926			552			453	
v/s Ratio Prot		0.43										
v/s Ratio Perm	0.17				c0.75			0.04			c0.46	
v/c Ratio	0.32	0.80			1.38			0.12			1.32	
Uniform Delay, d1	13.6	19.7			24.5			23.9			35.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	4.4	5.8			177.9			0.2			157.4	
Delay (s)	18.0	25.5			202.4			24.1			192.4	
Level of Service	B	C			F			C			F	
Approach Delay (s)		25.1			202.4			24.1			192.4	
Approach LOS		C			F			C			F	

Intersection Summary			
HCM Average Control Delay	142.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	43	64	43	64
Maximum Split (%)	40.2%	59.8%	40.2%	59.8%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	43	0	43
End Time (s)	43	0	43	0
Yield/Force Off (s)	37	101	37	101
Yield/Force Off 170(s)	25	101	25	101
Local Start Time (s)	0	43	0	43
Local Yield (s)	37	101	37	101
Local Yield 170(s)	25	101	25	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	140

Splits and Phases: 3: US 90 & Broad St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	817	51	53	673	99	85	206	73	51	243	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1736	1811		1736	1792			1774			1809	
Flt Permitted	0.14	1.00		0.07	1.00			0.74			0.85	
Satd. Flow (perm)	259	1811		131	1792			1329			1541	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	888	55	58	732	108	92	224	79	55	264	30
RTOR Reduction (vph)	0	2	0	0	5	0	0	8	0	0	3	0
Lane Group Flow (vph)	32	941	0	58	835	0	0	387	0	0	346	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	56.0	56.0		56.0	56.0			32.9			32.9	
Effective Green, g (s)	56.0	56.0		56.0	56.0			32.9			32.9	
Actuated g/C Ratio	0.56	0.56		0.56	0.56			0.33			0.33	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	144	1005		73	995			433			502	
v/s Ratio Prot		c0.52			0.47							
v/s Ratio Perm	0.12			0.44				c0.29			0.22	
v/c Ratio	0.22	0.94		0.79	0.84			0.89			0.69	
Uniform Delay, d1	11.4	20.8		17.9	18.7			32.3			29.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.1	15.4		45.2	6.6			21.4			5.0	
Delay (s)	12.5	36.2		63.1	25.3			53.8			34.6	
Level of Service	B	D		E	C			D			C	
Approach Delay (s)		35.4			27.7			53.8			34.6	
Approach LOS		D			C			D			C	

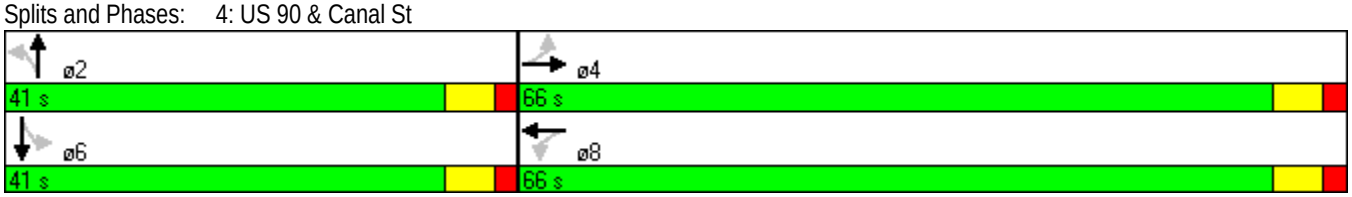
Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	41	66	41	66
Maximum Split (%)	38.3%	61.7%	38.3%	61.7%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	41	0	41
End Time (s)	41	0	41	0
Yield/Force Off (s)	35	101	35	101
Yield/Force Off 170(s)	35	101	35	101
Local Start Time (s)	0	41	0	41
Local Yield (s)	35	101	35	101
Local Yield 170(s)	35	101	35	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	738	630	660	283	323	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	802	685	717	308	351	653
RTOR Reduction (vph)	0	0	0	214	0	445
Lane Group Flow (vph)	802	685	717	94	351	208
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	31.6	66.6	29.0	29.0	23.0	23.0
Effective Green, g (s)	31.6	66.6	29.0	29.0	23.0	23.0
Actuated g/C Ratio	0.31	0.66	0.29	0.29	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	1068	2320	991	443	770	355
v/s Ratio Prot	c0.23	0.19	c0.21		0.10	
v/s Ratio Perm				0.06		c0.13
v/c Ratio	0.75	0.30	0.72	0.21	0.46	0.59
Uniform Delay, d1	31.5	7.5	32.7	27.6	33.9	35.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.1	2.6	0.2	0.6	2.9
Delay (s)	34.7	7.5	35.3	27.8	34.5	38.0
Level of Service	C	A	D	C	C	D
Approach Delay (s)		22.2	33.1		36.8	
Approach LOS		C	C		D	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	101.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	90	46	44	48
Maximum Split (%)	65.2%	33.3%	31.9%	34.8%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	46	90
End Time (s)	90	46	90	0
Yield/Force Off (s)	84	40	84	132
Yield/Force Off 170(s)	84	40	84	132
Local Start Time (s)	92	92	0	44
Local Yield (s)	38	132	38	86
Local Yield 170(s)	38	132	38	86

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	851	1148	68	64	1042	180	51	80	93	169	49	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1827	1583	1681	1722	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1827	1583	1681	1722	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	925	1248	74	70	1133	196	55	87	101	184	53	946
RTOR Reduction (vph)	0	0	16	0	0	127	0	0	91	0	0	0
Lane Group Flow (vph)	925	1248	58	70	1133	69	0	142	10	118	119	946
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	41.5	83.8	83.8	8.6	50.9	50.9		15.0	15.0	14.0	14.0	145.4
Effective Green, g (s)	41.5	83.8	83.8	8.6	50.9	50.9		15.0	15.0	14.0	14.0	145.4
Actuated g/C Ratio	0.29	0.58	0.58	0.06	0.35	0.35		0.10	0.10	0.10	0.10	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	980	2040	912	105	1239	554		188	163	162	166	1583
v/s Ratio Prot	c0.27	0.35		0.04	c0.32			0.08		0.07	0.07	
v/s Ratio Perm			0.04			0.04			0.01			c0.60
v/c Ratio	0.94	0.61	0.06	0.67	0.91	0.12		0.76	0.06	0.73	0.72	0.60
Uniform Delay, d1	50.8	20.2	13.5	67.0	45.2	32.1		63.4	58.9	63.9	63.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.8	0.6	0.0	14.8	10.6	0.1		16.7	0.2	15.1	13.7	1.7
Delay (s)	67.6	20.8	13.6	81.8	55.8	32.2		80.1	59.1	78.9	77.5	1.7
Level of Service	E	C	B	F	E	C		F	E	E	E	A
Approach Delay (s)		39.8			53.8			71.4			17.0	
Approach LOS		D			D			E			B	

Intersection Summary			
HCM Average Control Delay	39.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	145.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	18	88	22	49	57	22
Maximum Split (%)	12.0%	58.7%	14.7%	32.7%	38.0%	14.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	18	106	0	49	128
End Time (s)	18	106	128	49	106	0
Yield/Force Off (s)	12	100	122	43	100	144
Yield/Force Off 170(s)	12	100	117	43	100	139
Local Start Time (s)	101	119	57	101	0	79
Local Yield (s)	113	51	73	144	51	95
Local Yield 170(s)	113	51	68	144	51	90

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	125

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	767	6	5	4	8	27	5	634	6	34	393	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.94			0.91		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1746			1681		1752	3500		1770	3499	
Flt Permitted	0.95	1.00			1.00		0.44	1.00		0.26	1.00	
Satd. Flow (perm)	3433	1746			1681		820	3500		477	3499	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	834	7	5	4	9	29	5	689	7	37	427	35
RTOR Reduction (vph)	0	3	0	0	27	0	0	1	0	0	9	0
Lane Group Flow (vph)	834	9	0	0	15	0	5	695	0	37	453	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	26.8	26.8			4.2		19.3	19.3		19.3	19.3	
Effective Green, g (s)	26.8	26.8			4.2		19.3	19.3		19.3	19.3	
Actuated g/C Ratio	0.39	0.39			0.06		0.28	0.28		0.28	0.28	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1347	685			103		232	989		135	989	
v/s Ratio Prot	c0.24	0.01			c0.01			c0.20			0.13	
v/s Ratio Perm							0.01			0.08		
v/c Ratio	0.62	0.01			0.14		0.02	0.70		0.27	0.46	
Uniform Delay, d1	16.7	12.7			30.3		17.7	21.9		19.1	20.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.0			0.9		0.1	2.5		1.5	0.5	
Delay (s)	17.6	12.7			31.2		17.7	24.4		20.6	20.7	
Level of Service	B	B			C		B	C		C	C	
Approach Delay (s)		17.6			31.2			24.3			20.6	
Approach LOS		B			C			C			C	

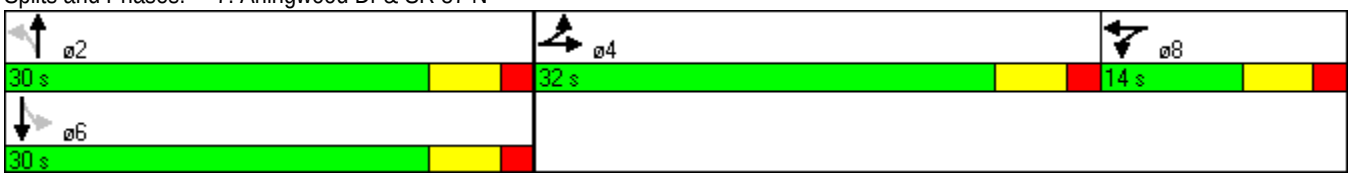
Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Min	Ped	Min	None
Maximum Split (s)	30	32	30	14
Maximum Split (%)	39.5%	42.1%	39.5%	18.4%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	14		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	30	0	62
End Time (s)	30	62	30	0
Yield/Force Off (s)	24	56	24	70
Yield/Force Off 170(s)	24	42	24	70
Local Start Time (s)	0	30	0	62
Local Yield (s)	24	56	24	70
Local Yield 170(s)	24	42	24	70

Intersection Summary	
Cycle Length	76
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	23	329	334	549	0	1034	96
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	358	363	597	0	1124	104
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	2201	614	1228		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2201	614	1228		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	0	17	36		0		
cM capacity (veh/h)	13	430	563		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	383	363	298	298	749	479	0
Volume Left	25	363	0	0	0	0	0
Volume Right	358	0	0	0	0	104	0
cSH	140	563	1700	1700	1700	1700	1700
Volume to Capacity	2.73	0.64	0.18	0.18	0.44	0.28	0.00
Queue Length 95th (ft)	862	115	0	0	0	0	0
Control Delay (s)	847.5	22.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	C					
Approach Delay (s)	847.5	8.4			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	129.3		
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	709	161	29	270	134	40	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.55	1.00	1.00	0.57	1.00
Satd. Flow (perm)	3400	1568	1022	1845	1568	1014	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	771	175	32	293	146	43	327
RTOR Reduction (vph)	0	115	0	0	76	0	0
Lane Group Flow (vph)	771	60	32	293	70	43	327
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	23.1	23.1	32.2	32.2	32.2	32.2	32.2
Effective Green, g (s)	23.1	23.1	32.2	32.2	32.2	32.2	32.2
Actuated g/C Ratio	0.34	0.34	0.48	0.48	0.48	0.48	0.48
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1167	538	489	883	750	485	1630
v/s Ratio Prot				c0.16			0.10
v/s Ratio Perm	c0.23	0.04	0.03		0.04	0.04	
v/c Ratio	0.66	0.11	0.07	0.33	0.09	0.09	0.20
Uniform Delay, d1	18.8	15.1	9.4	10.9	9.6	9.6	10.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1	0.3	1.0	0.2	0.4	0.3
Delay (s)	20.3	15.2	9.7	11.9	9.8	9.9	10.4
Level of Service	C	B	A	B	A	A	B
Approach Delay (s)	19.4			11.1			10.3
Approach LOS	B			B			B

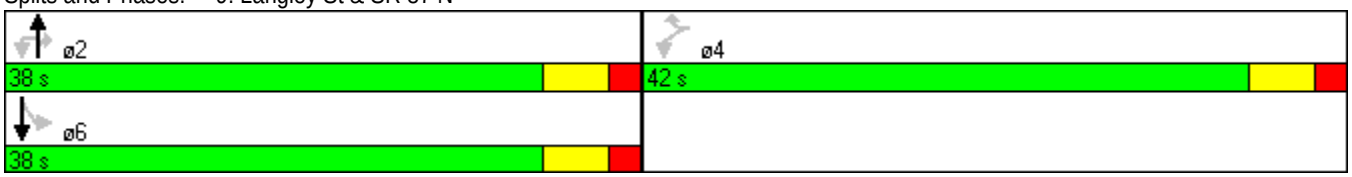
Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	67.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	38	42	38
Maximum Split (%)	47.5%	52.5%	47.5%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	38	0
End Time (s)	38	0	38
Yield/Force Off (s)	32	74	32
Yield/Force Off 170(s)	32	74	32
Local Start Time (s)	0	38	0
Local Yield (s)	32	74	32
Local Yield 170(s)	32	74	32

Intersection Summary	
Cycle Length	80
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	0	64	160	0	128	0	774	252	69	665	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	0	70	174	0	139	0	841	274	75	723	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1433	1988	361	1559	1851	558	723			1115		
vC1, stage 1 conf vol	873	873		978	978							
vC2, stage 2 conf vol	560	1115		581	873							
vCu, unblocked vol	1433	1988	361	1559	1851	558	723			1115		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	89	20	100	70	100			88		
cM capacity (veh/h)	194	176	635	217	230	471	869			616		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	22	70	313	561	554	75	361	361
Volume Left	22	0	174	0	0	75	0	0
Volume Right	0	70	139	0	274	0	0	0
cSH	194	635	285	1700	1700	616	1700	1700
Volume to Capacity	0.11	0.11	1.10	0.33	0.33	0.12	0.21	0.21
Queue Length 95th (ft)	9	9	318	0	0	10	0	0
Control Delay (s)	25.9	11.4	121.4	0.0	0.0	11.7	0.0	0.0
Lane LOS	D	B	F			B		
Approach Delay (s)	14.8		121.4	0.0		1.1		
Approach LOS	B		F					

Intersection Summary			
Average Delay	17.4		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	265	158	53	195	0	115	9	54	0	1	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	288	172	58	212	0	125	10	59	0	1	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	212			460			716	708	374	771	793	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	212			460			716	708	374	771	793	212
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			62	97	91	100	100	99
cM capacity (veh/h)	1353			1096			326	339	670	271	303	828

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	463	270	193	9
Volume Left	3	58	125	0
Volume Right	172	0	59	8
cSH	1353	1096	387	681
Volume to Capacity	0.00	0.05	0.50	0.01
Queue Length 95th (ft)	0	4	68	1
Control Delay (s)	0.1	2.2	23.3	10.4
Lane LOS	A	A	C	B
Approach Delay (s)	0.1	2.2	23.3	10.4
Approach LOS			C	B

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

AM 2035 - ALT 1 - DESIGN YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	71	305	284	112	101	316	788	173	61	246	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3364	
Flt Permitted	0.68	1.00	1.00	0.62	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1252	1845	1568	1129	1810	1538	1736	3471	1553	1770	3364	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	77	332	309	122	110	343	857	188	66	267	132
RTOR Reduction (vph)	0	0	0	0	0	82	0	0	0	0	51	0
Lane Group Flow (vph)	229	77	332	309	122	28	343	857	188	66	348	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	34.8	22.6	108.7	42.5	27.3	27.3	32.9	32.9	108.7	15.8	15.8	
Effective Green, g (s)	34.8	22.6	108.7	42.5	27.3	27.3	32.9	32.9	108.7	15.8	15.8	
Actuated g/C Ratio	0.32	0.21	1.00	0.39	0.25	0.25	0.30	0.30	1.00	0.15	0.15	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	457	384	1568	533	455	386	525	1051	1553	257	489	
v/s Ratio Prot	0.06	0.04		c0.09	0.07		0.20	c0.25		0.04	c0.10	
v/s Ratio Perm	0.10		0.21	c0.14		0.02			0.12			
v/c Ratio	0.50	0.20	0.21	0.58	0.27	0.07	0.65	0.82	0.12	0.26	0.71	
Uniform Delay, d1	28.9	35.6	0.0	24.6	32.7	31.0	32.9	35.1	0.0	41.2	44.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	1.2	0.3	1.5	1.4	0.4	2.9	5.0	0.2	0.5	4.8	
Delay (s)	29.8	36.8	0.3	26.2	34.1	31.4	35.9	40.1	0.2	41.8	49.1	
Level of Service	C	D	A	C	C	C	D	D	A	D	D	
Approach Delay (s)		15.3			29.0			33.6			48.1	
Approach LOS		B			C			C			D	

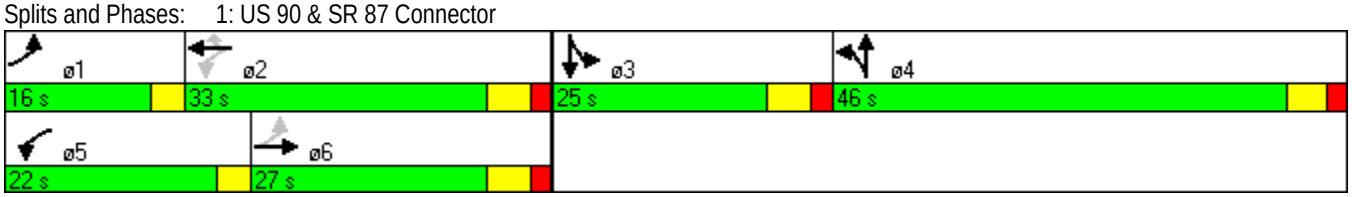
Intersection Summary			
HCM Average Control Delay	31.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	108.7	Sum of lost time (s)	14.5
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	16	33	25	46	22	27
Maximum Split (%)	13.3%	27.5%	20.8%	38.3%	18.3%	22.5%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	49	74	0	22
End Time (s)	16	49	74	0	22	49
Yield/Force Off (s)	13	43	68	114.5	19	43
Yield/Force Off 170(s)	13	31	68	114.5	19	31
Local Start Time (s)	104	0	33	58	104	6
Local Yield (s)	117	27	52	98.5	3	27
Local Yield 170(s)	117	15	52	98.5	3	15

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	328	276	176	329	1	356	11	117	5	9	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1585			1786	
Flt Permitted	0.54	1.00	1.00	0.41	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	982	1827	1553	753	3470		1665	1585			1786	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	357	300	191	358	1	387	12	127	5	10	4
RTOR Reduction (vph)	0	0	158	0	0	0	0	30	0	0	4	0
Lane Group Flow (vph)	1	357	142	191	359	0	271	225	0	0	15	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	54.4	54.4	54.4	71.0	71.0		23.3	23.3			2.5	
Effective Green, g (s)	54.4	54.4	54.4	71.0	71.0		23.3	23.3			2.5	
Actuated g/C Ratio	0.47	0.47	0.47	0.62	0.62		0.20	0.20			0.02	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	465	866	736	556	2146		338	322			39	
v/s Ratio Prot		c0.20		c0.03	0.10		c0.16	0.14			c0.01	
v/s Ratio Perm	0.00		0.09	0.18								
v/c Ratio	0.00	0.41	0.19	0.34	0.17		0.80	0.70			0.39	
Uniform Delay, d1	15.9	19.7	17.5	10.6	9.3		43.6	42.5			55.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.4	0.6	0.4	0.2		12.8	6.5			6.3	
Delay (s)	15.9	21.2	18.1	11.0	9.5		56.4	48.9			61.7	
Level of Service	B	C	B	B	A		E	D			E	
Approach Delay (s)		19.8			10.0			52.8			61.7	
Approach LOS		B			B			D			E	

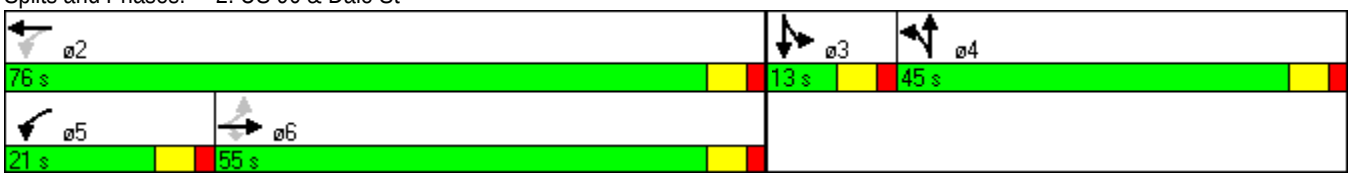
Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	76	13	45	21	55
Maximum Split (%)	56.7%	9.7%	33.6%	15.7%	41.0%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	76	89	0	21
End Time (s)	76	89	0	21	76
Yield/Force Off (s)	70	83	128	15	70
Yield/Force Off 170(s)	58	83	112	15	58
Local Start Time (s)	0	76	89	0	21
Local Yield (s)	70	83	128	15	70
Local Yield 170(s)	58	83	112	15	58

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	373	41	13	564	242	3	5	18	256	31	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.96			0.90			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1800			1753			1674			1757	
Flt Permitted	0.27	1.00			0.99			0.97			0.74	
Satd. Flow (perm)	502	1800			1739			1626			1355	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	405	45	14	613	263	3	5	20	278	34	18
RTOR Reduction (vph)	0	4	0	0	14	0	0	14	0	0	2	0
Lane Group Flow (vph)	14	446	0	0	876	0	0	14	0	0	328	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	55.3	55.3			55.3			28.6			28.6	
Effective Green, g (s)	55.3	55.3			55.3			28.6			28.6	
Actuated g/C Ratio	0.58	0.58			0.58			0.30			0.30	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	289	1038			1003			485			404	
v/s Ratio Prot		0.25										
v/s Ratio Perm	0.03				c0.50			0.01			c0.24	
v/c Ratio	0.05	0.43			0.87			0.03			0.81	
Uniform Delay, d1	8.8	11.4			17.3			23.8			31.2	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.2	1.0			9.9			0.1			13.2	
Delay (s)	9.1	12.4			27.2			23.9			44.3	
Level of Service	A	B			C			C			D	
Approach Delay (s)		12.3			27.2			23.9			44.3	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	39	68	39	68
Maximum Split (%)	36.4%	63.6%	36.4%	63.6%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	39	0	39
End Time (s)	39	0	39	0
Yield/Force Off (s)	33	101	33	101
Yield/Force Off 170(s)	21	101	21	101
Local Start Time (s)	0	39	0	39
Local Yield (s)	33	101	33	101
Local Yield 170(s)	21	101	21	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	75

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	492	90	78	525	24	105	130	82	21	170	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1736	1784		1736	1815			1751			1820	
Flt Permitted	0.26	1.00		0.23	1.00			0.81			0.94	
Satd. Flow (perm)	475	1784		417	1815			1450			1724	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	535	98	85	571	26	114	141	89	23	185	14
RTOR Reduction (vph)	0	7	0	0	2	0	0	12	0	0	2	0
Lane Group Flow (vph)	13	626	0	85	595	0	0	332	0	0	220	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.8	32.8		32.8	32.8			27.0			27.0	
Effective Green, g (s)	32.8	32.8		32.8	32.8			27.0			27.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.38			0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	217	815		190	829			545			648	
v/s Ratio Prot		c0.35			0.33							
v/s Ratio Perm	0.03			0.20				c0.23			0.13	
v/c Ratio	0.06	0.77		0.45	0.72			0.61			0.34	
Uniform Delay, d1	10.9	16.3		13.3	15.8			18.1			16.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	4.7		2.3	3.2			2.8			0.7	
Delay (s)	11.0	21.0		15.6	19.0			21.0			16.7	
Level of Service	B	C		B	B			C			B	
Approach Delay (s)		20.8			18.5			21.0			16.7	
Approach LOS		C			B			C			B	

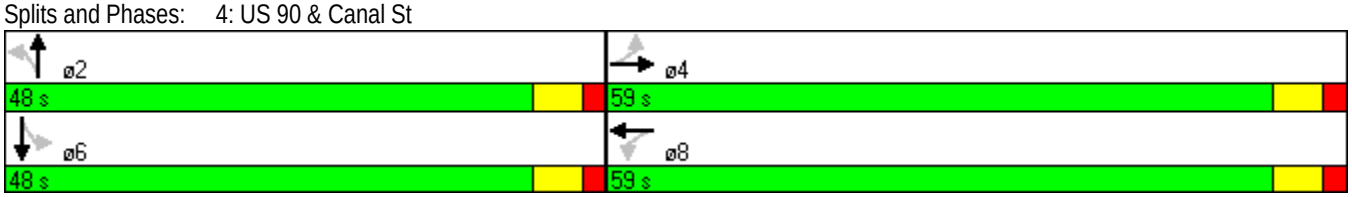
Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	48	59	48	59
Maximum Split (%)	44.9%	55.1%	44.9%	55.1%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	48	0	48
End Time (s)	48	0	48	0
Yield/Force Off (s)	42	101	42	101
Yield/Force Off 170(s)	42	101	42	101
Local Start Time (s)	0	48	0	48
Local Yield (s)	42	101	42	101
Local Yield 170(s)	42	101	42	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	332	506	645	146	216	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	550	701	159	235	464
RTOR Reduction (vph)	0	0	0	109	0	334
Lane Group Flow (vph)	361	550	701	50	235	130
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	14.8	42.6	21.8	21.8	14.4	14.4
Effective Green, g (s)	14.8	42.6	21.8	21.8	14.4	14.4
Actuated g/C Ratio	0.21	0.62	0.32	0.32	0.21	0.21
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	736	2185	1097	491	710	327
v/s Ratio Prot	c0.11	0.16	c0.20		0.07	
v/s Ratio Perm				0.03		c0.08
v/c Ratio	0.49	0.25	0.64	0.10	0.33	0.40
Uniform Delay, d1	23.8	6.0	20.2	16.7	23.2	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	1.2	0.1	0.4	1.1
Delay (s)	24.5	6.0	21.5	16.8	23.6	24.6
Level of Service	C	A	C	B	C	C
Approach Delay (s)		13.4	20.6		24.3	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	85	31	54	53
Maximum Split (%)	61.6%	22.5%	39.1%	38.4%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	31	85
End Time (s)	85	31	85	0
Yield/Force Off (s)	79	25	79	132
Yield/Force Off 170(s)	79	25	79	132
Local Start Time (s)	107	107	0	54
Local Yield (s)	48	132	48	101
Local Yield 170(s)	48	132	48	101

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	459	777	34	35	873	125	9	10	14	165	69	725
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1819	1583	1681	1733	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1819	1583	1681	1733	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	499	845	37	38	949	136	10	11	15	179	75	788
RTOR Reduction (vph)	0	0	11	0	0	83	0	0	14	0	0	0
Lane Group Flow (vph)	499	845	26	38	949	53	0	21	1	125	129	788
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	22.6	59.9	59.9	4.7	42.0	42.0		4.5	4.5	14.7	14.7	107.8
Effective Green, g (s)	22.6	59.9	59.9	4.7	42.0	42.0		4.5	4.5	14.7	14.7	107.8
Actuated g/C Ratio	0.21	0.56	0.56	0.04	0.39	0.39		0.04	0.04	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	720	1966	880	77	1379	617		76	66	229	236	1583
v/s Ratio Prot	c0.15	0.24		0.02	c0.27			0.01		0.07	0.07	
v/s Ratio Perm			0.02			0.03			0.00			c0.50
v/c Ratio	0.69	0.43	0.03	0.49	0.69	0.09		0.28	0.01	0.55	0.55	0.50
Uniform Delay, d1	39.4	14.0	10.8	50.4	27.4	20.8		50.1	49.5	43.4	43.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.2	0.0	4.9	1.6	0.1		2.7	0.1	2.6	2.6	1.1
Delay (s)	42.3	14.2	10.8	55.3	29.0	20.9		52.8	49.6	46.1	46.0	1.1
Level of Service	D	B	B	E	C	C		D	D	D	D	A
Approach Delay (s)		24.3			28.9			51.4			12.1	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	107.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	17	103	31	45	75	22
Maximum Split (%)	9.8%	59.5%	17.9%	26.0%	43.4%	12.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	17	120	0	45	151
End Time (s)	17	120	151	45	120	0
Yield/Force Off (s)	11	114	145	39	114	167
Yield/Force Off 170(s)	11	114	140	39	114	162
Local Start Time (s)	128	145	75	128	0	106
Local Yield (s)	139	69	100	167	69	122
Local Yield 170(s)	139	69	95	167	69	117

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	752	2	21	6	7	7	21	233	2	4	269	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.86			0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1606			1749		1752	3501		1770	3480	
Flt Permitted	0.95	1.00			0.99		0.55	1.00		0.59	1.00	
Satd. Flow (perm)	3433	1606			1749		1011	3501		1106	3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	817	2	23	7	8	8	23	253	2	4	292	37
RTOR Reduction (vph)	0	16	0	0	8	0	0	1	0	0	6	0
Lane Group Flow (vph)	817	9	0	0	15	0	23	254	0	4	323	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	38.0	38.0			5.2		58.8	58.8		58.8	58.8	
Effective Green, g (s)	38.0	38.0			5.2		58.8	58.8		58.8	58.8	
Actuated g/C Ratio	0.32	0.32			0.04		0.49	0.49		0.49	0.49	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1087	509			76		495	1715		542	1705	
v/s Ratio Prot	c0.24	0.01			c0.01			0.07			c0.09	
v/s Ratio Perm							0.02			0.00		
v/c Ratio	0.75	0.02			0.20		0.05	0.15		0.01	0.19	
Uniform Delay, d1	36.8	28.2			55.4		16.0	16.8		15.7	17.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		0.69	0.81	
Incremental Delay, d2	3.2	0.0			1.8		0.2	0.2		0.0	0.1	
Delay (s)	39.9	28.2			57.2		16.1	17.0		10.8	14.0	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		39.6			57.2			16.9			14.0	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	36	66	36	18
Maximum Split (%)	30.0%	55.0%	30.0%	15.0%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	77	113	77	59
End Time (s)	113	59	113	77
Yield/Force Off (s)	107	53	107	71
Yield/Force Off 170(s)	98	33	107	71
Local Start Time (s)	0	36	0	102
Local Yield (s)	30	96	30	114
Local Yield 170(s)	21	76	30	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 77 (64%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	67	482	263	1045	0	515	29
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	524	286	1136	0	560	32
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	1715	296	591		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1715	296	591		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	0	25	71		0		
cM capacity (veh/h)	56	695	980		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	597	286	568	568	373	218	0
Volume Left	73	286	0	0	0	0	0
Volume Right	524	0	0	0	0	32	0
cSH	291	980	1700	1700	1700	1700	1700
Volume to Capacity	2.05	0.29	0.33	0.33	0.22	0.13	0.00
Queue Length 95th (ft)	1084	30	0	0	0	0	0
Control Delay (s)	512.6	10.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s)	512.6	2.0			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	118.3		
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	121	49	8	234	994	109	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.53	1.00	1.00	0.60	1.00
Satd. Flow (perm)	3400	1568	976	1845	1568	1079	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	53	9	254	1080	118	375
RTOR Reduction (vph)	0	42	0	0	540	0	0
Lane Group Flow (vph)	132	11	9	254	540	118	375
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.20	0.20	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	680	314	488	923	784	540	1703
v/s Ratio Prot				0.14			0.11
v/s Ratio Perm	c0.04	0.01	0.01		c0.34	0.11	
v/c Ratio	0.19	0.03	0.02	0.28	0.69	0.22	0.22
Uniform Delay, d1	13.3	12.9	5.0	5.8	7.6	5.6	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.1	0.7	4.9	0.9	0.3
Delay (s)	13.5	12.9	5.1	6.5	12.5	6.5	5.9
Level of Service	B	B	A	A	B	A	A
Approach Delay (s)	13.3			11.4			6.1
Approach LOS	B			B			A

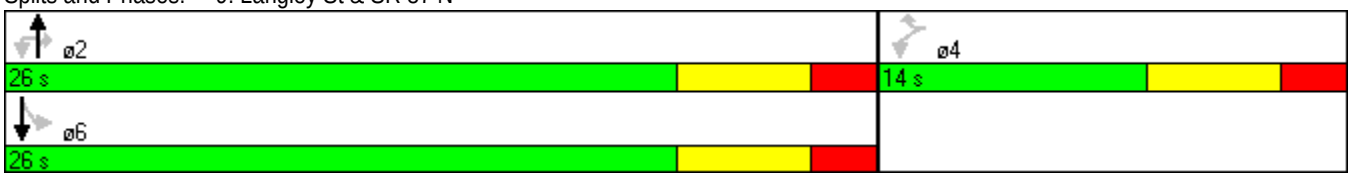
Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	26	14	26
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	26	0
End Time (s)	26	0	26
Yield/Force Off (s)	20	34	20
Yield/Force Off 170(s)	20	34	20
Local Start Time (s)	0	26	0
Local Yield (s)	20	34	20
Local Yield 170(s)	20	34	20

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	4	92	1	35	2	356	55	39	490	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	4	100	1	38	2	387	60	42	533	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	854	1069	267	777	1040	223	534			447		
vC1, stage 1 conf vol	618	618		421	421							
vC2, stage 2 conf vol	236	451		355	618							
vCu, unblocked vol	854	1069	267	777	1040	223	534			447		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	79	100	95	100			96		
cM capacity (veh/h)	393	386	731	472	398	777	1023			1103		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	2	4	139	196	253	42	355	179
Volume Left	2	0	100	2	0	42	0	0
Volume Right	0	4	38	0	60	0	0	1
cSH	393	731	528	1023	1700	1103	1700	1700
Volume to Capacity	0.01	0.01	0.26	0.00	0.15	0.04	0.21	0.11
Queue Length 95th (ft)	0	0	26	0	0	3	0	0
Control Delay (s)	14.2	10.0	14.2	0.1	0.0	8.4	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	11.4		14.2	0.1		0.6		
Approach LOS	B		B					

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	44	36	33	190	0	43	0	14	0	2	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	48	39	36	207	0	47	0	15	0	2	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			87			362	350	67	365	370	207
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	207			87			362	350	67	365	370	207
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			92	100	98	100	100	99
cM capacity (veh/h)	1359			1503			571	558	993	571	546	834

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	89	242	62	13
Volume Left	2	36	47	0
Volume Right	39	0	15	11
cSH	1359	1503	638	766
Volume to Capacity	0.00	0.02	0.10	0.02
Queue Length 95th (ft)	0	2	8	1
Control Delay (s)	0.2	1.3	11.3	9.8
Lane LOS	A	A	B	A
Approach Delay (s)	0.2	1.3	11.3	9.8
Approach LOS			B	A

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	237	2	47	74	587	9	734	369	341	934	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1861		1770	1863	1583	1770	3362		1770	3509	
Flt Permitted	0.70	1.00		0.39	1.00	1.00	0.27	1.00		0.08	1.00	
Satd. Flow (perm)	1313	1861		723	1863	1583	495	3362		158	3509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	258	2	51	80	638	10	798	401	371	1015	61
RTOR Reduction (vph)	0	0	0	0	0	276	0	52	0	0	3	0
Lane Group Flow (vph)	33	260	0	51	80	362	10	1147	0	371	1073	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	30.8	28.4		32.4	29.2	29.2	42.1	41.3		70.4	63.6	
Effective Green, g (s)	30.8	28.4		32.4	29.2	29.2	42.1	41.3		70.4	63.6	
Actuated g/C Ratio	0.26	0.24		0.27	0.24	0.24	0.35	0.34		0.59	0.53	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	346	440		223	453	385	182	1157		403	1860	
v/s Ratio Prot	0.00	0.14		c0.01	0.04		0.00	c0.34		c0.18	0.31	
v/s Ratio Perm	0.02			0.06		c0.23	0.02			0.36		
v/c Ratio	0.10	0.59		0.23	0.18	0.94	0.05	0.99		0.92	0.58	
Uniform Delay, d1	33.8	40.6		33.4	35.9	44.5	25.4	39.2		36.9	19.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.51	0.48		1.00	1.00	
Incremental Delay, d2	0.1	2.1		0.5	0.2	30.5	0.1	23.9		26.1	1.3	
Delay (s)	33.9	42.8		33.9	36.1	75.0	13.2	42.5		63.0	20.4	
Level of Service	C	D		C	D	E	B	D		E	C	
Approach Delay (s)		41.8			68.2			42.3			31.3	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM Average Control Delay	43.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	27	47	10	36	10	64	10	36
Maximum Split (%)	22.5%	39.2%	8.3%	30.0%	8.3%	53.3%	8.3%	30.0%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	93	0	47	57	93	103	47	57
End Time (s)	0	47	57	93	103	47	57	93
Yield/Force Off (s)	114	41	51	87	97	41	51	87
Yield/Force Off 170(s)	114	30	51	76	97	30	51	76
Local Start Time (s)	93	0	47	57	93	103	47	57
Local Yield (s)	114	41	51	87	97	41	51	87
Local Yield 170(s)	114	30	51	76	97	30	51	76

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	681	1	3	729	201	9	167	19	142	166	82
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	96	740	1	3	792	218	10	182	21	154	180	89
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1011			741			1514	1949	371	1581	1841	505
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1011			741			1514	1949	371	1581	1841	505
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	86			100			0	0	97	0	0	83
cM capacity (veh/h)	681			861			0	55	627	0	64	512

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	466	371	399	615	212	424
Volume Left	96	0	3	0	10	154
Volume Right	0	1	0	218	21	89
cSH	681	1700	861	1700	0	0
Volume to Capacity	0.14	0.22	0.00	0.36	Err	Err
Queue Length 95th (ft)	12	0	0	0	Err	Err
Control Delay (s)	3.9	0.0	0.1	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	2.2		0.0		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

PM 2035 - ALT 1 - DESIGN YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	100	471	269	89	55	439	446	238	115	519	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3390	
Flt Permitted	0.69	1.00	1.00	0.59	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1281	1845	1568	1065	1810	1538	1736	3471	1553	1770	3390	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	109	512	292	97	60	477	485	259	125	564	221
RTOR Reduction (vph)	0	0	0	0	0	47	0	0	0	0	35	0
Lane Group Flow (vph)	115	109	512	292	97	13	477	485	259	125	750	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	25.1	19.1	114.6	34.2	25.2	25.2	35.2	35.2	114.6	27.7	27.7	
Effective Green, g (s)	25.1	19.1	114.6	34.2	25.2	25.2	35.2	35.2	114.6	27.7	27.7	
Actuated g/C Ratio	0.22	0.17	1.00	0.30	0.22	0.22	0.31	0.31	1.00	0.24	0.24	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	305	308	1568	387	398	338	533	1066	1553	428	819	
v/s Ratio Prot	0.02	0.06		c0.08	0.05		c0.27	0.14		0.07	c0.22	
v/s Ratio Perm	0.06		0.33	c0.15		0.01			0.17			
v/c Ratio	0.38	0.35	0.33	0.75	0.24	0.04	0.89	0.45	0.17	0.29	0.92	
Uniform Delay, d1	37.4	42.3	0.0	35.0	36.8	35.2	37.9	32.0	0.0	35.5	42.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	3.2	0.6	8.1	1.5	0.2	17.3	0.3	0.2	0.4	14.7	
Delay (s)	38.2	45.5	0.6	43.1	38.3	35.4	55.3	32.3	0.2	35.8	57.1	
Level of Service	D	D	A	D	D	D	E	C	A	D	E	
Approach Delay (s)		13.1			41.0			34.5			54.1	
Approach LOS		B			D			C			D	

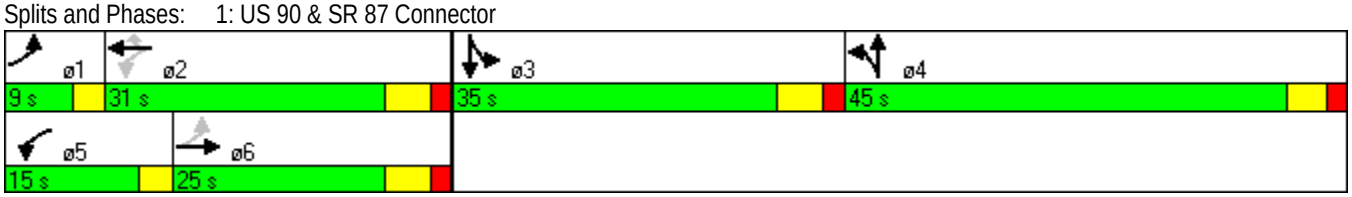
Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	114.6	Sum of lost time (s)	14.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	9	31	35	45	15	25
Maximum Split (%)	7.5%	25.8%	29.2%	37.5%	12.5%	20.8%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	9	40	75	0	15
End Time (s)	9	40	75	0	15	40
Yield/Force Off (s)	6	34	69	114.5	12	34
Yield/Force Off 170(s)	6	22	69	114.5	12	22
Local Start Time (s)	111	0	31	66	111	6
Local Yield (s)	117	25	60	105.5	3	25
Local Yield 170(s)	117	13	60	105.5	3	13

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	500	366	74	495	2	264	14	81	1	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3469		1665	1594			1726	
Flt Permitted	0.45	1.00	1.00	0.34	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	823	1827	1553	616	3469		1665	1594			1726	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	543	398	80	538	2	287	15	88	1	3	4
RTOR Reduction (vph)	0	0	160	0	0	0	0	25	0	0	4	0
Lane Group Flow (vph)	7	543	238	80	540	0	201	164	0	0	4	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	72.1	72.1	72.1	82.8	82.8		19.0	19.0			1.0	
Effective Green, g (s)	72.1	72.1	72.1	82.8	82.8		19.0	19.0			1.0	
Actuated g/C Ratio	0.60	0.60	0.60	0.69	0.69		0.16	0.16			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	491	1090	927	466	2378		262	251			14	
v/s Ratio Prot		c0.30		0.01	c0.16		c0.12	0.10			c0.00	
v/s Ratio Perm	0.01		0.15	0.11								
v/c Ratio	0.01	0.50	0.26	0.17	0.23		0.77	0.65			0.29	
Uniform Delay, d1	9.9	14.0	11.6	8.3	7.1		48.8	47.8			59.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	1.6	0.7	0.2	0.2		12.6	6.0			11.1	
Delay (s)	10.0	15.6	12.3	8.5	7.3		61.4	53.8			70.6	
Level of Service	A	B	B	A	A		E	D			E	
Approach Delay (s)		14.2			7.5			57.7			70.6	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	87	12	36	12	75
Maximum Split (%)	64.4%	8.9%	26.7%	8.9%	55.6%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	87	99	0	12
End Time (s)	87	99	0	12	87
Yield/Force Off (s)	81	93	129	6	81
Yield/Force Off 170(s)	69	93	113	6	69
Local Start Time (s)	0	87	99	0	12
Local Yield (s)	81	93	129	6	81
Local Yield 170(s)	69	93	113	6	69

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	583	18	9	542	333	20	29	30	299	13	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1819			1733			1745			1748	
Flt Permitted	0.25	1.00			0.99			0.89			0.72	
Satd. Flow (perm)	456	1819			1721			1564			1320	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	634	20	10	589	362	22	32	33	325	14	29
RTOR Reduction (vph)	0	1	0	0	20	0	0	21	0	0	3	0
Lane Group Flow (vph)	30	653	0	0	941	0	0	66	0	0	365	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	60.0	60.0			60.0			31.5			31.5	
Effective Green, g (s)	60.0	60.0			60.0			31.5			31.5	
Actuated g/C Ratio	0.58	0.58			0.58			0.30			0.30	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	264	1054			998			476			402	
v/s Ratio Prot		0.36										
v/s Ratio Perm	0.07				c0.55			0.04			c0.28	
v/c Ratio	0.11	0.62			0.94			0.14			0.91	
Uniform Delay, d1	9.8	14.3			20.2			26.1			34.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.7	2.2			17.5			0.3			24.9	
Delay (s)	10.5	16.5			37.6			26.4			59.5	
Level of Service	B	B			D			C			E	
Approach Delay (s)		16.2			37.6			26.4			59.5	
Approach LOS		B			D			C			E	

Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	103.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	39	68	39	68
Maximum Split (%)	36.4%	63.6%	36.4%	63.6%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	39	0	39
End Time (s)	39	0	39	0
Yield/Force Off (s)	33	101	33	101
Yield/Force Off 170(s)	21	101	21	101
Local Start Time (s)	0	39	0	39
Local Yield (s)	33	101	33	101
Local Yield 170(s)	21	101	21	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	671	118	88	572	31	146	170	78	28	172	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1736	1786		1736	1813			1763			1810	
Flt Permitted	0.25	1.00		0.10	1.00			0.74			0.92	
Satd. Flow (perm)	448	1786		178	1813			1327			1673	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	729	128	96	622	34	159	185	85	30	187	22
RTOR Reduction (vph)	0	6	0	0	2	0	0	8	0	0	3	0
Lane Group Flow (vph)	16	851	0	96	654	0	0	421	0	0	236	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.4	51.4		51.4	51.4			35.2			35.2	
Effective Green, g (s)	51.4	51.4		51.4	51.4			35.2			35.2	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	234	931		93	945			474			597	
v/s Ratio Prot		0.48			0.36							
v/s Ratio Perm	0.04			c0.54				c0.32			0.14	
v/c Ratio	0.07	0.91		1.03	0.69			0.89			0.39	
Uniform Delay, d1	11.7	21.6		23.6	17.7			29.8			23.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	13.3		102.4	2.4			19.1			0.9	
Delay (s)	11.9	34.9		126.0	20.1			48.9			24.6	
Level of Service	B	C		F	C			D			C	
Approach Delay (s)		34.5			33.6			48.9			24.6	
Approach LOS		C			C			D			C	

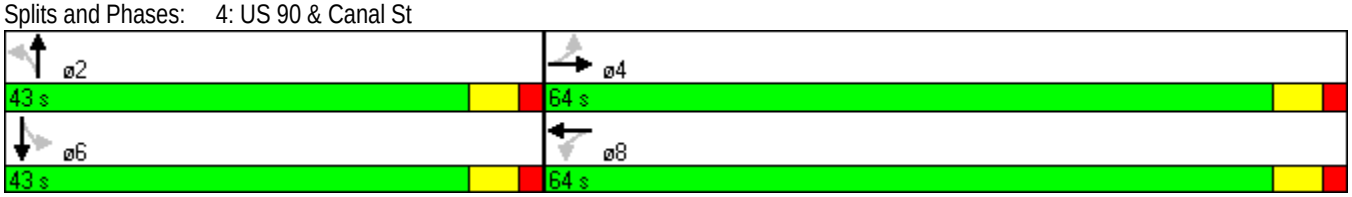
Intersection Summary			
HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	117.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	43	64	43	64
Maximum Split (%)	40.2%	59.8%	40.2%	59.8%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	43	0	43
End Time (s)	43	0	43	0
Yield/Force Off (s)	37	101	37	101
Yield/Force Off 170(s)	37	101	37	101
Local Start Time (s)	0	43	0	43
Local Yield (s)	37	101	37	101
Local Yield 170(s)	37	101	37	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	631	729	773	139	169	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	686	792	840	151	184	584
RTOR Reduction (vph)	0	0	0	90	0	398
Lane Group Flow (vph)	686	792	840	61	184	186
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	26.7	64.1	31.4	31.4	18.7	18.7
Effective Green, g (s)	26.7	64.1	31.4	31.4	18.7	18.7
Actuated g/C Ratio	0.28	0.68	0.33	0.33	0.20	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	967	2393	1150	514	671	309
v/s Ratio Prot	c0.20	0.22	c0.24		0.05	
v/s Ratio Perm				0.04		c0.12
v/c Ratio	0.71	0.33	0.73	0.12	0.27	0.60
Uniform Delay, d1	30.6	6.4	28.0	22.1	32.3	34.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	2.4	0.1	0.3	3.8
Delay (s)	33.2	6.5	30.4	22.2	32.6	38.4
Level of Service	C	A	C	C	C	D
Approach Delay (s)		18.9	29.1		37.0	
Approach LOS		B	C		D	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	94.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	92	41	51	46
Maximum Split (%)	66.7%	29.7%	37.0%	33.3%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	41	92
End Time (s)	92	41	92	0
Yield/Force Off (s)	86	35	86	132
Yield/Force Off 170(s)	86	35	86	132
Local Start Time (s)	97	97	0	51
Local Yield (s)	45	132	45	91
Local Yield 170(s)	45	132	45	91

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	770	1192	64	70	1063	190	47	77	102	165	47	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1828	1583	1681	1722	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1828	1583	1681	1722	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	837	1296	70	76	1155	207	51	84	111	179	51	865
RTOR Reduction (vph)	0	0	13	0	0	130	0	0	100	0	0	0
Lane Group Flow (vph)	837	1296	57	76	1155	77	0	135	11	115	115	865
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	42.9	89.0	89.0	12.0	58.1	58.1		15.7	15.7	14.8	14.8	155.5
Effective Green, g (s)	42.9	89.0	89.0	12.0	58.1	58.1		15.7	15.7	14.8	14.8	155.5
Actuated g/C Ratio	0.28	0.57	0.57	0.08	0.37	0.37		0.10	0.10	0.10	0.10	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	947	2026	906	137	1322	591		185	160	160	164	1583
v/s Ratio Prot	c0.24	0.37		0.04	c0.33			0.07		0.07	0.07	
v/s Ratio Perm			0.04			0.05			0.01			c0.55
v/c Ratio	0.88	0.64	0.06	0.55	0.87	0.13		0.73	0.07	0.72	0.70	0.55
Uniform Delay, d1	53.9	22.4	14.7	69.2	45.3	32.1		67.8	63.3	68.3	68.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.8	0.0	4.8	6.9	0.1		14.3	0.3	14.3	12.7	1.4
Delay (s)	63.7	23.2	14.8	74.0	52.2	32.2		82.1	63.5	82.6	80.9	1.4
Level of Service	E	C	B	E	D	C		F	E	F	F	A
Approach Delay (s)		38.3			50.4			73.7			18.3	
Approach LOS		D			D			E			B	

Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	155.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	21	106	23	55	72	23
Maximum Split (%)	12.1%	61.3%	13.3%	31.8%	41.6%	13.3%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	127	0	55	150
End Time (s)	21	127	150	55	127	0
Yield/Force Off (s)	15	121	144	49	121	167
Yield/Force Off 170(s)	15	121	139	49	121	162
Local Start Time (s)	118	139	72	118	0	95
Local Yield (s)	133	66	89	167	66	112
Local Yield 170(s)	133	66	84	167	66	107

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	125

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	710	3	19	2	6	3	20	256	1	13	237	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.87			0.97		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1618			1785		1752	3503		1770	3460	
Flt Permitted	0.95	1.00			0.99		0.57	1.00		0.58	1.00	
Satd. Flow (perm)	3433	1618			1785		1046	3503		1081	3460	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	772	3	21	2	7	3	22	278	1	14	258	45
RTOR Reduction (vph)	0	15	0	0	3	0	0	0	0	0	8	0
Lane Group Flow (vph)	772	9	0	0	9	0	22	279	0	14	295	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	36.6	36.6			1.7		63.7	63.7		63.7	63.7	
Effective Green, g (s)	36.6	36.6			1.7		63.7	63.7		63.7	63.7	
Actuated g/C Ratio	0.31	0.31			0.01		0.53	0.53		0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1047	493			25		555	1860		574	1837	
v/s Ratio Prot	c0.22	0.01			c0.01			0.08			c0.09	
v/s Ratio Perm							0.02			0.01		
v/c Ratio	0.74	0.02			0.36		0.04	0.15		0.02	0.16	
Uniform Delay, d1	37.4	29.2			58.6		13.5	14.3		13.4	14.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	0.0			11.8		0.1	0.2		0.0	0.1	
Delay (s)	40.3	29.2			70.4		13.6	14.5		13.4	14.5	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		40.0			70.4			14.5			14.4	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	36	66	36	18
Maximum Split (%)	30.0%	55.0%	30.0%	15.0%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	102
End Time (s)	36	102	36	0
Yield/Force Off (s)	30	96	30	114
Yield/Force Off 170(s)	21	76	30	114
Local Start Time (s)	0	36	0	102
Local Yield (s)	30	96	30	114
Local Yield 170(s)	21	76	30	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	23	488	483	578	0	1132	116
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	530	525	628	0	1230	126
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	2658	678	1357		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2658	678	1357		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	0	0	0		0		
cM capacity (veh/h)	0	390	503		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	555	525	314	314	820	536	0
Volume Left	25	525	0	0	0	0	0
Volume Right	530	0	0	0	0	126	0
cSH	0	503	1700	1700	1700	1700	1700
Volume to Capacity	Err	1.04	0.18	0.18	0.48	0.32	0.00
Queue Length 95th (ft)	Err	387	0	0	0	0	0
Control Delay (s)	Err	80.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	F					
Approach Delay (s)	Err	36.8			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	752	146	29	296	130	39	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.54	1.00	1.00	0.57	1.00
Satd. Flow (perm)	3400	1568	1005	1845	1568	1014	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	817	159	32	322	141	42	345
RTOR Reduction (vph)	0	105	0	0	91	0	0
Lane Group Flow (vph)	817	54	32	322	50	42	345
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	13.4	13.4	14.0	14.0	14.0	14.0	14.0
Effective Green, g (s)	13.4	13.4	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.34	0.34	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1156	533	357	656	557	360	1210
v/s Ratio Prot				c0.17			0.10
v/s Ratio Perm	c0.24	0.03	0.03		0.03	0.04	
v/c Ratio	0.71	0.10	0.09	0.49	0.09	0.12	0.29
Uniform Delay, d1	11.3	8.9	8.5	9.9	8.5	8.5	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.1	0.5	2.6	0.3	0.7	0.6
Delay (s)	13.4	9.0	9.0	12.5	8.8	9.2	9.7
Level of Service	B	A	A	B	A	A	A
Approach Delay (s)	12.7			11.2			9.6
Approach LOS	B			B			A

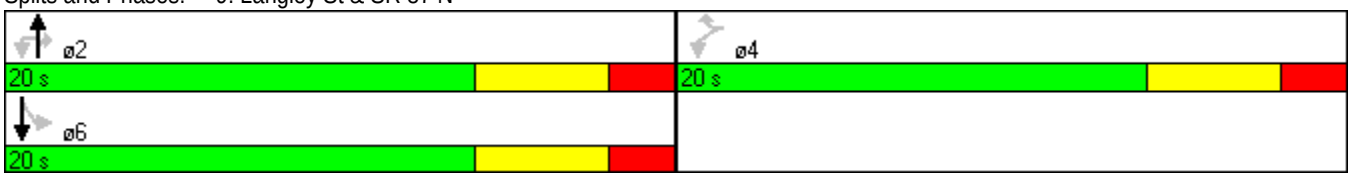
Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	39.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	20	0
End Time (s)	20	0	20
Yield/Force Off (s)	14	34	14
Yield/Force Off 170(s)	14	34	14
Local Start Time (s)	0	20	0
Local Yield (s)	14	34	14
Local Yield 170(s)	14	34	14

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	2	71	96	1	52	1	515	134	36	431	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	2	77	104	1	57	1	560	146	39	468	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	886	1255	235	1026	1183	353	470			705		
vC1, stage 1 conf vol	547	547		635	635							
vC2, stage 2 conf vol	339	708		391	548							
vCu, unblocked vol	886	1255	235	1026	1183	353	470			705		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	90	71	100	91	100			96		
cM capacity (veh/h)	394	335	767	355	369	641	1081			882		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	79	162	281	426	39	312	157
Volume Left	16	0	104	1	0	39	0	0
Volume Right	0	77	57	0	146	0	0	1
cSH	394	741	421	1081	1700	882	1700	1700
Volume to Capacity	0.04	0.11	0.38	0.00	0.25	0.04	0.18	0.09
Queue Length 95th (ft)	3	9	44	0	0	3	0	0
Control Delay (s)	14.5	10.4	18.8	0.0	0.0	9.3	0.0	0.0
Lane LOS	B	B	C	A		A		
Approach Delay (s)	11.1		18.8	0.0		0.7		
Approach LOS	B		C					

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	134	61	13	109	0	47	6	11	0	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	146	66	14	118	0	51	7	12	0	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	118			212			345	336	179	352	370	118
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	118			212			345	336	179	352	370	118
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			91	99	99	100	100	99
cM capacity (veh/h)	1463			1353			595	574	861	583	552	933

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	217	133	70	9
Volume Left	5	14	51	0
Volume Right	66	0	12	9
cSH	1463	1353	626	933
Volume to Capacity	0.00	0.01	0.11	0.01
Queue Length 95th (ft)	0	1	9	1
Control Delay (s)	0.2	0.9	11.5	8.9
Lane LOS	A	A	B	A
Approach Delay (s)	0.2	0.9	11.5	8.9
Approach LOS			B	A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	208	2	45	138	637	4	905	359	280	805	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1860		1770	1863	1583	1770	3389		1770	3524	
Flt Permitted	0.51	1.00		0.25	1.00	1.00	0.32	1.00		0.06	1.00	
Satd. Flow (perm)	959	1860		460	1863	1583	589	3389		104	3524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	226	2	49	150	692	4	984	390	304	875	26
RTOR Reduction (vph)	0	0	0	0	0	55	0	27	0	0	1	0
Lane Group Flow (vph)	28	228	0	49	150	637	4	1347	0	304	900	0
Turn Type	pm+pt			pm+pt		pm+ov	pm+pt			pm+pt		
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	24.0	21.6		25.6	22.4	57.9	66.5	65.7		107.2	100.4	
Effective Green, g (s)	24.0	21.6		25.6	22.4	57.9	66.5	65.7		107.2	100.4	
Actuated g/C Ratio	0.16	0.14		0.17	0.15	0.39	0.44	0.44		0.71	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	166	268		106	278	674	267	1484		469	2359	
v/s Ratio Prot	0.00	0.12		c0.01	0.08	c0.22	0.00	c0.40		0.15	0.26	
v/s Ratio Perm	0.02			0.07		0.18	0.01			0.31		
v/c Ratio	0.17	0.85		0.46	0.54	0.94	0.01	0.91		0.65	0.38	
Uniform Delay, d1	53.8	62.6		54.8	59.0	44.5	23.3	39.3		41.1	11.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	21.9		3.2	2.0	21.9	0.0	9.7		3.1	0.5	
Delay (s)	54.3	84.6		58.0	61.0	66.4	23.3	49.0		44.2	11.5	
Level of Service	D	F		E	E	E	C	D		D	B	
Approach Delay (s)		81.3			65.1			48.9			19.7	
Approach LOS		F			E			D			B	

Intersection Summary			
HCM Average Control Delay	45.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	44	69	10	27	10	103	10	27
Maximum Split (%)	29.3%	46.0%	6.7%	18.0%	6.7%	68.7%	6.7%	18.0%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	106	0	69	79	106	116	69	79
End Time (s)	0	69	79	106	116	69	79	106
Yield/Force Off (s)	144	63	73	100	110	63	73	100
Yield/Force Off 170(s)	144	52	73	89	110	52	73	89
Local Start Time (s)	106	0	69	79	106	116	69	79
Local Yield (s)	144	63	73	100	110	63	73	100
Local Yield 170(s)	144	52	73	89	110	52	73	89

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Coordinated
Natural Cycle	110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	663	1	2	768	225	9	181	20	120	155	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	721	1	2	835	245	10	197	22	130	168	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1079			722			1510	2011	361	1648	1890	540
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1079			722			1510	2011	361	1648	1890	540
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			100			0	0	97	0	0	84
cM capacity (veh/h)	642			876			0	49	636	0	58	486

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	464	361	420	662	228	375
Volume Left	103	0	2	0	10	130
Volume Right	0	1	0	245	22	76
cSH	642	1700	876	1700	0	0
Volume to Capacity	0.16	0.21	0.00	0.39	Err	Err
Queue Length 95th (ft)	14	0	0	0	Err	Err
Control Delay (s)	4.5	0.0	0.1	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	2.5		0.0		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: US 90 & SR 87 Connector

AM 2035 - ALT 2 - DESIGN YEAR

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	160	94	428	263	97	51	375	535	207	70	342	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3384	
Flt Permitted	0.69	1.00	1.00	0.61	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1271	1845	1568	1102	1810	1538	1736	3471	1553	1770	3384	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	102	465	286	105	55	408	582	225	76	372	154
RTOR Reduction (vph)	0	0	0	0	0	41	0	0	0	0	37	0
Lane Group Flow (vph)	174	102	465	286	105	14	408	582	225	76	489	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	33.6	22.2	108.3	41.7	27.3	27.3	30.7	30.7	108.3	18.4	18.4	
Effective Green, g (s)	33.6	22.2	108.3	41.7	27.3	27.3	30.7	30.7	108.3	18.4	18.4	
Actuated g/C Ratio	0.31	0.20	1.00	0.39	0.25	0.25	0.28	0.28	1.00	0.17	0.17	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	445	378	1568	518	456	388	492	984	1553	301	575	
v/s Ratio Prot	0.04	0.06		c0.08	0.06		c0.24	0.17		0.04	c0.14	
v/s Ratio Perm	0.08		0.30	c0.13		0.01			0.14			
v/c Ratio	0.39	0.27	0.30	0.55	0.23	0.04	0.83	0.59	0.14	0.25	0.85	
Uniform Delay, d1	28.6	36.2	0.0	24.6	32.2	30.6	36.3	33.4	0.0	39.0	43.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	1.8	0.5	1.3	1.2	0.2	11.1	1.0	0.2	0.4	11.3	
Delay (s)	29.2	38.0	0.5	25.9	33.3	30.7	47.4	34.4	0.2	39.4	54.9	
Level of Service	C	D	A	C	C	C	D	C	A	D	D	
Approach Delay (s)		12.4			28.2			32.4			52.9	
Approach LOS		B			C			C			D	

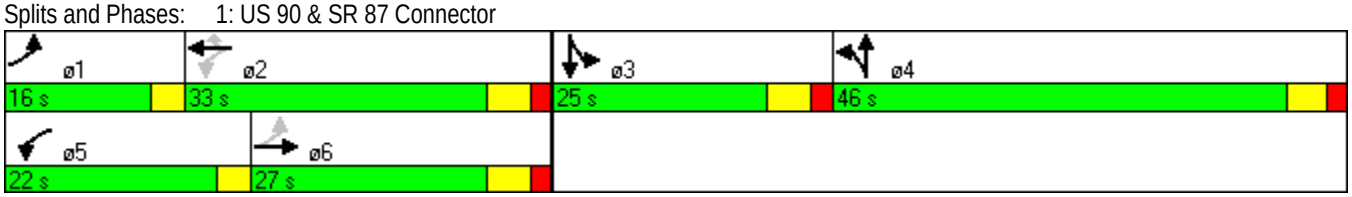
Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	108.3	Sum of lost time (s)	14.5
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	16	33	25	46	22	27
Maximum Split (%)	13.3%	27.5%	20.8%	38.3%	18.3%	22.5%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	49	74	0	22
End Time (s)	16	49	74	0	22	49
Yield/Force Off (s)	13	43	68	114.5	19	43
Yield/Force Off 170(s)	13	31	68	114.5	19	31
Local Start Time (s)	104	0	33	58	104	6
Local Yield (s)	117	27	52	98.5	3	27
Local Yield 170(s)	117	15	52	98.5	3	15

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	75

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	339	281	181	338	1	361	11	122	5	9	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.92			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3470		1665	1583			1786	
Flt Permitted	0.53	1.00	1.00	0.40	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	973	1827	1553	732	3470		1665	1583			1786	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	368	305	197	367	1	392	12	133	5	10	4
RTOR Reduction (vph)	0	0	162	0	0	0	0	32	0	0	4	0
Lane Group Flow (vph)	1	368	143	197	368	0	278	227	0	0	15	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	53.9	53.9	53.9	70.9	70.9		23.7	23.7			2.1	
Effective Green, g (s)	53.9	53.9	53.9	70.9	70.9		23.7	23.7			2.1	
Actuated g/C Ratio	0.47	0.47	0.47	0.62	0.62		0.21	0.21			0.02	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	457	859	730	549	2145		344	327			33	
v/s Ratio Prot		c0.20		c0.03	0.11		c0.17	0.14			c0.01	
v/s Ratio Perm	0.00		0.09	0.19								
v/c Ratio	0.00	0.43	0.20	0.36	0.17		0.81	0.70			0.46	
Uniform Delay, d1	16.1	20.2	17.8	10.8	9.4		43.3	42.2			55.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.6	0.6	0.4	0.2		13.0	6.3			9.7	
Delay (s)	16.1	21.7	18.4	11.2	9.5		56.4	48.4			65.4	
Level of Service	B	C	B	B	A		E	D			E	
Approach Delay (s)		20.2			10.1			52.5			65.4	
Approach LOS		C			B			D			E	

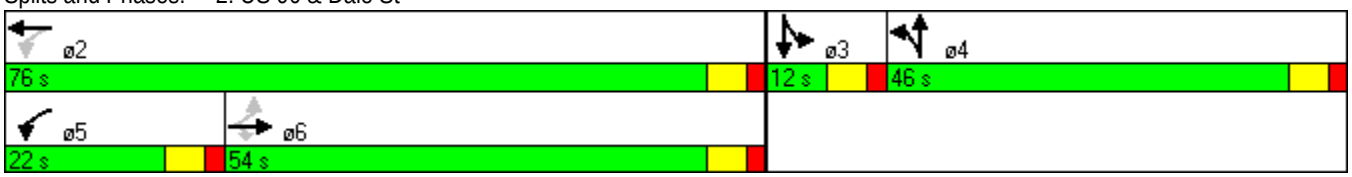
Intersection Summary			
HCM Average Control Delay	27.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	114.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	76	12	46	22	54
Maximum Split (%)	56.7%	9.0%	34.3%	16.4%	40.3%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	76	88	0	22
End Time (s)	76	88	0	22	76
Yield/Force Off (s)	70	82	128	16	70
Yield/Force Off 170(s)	58	82	112	16	58
Local Start Time (s)	0	76	88	0	22
Local Yield (s)	70	82	128	16	70
Local Yield 170(s)	58	82	112	16	58

Intersection Summary	
Cycle Length	134
Control Type	Actuated-Uncoordinated
Natural Cycle	80

Splits and Phases: 2: US 90 & Dale St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	366	39	12	564	267	3	6	18	272	33	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.91			0.99	
Flt Protected	0.95	1.00			1.00			1.00			0.96	
Satd. Flow (prot)	1736	1801			1748			1687			1757	
Flt Permitted	0.27	1.00			0.99			0.97			0.74	
Satd. Flow (perm)	487	1801			1736			1639			1353	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	398	42	13	613	290	3	7	20	296	36	20
RTOR Reduction (vph)	0	4	0	0	16	0	0	14	0	0	2	0
Lane Group Flow (vph)	16	436	0	0	900	0	0	16	0	0	350	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	58.0	58.0			58.0			29.7			29.7	
Effective Green, g (s)	58.0	58.0			58.0			29.7			29.7	
Actuated g/C Ratio	0.58	0.58			0.58			0.30			0.30	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	283	1048			1010			488			403	
v/s Ratio Prot		0.24										
v/s Ratio Perm	0.03				c0.52			0.01			c0.26	
v/c Ratio	0.06	0.42			0.89			0.03			0.87	
Uniform Delay, d1	9.0	11.5			18.1			24.8			33.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.3	1.0			11.5			0.1			19.0	
Delay (s)	9.3	12.5			29.6			24.9			52.1	
Level of Service	A	B			C			C			D	
Approach Delay (s)		12.3			29.6			24.9			52.1	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	99.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	38	69	38	69
Maximum Split (%)	35.5%	64.5%	35.5%	64.5%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	38	0	38
End Time (s)	38	0	38	0
Yield/Force Off (s)	32	101	32	101
Yield/Force Off 170(s)	20	101	20	101
Local Start Time (s)	0	38	0	38
Local Yield (s)	32	101	32	101
Local Yield 170(s)	20	101	20	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 3: US 90 & Broad St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	494	89	77	528	26	103	136	80	21	172	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1736	1785		1736	1814			1754			1819	
Flt Permitted	0.26	1.00		0.23	1.00			0.82			0.94	
Satd. Flow (perm)	473	1785		421	1814			1455			1723	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	537	97	84	574	28	112	148	87	23	187	15
RTOR Reduction (vph)	0	6	0	0	2	0	0	11	0	0	3	0
Lane Group Flow (vph)	14	628	0	84	600	0	0	336	0	0	222	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.2	33.2		33.2	33.2			26.9			26.9	
Effective Green, g (s)	33.2	33.2		33.2	33.2			26.9			26.9	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.37			0.37	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	218	822		194	835			543			643	
v/s Ratio Prot		c0.35			0.33							
v/s Ratio Perm	0.03			0.20				c0.23			0.13	
v/c Ratio	0.06	0.76		0.43	0.72			0.62			0.35	
Uniform Delay, d1	10.8	16.2		13.1	15.7			18.4			16.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	4.5		2.1	3.2			3.0			0.7	
Delay (s)	11.0	20.7		15.2	18.9			21.4			16.9	
Level of Service	B	C		B	B			C			B	
Approach Delay (s)		20.5			18.4			21.4			16.9	
Approach LOS		C			B			C			B	

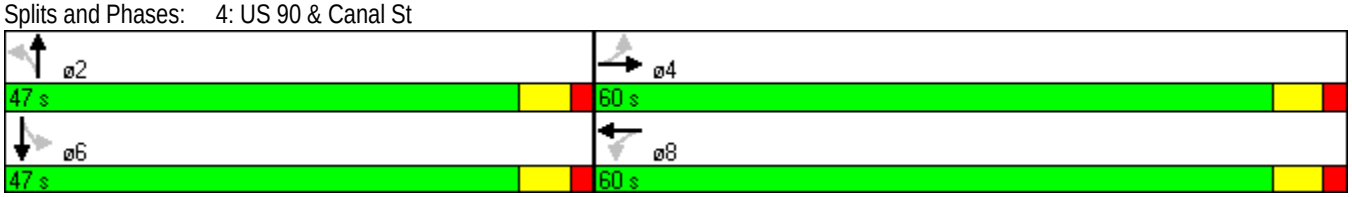
Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	47	60	47	60
Maximum Split (%)	43.9%	56.1%	43.9%	56.1%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	47	0	47
End Time (s)	47	0	47	0
Yield/Force Off (s)	41	101	41	101
Yield/Force Off 170(s)	41	101	41	101
Local Start Time (s)	0	47	0	47
Local Yield (s)	41	101	41	101
Local Yield 170(s)	41	101	41	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	333	505	639	146	219	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	362	549	695	159	238	467
RTOR Reduction (vph)	0	0	0	109	0	335
Lane Group Flow (vph)	362	549	695	50	238	132
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	14.8	42.5	21.7	21.7	14.5	14.5
Effective Green, g (s)	14.8	42.5	21.7	21.7	14.5	14.5
Actuated g/C Ratio	0.21	0.62	0.31	0.31	0.21	0.21
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	736	2180	1092	488	714	330
v/s Ratio Prot	c0.11	0.16	c0.20		0.07	
v/s Ratio Perm				0.03		c0.08
v/c Ratio	0.49	0.25	0.64	0.10	0.33	0.40
Uniform Delay, d1	23.8	6.0	20.3	16.8	23.1	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	1.2	0.1	0.4	1.1
Delay (s)	24.5	6.1	21.5	16.8	23.5	24.6
Level of Service	C	A	C	B	C	C
Approach Delay (s)		13.4	20.6		24.2	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	85	31	54	53
Maximum Split (%)	61.6%	22.5%	39.1%	38.4%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	31	85
End Time (s)	85	31	85	0
Yield/Force Off (s)	79	25	79	132
Yield/Force Off 170(s)	79	25	79	132
Local Start Time (s)	107	107	0	54
Local Yield (s)	48	132	48	101
Local Yield 170(s)	48	132	48	101

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	459	777	34	35	873	125	9	10	14	165	69	725
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1819	1583	1681	1733	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.98	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1819	1583	1681	1733	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	499	845	37	38	949	136	10	11	15	179	75	788
RTOR Reduction (vph)	0	0	11	0	0	83	0	0	14	0	0	0
Lane Group Flow (vph)	499	845	26	38	949	53	0	21	1	125	129	788
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	22.6	59.9	59.9	4.7	42.0	42.0		4.5	4.5	14.7	14.7	107.8
Effective Green, g (s)	22.6	59.9	59.9	4.7	42.0	42.0		4.5	4.5	14.7	14.7	107.8
Actuated g/C Ratio	0.21	0.56	0.56	0.04	0.39	0.39		0.04	0.04	0.14	0.14	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	720	1966	880	77	1379	617		76	66	229	236	1583
v/s Ratio Prot	c0.15	0.24		0.02	c0.27			0.01		0.07	0.07	
v/s Ratio Perm			0.02			0.03			0.00			c0.50
v/c Ratio	0.69	0.43	0.03	0.49	0.69	0.09		0.28	0.01	0.55	0.55	0.50
Uniform Delay, d1	39.4	14.0	10.8	50.4	27.4	20.8		50.1	49.5	43.4	43.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.2	0.0	4.9	1.6	0.1		2.7	0.1	2.6	2.6	1.1
Delay (s)	42.3	14.2	10.8	55.3	29.0	20.9		52.8	49.6	46.1	46.0	1.1
Level of Service	D	B	B	E	C	C		D	D	D	D	A
Approach Delay (s)		24.3			28.9			51.4			12.1	
Approach LOS		C			C			D			B	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	107.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	17	103	31	45	75	22
Maximum Split (%)	9.8%	59.5%	17.9%	26.0%	43.4%	12.7%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	17	120	0	45	151
End Time (s)	17	120	151	45	120	0
Yield/Force Off (s)	11	114	145	39	114	167
Yield/Force Off 170(s)	11	114	140	39	114	162
Local Start Time (s)	128	145	75	128	0	106
Local Yield (s)	139	69	100	167	69	122
Local Yield 170(s)	139	69	95	167	69	117

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	95

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	865	1	3	2	4	18	7	325	1	7	286	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89			0.90		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1653			1663		1752	3503		1770	3476	
Flt Permitted	0.95	1.00			1.00		0.52	1.00		0.52	1.00	
Satd. Flow (perm)	3433	1653			1663		968	3503		976	3476	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	940	1	3	2	4	20	8	353	1	8	311	42
RTOR Reduction (vph)	0	2	0	0	19	0	0	0	0	0	7	0
Lane Group Flow (vph)	940	2	0	0	7	0	8	354	0	8	346	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	42.7	42.7			5.1		54.2	54.2		54.2	54.2	
Effective Green, g (s)	42.7	42.7			5.1		54.2	54.2		54.2	54.2	
Actuated g/C Ratio	0.36	0.36			0.04		0.45	0.45		0.45	0.45	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1222	588			71		437	1582		441	1570	
v/s Ratio Prot	c0.27	0.00			c0.00			c0.10			0.10	
v/s Ratio Perm							0.01			0.01		
v/c Ratio	0.77	0.00			0.10		0.02	0.22		0.02	0.22	
Uniform Delay, d1	34.3	24.9			55.2		18.2	20.1		18.2	20.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	0.0			0.8		0.1	0.3		0.0	0.1	
Delay (s)	37.4	24.9			56.0		18.3	20.4		18.2	20.1	
Level of Service	D	C			E		B	C		B	C	
Approach Delay (s)		37.4			56.0			20.3			20.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	36	67	36	17
Maximum Split (%)	30.0%	55.8%	30.0%	14.2%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	36	0	103
End Time (s)	36	103	36	0
Yield/Force Off (s)	30	97	30	114
Yield/Force Off 170(s)	21	77	30	114
Local Start Time (s)	0	36	0	103
Local Yield (s)	30	97	30	114
Local Yield 170(s)	21	77	30	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	22	128	57	840	0	476	9
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	139	62	913	0	517	10
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked	0.96	0.96	0.96		0.00		
vC, conflicting volume	1103	264	527		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1018	141	416		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	88	83	94		0		
cM capacity (veh/h)	208	837	1090		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	163	62	457	457	345	182	0
Volume Left	24	62	0	0	0	0	0
Volume Right	139	0	0	0	0	10	0
cSH	580	1090	1700	1700	1700	1700	1700
Volume to Capacity	0.28	0.06	0.27	0.27	0.20	0.11	0.00
Queue Length 95th (ft)	29	5	0	0	0	0	0
Control Delay (s)	13.6	8.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A					
Approach Delay (s)	13.6	0.5			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	123	48	8	238	1003	108	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.53	1.00	1.00	0.60	1.00
Satd. Flow (perm)	3400	1568	971	1845	1568	1074	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	52	9	259	1090	117	380
RTOR Reduction (vph)	0	42	0	0	545	0	0
Lane Group Flow (vph)	134	10	9	259	545	117	380
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Effective Green, g (s)	8.0	8.0	20.0	20.0	20.0	20.0	20.0
Actuated g/C Ratio	0.20	0.20	0.50	0.50	0.50	0.50	0.50
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	680	314	486	923	784	537	1703
v/s Ratio Prot				0.14			0.11
v/s Ratio Perm	c0.04	0.01	0.01		c0.35	0.11	
v/c Ratio	0.20	0.03	0.02	0.28	0.70	0.22	0.22
Uniform Delay, d1	13.3	12.9	5.0	5.8	7.7	5.6	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.1	0.8	5.0	0.9	0.3
Delay (s)	13.5	12.9	5.1	6.6	12.7	6.5	5.9
Level of Service	B	B	A	A	B	A	A
Approach Delay (s)	13.4			11.5			6.1
Approach LOS	B			B			A

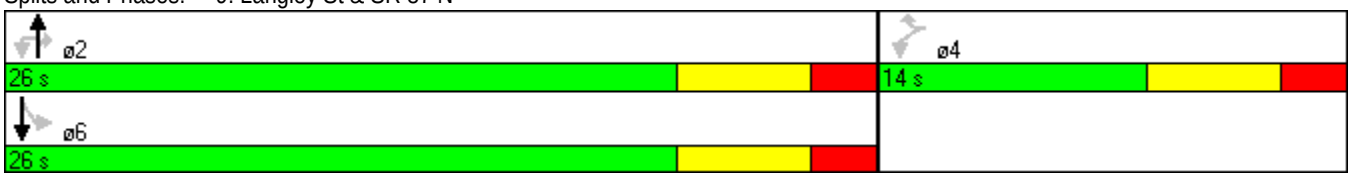
Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	26	14	26
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	26	0
End Time (s)	26	0	26
Yield/Force Off (s)	20	34	20
Yield/Force Off 170(s)	20	34	20
Local Start Time (s)	0	26	0
Local Yield (s)	20	34	20
Local Yield 170(s)	20	34	20

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	4	96	2	43	1	354	68	43	493	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	4	104	2	47	1	385	74	47	536	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	872	1091	268	790	1054	229	537			459		
vC1, stage 1 conf vol	630	630		424	424							
vC2, stage 2 conf vol	242	461		366	630							
vCu, unblocked vol	872	1091	268	790	1054	229	537			459		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	78	99	94	100			96		
cM capacity (veh/h)	383	379	730	467	392	770	1020			1092		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	2	4	153	193	266	47	357	180
Volume Left	2	0	104	1	0	47	0	0
Volume Right	0	4	47	0	74	0	0	1
cSH	383	730	529	1020	1700	1092	1700	1700
Volume to Capacity	0.01	0.01	0.29	0.00	0.16	0.04	0.21	0.11
Queue Length 95th (ft)	0	0	30	0	0	3	0	0
Control Delay (s)	14.5	10.0	14.6	0.1	0.0	8.4	0.0	0.0
Lane LOS	B	A	B	A		A		
Approach Delay (s)	11.5		14.6	0.0		0.7		
Approach LOS	B		B					

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	42	50	32	198	0	57	0	12	0	2	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	46	54	35	215	0	62	0	13	0	2	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	215			100			375	362	73	375	389	215
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	215			100			375	362	73	375	389	215
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			89	100	99	100	100	99
cM capacity (veh/h)	1349			1486			559	550	986	564	532	825

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	102	250	75	14
Volume Left	2	35	62	0
Volume Right	54	0	13	12
cSH	1349	1486	605	760
Volume to Capacity	0.00	0.02	0.12	0.02
Queue Length 95th (ft)	0	2	11	1
Control Delay (s)	0.2	1.2	11.8	9.8
Lane LOS	A	A	B	A
Approach Delay (s)	0.2	1.2	11.8	9.8
Approach LOS			B	A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

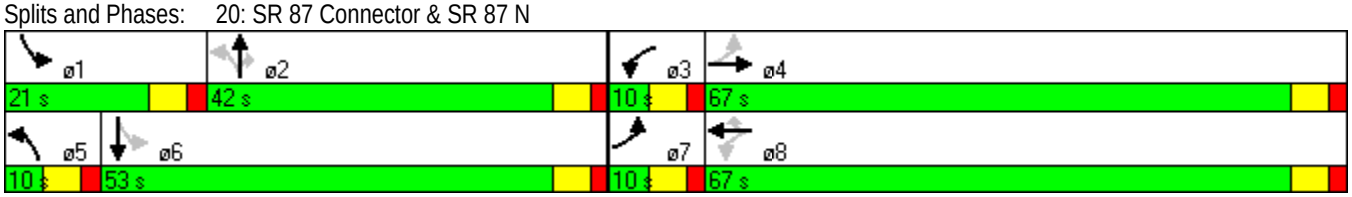
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	478	12	43	353	209	8	441	143	142	606	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1863	1583	1770	3539	1583	1770	3516	
Flt Permitted	0.31	1.00		0.12	1.00	1.00	0.39	1.00	1.00	0.36	1.00	
Satd. Flow (perm)	582	1856		233	1863	1583	723	3539	1583	662	3516	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	520	13	47	384	227	9	479	155	154	659	30
RTOR Reduction (vph)	0	1	0	0	0	154	0	0	100	0	2	0
Lane Group Flow (vph)	59	532	0	47	384	73	9	479	55	154	687	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	40.9	37.9		40.9	37.9	37.9	42.8	42.1	42.1	59.2	52.5	
Effective Green, g (s)	40.9	37.9		40.9	37.9	37.9	42.8	42.1	42.1	59.2	52.5	
Actuated g/C Ratio	0.35	0.32		0.35	0.32	0.32	0.36	0.36	0.36	0.50	0.44	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	232	596		120	598	508	268	1262	564	436	1563	
v/s Ratio Prot	0.01	c0.29		c0.01	0.21		0.00	0.14		c0.03	c0.20	
v/s Ratio Perm	0.08			0.13		0.05	0.01		0.03	0.14		
v/c Ratio	0.25	0.89		0.39	0.64	0.14	0.03	0.38	0.10	0.35	0.44	
Uniform Delay, d1	27.2	38.2		29.4	34.3	28.5	24.1	28.3	25.3	16.9	22.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	15.7		2.1	2.4	0.1	0.1	0.9	0.3	0.5	0.9	
Delay (s)	27.8	53.9		31.5	36.7	28.7	24.2	29.2	25.7	17.4	23.5	
Level of Service	C	D		C	D	C	C	C	C	B	C	
Approach Delay (s)		51.3			33.5			28.2			22.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	21	42	10	67	10	53	10	67
Maximum Split (%)	15.0%	30.0%	7.1%	47.9%	7.1%	37.9%	7.1%	47.9%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	63	73	0	10	63	73
End Time (s)	21	63	73	0	10	63	73	0
Yield/Force Off (s)	15	57	67	134	4	57	67	134
Yield/Force Off 170(s)	15	46	67	123	4	46	67	123
Local Start Time (s)	119	0	42	52	119	129	42	52
Local Yield (s)	134	36	46	113	123	36	46	113
Local Yield 170(s)	134	25	46	102	123	25	46	102

Intersection Summary	
Cycle Length	140
Control Type	Semi Act-Uncoord
Natural Cycle	70

Splits and Phases: 20: SR 87 Connector & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	623	1	6	701	227	11	201	34	116	182	51
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	677	1	7	762	247	12	218	37	126	198	55
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1009			678			1374	1847	339	1531	1724	504
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1009			678			1374	1847	339	1531	1724	504
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			99			0	0	94	0	0	89
cM capacity (veh/h)	683			910			0	65	657	0	78	513

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	412	340	388	628	267	379
Volume Left	74	0	7	0	12	126
Volume Right	0	1	0	247	37	55
cSH	683	1700	910	1700	0	0
Volume to Capacity	0.11	0.20	0.01	0.37	Err	Err
Queue Length 95th (ft)	9	0	1	0	Err	Err
Control Delay (s)	3.2	0.0	0.2	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	1.7		0.1		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	102	479	268	92	56	449	445	235	115	513	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	4.0	3.0	6.0	6.0	5.5	5.5	4.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1845	1568	1719	1810	1538	1736	3471	1553	1770	3386	
Flt Permitted	0.69	1.00	1.00	0.58	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1277	1845	1568	1051	1810	1538	1736	3471	1553	1770	3386	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	111	521	291	100	61	488	484	255	125	558	226
RTOR Reduction (vph)	0	0	0	0	0	48	0	0	0	0	36	0
Lane Group Flow (vph)	120	111	521	291	100	13	488	484	255	125	748	0
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	4%	4%	4%	2%	2%	2%
Turn Type	pm+pt		Free	pm+pt		Perm	Split		Free	Split		
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		Free	2		2			Free			
Actuated Green, G (s)	24.7	18.7	114.8	33.8	24.8	24.8	35.8	35.8	114.8	27.7	27.7	
Effective Green, g (s)	24.7	18.7	114.8	33.8	24.8	24.8	35.8	35.8	114.8	27.7	27.7	
Actuated g/C Ratio	0.22	0.16	1.00	0.29	0.22	0.22	0.31	0.31	1.00	0.24	0.24	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	5.5	5.5		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	300	301	1568	380	391	332	541	1082	1553	427	817	
v/s Ratio Prot	0.02	0.06		c0.08	0.06		c0.28	0.14		0.07	c0.22	
v/s Ratio Perm	0.07		0.33	c0.14		0.01			0.16			
v/c Ratio	0.40	0.37	0.33	0.77	0.26	0.04	0.90	0.45	0.16	0.29	0.92	
Uniform Delay, d1	38.0	42.8	0.0	35.5	37.3	35.6	37.8	31.6	0.0	35.6	42.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	3.5	0.6	8.9	1.6	0.2	18.2	0.3	0.2	0.4	14.7	
Delay (s)	38.8	46.2	0.6	44.4	38.9	35.8	56.0	31.9	0.2	35.9	57.1	
Level of Service	D	D	A	D	D	D	E	C	A	D	E	
Approach Delay (s)		13.4			42.0			34.9			54.2	
Approach LOS		B			D			C			D	

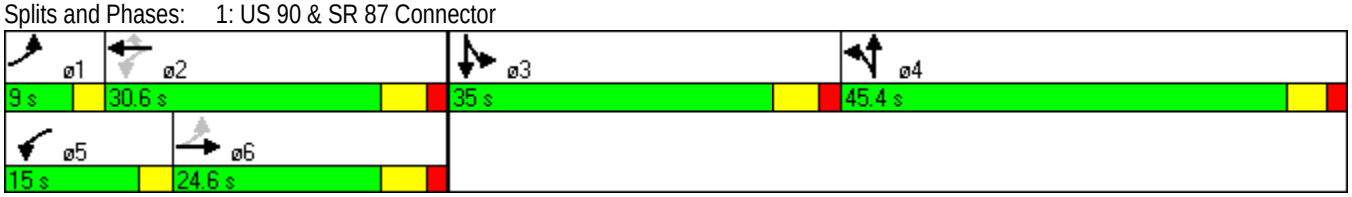
Intersection Summary			
HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	14.5
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	1	2	3	4	5	6
Movement	EBL	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Min	Min	None	Max
Maximum Split (s)	9	30.6	35	45.4	15	24.6
Maximum Split (%)	7.5%	25.5%	29.2%	37.8%	12.5%	20.5%
Minimum Split (s)	8	24	13	23.5	8	24
Yellow Time (s)	3	4	4	3.5	3	4
All-Red Time (s)	0	2	2	2	0	2
Minimum Initial (s)	5	10	7	7	5	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		6		6		6
Flash Dont Walk (s)		12		12		12
Dual Entry	Yes	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	9	39.6	74.6	0	15
End Time (s)	9	39.6	74.6	0	15	39.6
Yield/Force Off (s)	6	33.6	68.6	114.5	12	33.6
Yield/Force Off 170(s)	6	21.6	68.6	114.5	12	21.6
Local Start Time (s)	111	0	30.6	65.6	111	6
Local Yield (s)	117	24.6	59.6	105.5	3	24.6
Local Yield 170(s)	117	12.6	59.6	105.5	3	12.6

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 1: US 90 & SR 87 Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	519	375	78	508	2	268	14	86	1	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		0.95	0.95			1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.93			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.98			0.99	
Satd. Flow (prot)	1736	1827	1553	1736	3469		1665	1592			1726	
Flt Permitted	0.44	1.00	1.00	0.32	1.00		0.95	0.98			0.99	
Satd. Flow (perm)	812	1827	1553	591	3469		1665	1592			1726	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	564	408	85	552	2	291	15	93	1	3	4
RTOR Reduction (vph)	0	0	165	0	0	0	0	26	0	0	4	0
Lane Group Flow (vph)	7	564	243	85	554	0	204	169	0	0	4	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Perm		Perm	pm+pt			Split			Split		
Protected Phases		6		5	2		4	4		3	3	
Permitted Phases	6		6	2								
Actuated Green, G (s)	72.1	72.1	72.1	82.8	82.8		19.2	19.2			1.0	
Effective Green, g (s)	72.1	72.1	72.1	82.8	82.8		19.2	19.2			1.0	
Actuated g/C Ratio	0.60	0.60	0.60	0.68	0.68		0.16	0.16			0.01	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0			6.0	
Vehicle Extension (s)	4.0	4.0	4.0	3.0	4.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	484	1089	925	449	2374		264	253			14	
v/s Ratio Prot		c0.31		0.01	c0.16		c0.12	0.11			c0.00	
v/s Ratio Perm	0.01		0.16	0.12								
v/c Ratio	0.01	0.52	0.26	0.19	0.23		0.77	0.67			0.29	
Uniform Delay, d1	10.0	14.3	11.7	8.6	7.2		48.8	47.9			59.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	1.8	0.7	0.2	0.2		13.1	6.5			11.1	
Delay (s)	10.0	16.1	12.4	8.8	7.4		61.9	54.4			70.7	
Level of Service	B	B	B	A	A		E	D			E	
Approach Delay (s)		14.5			7.6			58.3			70.7	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	3	4	5	6
Movement	WBTL	SBTL	NBTL	WBL	EBTL
Lead/Lag		Lead	Lag	Lead	Lag
Lead-Lag Optimize		Yes	Yes	Yes	Yes
Recall Mode	Max	None	None	None	Max
Maximum Split (s)	87	12	36	12	75
Maximum Split (%)	64.4%	8.9%	26.7%	8.9%	55.6%
Minimum Split (s)	25	12	29	12	25
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	15	6	6	6	15
Vehicle Extension (s)	4	3	3	3	4
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7		7
Flash Dont Walk (s)	12		16		12
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	87	99	0	12
End Time (s)	87	99	0	12	87
Yield/Force Off (s)	81	93	129	6	81
Yield/Force Off 170(s)	69	93	113	6	69
Local Start Time (s)	0	87	99	0	12
Local Yield (s)	81	93	129	6	81
Local Yield 170(s)	69	93	113	6	69

Intersection Summary	
Cycle Length	135
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 2: US 90 & Dale St

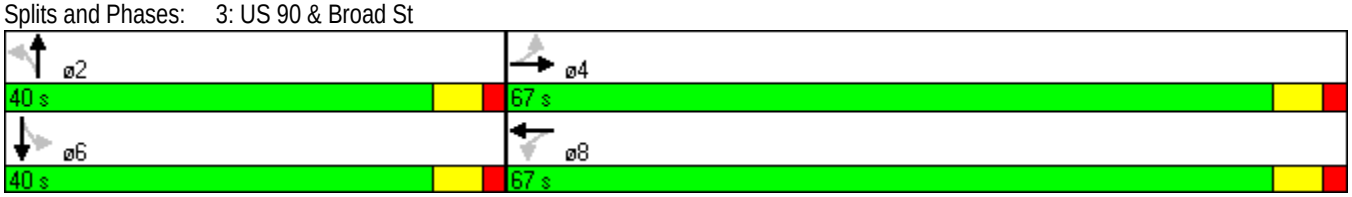
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	585	17	9	542	363	19	31	30	325	14	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.95			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.96	
Satd. Flow (prot)	1736	1819			1728			1748			1748	
Flt Permitted	0.24	1.00			0.99			0.89			0.72	
Satd. Flow (perm)	430	1819			1717			1570			1314	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	636	18	10	589	395	21	34	33	353	15	32
RTOR Reduction (vph)	0	1	0	0	22	0	0	21	0	0	3	0
Lane Group Flow (vph)	34	653	0	0	972	0	0	67	0	0	397	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	3%	3%	3%
Parking (#/hr)			0						0			0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	61.0	61.0			61.0			33.7			33.7	
Effective Green, g (s)	61.0	61.0			61.0			33.7			33.7	
Actuated g/C Ratio	0.57	0.57			0.57			0.32			0.32	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	7.0	7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)	246	1040			982			496			415	
v/s Ratio Prot		0.36										
v/s Ratio Perm	0.08				c0.57			0.04			c0.30	
v/c Ratio	0.14	0.63			0.99			0.14			0.96	
Uniform Delay, d1	10.6	15.3			22.5			26.1			35.8	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.9	2.4			26.3			0.3			33.6	
Delay (s)	11.5	17.6			48.8			26.4			69.4	
Level of Service	B	B			D			C			E	
Approach Delay (s)		17.3			48.8			26.4			69.4	
Approach LOS		B			D			C			E	

Intersection Summary			
HCM Average Control Delay	41.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	106.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	40	67	40	67
Maximum Split (%)	37.4%	62.6%	37.4%	62.6%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	8	20	8	20
Vehicle Extension (s)	5	7	5	7
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	8	8	8	8
Flash Dont Walk (s)	12	12	12	12
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	40	0	40
End Time (s)	40	0	40	0
Yield/Force Off (s)	34	101	34	101
Yield/Force Off 170(s)	22	101	22	101
Local Start Time (s)	0	40	0	40
Local Yield (s)	34	101	34	101
Local Yield 170(s)	22	101	22	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 3: US 90 & Broad St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	664	117	87	568	33	143	174	75	28	174	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.99	
Satd. Flow (prot)	1736	1786		1736	1812			1765			1811	
Flt Permitted	0.25	1.00		0.10	1.00			0.74			0.92	
Satd. Flow (perm)	453	1786		190	1812			1330			1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	722	127	95	617	36	155	189	82	30	189	22
RTOR Reduction (vph)	0	6	0	0	2	0	0	8	0	0	3	0
Lane Group Flow (vph)	17	843	0	95	651	0	0	418	0	0	238	0
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.6	51.6		51.6	51.6			35.2			35.2	
Effective Green, g (s)	51.6	51.6		51.6	51.6			35.2			35.2	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.36			0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	4.0	4.0		4.0	4.0			5.0			5.0	
Lane Grp Cap (vph)	237	933		99	946			474			596	
v/s Ratio Prot		0.47			0.36							
v/s Ratio Perm	0.04			c0.50				c0.31			0.14	
v/c Ratio	0.07	0.90		0.96	0.69			0.88			0.40	
Uniform Delay, d1	11.7	21.3		22.6	17.6			29.9			23.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.2	12.1		76.8	2.3			18.5			0.9	
Delay (s)	11.9	33.5		99.4	19.9			48.4			24.8	
Level of Service	B	C		F	B			D			C	
Approach Delay (s)		33.0			30.0			48.4			24.8	
Approach LOS		C			C			D			C	

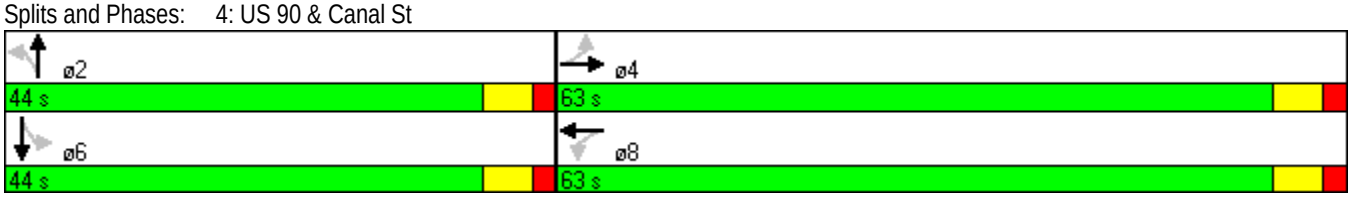
Intersection Summary			
HCM Average Control Delay	34.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	44	63	44	63
Maximum Split (%)	41.1%	58.9%	41.1%	58.9%
Minimum Split (s)	26	26	26	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	20	20	20
Vehicle Extension (s)	5	4	5	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	44	0	44
End Time (s)	44	0	44	0
Yield/Force Off (s)	38	101	38	101
Yield/Force Off 170(s)	38	101	38	101
Local Start Time (s)	0	44	0	44
Local Yield (s)	38	101	38	101
Local Yield 170(s)	38	101	38	101

Intersection Summary	
Cycle Length	107
Control Type	Actuated-Uncoordinated
Natural Cycle	75

Splits and Phases: 4: US 90 & Canal St



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	642	720	770	139	171	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	3471	1553	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	3471	1553	3400	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	698	783	837	151	186	592
RTOR Reduction (vph)	0	0	0	90	0	401
Lane Group Flow (vph)	698	783	837	61	186	191
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		8	
Permitted Phases				6		8
Actuated Green, G (s)	27.4	64.6	31.2	31.2	19.0	19.0
Effective Green, g (s)	27.4	64.6	31.2	31.2	19.0	19.0
Actuated g/C Ratio	0.29	0.68	0.33	0.33	0.20	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	3.0	3.0	3.0	4.0	4.0
Lane Grp Cap (vph)	984	2391	1133	507	676	312
v/s Ratio Prot	c0.20	0.22	c0.24		0.05	
v/s Ratio Perm				0.04		c0.12
v/c Ratio	0.71	0.33	0.74	0.12	0.28	0.61
Uniform Delay, d1	30.5	6.5	28.6	22.6	32.5	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	2.6	0.1	0.3	4.0
Delay (s)	33.1	6.5	31.1	22.7	32.8	38.9
Level of Service	C	A	C	C	C	D
Approach Delay (s)		19.0	29.8		37.5	
Approach LOS		B	C		D	

Intersection Summary			
HCM Average Control Delay	26.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	5	6	8
Movement	EBT	EBL	WBT	SBL
Lead/Lag		Lead	Lag	
Lead-Lag Optimize				
Recall Mode	Min	None	Min	None
Maximum Split (s)	91	41	50	47
Maximum Split (%)	65.9%	29.7%	36.2%	34.1%
Minimum Split (s)	18	11	18	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	12	5	12	8
Vehicle Extension (s)	3	4	3	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	0	41	91
End Time (s)	91	41	91	0
Yield/Force Off (s)	85	35	85	132
Yield/Force Off 170(s)	85	35	85	132
Local Start Time (s)	97	97	0	50
Local Yield (s)	44	132	44	91
Local Yield 170(s)	44	132	44	91

Intersection Summary	
Cycle Length	138
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 5: US 90 & SR 87 N

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	770	1192	64	70	1063	190	47	77	102	165	47	796
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583		1828	1583	1681	1722	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583		1828	1583	1681	1722	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	837	1296	70	76	1155	207	51	84	111	179	51	865
RTOR Reduction (vph)	0	0	13	0	0	130	0	0	100	0	0	0
Lane Group Flow (vph)	837	1296	57	76	1155	77	0	135	11	115	115	865
Turn Type	Prot		Perm	Prot		Perm	Split		Perm	Split		Free
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2			6			8			Free
Actuated Green, G (s)	42.9	89.0	89.0	12.0	58.1	58.1		15.7	15.7	14.8	14.8	155.5
Effective Green, g (s)	42.9	89.0	89.0	12.0	58.1	58.1		15.7	15.7	14.8	14.8	155.5
Actuated g/C Ratio	0.28	0.57	0.57	0.08	0.37	0.37		0.10	0.10	0.10	0.10	1.00
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0	3.0	
Lane Grp Cap (vph)	947	2026	906	137	1322	591		185	160	160	164	1583
v/s Ratio Prot	c0.24	0.37		0.04	c0.33			0.07		0.07	0.07	
v/s Ratio Perm			0.04			0.05			0.01			c0.55
v/c Ratio	0.88	0.64	0.06	0.55	0.87	0.13		0.73	0.07	0.72	0.70	0.55
Uniform Delay, d1	53.9	22.4	14.7	69.2	45.3	32.1		67.8	63.3	68.3	68.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.8	0.0	4.8	6.9	0.1		14.3	0.3	14.3	12.7	1.4
Delay (s)	63.7	23.2	14.8	74.0	52.2	32.2		82.1	63.5	82.6	80.9	1.4
Level of Service	E	C	B	E	D	C		F	E	F	F	A
Approach Delay (s)		38.3			50.4			73.7			18.3	
Approach LOS		D			D			E			B	

Intersection Summary			
HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	155.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	Min	None	None	Min	None
Maximum Split (s)	21	106	23	55	72	23
Maximum Split (%)	12.1%	61.3%	13.3%	31.8%	41.6%	13.3%
Minimum Split (s)	14	28	22	14	33	22
Yellow Time (s)	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2
Minimum Initial (s)	8	22	8	8	22	8
Vehicle Extension (s)	3	4	3	3	4	4
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		7	5
Flash Dont Walk (s)		5	5		20	5
Dual Entry	No	Yes	No	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	127	0	55	150
End Time (s)	21	127	150	55	127	0
Yield/Force Off (s)	15	121	144	49	121	167
Yield/Force Off 170(s)	15	121	139	49	121	162
Local Start Time (s)	118	139	72	118	0	95
Local Yield (s)	133	66	89	167	66	112
Local Yield 170(s)	133	66	84	167	66	107

Intersection Summary	
Cycle Length	173
Control Type	Actuated-Uncoordinated
Natural Cycle	125

Splits and Phases: 6: US 90 & SR 89

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	817	1	3	1	4	8	6	355	0	16	251	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89			0.91		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1653			1695		1752	3505		1770	3460	
Flt Permitted	0.95	1.00			1.00		0.55	1.00		0.51	1.00	
Satd. Flow (perm)	3433	1653			1695		1021	3505		944	3460	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	888	1	3	1	4	9	7	386	0	17	273	48
RTOR Reduction (vph)	0	2	0	0	9	0	0	0	0	0	8	0
Lane Group Flow (vph)	888	2	0	0	5	0	7	386	0	17	313	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	40.5	40.5			3.3		58.2	58.2		58.2	58.2	
Effective Green, g (s)	40.5	40.5			3.3		58.2	58.2		58.2	58.2	
Actuated g/C Ratio	0.34	0.34			0.03		0.49	0.49		0.49	0.49	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1159	558			47		495	1700		458	1678	
v/s Ratio Prot	c0.26	0.00			c0.00			c0.11			0.09	
v/s Ratio Perm							0.01			0.02		
v/c Ratio	0.77	0.00			0.11		0.01	0.23		0.04	0.19	
Uniform Delay, d1	35.5	26.4			56.9		16.0	17.9		16.2	17.5	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	0.0			1.4		0.1	0.3		0.0	0.1	
Delay (s)	38.8	26.4			58.4		16.1	18.2		16.3	17.6	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		38.7			58.4			18.2			17.5	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM Average Control Delay	29.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	39	65	39	16
Maximum Split (%)	32.5%	54.2%	32.5%	13.3%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	39	0	104
End Time (s)	39	104	39	0
Yield/Force Off (s)	33	98	33	114
Yield/Force Off 170(s)	24	78	33	114
Local Start Time (s)	0	39	0	104
Local Yield (s)	33	98	33	114
Local Yield 170(s)	24	78	33	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	8	105	118	463	0	873	26
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	114	128	503	0	949	28
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked	0.92	0.92	0.92		0.00		
vC, conflicting volume	1471	489	977		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1344	280	809		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	92	83	83		0		
cM capacity (veh/h)	107	656	750		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	123	128	252	252	633	345	0
Volume Left	9	128	0	0	0	0	0
Volume Right	114	0	0	0	0	28	0
cSH	482	750	1700	1700	1700	1700	1700
Volume to Capacity	0.25	0.17	0.15	0.15	0.37	0.20	0.00
Queue Length 95th (ft)	25	15	0	0	0	0	0
Control Delay (s)	15.0	10.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	B					
Approach Delay (s)	15.0	2.2			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Volume (vph)	765	149	29	306	133	40	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95
Frt	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1568	1752	1845	1568	1703	3406
Flt Permitted	0.95	1.00	0.54	1.00	1.00	0.56	1.00
Satd. Flow (perm)	3400	1568	996	1845	1568	1004	3406
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	832	162	32	333	145	43	354
RTOR Reduction (vph)	0	107	0	0	93	0	0
Lane Group Flow (vph)	832	55	32	333	52	43	354
Heavy Vehicles (%)	3%	3%	3%	3%	3%	6%	6%
Turn Type		custom	Perm		Perm	Perm	
Protected Phases				2			6
Permitted Phases	4	4	2		2	6	
Actuated Green, G (s)	13.4	13.4	14.0	14.0	14.0	14.0	14.0
Effective Green, g (s)	13.4	13.4	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.34	0.34	0.36	0.36	0.36	0.36	0.36
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	1156	533	354	656	557	357	1210
v/s Ratio Prot				c0.18			0.10
v/s Ratio Perm	c0.24	0.04	0.03		0.03	0.04	
v/c Ratio	0.72	0.10	0.09	0.51	0.09	0.12	0.29
Uniform Delay, d1	11.4	8.9	8.5	10.0	8.5	8.6	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	0.5	2.8	0.3	0.7	0.6
Delay (s)	13.7	9.0	9.0	12.8	8.8	9.2	9.8
Level of Service	B	A	A	B	A	A	A
Approach Delay (s)	12.9			11.4			9.7
Approach LOS	B			B			A

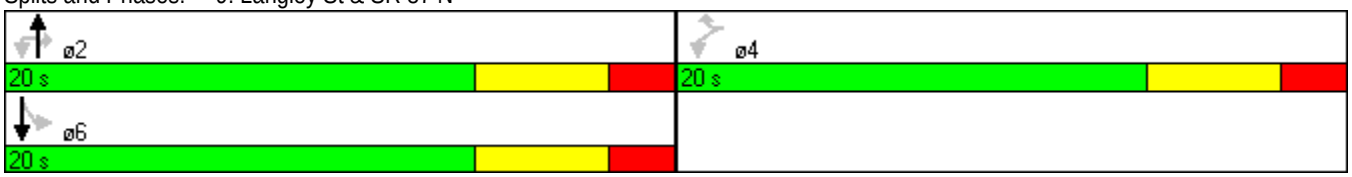
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	39.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTU	WBL	SBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Min	Max
Maximum Split (s)	20	20	20
Maximum Split (%)	50.0%	50.0%	50.0%
Minimum Split (s)	16	14	16
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	10	8	10
Vehicle Extension (s)	4	4	4
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	20	0
End Time (s)	20	0	20
Yield/Force Off (s)	14	34	14
Yield/Force Off 170(s)	14	34	14
Local Start Time (s)	0	20	0
Local Yield (s)	14	34	14
Local Yield 170(s)	14	34	14

Intersection Summary	
Cycle Length	40
Control Type	Actuated-Uncoordinated
Natural Cycle	40

Splits and Phases: 9: Langley St & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	3	68	99	1	62	1	520	145	39	435	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	3	74	108	1	67	1	565	158	42	473	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	911	1283	237	1043	1205	361	474			723		
vC1, stage 1 conf vol	558	558		646	646							
vC2, stage 2 conf vol	353	725		397	559							
vCu, unblocked vol	911	1283	237	1043	1205	361	474			723		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.5	5.5		6.6	5.6							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	99	90	69	100	89	100			95		
cM capacity (veh/h)	381	326	764	350	363	632	1077			869		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	18	77	176	284	440	42	315	159
Volume Left	18	0	108	1	0	42	0	0
Volume Right	0	74	67	0	158	0	0	1
cSH	381	723	422	1077	1700	869	1700	1700
Volume to Capacity	0.05	0.11	0.42	0.00	0.26	0.05	0.19	0.09
Queue Length 95th (ft)	4	9	50	0	0	4	0	0
Control Delay (s)	14.9	10.6	19.5	0.0	0.0	9.4	0.0	0.0
Lane LOS	B	B	C	A		A		
Approach Delay (s)	11.4		19.5	0.0		0.8		
Approach LOS	B		C					

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	140	72	12	117	0	61	6	11	0	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	152	78	13	127	0	66	7	12	0	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	127			230			366	358	191	373	397	127
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	127			230			366	358	191	373	397	127
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			88	99	99	100	100	99
cM capacity (veh/h)	1453			1332			576	559	848	565	533	923

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	237	140	85	9
Volume Left	7	13	66	0
Volume Right	78	0	12	9
cSH	1453	1332	602	923
Volume to Capacity	0.00	0.01	0.14	0.01
Queue Length 95th (ft)	0	1	12	1
Control Delay (s)	0.2	0.8	12.0	8.9
Lane LOS	A	A	B	A
Approach Delay (s)	0.2	0.8	12.0	8.9
Approach LOS			B	A

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

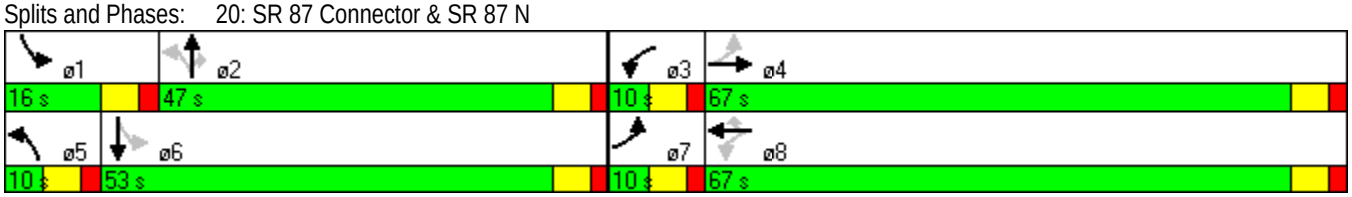
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	487	11	38	356	226	9	576	156	119	492	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1863	1583	1770	3539	1583	1770	3515	
Flt Permitted	0.31	1.00		0.11	1.00	1.00	0.44	1.00	1.00	0.28	1.00	
Satd. Flow (perm)	570	1857		211	1863	1583	823	3539	1583	525	3515	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	529	12	41	387	246	10	626	170	129	535	26
RTOR Reduction (vph)	0	1	0	0	0	133	0	0	104	0	2	0
Lane Group Flow (vph)	65	540	0	41	387	113	10	626	66	129	559	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	42.3	39.3		42.3	39.3	39.3	47.6	46.9	46.9	62.0	55.3	
Effective Green, g (s)	42.3	39.3		42.3	39.3	39.3	47.6	46.9	46.9	62.0	55.3	
Actuated g/C Ratio	0.35	0.32		0.35	0.32	0.32	0.39	0.38	0.38	0.51	0.45	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	227	597		111	599	509	326	1357	607	359	1589	
v/s Ratio Prot	0.01	c0.29		c0.01	0.21		0.00	c0.18		c0.03	0.16	
v/s Ratio Perm	0.09			0.12		0.07	0.01		0.04	0.16		
v/c Ratio	0.29	0.91		0.37	0.65	0.22	0.03	0.46	0.11	0.36	0.35	
Uniform Delay, d1	28.6	39.7		30.6	35.5	30.3	22.9	28.2	24.3	17.4	21.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	17.2		2.1	2.4	0.2	0.0	1.1	0.4	0.6	0.6	
Delay (s)	29.3	56.9		32.6	37.9	30.5	23.0	29.4	24.6	18.1	22.4	
Level of Service	C	E		C	D	C	C	C	C	B	C	
Approach Delay (s)		54.0			34.9			28.3			21.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	122.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	16	47	10	67	10	53	10	67
Maximum Split (%)	11.4%	33.6%	7.1%	47.9%	7.1%	37.9%	7.1%	47.9%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	63	73	0	10	63	73
End Time (s)	16	63	73	0	10	63	73	0
Yield/Force Off (s)	10	57	67	134	4	57	67	134
Yield/Force Off 170(s)	10	46	67	123	4	46	67	123
Local Start Time (s)	124	0	47	57	124	134	47	57
Local Yield (s)	134	41	51	118	128	41	51	118
Local Yield 170(s)	134	30	51	107	128	30	51	107

Intersection Summary	
Cycle Length	140
Control Type	Semi Act-Uncoord
Natural Cycle	70

Splits and Phases: 20: SR 87 Connector & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	66	628	1	5	704	223	10	207	31	114	183	49
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	683	1	5	765	242	11	225	34	124	199	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1008			684			1373	1845	342	1528	1724	504
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1008			684			1373	1845	342	1528	1724	504
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			0	0	95	0	0	90
cM capacity (veh/h)	683			905			0	66	654	0	78	513

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	413	342	388	625	270	376
Volume Left	72	0	5	0	11	124
Volume Right	0	1	0	242	34	53
cSH	683	1700	905	1700	0	0
Volume to Capacity	0.10	0.20	0.01	0.37	Err	Err
Queue Length 95th (ft)	9	0	0	0	Err	Err
Control Delay (s)	3.1	0.0	0.2	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s)	1.7		0.1		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	56	397	215	925	0	459	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0		6.0	
Lane Util. Factor	1.00		1.00	0.95		0.95	
Frt	0.88		1.00	1.00		0.99	
Flt Protected	0.99		0.95	1.00		1.00	
Satd. Flow (prot)	1601		1770	3539		3480	
Flt Permitted	0.99		0.46	1.00		1.00	
Satd. Flow (perm)	1601		853	3539		3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	432	234	1005	0	499	25
RTOR Reduction (vph)	231	0	0	0	0	4	0
Lane Group Flow (vph)	262	0	234	1005	0	520	0
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%	3%
Turn Type			Perm		Perm		
Protected Phases	4			2		6	
Permitted Phases			2		6		
Actuated Green, G (s)	13.7		25.3	25.3		25.3	
Effective Green, g (s)	13.7		25.3	25.3		25.3	
Actuated g/C Ratio	0.27		0.50	0.50		0.50	
Clearance Time (s)	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	430		423	1756		1726	
v/s Ratio Prot	c0.16			c0.28		0.15	
v/s Ratio Perm			0.27				
v/c Ratio	0.61		0.55	0.57		0.30	
Uniform Delay, d1	16.3		8.9	9.0		7.6	
Progression Factor	1.00		1.00	1.00		1.00	
Incremental Delay, d2	2.4		1.6	0.5		0.1	
Delay (s)	18.8		10.5	9.5		7.7	
Level of Service	B		B	A		A	
Approach Delay (s)	18.8			9.7		7.7	
Approach LOS	B			A		A	

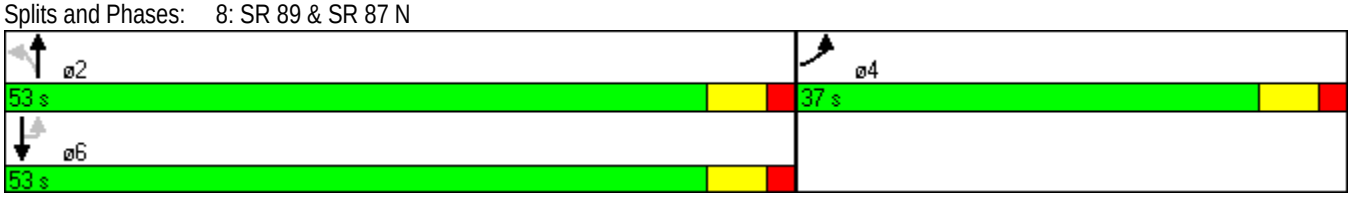
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6
Movement	NBTL	EBL	SBTU
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	None	Min
Maximum Split (s)	53	37	53
Maximum Split (%)	58.9%	41.1%	58.9%
Minimum Split (s)	22	22	22
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	53	0
End Time (s)	53	0	53
Yield/Force Off (s)	47	84	47
Yield/Force Off 170(s)	47	73	47
Local Start Time (s)	0	53	0
Local Yield (s)	47	84	47
Local Yield 170(s)	47	73	47

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 8: SR 89 & SR 87 N



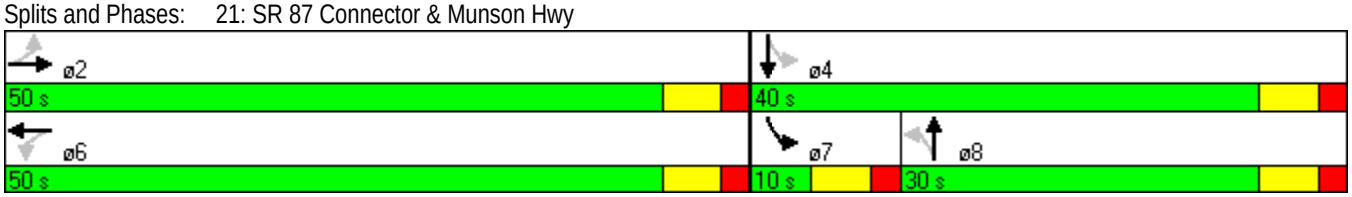
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	561	1	5	606	92	9	137	16	62	141	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.98			0.99			0.98	
Flt Protected		1.00			1.00			1.00			0.99	
Satd. Flow (prot)		3524			3469			1833			1797	
Flt Permitted		0.84			0.95			0.97			0.86	
Satd. Flow (perm)		2955			3295			1785			1566	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	610	1	5	659	100	10	149	17	67	153	46
RTOR Reduction (vph)	0	0	0	0	15	0	0	4	0	0	9	0
Lane Group Flow (vph)	0	665	0	0	749	0	0	172	0	0	257	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		17.5			17.5			13.2			13.2	
Effective Green, g (s)		17.5			17.5			13.2			13.2	
Actuated g/C Ratio		0.41			0.41			0.31			0.31	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1211			1350			552			484	
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.23			0.10			c0.16	
v/c Ratio		0.55			0.55			0.31			0.53	
Uniform Delay, d1		9.6			9.6			11.3			12.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			0.5			0.3			1.1	
Delay (s)		10.1			10.1			11.6			13.3	
Level of Service		B			B			B			B	
Approach Delay (s)		10.1			10.1			11.6			13.3	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	42.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	7	8
Movement	EBTL	SBTL	WBTL	SBL	NBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	Min	None	None	Min
Maximum Split (s)	50	40	50	10	30
Maximum Split (%)	55.6%	44.4%	55.6%	11.1%	33.3%
Minimum Split (s)	22	22	22	10	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	5	5	5		5
Flash Dont Walk (s)	11	11	11		11
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	50	0	50	60
End Time (s)	50	0	50	60	0
Yield/Force Off (s)	44	84	44	54	84
Yield/Force Off 170(s)	33	84	33	54	84
Local Start Time (s)	0	50	0	50	60
Local Yield (s)	44	84	44	54	84
Local Yield 170(s)	33	84	33	54	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 21: SR 87 Connector & Munson Hwy



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	23	488	483	578	0	1132	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0		6.0	
Lane Util. Factor	1.00		1.00	0.95		0.95	
Frt	0.87		1.00	1.00		0.99	
Flt Protected	1.00		0.95	1.00		1.00	
Satd. Flow (prot)	1588		1770	3539		3456	
Flt Permitted	1.00		0.10	1.00		1.00	
Satd. Flow (perm)	1588		177	3539		3456	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	530	525	628	0	1230	126
RTOR Reduction (vph)	349	0	0	0	0	8	0
Lane Group Flow (vph)	206	0	525	628	0	1348	0
Heavy Vehicles (%)	4%	4%	2%	2%	3%	3%	3%
Turn Type			pm+pt		Perm		
Protected Phases	4		5	2		6	
Permitted Phases			2		6		
Actuated Green, G (s)	13.6		63.0	63.0		36.0	
Effective Green, g (s)	13.6		63.0	63.0		36.0	
Actuated g/C Ratio	0.15		0.71	0.71		0.41	
Clearance Time (s)	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	244		503	2516		1404	
v/s Ratio Prot	c0.13		c0.25	0.18		0.39	
v/s Ratio Perm			c0.49				
v/c Ratio	0.85		1.04	0.25		0.96	
Uniform Delay, d1	36.5		27.1	4.5		25.6	
Progression Factor	1.00		1.00	1.00		1.00	
Incremental Delay, d2	22.6		52.0	0.1		15.3	
Delay (s)	59.1		79.1	4.5		40.9	
Level of Service	E		E	A		D	
Approach Delay (s)	59.1			38.5		40.9	
Approach LOS	E			D		D	

Intersection Summary			
HCM Average Control Delay	43.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBTU
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	Min	None	None	Min
Maximum Split (s)	69	21	27	42
Maximum Split (%)	76.7%	23.3%	30.0%	46.7%
Minimum Split (s)	22	10	10	22
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	4	4	4	4
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5			5
Flash Dont Walk (s)	11			11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	69	0	27
End Time (s)	69	0	27	69
Yield/Force Off (s)	63	84	21	63
Yield/Force Off 170(s)	63	84	21	63
Local Start Time (s)	63	42	63	0
Local Yield (s)	36	57	84	36
Local Yield 170(s)	36	57	84	36

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	90

Splits and Phases: 8: SR 89 & SR 87 N

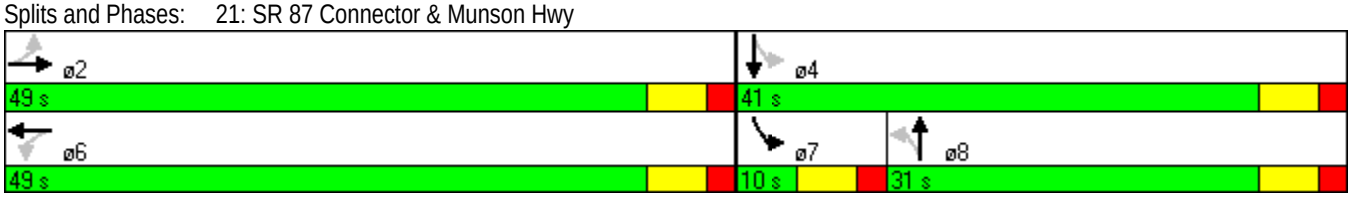
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	663	1	2	768	225	9	181	20	120	155	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.97			0.99			0.97	
Flt Protected		0.99			1.00			1.00			0.98	
Satd. Flow (prot)		3517			3419			1835			1781	
Flt Permitted		0.60			0.95			0.98			0.79	
Satd. Flow (perm)		2109			3261			1800			1425	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	721	1	2	835	245	10	197	22	130	168	76
RTOR Reduction (vph)	0	0	0	0	31	0	0	4	0	0	11	0
Lane Group Flow (vph)	0	825	0	0	1051	0	0	225	0	0	363	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		36.0			36.0			28.9			28.9	
Effective Green, g (s)		36.0			36.0			28.9			28.9	
Actuated g/C Ratio		0.47			0.47			0.38			0.38	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		987			1527			676			536	
v/s Ratio Prot												
v/s Ratio Perm		c0.39			0.32			0.13			c0.25	
v/c Ratio		0.84			0.69			0.33			0.68	
Uniform Delay, d1		17.9			16.0			17.1			20.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.2			1.3			0.3			3.4	
Delay (s)		24.1			17.4			17.4			23.5	
Level of Service		C			B			B			C	
Approach Delay (s)		24.1			17.4			17.4			23.5	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	7	8
Movement	EBTL	SBTL	WBTL	SBL	NBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	Min	None	Min	None	None
Maximum Split (s)	49	41	49	10	31
Maximum Split (%)	54.4%	45.6%	54.4%	11.1%	34.4%
Minimum Split (s)	22	22	22	10	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	5	5	5		5
Flash Dont Walk (s)	11	11	11		11
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	49	0	49	59
End Time (s)	49	0	49	59	0
Yield/Force Off (s)	43	84	43	53	84
Yield/Force Off 170(s)	43	73	43	53	73
Local Start Time (s)	0	49	0	49	59
Local Yield (s)	43	84	43	53	84
Local Yield 170(s)	43	73	43	53	73

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	65

Splits and Phases: 21: SR 87 Connector & Munson Hwy



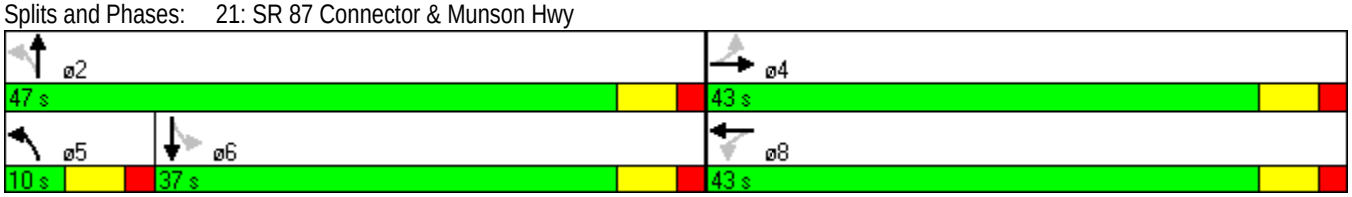
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	623	1	6	701	227	11	201	34	116	182	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.96			0.98			0.98	
Flt Protected		1.00			1.00			1.00			0.98	
Satd. Flow (prot)		3521			3409			1824			1796	
Flt Permitted		0.70			0.95			0.98			0.78	
Satd. Flow (perm)		2486			3237			1784			1426	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	677	1	7	762	247	12	218	37	126	198	55
RTOR Reduction (vph)	0	0	0	0	32	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	752	0	0	984	0	0	259	0	0	373	0
Turn Type	Perm			Perm			pm+pt			Perm		
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.6			28.6			22.7			22.7	
Effective Green, g (s)		28.6			28.6			22.7			22.7	
Actuated g/C Ratio		0.45			0.45			0.36			0.36	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1123			1463			640			511	
v/s Ratio Prot												
v/s Ratio Perm		0.30			c0.30			0.15			c0.26	
v/c Ratio		0.67			0.67			0.41			0.73	
Uniform Delay, d1		13.6			13.7			15.2			17.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.5			1.2			0.4			5.2	
Delay (s)		15.2			14.9			15.7			22.8	
Level of Service		B			B			B			C	
Approach Delay (s)		15.2			14.9			15.7			22.8	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	5	6	8
Movement	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag			Lead	Lag	
Lead-Lag Optimize			Yes	Yes	
Recall Mode	Min	None	None	Min	None
Maximum Split (s)	47	43	10	37	43
Maximum Split (%)	52.2%	47.8%	11.1%	41.1%	47.8%
Minimum Split (s)	22	22	10	22	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	5	5		5	5
Flash Dont Walk (s)	11	11		11	11
Dual Entry	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	47	0	10	47
End Time (s)	47	0	10	47	0
Yield/Force Off (s)	41	84	4	41	84
Yield/Force Off 170(s)	41	73	4	41	73
Local Start Time (s)	80	37	80	0	37
Local Yield (s)	31	74	84	31	74
Local Yield 170(s)	31	63	84	31	63

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	70

Splits and Phases: 21: SR 87 Connector & Munson Hwy



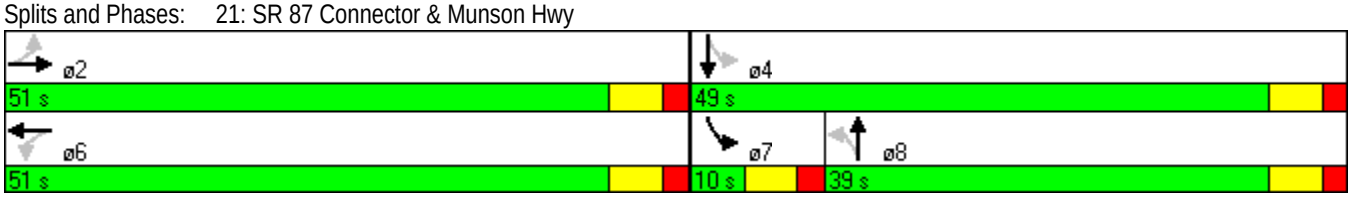
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	628	1	5	704	223	10	207	31	114	183	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.96			0.98			0.98	
Flt Protected		1.00			1.00			1.00			0.98	
Satd. Flow (prot)		3522			3411			1827			1798	
Flt Permitted		0.68			0.95			0.98			0.78	
Satd. Flow (perm)		2420			3246			1795			1430	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	683	1	5	765	242	11	225	34	124	199	53
RTOR Reduction (vph)	0	0	0	0	31	0	0	5	0	0	6	0
Lane Group Flow (vph)	0	756	0	0	981	0	0	265	0	0	370	0
Turn Type	Perm			Perm			Perm			pm+pt		
Protected Phases		2			6			8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		31.2			31.2			28.6			28.6	
Effective Green, g (s)		31.2			31.2			28.6			28.6	
Actuated g/C Ratio		0.43			0.43			0.40			0.40	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1052			1411			715			570	
v/s Ratio Prot												
v/s Ratio Perm		c0.31			0.30			0.15			c0.26	
v/c Ratio		0.72			0.70			0.37			0.65	
Uniform Delay, d1		16.7			16.5			15.2			17.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.4			1.5			0.3			2.6	
Delay (s)		19.1			18.0			15.6			20.1	
Level of Service		B			B			B			C	
Approach Delay (s)		19.1			18.0			15.6			20.1	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	71.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	2	4	6	7	8
Movement	EBTL	SBTL	WBTL	SBL	NBTL
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	Min	None	None	Min
Maximum Split (s)	51	49	51	10	39
Maximum Split (%)	51.0%	49.0%	51.0%	10.0%	39.0%
Minimum Split (s)	22	22	22	10	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	5	5	5		5
Flash Dont Walk (s)	11	11	11		11
Dual Entry	Yes	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	51	0	51	61
End Time (s)	51	0	51	61	0
Yield/Force Off (s)	45	94	45	55	94
Yield/Force Off 170(s)	34	94	34	55	94
Local Start Time (s)	0	51	0	51	61
Local Yield (s)	45	94	45	55	94
Local Yield 170(s)	34	94	34	55	94

Intersection Summary	
Cycle Length	100
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 21: SR 87 Connector & Munson Hwy



Appendix: G

Traffic Data Counts

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Canal Street north of US 90
County: Santa Rosa
Start Date: 7-Dec-10
Station #: 1
Start Time: 0:00

Time	Northbound 1st	Northbound 2nd	Northbound 3rd	Northbound 4th	Northbound Hour Tot.	Southbound 1st	Southbound 2nd	Southbound 3rd	Southbound 4th	Southbound Hour Tot.	Combined Total
0:00	0	1	0	0	1	0	1	1	1	3	4
1:00	0	1	0	1	2	1	0	1	1	3	5
2:00	0	1	0	1	2	0	0	0	0	0	2
3:00	0	0	1	0	1	0	0	0	0	0	1
4:00	0	1	2	4	7	0	0	1	2	3	10
5:00	2	4	9	9	24	1	2	3	4	10	34
6:00	10	8	7	13	38	14	23	12	19	68	106
7:00	25	22	24	26	97	28	33	35	21	117	214
8:00	23	14	20	20	77	20	17	11	13	61	138
9:00	17	17	14	16	64	27	13	14	9	63	127
10:00	18	11	15	20	64	14	19	16	20	69	133
11:00	9	7	15	22	53	13	15	8	15	51	104
12:00	15	21	22	16	74	18	16	18	18	70	144
13:00	26	30	21	17	94	14	24	27	22	87	181
14:00	19	13	32	21	85	17	13	21	12	63	148
15:00	20	11	33	28	92	17	34	23	32	106	198
16:00	30	27	26	27	110	29	28	21	22	100	210
17:00	20	29	31	28	108	16	22	14	18	70	178
18:00	14	16	17	14	61	15	6	7	8	36	97
19:00	15	7	7	9	38	12	6	6	8	32	70
20:00	9	3	6	3	21	6	6	1	4	17	38
21:00	5	5	4	4	18	3	1	3	2	9	27
22:00	6	1	2	4	13	2	2	1	2	7	20
23:00	2	3	0	1	6	2	3	1	2	8	14
Total					1150					1053	2203

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	700	97
P.M	1530	118
Daily	1530	118

	Direction:	Southbound
	Hour	Volume
A.M	700	117
P.M	1515	118
Daily	1515	118

	Direction:	Combined
	Hour	Volume
A.M	700	214
P.M	1530	230
Daily	1530	230

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Glover Lane north of US 90
County: Santa Rosa
Station #: 2
Start Date: 7-Dec-10
Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	6	11	7	6	30	5	3	3	2	13	43
1:00	2	1	3	5	11	2	3	2	1	8	19
2:00	2	5	0	2	9	1	1	2	3	7	16
3:00	7	4	1	3	15	2	1	7	7	17	32
4:00	6	2	3	2	13	5	6	14	9	34	47
5:00	4	5	14	14	37	20	29	40	40	129	166
6:00	12	28	38	44	122	58	101	103	128	390	512
7:00	34	50	76	78	238	141	166	149	162	618	856
8:00	72	62	57	71	262	128	110	100	111	449	711
9:00	54	65	44	66	229	83	101	91	91	366	595
10:00	48	88	59	80	275	95	89	74	95	353	628
11:00	83	74	72	84	313	72	109	91	108	380	693
12:00	81	83	94	91	349	95	76	93	79	343	692
13:00	101	100	82	92	375	90	84	81	96	351	726
14:00	90	103	107	103	403	83	93	83	94	353	756
15:00	102	121	102	110	435	81	98	102	93	374	809
16:00	103	129	122	120	474	92	102	103	100	397	871
17:00	119	112	149	139	519	93	98	100	86	377	896
18:00	121	105	76	69	371	80	78	57	53	268	639
19:00	64	65	63	83	275	36	53	33	45	167	442
20:00	68	63	53	41	225	40	40	26	21	127	352
21:00	58	42	47	32	179	25	17	16	17	75	254
22:00	26	37	20	20	103	15	13	9	9	46	149
23:00	26	14	19	7	66	13	9	13	6	41	107
Total					5328					5683	11011

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	730	288
P.M	1715	521
Daily	1715	521

	Direction:	Southbound
	Hour	Volume
A.M	700	618
P.M	1615	398
Daily	700	618

	Direction:	Combined
	Hour	Volume
A.M	715	881
P.M	1700	896
Daily	1700	896

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: US 90 west of Glover Lane
County: Santa Rosa
Station #: 3
Start Date: 7-Dec-10
Start Time: 0:00

	Eastbound					Westbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	38	41	23	18	120	31	17	20	21	89	209
1:00	13	6	10	13	42	7	9	12	7	35	77
2:00	8	7	3	11	29	10	8	8	14	40	69
3:00	8	10	15	14	47	11	3	16	19	49	96
4:00	27	26	24	36	113	22	40	41	37	140	253
5:00	37	35	83	119	274	58	98	123	150	429	703
6:00	111	160	204	217	692	174	240	252	316	982	1674
7:00	214	243	334	393	1184	324	429	396	434	1583	2767
8:00	310	273	272	331	1186	311	343	348	333	1335	2521
9:00	251	244	274	293	1062	319	340	366	337	1362	2424
10:00	300	299	316	320	1235	359	356	348	319	1382	2617
11:00	345	381	354	396	1476	330	403	435	408	1576	3052
12:00	333	361	381	433	1508	390	372	357	383	1502	3010
13:00	376	439	357	415	1587	391	319	349	402	1461	3048
14:00	372	392	436	379	1579	348	397	349	397	1491	3070
15:00	415	453	416	445	1729	388	392	390	447	1617	3346
16:00	458	442	441	435	1776	436	422	404	410	1672	3448
17:00	514	404	459	472	1849	431	388	358	312	1489	3338
18:00	365	338	295	258	1256	303	256	248	217	1024	2280
19:00	200	199	225	230	854	194	187	169	143	693	1547
20:00	179	166	189	148	682	160	160	111	100	531	1213
21:00	159	152	129	101	541	111	95	77	97	380	921
22:00	105	101	77	69	352	90	57	49	45	241	593
23:00	63	55	54	18	190	50	60	37	20	167	357
Total					21363					21270	42633

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	730	1310
P.M	1700	1849
Daily	1700	1849

	Direction:	Westbound
	Hour	Volume
A.M	700	1583
P.M	1545	1709
Daily	1545	1709

	Direction:	Combined
	Hour	Volume
A.M	715	2850
P.M	1615	3499
Daily	1615	3499

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Old US 90 south of US 90
County: Santa Rosa
Start Date: 7-Dec-10
Station #: 4
Start Time: 0:00

Time	Northbound 1st	Northbound 2nd	Northbound 3rd	Northbound 4th	Northbound Hour Tot.	Southbound 1st	Southbound 2nd	Southbound 3rd	Southbound 4th	Southbound Hour Tot.	Combined Total
0:00	1	0	1	1	3	0	1	0	0	1	4
1:00	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0
4:00	1	0	1	0	2	0	0	0	0	0	2
5:00	0	1	3	1	5	1	0	2	2	5	10
6:00	2	5	2	9	18	4	9	4	16	33	51
7:00	5	5	17	33	60	9	11	26	14	60	120
8:00	13	10	11	3	37	14	14	7	5	40	77
9:00	5	6	2	8	21	7	14	11	6	38	59
10:00	4	11	5	5	25	6	3	6	9	24	49
11:00	7	6	13	4	30	6	12	9	4	31	61
12:00	7	6	10	8	31	5	8	8	16	37	68
13:00	13	15	16	8	52	24	18	8	10	60	112
14:00	11	13	12	13	49	12	9	8	11	40	89
15:00	11	11	14	9	45	11	13	4	10	38	83
16:00	13	5	5	3	26	12	7	4	11	34	60
17:00	14	12	13	13	52	10	10	5	13	38	90
18:00	6	3	4	4	17	8	10	3	6	27	44
19:00	4	4	1	4	13	4	4	4	9	21	34
20:00	4	3	2	2	11	1	5	6	2	14	25
21:00	3	1	0	1	5	3	2	1	1	7	12
22:00	1	1	0	2	4	2	3	3	0	8	12
23:00	1	0	1	1	3	3	3	0	1	7	10
Total					509					563	1072

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	730	73
P.M	1245	52
Daily	730	73

	Direction:	Southbound
	Hour	Volume
A.M	730	68
P.M	1230	66
Daily	730	68

	Direction:	Combined
	Hour	Volume
A.M	730	141
P.M	1245	118
Daily	730	141

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: SR 87 south of Oliver Street
County: Santa Rosa
Start Date: 7-Dec-10
Station #: 5
Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	26	19	14	13	72	6	8	5	6	25	97
1:00	10	2	7	7	26	6	3	2	9	20	46
2:00	0	2	4	8	14	2	4	2	3	11	25
3:00	3	3	4	7	17	6	7	9	12	34	51
4:00	7	11	8	25	51	5	19	10	17	51	102
5:00	23	12	35	37	107	35	37	59	66	197	304
6:00	44	52	77	84	257	62	105	118	104	389	646
7:00	72	100	124	141	437	133	170	161	151	615	1052
8:00	132	122	135	141	530	147	130	129	121	527	1057
9:00	127	122	107	93	449	151	115	116	152	534	983
10:00	122	124	119	101	466	114	105	110	111	440	906
11:00	135	114	124	128	501	128	139	116	120	503	1004
12:00	134	137	134	146	551	133	123	117	114	487	1038
13:00	160	158	150	166	634	137	124	141	129	531	1165
14:00	122	163	169	134	588	146	127	119	123	515	1103
15:00	125	178	175	204	682	140	125	144	200	609	1291
16:00	185	172	194	196	747	161	147	132	143	583	1330
17:00	186	176	200	152	714	156	137	137	133	563	1277
18:00	139	147	115	102	503	75	79	72	69	295	798
19:00	90	86	90	74	340	50	87	59	47	243	583
20:00	81	68	74	72	295	59	38	44	42	183	478
21:00	63	47	46	37	193	37	48	32	38	155	348
22:00	43	52	33	21	149	26	20	24	13	83	232
23:00	24	25	21	15	85	14	21	12	5	52	137
Total					8408					7645	16053

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	745	530
P.M	1645	758
Daily	1645	758

	Direction:	Southbound
	Hour	Volume
A.M	715	629
P.M	1530	652
Daily	1530	652

	Direction:	Combined
	Hour	Volume
A.M	715	1126
P.M	1545	1395
Daily	1545	1395

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, FL 32563

Location: US 90 between Ward Basin Rd and Airport Rd
County: Santa Rosa Station #: 6
Start Date: 12/8/2010 Start Time: 0:00

Time	Dir	Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
15	E	1	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	15
	W	1	0	14	3	0	0	0	0	0	1	0	0	0	0	0	0	18
30	E	1	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
	W	1	1	13	3	0	0	0	0	0	0	0	0	0	0	0	0	17
45	E	1	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
	W	1	0	10	5	0	0	0	0	0	0	0	0	0	0	0	0	15
100	E	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	W	1	0	4	2	0	0	0	0	1	0	0	0	0	0	0	0	7
Hour Total			1	69	17	0	0	0	0	1	1	0	0	0	0	0	0	89
115	E	1	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	6
	W	1	0	6	1	0	0	0	0	0	0	0	0	0	1	0	0	8
130	E	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	4
	W	1	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
145	E	1	0	4	1	0	0	0	0	0	1	0	0	0	0	0	0	6
	W	1	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
200	E	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
	W	1	0	2	4	0	0	0	0	0	1	0	0	0	0	0	0	7
Hour Total			0	24	17	1	0	0	0	0	2	0	0	0	1	0	0	45
215	E	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	W	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3
230	E	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	W	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
245	E	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	4
	W	1	0	3	1	0	0	0	0	0	1	0	0	0	0	0	0	5
300	E	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
	W	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total			1	17	6	0	1	0	0	0	1	0	0	0	0	0	0	26
315	E	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	W	1	0	1	3	0	1	0	0	0	0	0	0	0	0	0	0	5
330	E	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	5
	W	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3
345	E	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	W	1	0	3	8	0	0	0	0	0	1	0	0	0	0	0	0	12
400	E	1	0	5	5	0	0	0	0	0	2	0	0	1	0	0	0	13
	W	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total			0	17	19	0	2	2	0	0	3	0	0	1	0	0	0	44
415	E	1	0	3	6	0	1	0	0	0	0	0	0	0	0	0	0	10
	W	1	0	5	0	0	1	0	0	0	1	0	0	0	0	0	0	7
430	E	1	0	11	4	0	0	0	0	0	0	0	0	0	0	0	0	15
	W	1	0	6	5	0	0	1	0	0	1	0	0	0	0	0	0	13
445	E	1	0	9	4	0	0	0	0	0	0	0	1	0	0	0	0	14
	W	1	0	6	5	1	2	0	0	0	0	0	0	1	0	0	0	15
500	E	1	0	11	6	0	4	0	0	0	0	0	0	0	0	0	0	21
	W	1	0	2	8	0	1	0	0	0	0	0	0	0	0	0	0	11
Hour Total			0	53	38	1	9	1	0	0	2	0	1	1	0	0	0	106
515	E	1	0	15	6	0	2	0	0	0	0	0	0	0	0	0	0	23
	W	1	0	11	7	0	1	0	0	0	0	0	0	0	0	0	0	19
530	E	1	0	22	20	0	2	0	0	0	0	0	0	0	0	0	0	44
	W	1	1	15	7	0	1	0	0	0	0	0	0	0	0	0	0	24
545	E	1	1	27	20	2	4	0	0	0	0	0	0	0	0	0	0	54
	W	1	0	25	17	0	3	0	0	0	3	0	0	0	0	0	0	48
600	E	1	0	32	38	1	4	0	0	1	2	0	0	0	0	0	0	78
	W	1	0	21	16	0	2	0	0	0	0	0	0	0	0	0	0	39
Hour Total			2	168	131	3	19	0	0	1	5	0	0	0	0	0	0	329
615	E	1	0	55	22	2	2	0	0	0	0	0	0	0	0	0	0	81
	W	1	1	25	25	0	5	0	0	0	2	0	0	0	0	0	0	58
630	E	1	0	57	46	2	1	1	0	0	0	0	1	0	0	0	0	108
	W	1	0	38	19	0	3	0	0	0	3	0	0	0	0	0	0	63
645	E	1	0	114	60	0	5	0	0	0	0	0	0	0	0	0	0	179
	W	1	0	46	21	2	2	0	0	0	0	1	0	1	0	0	0	73
700	E	1	0	68	44	3	2	0	0	0	1	0	0	0	0	0	0	118

	W	1	0	74	37	2	2	2	0	0	0	0	0	0	0	0	0	117
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Hour Total			1	477	274	11	22	3	0	0	6	1	1	1	0	0	0	797
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715	E	1	1	57	23	3	4	1	0	0	1	0	0	0	0	0	0	90
	W	1	0	81	35	2	5	1	0	1	2	1	0	0	0	0	0	128
730	E	1	0	54	48	3	6	1	0	0	1	0	0	0	0	0	0	113
	W	1	0	80	50	1	4	0	0	1	0	0	0	0	0	0	0	136
745	E	1	0	77	39	0	9	0	0	0	0	0	0	0	1	0	0	126
	W	1	0	81	34	3	7	0	0	2	0	0	0	0	0	0	0	127
800	E	1	0	74	38	2	1	0	0	0	3	0	0	0	0	0	0	118
	W	1	0	75	41	4	9	0	0	1	4	0	0	0	0	0	0	134
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Hour Total			1	579	308	18	45	3	0	5	11	1	0	0	1	0	0	972
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815	E	1	0	45	37	0	7	1	0	1	0	0	0	0	0	0	0	91
	W	1	0	80	37	0	6	1	0	4	2	0	0	0	0	0	0	130
830	E	1	0	36	35	2	12	0	0	1	2	0	0	0	0	0	0	88
	W	1	0	58	34	1	4	0	0	3	1	0	0	0	0	0	0	101
845	E	1	0	51	24	1	10	1	0	0	0	0	0	0	0	0	0	87
	W	1	0	75	30	3	4	1	0	1	1	0	0	0	0	0	0	115
900	E	1	1	35	26	1	5	0	0	0	0	0	0	0	0	0	0	68
	W	1	1	58	39	2	3	0	0	2	5	0	0	0	0	0	0	110
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Hour Total			2	438	262	10	51	4	0	12	11	0	0	0	0	0	0	790
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915	E	1	0	39	36	0	4	2	0	2	0	0	0	0	0	0	0	83
	W	1	0	54	35	1	5	1	0	0	0	0	0	0	0	0	0	96
930	E	1	0	44	34	1	2	0	0	0	0	0	0	0	0	0	0	81
	W	1	0	54	31	0	4	0	0	0	4	0	0	0	0	0	0	93
945	E	1	1	44	32	0	5	1	0	0	1	0	0	0	0	0	0	84
	W	1	0	49	37	2	5	1	0	1	1	0	0	0	0	0	0	96
1000	E	1	0	39	29	0	3	0	0	0	1	0	0	0	0	0	0	72
	W	1	0	42	24	0	3	0	0	2	1	0	0	0	0	0	0	72
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Hour Total			1	365	258	4	31	5	0	5	8	0	0	0	0	0	0	677
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1015	E	1	0	39	43	0	6	0	0	0	1	0	0	0	0	0	0	89
	W	1	0	53	29	2	3	1	0	1	3	0	0	0	0	0	0	92
1030	E	1	0	36	25	1	11	0	0	0	1	0	0	0	0	0	0	74
	W	1	0	59	43	0	4	0	0	2	0	0	0	0	0	0	0	108
1045	E	1	0	32	26	0	8	1	0	2	1	0	0	0	0	0	0	70
	W	1	0	66	38	0	5	0	0	0	1	0	0	0	0	0	0	110
1100	E	1	2	41	27	1	6	1	0	1	0	0	0	0	0	0	0	79
	W	1	1	40	30	1	5	0	1	1	2	0	0	0	0	0	0	81
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Hour Total			3	366	261	5	48	3	1	7	9	0	0	0	0	0	0	703
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1115	E	1	0	46	39	2	6	0	0	0	0	0	0	0	0	0	0	93
	W	1	0	77	54	0	7	0	1	0	1	1	0	0	0	0	0	141
1130	E	1	0	57	45	1	6	1	0	3	1	0	0	0	0	0	0	114
	W	1	0	42	40	1	7	0	1	1	5	0	0	0	0	0	0	97
1145	E	1	1	50	45	0	7	1	0	2	0	0	0	0	0	0	0	106
	W	1	0	56	22	1	7	3	0	0	1	0	0	0	0	0	0	90
1200	E	1	0	60	40	0	13	3	0	2	0	1	0	0	0	0	0	119
	W	1	0	64	34	1	6	1	0	0	1	0	0	0	0	0	0	107
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Hour Total			1	452	319	6	59	9	2	8	9	2	0	0	0	0	0	867
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1215	E	1	0	55	41	1	12	0	0	1	1	0	0	0	0	0	0	111
	W	1	0	51	33	1	3	0	1	1	2	0	0	0	0	0	0	92
1230	E	1	0	61	43	0	5	1	0	1	0	0	0	0	0	0	0	111
	W	1	0	50	37	0	2	1	0	1	3	1	0	0	0	0	0	95
1245	E	1	1	62	30	1	6	1	0	0	1	0	0	0	0	0	0	102
	W	1	0	48	39	1	4	1	0	1	5	2	0	0	0	0	0	101
1300	E	1	0	54	46	1	5	0	0	2	1	0	0	0	0	0	0	109
	W	1	0	53	36	0	6	0	0	1	1	0	0	0	0	0	0	97
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Hour Total			1	434	305	5	43	4	1	8	14	3	0	0	0	0	0	818
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1315	E	1	0	53	41	0	5	1	0	1	1	0	0	0	0	0	0	102
	W	1	1	57	23	2	7	1	0	0	2	1	0	0	0	0	0	94
1330	E	1	0	57	50	0	7	0	0	2	1	0	0	0	0	0	0	117
	W	1	0	69	32	0	3	1	0	0	2	0	0	0	0	0	0	107
1345	E	1	1	57	37	0	4	0	0	0	0	0	0	0	0	0	0	99
	W	1	0	70	47	1	2	1	0	2	2	0	0	0	0	0	0	125
1400	E	1	0	66	48	0	6	2	0	3	2	0	0	0	0	0	0	127
	W	1	1	49	31	0	2	0	0	1	2	0	0	0	0	0	0	86
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Hour Total			3	478	309	3	36	6	0	9	12	1	0	0	0	0	0	857
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1415	E	1	0	58	47	7	5	0	0	3	0	0	0	0	0	0	0	120
	W	1	0	51	33	0	2	0	0	1	1	0	0	0	0	0	0	88
1430	E	1	0	71	49	0	9	2	0	2	0	0	0	0	0	0	0	133
	W	1	1	51	42	2	5	0	0	0	2	0	0	0	0	0	0	103
1445	E	1	0	68	43	0	5	0	0	1	0	0	0	0	0	0	0	117
	W	1	0	60	35	0	5	0	0	1	0	0	0	0	1	0	0	102

1500	E	1	0	50	45	0	2	0	0	0	0	0	0	0	0	0	0	97
	W	1	0	68	30	1	5	1	0	1	0	0	0	0	0	0	0	106
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Hour Total			1	477	324	10	38	3	0	9	3	0	0	0	1	0	0	866
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1515	E	1	1	63	40	0	5	1	0	1	2	0	0	0	1	0	0	114
	W	1	1	127	47	2	3	1	0	0	1	0	0	0	0	0	0	182
1530	E	1	0	74	42	5	16	0	0	2	1	0	0	0	0	0	0	140
	W	1	0	59	41	3	6	1	0	1	2	0	0	0	0	0	0	113
1545	E	1	0	81	49	0	11	0	0	1	2	0	0	0	0	0	0	144
	W	1	0	102	34	5	7	0	0	1	1	0	0	0	0	0	0	150
1600	E	1	0	60	57	0	13	0	0	0	0	0	0	0	0	0	0	130
	W	1	0	65	47	1	3	0	0	1	0	0	0	0	0	0	0	117
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Hour Total			2	631	357	16	64	3	0	7	9	0	0	0	1	0	0	1090
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1615	E	1	0	95	28	5	4	0	0	1	0	0	0	0	0	0	0	133
	W	1	1	92	68	1	4	0	0	0	3	0	0	0	0	0	0	169
1630	E	1	0	81	46	0	4	0	0	1	1	0	0	0	0	0	0	133
	W	1	0	68	55	1	3	0	0	0	2	0	0	0	0	0	0	129
1645	E	1	0	63	41	0	6	0	0	1	0	0	0	0	0	0	0	111
	W	1	2	103	38	0	10	0	0	0	2	0	0	0	0	0	0	155
1700	E	1	0	76	47	1	4	0	0	1	1	0	0	0	0	0	0	130
	W	1	1	88	44	1	3	0	0	0	1	0	0	0	0	0	0	138
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Hour Total			4	666	367	9	38	0	0	4	10	0	0	0	0	0	0	1098
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1715	E	1	1	71	56	0	9	1	0	0	1	0	0	0	0	0	0	139
	W	1	0	91	44	2	4	0	0	0	4	0	0	0	0	0	0	145
1730	E	1	1	85	50	0	5	0	0	2	1	0	0	0	0	0	0	144
	W	1	0	77	39	0	6	0	0	0	0	0	0	0	0	0	0	122
1745	E	1	0	65	48	1	7	0	0	0	1	0	0	0	0	0	0	122
	W	1	0	70	43	0	7	0	0	0	0	0	0	0	0	0	0	120
1800	E	1	0	66	44	0	4	0	0	0	0	0	0	0	0	0	0	114
	W	1	0	61	31	0	2	0	0	1	1	0	0	0	0	0	0	96
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Hour Total			2	586	355	3	44	1	0	3	8	0	0	0	0	0	0	1002
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1815	E	1	0	48	46	0	3	0	0	0	0	0	0	0	0	0	0	97
	W	1	0	51	27	0	4	0	0	0	1	0	0	0	0	0	0	83
1830	E	1	1	50	33	0	7	0	0	1	0	0	0	0	0	0	0	92
	W	1	1	47	21	0	7	1	0	0	0	0	0	0	0	0	0	77
1845	E	1	0	50	35	0	2	0	0	0	0	0	0	0	0	0	0	87
	W	1	0	49	23	0	3	0	0	0	1	0	0	0	0	0	0	76
1900	E	1	0	34	31	0	3	0	0	0	1	0	0	0	0	0	0	69
	W	1	0	32	22	0	1	1	0	0	1	0	0	0	0	0	0	57
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Hour Total			2	361	238	0	30	2	0	1	4	0	0	0	0	0	0	638
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1915	E	1	0	40	14	0	3	0	0	0	0	0	0	0	0	0	0	57
	W	1	0	47	19	0	2	0	0	0	1	0	0	0	0	0	0	69
1930	E	1	0	43	20	0	2	0	0	0	0	0	0	0	0	0	0	65
	W	1	0	18	7	0	1	0	0	1	0	0	0	0	0	0	0	27
1945	E	1	0	26	21	0	4	0	0	0	0	0	0	0	0	0	0	51
	W	1	0	24	22	0	1	0	0	0	0	0	0	0	0	0	0	47
2000	E	1	0	27	21	0	0	0	0	0	0	0	0	0	0	0	0	48
	W	1	0	28	15	0	2	0	0	0	0	0	0	0	0	0	0	45
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Hour Total			0	253	139	0	15	0	0	1	1	0	0	0	0	0	0	409
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2015	E	1	1	32	12	0	3	0	0	0	0	0	0	0	0	0	0	48
	W	1	0	36	23	0	0	0	0	0	1	0	0	0	0	0	0	60
2030	E	1	0	42	21	1	4	0	0	0	0	0	1	0	0	0	0	69
	W	1	0	22	9	0	0	0	0	0	0	0	0	1	0	0	0	32
2045	E	1	0	36	21	0	2	0	0	1	0	0	0	0	0	0	0	60
	W	1	0	22	17	0	2	0	0	0	2	0	0	0	0	0	0	43
2100	E	1	0	25	21	0	4	0	0	0	0	0	0	0	0	0	0	50
	W	1	0	25	10	0	1	0	0	0	0	0	0	0	0	0	0	36
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Hour Total			1	240	134	1	16	0	0	1	3	0	1	1	0	0	0	398
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2115	E	1	0	27	15	2	1	0	0	0	1	0	0	0	0	0	0	46
	W	1	0	28	16	0	0	0	0	0	0	0	0	0	0	0	0	44
2130	E	1	0	25	17	0	2	0	0	0	1	0	0	0	0	0	0	45
	W	1	0	18	11	0	4	0	0	0	0	0	1	0	0	0	0	34
2145	E	1	0	21	8	0	3	0	0	0	0	0	0	0	0	0	0	32
	W	1	0	28	5	0	1	0	0	0	0	0	0	0	0	0	0	34
2200	E	1	0	22	11	0	0	0	0	0	0	0	0	0	0	0	0	33
	W	1	0	8	10	0	0	0	0	0	1	0	0	0	0	0	0	19
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Hour Total			0	177	93	2	11	0	0	0	3	0	1	0	0	0	0	287
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2215	E	1	0	17	7	0	0	0	0	0	1	0	0	0	0	0	0	25
	W	1	0	24	4	0	1	0	0	0	0	0	0	0	0	0	0	29
2230	E	1	1	28	15	0	0	0	0	0	0	0	0	0	0	0	0	44
	W	1	0	23	7	0	1	0	0	0	0	0	0	0	0	0	0	31
2245	E	1	0	21	9	0	0	0	0	0	1	0	0	0	0	0	0	31

	W	1	0	18	4	1	0	0	0	0	0	0	0	0	0	0	0	23
2300	E	1	0	14	8	0	0	0	0	0	0	0	0	0	0	0	0	22
	W	1	0	11	3	0	1	0	0	0	0	0	0	0	0	0	0	15
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Hour Total			1	156	57	1	3	0	0	0	2	0	0	0	0	0	0	220
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2315	E	1	0	9	8	0	1	0	0	0	0	0	0	0	0	0	0	18
	W	1	0	42	15	0	0	0	0	0	1	0	1	0	0	0	0	59
2330	E	1	0	15	10	0	1	0	0	0	0	0	0	0	0	0	0	26
	W	1	0	19	4	0	0	0	0	0	0	0	0	0	0	0	0	23
2345	E	1	0	11	12	0	0	0	0	0	0	0	0	0	0	0	0	23
	W	1	1	7	3	0	0	0	0	0	1	0	0	0	0	0	0	12
2400	E	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
	W	1	0	8	1	0	1	0	0	0	0	0	0	0	0	0	0	10
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Hour Total			1	119	54	0	3	0	0	0	2	0	1	0	0	0	0	180
====	==	===	=======	=======	=======	=======	=====	=======	=======	=====	=======	=======	=======	=======	=======	=====	=======	=====
24 Hour																		
Totals			31	7603	4642	109	628	49	4	82	139	8	5	4	4	0	0	13308
Percent			0.23%	57.13%	34.88%	0.82%	4.72%	0.37%	0.03%	0.62%	1.04%	0.06%	0.04%	0.03%	0.03%	0.00%	0.00%	

Peak Hour	Volume	Truck Volume	Peak/Daily Factor	Peak Hour Factor
1530	1105	76	8.30%	91.47%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, FL 32563

Location: SR 87 between SR 89 and Langley St
County: Santa Rosa Station #: 7
Start Date: ######## Start Time: 0:00

Time	Dir	Ln	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
15	N	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	N	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	2	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
30	N	1	0	4	2	0	0	0	0	0	1	0	0	0	0	0	0	7
	N	2	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	S	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	S	2	0	3	3	0	0	0	0	0	1	0	0	0	0	0	0	7
45	N	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
	N	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
	S	2	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	4
100	N	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	N	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total			0	43	15	0	0	0	0	0	2	0	0	1	0	0	0	61
115	N	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	N	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	6	1	0	0	0	0	0	1	0	0	0	0	0	0	8
130	N	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	N	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
145	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	2	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	7
200	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total			0	24	5	0	0	0	0	0	1	0	0	0	0	0	0	30
215	N	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	N	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230	N	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	N	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
245	N	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	N	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
300	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total			0	7	8	0	0	0	0	0	1	0	0	0	0	0	0	16
315	N	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	N	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
330	N	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	N	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
345	N	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
	S	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
400	N	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	N	2	0	5	4	0	1	0	0	0	0	0	0	0	0	0	0	10
	S	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total			0	18	11	0	1	0	0	0	1	0	0	0	0	0	0	31

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415	N	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	N	2	0	7	10	0	0	0	0	0	0	0	0	0	0	0	0	17
	S	1	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3
	S	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
430	N	1	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	7
	N	2	0	7	4	0	1	0	0	0	0	0	0	0	0	0	0	12
	S	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	5
445	N	1	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
	N	2	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	13
	S	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
500	N	1	0	4	4	0	1	0	0	0	0	0	0	0	0	0	0	9
	N	2	0	28	15	0	0	0	0	0	0	0	0	0	0	0	0	43
	S	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	S	2	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11
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Hour Total			0	87	46	0	2	0	0	0	0	0	2	0	0	0	0	137
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515	N	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
	N	2	1	34	10	0	1	0	0	0	0	0	0	0	0	0	0	46
	S	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
	S	2	0	12	5	0	1	0	0	0	0	0	0	0	0	0	0	18
530	N	1	0	4	6	0	0	0	0	0	1	0	0	0	0	0	0	11
	N	2	0	27	15	0	2	1	0	0	0	0	0	0	0	0	0	45
	S	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	S	2	0	8	9	0	2	0	0	0	1	0	0	0	0	0	0	20
545	N	1	0	6	3	0	3	0	0	1	0	0	0	0	0	0	0	13
	N	2	1	45	20	0	0	0	0	0	0	0	0	0	0	0	0	66
	S	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
	S	2	0	12	10	0	0	0	0	0	1	0	0	0	0	0	0	23
600	N	1	0	19	10	0	1	0	0	0	0	0	0	0	0	0	0	30
	N	2	0	66	28	1	4	0	0	0	0	0	0	0	0	0	0	99
	S	1	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	9
	S	2	0	19	8	0	2	0	0	0	0	0	1	0	0	0	0	30
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Hour Total			2	263	133	1	17	1	0	1	3	0	1	0	0	0	0	422
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615	N	1	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0	15
	N	2	0	65	32	0	2	0	0	0	0	0	0	0	0	0	0	99
	S	1	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
	S	2	0	23	10	0	2	0	0	0	0	0	0	0	0	0	0	35
630	N	1	0	14	13	0	0	0	0	0	0	0	0	0	0	0	0	27
	N	2	0	64	35	1	4	0	0	0	0	0	0	0	0	0	0	104
	S	1	0	11	4	0	2	0	0	0	0	0	0	0	0	0	0	17
	S	2	0	34	11	0	2	0	0	0	0	0	0	0	0	0	0	47
645	N	1	0	18	5	1	0	0	0	0	0	0	0	0	0	0	0	24
	N	2	0	77	39	0	0	0	0	0	0	0	0	0	0	0	0	116
	S	1	0	18	5	0	0	0	0	0	0	0	0	0	0	0	0	23
	S	2	0	24	16	1	3	0	0	0	0	0	0	0	0	0	0	44
700	N	1	0	29	7	0	2	0	0	0	0	0	0	0	0	0	0	38
	N	2	0	90	29	0	4	1	0	1	1	0	0	0	0	0	0	126
	S	1	0	23	7	0	0	0	0	0	0	0	0	0	0	0	0	30
	S	2	0	29	16	0	5	0	0	1	1	0	0	0	0	0	0	52
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Hour Total			0	536	233	3	26	1	0	2	2	0	0	0	0	0	0	803
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715	N	1	0	24	6	0	0	0	0	0	2	0	0	0	0	0	0	32
	N	2	0	82	25	0	9	0	0	0	0	0	0	0	0	0	0	116
	S	1	0	19	7	0	1	0	0	0	0	0	0	0	0	0	0	27
	S	2	0	45	18	0	4	0	0	1	0	0	0	0	0	0	0	68
730	N	1	1	27	15	0	5	0	0	0	0	0	0	0	0	0	0	48
	N	2	1	79	31	1	5	0	0	1	0	0	0	0	0	0	0	118
	S	1	0	12	3	0	0	0	0	1	1	0	0	0	0	0	0	17
	S	2	0	35	10	1	2	0	0	2	2	0	0	0	0	0	0	52
745	N	1	0	10	14	0	0	0	0	1	0	0	0	0	0	0	0	25
	N	2	0	73	25	0	2	0	0	0	2	0	0	0	0	0	0	102
	S	1	0	17	6	1	0	0	0	0	0	0	0	0	0	0	0	24
	S	2	0	40	8	1	2	0	1	0	2	0	0	0	0	0	0	54
800	N	1	0	20	10	0	1	0	0	0	0	0	0	0	0	0	0	31
	N	2	0	60	15	0	1	0	0	0	1	0	0	0	0	0	0	77
	S	1	0	26	2	0	0	0	0	0	0	0	0	0	0	0	0	28
	S	2	0	19	13	1	3	0	0	2	1	0	0	0	0	0	0	39
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Hour Total			2	588	208	5	35	0	1	8	11	0	0	0	0	0	0	858
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815	N	1	0	15	4	0	0	1	0	0	0	0	0	0	0	0	0	20
	N	2	0	44	15	0	2	0	0	0	0	0	0	0	0	0	0	61
	S	1	1	15	2	0	0	0	0	0	0	0	0	0	0	0	0	18
	S	2	0	31	5	0	1	0	0	0	2	0	0	0	0	0	0	39
830	N	1	0	16	5	0	2	2	0	0	1	0	0	0	0	0	0	26
	N	2	0	30	13	2	1	0	0	1	1	0	0	0	0	0	0	48
	S	1	0	5	1	0	2	0	0	0	0	0	0	0	0	0	0	8
	S	2	0	25	9	1	3	1	0	0	1	0	0	0	0	0	0	40
845	N	1	0	19	4	0	0	0	0	0	0	0	0	0	0	0	0	23
	N	2	1	46	16	0	4	0	0	0	1	0	0	0	0	0	0	68
	S	1	0	8	2	0	1	0	0	0	0	0	0	0	0	0	0	11

	S	2	0	21	6	1	0	0	1	1	0	0	0	0	0	0	0	30
900	N	1	0	13	6	1	1	0	0	0	0	0	0	0	0	0	0	21
	N	2	0	41	22	0	6	0	0	0	2	0	0	0	0	0	0	71
	S	1	0	11	4	0	0	0	0	0	0	0	0	0	0	0	0	15
	S	2	0	32	8	0	2	0	0	0	1	0	0	0	0	0	0	43
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Hour Total			2	372	122	5	25	4	1	2	9	0	0	0	0	0	0	542
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915	N	1	0	6	10	0	1	1	0	0	0	0	0	0	0	0	0	18
	N	2	0	39	22	0	2	1	0	0	0	0	0	0	0	0	0	64
	S	1	0	17	3	0	0	0	0	0	0	0	0	0	0	0	0	20
	S	2	0	25	15	1	6	0	0	0	0	0	0	0	0	0	0	47
930	N	1	0	11	6	1	2	1	0	0	0	0	0	0	0	0	0	21
	N	2	0	37	21	0	1	0	0	0	0	0	0	0	0	0	0	59
	S	1	0	12	6	0	0	0	0	0	0	0	0	0	0	0	0	18
	S	2	0	25	7	0	2	1	1	0	1	0	0	0	0	0	0	37
945	N	1	0	12	7	0	3	0	0	0	1	0	0	0	0	0	0	23
	N	2	0	32	16	0	0	0	0	1	1	0	0	0	0	0	0	50
	S	1	0	11	3	0	1	0	0	0	0	0	0	0	0	0	0	15
	S	2	0	19	9	0	1	1	0	0	0	0	0	0	0	0	0	30
1000	N	1	0	13	5	0	1	0	0	0	0	0	0	0	0	0	0	19
	N	2	0	51	19	1	1	0	0	0	1	0	0	0	0	0	0	73
	S	1	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	11
	S	2	0	26	7	0	1	1	0	0	0	0	0	0	0	0	0	35
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Hour Total			0	343	160	3	22	6	1	1	4	0	0	0	0	0	0	540
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1015	N	1	0	8	6	0	0	1	0	0	1	0	0	0	0	0	0	16
	N	2	0	43	19	0	2	0	0	1	2	0	0	0	0	0	0	67
	S	1	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	20
	S	2	0	17	11	1	1	0	0	0	0	0	0	0	0	0	0	30
1030	N	1	0	12	6	0	2	0	0	0	1	0	0	0	0	0	0	21
	N	2	0	37	15	0	6	0	0	0	1	0	0	0	0	0	0	59
	S	1	0	21	1	0	0	0	0	0	0	0	0	0	0	0	0	22
	S	2	0	37	11	0	6	0	1	0	1	0	0	0	0	0	0	56
1045	N	1	0	15	14	0	1	0	0	1	0	0	0	0	0	0	0	31
	N	2	0	48	6	0	2	0	0	0	1	0	0	0	0	0	0	57
	S	1	0	19	3	0	0	1	0	0	0	0	0	0	0	0	0	23
	S	2	0	36	14	0	2	1	0	2	0	0	0	0	0	0	0	55
1100	N	1	0	6	14	0	2	1	0	0	0	0	0	0	0	0	0	23
	N	2	0	27	11	0	3	0	0	1	0	0	0	0	0	0	0	42
	S	1	0	13	8	0	0	0	0	1	1	0	0	0	0	0	0	23
	S	2	0	35	25	0	1	0	0	0	1	0	0	0	0	0	0	62
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Hour Total			0	390	168	1	28	4	1	6	9	0	0	0	0	0	0	607
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1115	N	1	0	13	2	0	2	0	0	0	0	0	0	0	0	0	0	17
	N	2	0	31	12	0	0	0	0	1	0	0	0	0	0	0	0	44
	S	1	0	18	8	0	0	0	0	0	0	0	0	0	0	0	0	26
	S	2	0	25	12	0	5	0	0	0	0	0	0	0	0	0	0	42
1130	N	1	0	11	7	0	0	0	0	0	1	0	0	0	0	0	0	19
	N	2	0	30	20	0	4	1	0	0	1	0	0	0	0	0	0	56
	S	1	0	20	2	0	2	0	0	0	1	0	0	0	0	0	0	25
	S	2	0	46	12	0	1	0	0	0	0	0	0	0	0	0	0	59
1145	N	1	0	16	4	0	0	0	0	1	2	0	0	0	0	0	0	23
	N	2	0	35	19	1	0	0	0	0	0	0	0	0	0	0	0	55
	S	1	0	16	11	0	1	0	0	0	0	0	0	0	0	0	0	28
	S	2	0	41	11	1	2	1	1	1	1	0	0	0	0	0	0	59
1200	N	1	0	13	5	0	0	0	0	0	0	0	0	0	0	0	0	18
	N	2	0	31	11	0	1	0	0	0	0	0	0	0	0	0	0	43
	S	1	0	22	5	1	0	0	0	0	0	0	0	0	0	0	0	28
	S	2	0	34	17	1	4	0	0	0	0	0	0	0	0	0	0	56
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Hour Total			0	402	158	4	22	2	1	3	6	0	0	0	0	0	0	598
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1215	N	1	0	13	13	0	1	0	0	0	0	0	0	0	0	0	0	27
	N	2	0	34	18	1	2	0	0	0	2	0	0	0	0	0	0	57
	S	1	0	12	10	0	2	0	0	0	0	0	0	0	0	0	0	24
	S	2	0	36	15	0	3	0	0	1	0	0	0	0	0	0	0	55
1230	N	1	0	13	11	0	0	0	0	1	0	0	0	0	0	0	0	25
	N	2	0	27	16	0	1	1	0	0	0	0	0	0	0	0	0	45
	S	1	0	19	7	0	0	0	0	0	0	0	0	0	0	0	0	26
	S	2	0	34	11	0	5	0	0	0	2	0	0	0	0	0	0	52
1245	N	1	0	10	8	0	4	0	0	1	1	0	0	0	0	0	0	24
	N	2	0	26	21	0	2	0	0	0	0	0	0	0	0	0	0	49
	S	1	0	12	6	0	0	0	0	0	0	0	0	0	0	0	0	18
	S	2	0	31	12	2	1	0	0	0	0	0	0	0	0	0	0	46
1300	N	1	0	11	7	0	0	0	0	0	0	1	0	0	0	0	0	19
	N	2	0	25	16	1	2	0	0	0	3	0	0	0	0	0	0	47
	S	1	0	30	4	0	0	0	0	0	0	0	0	0	0	0	0	34
	S	2	0	35	15	0	3	1	0	1	0	0	0	0	0	0	0	55
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Hour Total			0	368	190	4	26	2	0	4	8	1	0	0	0	0	0	603
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1315	N	1	0	18	10	0	0	0	0	0	1	0	0	0	0	0	0	29
	N	2	0	37	14	0	4	0	0	0	0	0	0	0	0	0	0	55
	S	1	0	18	11	0	0	0	0	0	0	0	0	0	0	0	0	29
	S	2	0	36	15	0	1	0	0	0	1	0	0	0	0	0	0	53

1330	N	1	0	17	9	1	0	0	0	0	0	0	0	0	0	0	0	27
	N	2	0	37	14	0	1	0	0	2	0	0	0	0	0	0	0	54
	S	1	0	17	9	0	0	0	0	0	0	0	0	0	0	0	0	26
	S	2	0	31	10	0	1	1	0	0	1	0	0	0	0	0	0	44
1345	N	1	0	8	10	0	2	0	0	0	0	0	0	0	0	0	0	20
	N	2	0	41	14	2	5	1	0	2	0	0	0	0	0	0	0	65
	S	1	0	12	6	0	1	0	0	0	1	0	0	0	0	0	0	20
	S	2	1	29	8	0	0	0	0	0	1	0	0	0	0	0	0	39
1400	N	1	0	23	9	0	2	0	0	0	0	0	0	0	0	0	0	34
	N	2	1	41	22	0	2	0	0	0	0	0	0	0	0	0	0	66
	S	1	0	23	10	0	0	0	0	0	0	0	0	0	0	0	0	33
	S	2	0	44	19	0	0	1	0	0	2	0	0	0	0	0	0	66
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Hour Total			2	432	190	3	19	3	0	4	7	0	0	0	0	0	0	660
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1415	N	1	0	18	18	0	0	0	0	0	0	0	0	0	0	0	0	36
	N	2	0	54	25	1	5	1	0	0	0	0	0	0	0	0	0	86
	S	1	0	24	6	0	0	0	0	0	0	0	0	0	0	0	0	30
	S	2	0	45	13	1	7	0	0	0	0	0	0	0	0	0	0	66
1430	N	1	0	18	10	0	1	0	0	0	0	0	0	0	0	0	0	29
	N	2	0	41	25	0	1	0	0	0	0	0	0	0	0	0	0	67
	S	1	0	29	6	0	1	0	0	0	0	0	0	0	0	0	0	36
	S	2	0	46	13	0	3	0	0	1	0	0	0	0	0	0	0	63
1445	N	1	0	10	6	1	3	1	0	0	0	0	0	0	0	0	0	21
	N	2	0	25	11	0	2	0	0	0	0	0	0	0	0	0	0	38
	S	1	0	31	12	0	1	0	0	0	0	0	0	0	0	0	0	44
	S	2	0	51	28	2	1	0	0	1	0	0	0	0	0	0	0	83
1500	N	1	0	26	8	0	0	0	0	0	0	0	0	0	0	0	0	34
	N	2	0	24	13	1	1	0	0	2	0	0	0	0	0	0	0	41
	S	1	0	32	19	0	0	0	0	0	0	0	0	0	0	0	0	51
	S	2	0	72	40	1	5	0	0	0	0	0	0	0	0	0	0	118
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Hour Total			0	546	253	7	31	2	0	4	0	0	0	0	0	0	0	843
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1515	N	1	0	13	15	0	2	0	0	0	1	0	0	0	0	0	0	31
	N	2	0	27	9	0	4	0	0	1	0	0	0	0	0	0	0	41
	S	1	0	45	22	0	1	0	0	0	0	0	0	0	0	0	0	68
	S	2	0	81	32	1	5	1	0	1	0	0	0	0	0	0	0	121
1530	N	1	0	24	12	0	3	0	0	0	0	0	0	0	0	0	0	39
	N	2	0	21	12	1	1	0	0	0	0	0	0	0	0	0	0	35
	S	1	0	33	16	0	0	0	0	0	1	0	0	0	0	0	0	50
	S	2	0	45	16	0	2	0	0	1	1	0	0	0	0	0	0	65
1545	N	1	0	21	18	0	1	0	0	2	0	0	0	0	0	0	0	42
	N	2	0	25	10	0	2	0	0	0	0	0	0	0	0	0	0	37
	S	1	0	61	11	0	0	0	0	0	0	0	0	0	0	0	0	72
	S	2	0	85	28	1	8	0	0	0	0	0	0	0	0	0	0	122
1600	N	1	0	23	11	0	3	0	0	0	0	0	0	0	0	0	0	37
	N	2	0	21	13	0	0	0	0	1	0	0	0	0	0	0	0	35
	S	1	1	37	16	0	0	0	0	0	0	0	0	0	0	0	0	54
	S	2	1	67	27	0	3	0	0	0	0	0	0	0	0	0	0	98
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Hour Total			2	629	268	3	35	1	0	6	3	0	0	0	0	0	0	947
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1615	N	1	0	15	16	0	2	0	0	0	1	0	0	0	0	0	0	34
	N	2	0	19	18	0	5	0	0	1	0	0	0	0	0	0	0	43
	S	1	0	43	16	0	0	0	0	0	0	0	0	0	0	0	0	59
	S	2	0	73	26	0	5	1	0	0	0	0	0	0	0	0	0	105
1630	N	1	0	22	15	0	6	0	0	0	0	0	0	0	0	0	0	43
	N	2	0	22	13	1	2	0	0	0	0	0	0	0	0	0	0	38
	S	1	0	33	14	0	2	1	0	0	0	0	0	0	0	0	0	50
	S	2	0	55	23	0	4	0	0	0	1	0	0	0	0	0	0	83
1645	N	1	0	25	14	0	4	0	0	0	0	0	0	0	0	0	0	43
	N	2	0	23	5	0	2	0	0	1	0	0	0	0	0	0	0	31
	S	1	0	28	13	0	2	0	0	0	0	0	0	0	0	0	0	43
	S	2	0	45	24	1	0	0	0	0	1	0	0	0	0	0	0	71
1700	N	1	0	22	9	0	4	0	0	1	0	0	0	0	0	0	0	36
	N	2	0	25	15	0	3	0	0	0	0	0	0	0	0	0	0	43
	S	1	0	30	9	0	0	0	0	0	0	0	0	0	0	0	0	39
	S	2	0	55	12	0	1	0	0	0	0	0	0	0	0	0	0	68
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Hour Total			0	535	242	2	42	2	0	3	3	0	0	0	0	0	0	829
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1715	N	1	0	28	15	0	1	0	0	0	0	0	0	0	0	0	0	44
	N	2	0	20	13	0	3	0	0	1	0	0	0	0	0	0	0	37
	S	1	0	19	6	0	1	0	0	0	0	0	0	0	0	0	0	26
	S	2	0	45	21	0	3	0	0	0	0	0	0	0	0	0	0	69
1730	N	1	0	23	14	0	4	0	0	0	1	0	0	0	0	0	0	42
	N	2	0	20	7	0	0	0	0	0	2	0	0	0	0	0	0	29
	S	1	0	25	8	0	2	0	0	0	0	0	0	0	0	0	0	35
	S	2	0	43	14	0	0	0	0	0	1	0	0	0	0	0	0	58
1745	N	1	0	15	15	0	2	0	0	0	0	0	0	0	0	0	0	32
	N	2	0	19	9	0	0	0	0	0	0	0	0	0	0	0	0	28
	S	1	1	20	10	0	3	0	0	0	0	0	0	0	0	0	0	34
	S	2	0	42	17	0	5	0	0	1	1	0	0	0	0	0	0	66
1800	N	1	0	23	14	0	2	0	0	2	0	0	0	0	0	0	0	41
	N	2	0	25	12	0	0	0	0	0	0	0	0	0	0	0	0	37
	S	1	0	23	6	0	1	0	0	0	0	0	0	0	0	0	0	30
	S	2	0	42	11	0	0	0	0	0	0	0	0	0	0	0	0	53

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Hour Total			1	432	192	0	27	0	0	4	5	0	0	0	0	0	0	661
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1815	N	1	0	21	10	0	0	0	0	0	0	0	0	0	0	0	0	31
	N	2	0	23	7	0	0	0	0	1	0	0	0	0	0	0	0	31
	S	1	0	17	7	0	0	0	0	0	0	0	0	0	0	0	0	24
	S	2	0	31	18	0	2	0	0	0	0	0	0	0	0	0	0	51
1830	N	1	0	16	11	0	1	0	0	0	1	0	0	0	0	0	0	29
	N	2	0	17	7	0	2	0	0	0	0	0	0	0	0	0	0	26
	S	1	0	10	4	0	0	0	0	0	0	0	0	0	0	0	0	14
	S	2	0	29	15	0	1	0	0	0	1	0	0	0	0	0	0	46
1845	N	1	0	10	3	0	1	0	0	0	0	0	0	0	0	0	0	14
	N	2	0	11	8	0	0	0	0	0	0	0	0	0	0	0	0	19
	S	1	0	14	1	0	1	0	0	0	0	0	0	0	0	0	0	16
	S	2	0	18	11	0	0	0	0	0	0	0	0	0	0	0	0	29
1900	N	1	0	14	6	0	0	0	0	0	0	0	0	0	0	0	0	20
	N	2	0	21	4	0	0	0	0	0	0	0	0	0	0	0	0	25
	S	1	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	9
	S	2	1	25	7	0	3	0	0	0	1	0	0	0	0	0	0	37
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Hour Total			1	283	122	0	11	0	0	1	3	0	0	0	0	0	0	421
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1915	N	1	1	9	7	0	1	0	0	1	0	0	0	0	0	0	0	19
	N	2	0	12	7	0	0	0	0	0	0	0	0	0	0	0	0	19
	S	1	0	6	4	0	1	0	0	0	0	0	0	0	0	0	0	11
	S	2	0	12	7	0	0	0	0	0	0	0	0	0	0	0	0	19
1930	N	1	0	6	7	0	0	0	0	0	0	0	0	0	0	0	0	13
	N	2	0	7	5	0	0	0	0	0	1	0	0	0	0	0	0	13
	S	1	0	16	2	0	0	0	0	0	0	0	0	0	0	0	0	18
	S	2	0	14	7	0	1	0	0	0	0	0	0	0	0	0	0	22
1945	N	1	0	18	5	0	0	0	0	0	1	0	0	0	0	0	0	24
	N	2	0	18	2	0	1	0	0	0	0	0	0	0	0	0	0	21
	S	1	0	9	4	0	0	0	0	0	0	0	0	0	0	0	0	13
	S	2	0	19	3	0	0	0	0	1	0	0	0	0	0	0	0	23
2000	N	1	0	10	4	0	0	0	0	0	0	0	0	0	0	0	0	14
	N	2	0	13	3	0	0	0	0	0	0	0	0	0	0	0	0	16
	S	1	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
	S	2	0	18	5	0	2	0	0	0	0	0	0	0	0	0	0	25
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Hour Total			1	195	74	0	6	0	0	2	2	0	0	0	0	0	0	280
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2015	N	1	0	17	4	0	1	0	0	0	0	0	0	0	0	0	0	22
	N	2	0	15	5	0	1	0	0	0	1	0	0	0	0	0	0	22
	S	1	0	9	5	0	0	0	0	0	0	0	0	0	0	0	0	14
	S	2	0	17	10	0	0	0	0	0	0	0	0	0	0	0	0	27
2030	N	1	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	8
	N	2	0	13	5	0	0	0	0	0	0	0	0	0	0	0	0	18
	S	1	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	10
	S	2	0	19	7	0	0	0	0	0	0	0	0	0	0	0	0	26
2045	N	1	0	5	1	0	0	0	0	0	0	0	1	0	0	0	0	7
	N	2	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	13
	S	1	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
	S	2	0	18	5	0	1	0	0	0	0	0	0	0	0	0	0	24
2100	N	1	0	6	3	0	0	1	0	1	0	0	0	0	0	0	0	11
	N	2	0	8	3	0	0	0	0	0	1	0	0	0	0	0	0	12
	S	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
	S	2	0	16	5	0	1	0	0	0	0	0	0	0	0	0	0	22
---	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hour Total			0	180	58	0	4	1	0	1	3	0	1	1	0	0	0	249
---	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2115	N	1	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	11
	N	2	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
	S	1	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
	S	2	0	27	6	0	0	0	0	0	0	0	0	0	0	0	0	33
2130	N	1	0	8	7	0	1	0	0	0	0	0	0	0	0	0	0	16
	N	2	0	11	3	0	1	0	0	0	1	0	0	0	0	0	0	16
	S	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
	S	2	0	13	4	0	0	0	0	1	0	0	0	0	0	0	0	18
2145	N	1	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	13
	N	2	0	5	4	0	1	0	0	0	0	0	0	0	0	0	0	10
	S	1	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6
	S	2	0	13	1	0	0	0	0	0	2	0	0	0	0	0	0	16
2200	N	1	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	11
	N	2	0	16	11	0	0	0	0	0	0	0	0	0	0	0	0	27
	S	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
	S	2	0	13	5	0	0	0	0	0	0	0	0	0	0	0	0	18
---	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hour Total			0	150	65	0	3	0	0	1	3	0	0	0	0	0	0	222
---	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2215	N	1	0	4	4	0	1	0	0	0	0	0	1	0	0	0	0	10
	N	2	0	10	6	0	3	0	0	0	0	0	0	0	0	0	0	19
	S	1	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
	S	2	0	19	3	0	1	1	0	1	0	0	0	0	0	0	0	25
2230	N	1	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	10
	N	2	0	14	8	0	0	0	0	0	0	0	0	0	0	0	0	22
	S	1	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
	S	2	0	14	5	0	0	0	0	0	0	0	0	0	0	0	0	19
2245	N	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5

	N	2	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	7
	S	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	S	2	0	10	3	0	1	0	0	0	0	0	0	0	0	0	0	14
2300	N	1	0	2	2	0	1	0	0	0	0	0	0	0	0	0	0	5
	N	2	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
	S	1	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	9
	S	2	0	12	10	0	0	0	0	0	1	0	0	0	0	0	0	23
---	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hour Total			0	127	53	0	7	1	0	1	1	0	1	0	0	0	0	191
---	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2315	N	1	0	5	4	0	1	0	0	0	0	0	0	0	0	0	0	10
	N	2	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3
	S	1	0	25	4	0	0	0	0	0	0	0	0	0	0	0	0	29
	S	2	0	28	19	0	1	0	0	0	0	0	0	0	0	0	0	48
2330	N	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
	N	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	S	1	0	2	3	0	2	0	0	0	0	0	0	0	0	0	0	7
	S	2	0	9	4	0	0	0	0	0	0	0	0	0	0	0	0	13
2345	N	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	N	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	2	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	13
2400	N	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
	N	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	S	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
	S	2	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
---	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hour Total			0	111	41	0	5	0	0	0	0	0	0	0	0	0	0	157
====	==	===	=======	=======	=======	=======	=====	=======	=======	=====	=======	=======	=======	=======	=======	=====	=======	=====
24 Hour																		
Totals			13	7061	3015	41	394	30	5	54	87	1	5	2	0	0	0	10708
Percent			0.12%	65.94%	28.16%	0.38%	3.68%	0.28%	0.05%	0.50%	0.81%	0.01%	0.05%	0.02%	0.00%	0.00%	0.00%	

Peak Hour	Volume	Truck Volume	Peak/Daily Factor	Peak Hour Factor
1445	967	51	9.03%	88.55%

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & SR 87 South

COUNTED BY: TF COUNT DATE: 8-Dec-10 FILE NAME: us90 & sr87S tmc.xls

	E. MILTON RD Southbound				US 90 Westbound				SR 87 Northbound				US 90 Eastbound				
Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	TOTAL
6:00	0	2	0	1	10	16	1	2	23	16	2	0	24	8	42	0	147
6:15	1	1	2	6	23	29	6	2	22	25	13	0	34	26	40	0	230
6:30	2	10	3	2	18	36	4	8	39	58	17	0	89	38	44	0	368
6:45	1	10	3	16	15	43	11	7	52	76	23	1	56	30	31	0	375
TOTAL	4	23	8	25	66	124	22	19	136	175	55	1	203	102	157	0	1120
7:00	6	28	6	23	21	40	1	3	46	17	6	0	17	14	41	0	269
7:15	1	12	4	5	20	47	0	1	78	5	11	0	13	29	45	0	271
7:30	0	4	7	2	13	42	1	1	82	6	14	1	14	25	40	0	252
7:45	0	4	1	5	12	39	5	0	93	14	7	0	22	20	34	0	256
TOTAL	7	48	18	35	66	168	7	5	299	42	38	1	66	88	160	0	1048
8:00	1	6	1	2	7	37	1	0	48	9	6	0	9	19	33	0	179
8:15	1	3	1	5	21	34	2	0	64	5	6	0	9	24	40	0	215
8:30	0	7	4	7	17	47	0	1	64	4	7	1	10	10	33	0	212
8:45	0	2	2	0	13	34	0	1	59	9	3	1	8	21	38	0	191
TOTAL	2	18	8	14	58	152	3	2	235	27	22	2	36	74	144	0	797
11:30	2	6	3	8	9	26	0	2	41	4	2	0	20	26	51	0	200
11:45	1	6	5	14	6	24	0	0	51	7	6	1	14	32	42	0	209
12:00	0	12	2	12	6	28	0	1	35	6	9	1	17	28	56	0	213
12:15	2	8	0	5	4	29	3	1	52	1	5	1	13	36	45	0	205
TOTAL	5	32	10	39	25	107	3	4	179	18	22	3	64	122	194	0	827
12:30	2	3	1	6	7	35	1	0	45	3	8	0	13	28	35	0	187
12:45	1	2	0	6	10	39	1	0	43	6	5	0	10	34	38	0	195
13:00	3	12	3	7	9	29	1	1	50	4	9	0	19	26	38	0	211
13:15	0	6	3	8	5	30	0	0	49	8	10	0	10	34	29	0	192
TOTAL	6	23	7	27	31	133	3	1	187	21	32	0	52	122	140	0	785
15:00	15	42	20	48	25	31	1	2	42	5	12	0	6	36	39	0	324
15:15	2	12	2	15	23	39	1	0	46	3	20	0	5	49	62	0	279
15:30	2	17	2	10	33	40	0	0	68	6	20	0	7	43	76	0	324
15:45	1	24	3	16	16	41	1	0	57	3	23	0	4	42	63	0	294
TOTAL	20	95	27	89	97	151	3	2	213	17	75	0	22	170	240	0	1221
16:00	16	53	25	27	11	35	1	0	53	2	11	0	1	45	73	0	353
16:15	1	14	2	8	29	36	0	0	68	4	21	0	8	48	71	0	310
16:30	1	11	5	5	18	32	1	0	48	1	21	0	5	36	75	0	259
16:45	2	5	1	8	19	28	0	0	69	3	5	0	2	48	88	0	278
TOTAL	20	83	33	48	77	131	2	0	238	10	58	0	16	177	307	0	1200
17:00	2	4	6	18	11	43	0	0	51	8	18	1	5	48	77	0	292
17:15	3	11	1	13	12	31	0	0	55	2	13	0	5	59	68	0	273
17:30	0	6	1	12	8	27	0	0	63	2	22	0	4	50	56	0	251
17:45	0	7	1	9	10	23	1	0	47	3	20	0	4	27	58	0	210
TOTAL	5	28	9	52	41	124	1	0	216	15	73	1	18	184	259	0	1026

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & Ward Basin Rd

COUNTED BY: DB COUNT DATE: 8-Dec-10 FILE NAME: us90 & ward tmc.xls

	DALE ST Southbound				US 90 Westbound				WARD BASIN RD Northbound				US 90 Eastbound				
Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	TOTAL
6:00	0	1	0	0	9	41	0	0	18	0	3	0	0	72	12	1	157
6:15	0	0	0	0	6	48	0	0	24	0	5	1	0	97	36	0	217
6:30	1	2	0	0	9	55	0	0	33	0	12	1	0	144	48	0	305
6:45	1	1	0	0	23	88	1	0	40	2	13	0	0	102	47	0	318
TOTAL	2	4	0	0	47	232	1	0	115	2	33	2	0	415	143	1	997
7:00	0	5	0	0	27	96	0	0	42	1	11	1	0	78	36	0	297
7:15	1	1	0	1	32	99	0	0	71	5	16	2	0	82	54	0	364
7:30	0	0	0	1	15	104	0	0	72	1	12	1	0	108	29	1	344
7:45	0	1	0	0	7	110	0	0	52	0	10	0	0	99	26	0	305
TOTAL	1	7	0	2	81	409	0	0	237	7	49	4	0	367	145	1	1310
8:00	0	5	1	0	6	115	0	0	50	0	3	0	1	87	19	1	288
8:15	0	0	1	1	6	98	0	0	37	0	8	0	0	68	29	0	248
8:30	1	1	0	0	4	104	0	0	41	1	6	2	0	70	34	0	264
8:45	0	0	1	0	9	96	0	0	52	0	3	1	0	63	22	1	248
TOTAL	1	6	3	1	25	413	0	0	180	1	20	3	1	288	104	2	1048
11:30	0	0	0	0	2	76	0	0	42	4	4	6	0	80	31	2	247
11:45	1	1	1	0	6	99	0	0	34	1	8	3	1	114	33	0	302
12:00	0	3	1	0	5	67	0	0	30	1	7	1	0	103	33	0	251
12:15	0	0	0	0	8	79	1	0	36	0	6	1	0	98	30	0	259
TOTAL	1	4	2	0	21	321	1	0	142	6	25	11	1	395	127	2	1059
12:30	0	3	1	0	4	87	0	0	35	0	7	1	0	89	42	4	273
12:45	0	1	0	1	7	84	0	0	33	0	8	2	1	100	32	1	270
13:00	0	1	1	0	4	76	0	0	37	0	5	3	0	95	39	0	261
13:15	0	0	0	0	9	93	0	0	28	0	10	1	2	98	42	2	285
TOTAL	0	5	2	1	24	340	0	0	133	0	30	7	3	382	155	7	1089
15:00	0	0	0	0	10	160	0	0	47	1	7	0	0	114	45	0	384
15:15	0	1	0	2	7	106	0	0	54	2	8	2	1	136	60	0	379
15:30	0	0	0	0	2	134	1	0	35	1	9	0	1	135	55	0	373
15:45	0	2	0	1	8	117	0	0	34	3	7	4	0	121	61	0	358
TOTAL	0	3	0	3	27	517	1	0	170	7	31	6	2	506	221	0	1494
16:00	0	0	0	0	8	157	0	0	40	2	7	3	2	126	58	0	403
16:15	0	0	0	0	3	118	0	0	31	1	6	1	1	126	64	0	351
16:30	0	3	0	0	6	144	0	0	42	3	8	1	0	102	51	0	360
16:45	0	1	0	0	7	123	0	0	41	1	11	0	0	122	61	0	367
TOTAL	0	4	0	0	24	542	0	0	154	7	32	5	3	476	234	0	1481
17:00	0	1	0	0	10	126	0	0	37	1	15	0	0	118	68	0	376
17:15	0	0	0	0	8	105	0	0	30	1	10	0	2	130	48	0	334
17:30	0	2	0	0	5	113	0	0	39	0	21	0	0	93	60	1	334
17:45	0	3	2	1	4	90	0	0	31	2	10	1	0	107	55	1	307
TOTAL	0	6	2	1	27	434	0	0	137	4	56	1	2	448	231	2	1351

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & Willing Street

COUNTED BY: TF COUNT DATE: 7-Dec-10 FILE NAME: us90 & willing tmc.xls

	WILLING ST Southbound				US 90 Westbound				WILLING ST Northbound				US 90 Eastbound				
Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	TOTAL
6:00	26	1	0	0	0	33	25	1	0	0	0	1	0	55	2	0	144
6:15	47	1	0	1	0	31	21	4	0	0	1	0	0	92	0	0	198
6:30	58	2	2	0	0	55	28	8	0	2	3	2	1	143	0	0	304
6:45	53	0	0	0	1	78	35	3	1	3	0	0	3	92	1	0	270
TOTAL	184	4	2	1	1	197	109	16	1	5	4	3	4	382	3	0	916
7:00	50	3	0	0	0	86	52	1	0	1	0	0	1	65	0	0	259
7:15	38	2	1	0	0	131	46	3	0	3	2	1	0	70	2	0	299
7:30	60	4	1	0	0	121	52	6	1	2	1	0	0	94	5	1	348
7:45	58	8	0	0	1	133	49	6	1	0	1	1	1	85	12	0	356
TOTAL	206	17	2	0	1	471	199	16	2	6	4	2	2	314	19	1	1262
8:00	40	14	1	0	0	108	33	4	0	0	2	2	2	67	5	0	278
8:15	48	4	3	3	0	96	36	4	0	2	0	1	2	68	3	0	270
8:30	32	2	1	0	0	100	44	1	3	3	1	0	0	64	11	1	263
8:45	38	3	1	0	1	110	38	6	1	2	1	2	3	61	12	0	279
TOTAL	158	23	6	3	1	414	151	15	4	7	4	5	7	260	31	1	1090
11:30	33	2	2	1	0	108	32	2	4	1	1	2	3	115	3	0	309
11:45	36	2	1	0	0	115	39	2	3	1	4	4	3	99	6	1	316
12:00	39	1	3	0	1	94	27	3	7	4	2	2	3	115	4	1	306
12:15	33	4	1	1	0	107	24	4	4	8	3	0	5	108	7	3	312
TOTAL	141	9	7	2	1	424	122	11	18	14	10	8	14	437	20	5	1243
12:30	34	1	1	1	0	100	31	2	8	3	2	0	7	102	4	1	297
12:45	30	2	2	0	1	109	33	3	3	0	4	1	5	105	8	1	307
13:00	41	2	1	0	0	89	30	2	2	0	2	2	7	121	4	0	303
13:15	51	2	3	0	2	89	43	2	4	3	1	1	3	121	5	0	330
TOTAL	156	7	7	1	3	387	137	9	17	6	9	4	22	449	21	2	1237
15:00	57	3	0	0	0	113	62	5	4	2	3	0	1	101	8	0	359
15:15	69	2	3	0	1	123	61	8	4	3	5	0	1	125	3	0	408
15:30	36	4	2	0	0	118	75	1	5	4	3	1	2	118	2	0	371
15:45	61	1	3	0	0	115	52	6	2	1	4	2	6	134	3	0	390
TOTAL	223	10	8	0	1	469	250	20	15	10	15	3	10	478	16	0	1528
16:00	72	3	3	0	0	97	65	3	0	11	1	0	2	110	4	0	371
16:15	55	4	2	0	0	122	67	6	2	2	1	1	1	117	3	0	383
16:30	48	3	4	0	1	139	65	6	11	9	4	1	3	132	3	0	429
16:45	53	1	1	0	0	105	65	6	4	6	2	2	2	128	2	0	377
TOTAL	228	11	10	0	1	463	262	21	17	28	8	4	8	487	12	0	1560
17:00	64	6	2	0	0	113	75	6	5	10	1	1	0	141	1	0	425
17:15	54	3	0	0	0	97	64	7	4	4	2	2	1	134	3	2	377
17:30	42	1	1	0	0	114	56	3	2	8	1	1	1	104	4	0	338
17:45	30	4	0	0	0	80	62	5	2	5	1	0	1	105	1	0	296
TOTAL	190	14	3	0	0	404	257	21	13	27	5	4	3	484	9	2	1436

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & CANAL STREET

COUNTED BY: KB COUNT DATE: 7-Dec-10 FILE NAME: us90 & canal tmc.xls

	CANAL ST Southbound				US 90 Westbound				CANAL ST Northbound				US 90 Eastbound				
Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	TOTAL
6:00	0	13	0	0	0	31	0	0	8	10	2	1	0	46	9	2	122
6:15	0	21	0	0	3	32	0	0	10	9	3	0	0	85	14	4	181
6:30	0	14	0	0	4	45	0	0	11	9	0	2	0	105	26	7	223
6:45	1	17	0	0	5	71	0	0	27	14	0	0	1	79	20	7	242
TOTAL	1	65	0	0	12	179	0	0	56	42	5	3	1	315	69	20	768
7:00	0	26	2	0	3	79	0	0	20	23	2	1	1	65	32	4	258
7:15	2	32	0	0	1	125	0	0	25	22	2	0	2	77	32	6	326
7:30	0	32	3	0	6	109	0	0	31	21	2	0	0	112	38	8	362
7:45	3	19	2	0	3	128	0	0	48	29	5	0	1	123	16	1	378
TOTAL	5	109	7	0	13	441	0	0	124	95	11	1	4	377	118	19	1324
8:00	0	22	2	1	1	101	0	0	31	20	2	0	4	75	26	2	287
8:15	1	9	1	2	2	109	0	0	39	14	3	2	0	85	20	1	288
8:30	2	7	1	1	2	102	2	0	43	21	7	0	1	88	19	0	296
8:45	1	13	1	1	1	114	0	0	45	16	5	2	3	77	29	0	308
TOTAL	4	51	5	5	6	426	2	0	158	71	17	4	8	325	94	3	1179
11:30	1	8	2	3	2	112	0	0	34	19	0	0	1	132	38	2	354
11:45	0	9	2	2	3	132	1	1	31	26	8	0	0	114	21	0	350
12:00	4	6	3	8	2	103	1	0	41	16	2	1	0	112	28	1	328
12:15	0	10	2	2	4	120	1	0	34	18	5	0	2	139	26	3	366
TOTAL	5	33	9	15	11	467	3	1	140	79	15	1	3	497	113	6	1398
12:30	1	16	4	1	0	95	3	0	39	16	7	1	3	134	32	1	353
12:45	0	16	2	0	1	115	1	0	35	16	3	0	1	138	46	0	374
13:00	1	13	2	1	1	81	0	0	33	22	8	1	2	138	32	4	339
13:15	1	22	1	0	4	91	1	0	36	29	4	0	4	127	21	4	345
TOTAL	3	67	9	2	6	382	5	0	143	83	22	2	10	537	131	9	1411
15:00	2	9	4	0	0	127	0	0	29	19	5	0	1	114	28	1	339
15:15	1	31	3	0	3	120	1	0	23	8	2	0	1	129	30	4	356
15:30	4	16	4	0	4	107	1	0	39	32	2	0	0	128	28	0	365
15:45	4	28	4	3	2	125	1	0	39	29	0	0	3	128	29	3	398
TOTAL	11	84	15	3	9	479	3	0	130	88	9	0	5	499	115	8	1458
16:00	1	24	4	1	1	104	0	0	37	30	1	0	1	128	42	0	374
16:15	1	30	1	1	6	121	2	0	48	30	0	0	3	120	38	2	403
16:30	1	18	2	1	3	149	0	0	53	27	2	0	2	140	47	1	446
16:45	3	20	0	0	3	125	0	0	30	27	3	0	0	133	28	1	373
TOTAL	6	92	7	3	13	499	2	0	168	114	6	0	6	521	155	4	1596
17:00	0	14	1	0	2	126	2	0	52	20	4	0	0	147	43	0	411
17:15	1	19	2	0	2	114	2	0	41	29	3	2	1	144	24	0	384
17:30	0	16	3	1	0	130	0	0	55	31	3	0	0	108	31	3	381
17:45	1	15	1	0	0	92	1	0	49	28	2	0	0	118	24	5	336
TOTAL	2	64	7	1	4	462	5	0	197	108	12	2	1	517	122	8	1512

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & SR 87 North

COUNTED BY: KEB COUNT DATE: 7-Dec-10 FILE NAME: us90 & sr87N tmc.xls

	SR 87 Southbound					US 90 Westbound							US 90 Eastbound				
Time	Left		Right	RTOR		Thru	Right	RTOR					Left	Thru			TOTAL
6:00	24		27	0		28	14	0					22	28			143
6:15	46		35	0		24	22	0					19	71			217
6:30	48		48	0		39	23	0					43	94			295
6:45	36		49	0		70	36	0					37	78			306
TOTAL	154		159	0		161	95	0					121	271			961
7:00	54		49	0		65	35	0					41	60			304
7:15	76		68	0		120	36	0					35	59			394
7:30	91		88	0		98	51	0					65	113			506
7:45	49		81	0		131	68	0					91	103			523
TOTAL	270		286	0		414	190	0					232	335			1727
8:00	46		75	0		98	41	0					51	79			390
8:15	32		62	0		116	50	0					55	82			397
8:30	35		77	0		98	59	0					62	86			417
8:45	43		56	0		104	60	0					86	85			434
TOTAL	156		270	0		416	210	0					254	332			1638
11:30	33		93	0		128	35	0					76	133			498
11:45	40		95	0		135	39	0					81	129			519
12:00	44		101	0		133	36	0					113	129			556
12:15	36		90	0		136	36	0					90	150			538
TOTAL	153		379	0		532	146	0					360	541			2111
12:30	41		88	0		121	44	0					110	140			544
12:45	63		88	0		125	40	0					89	146			551
13:00	56		84	0		111	46	0					116	150			563
13:15	48		63	0		102	59	0					104	128			504
TOTAL	208		323	0		459	189	0					419	564			2162
15:00	44		86	0		133	48	0					70	114			495
15:15	47		85	0		104	46	0					88	141			511
15:30	50		93	0		147	48	0					115	118			571
15:45	59		116	0		124	49	0					118	128			594
TOTAL	200		380	0		508	191	0					391	501			2171
16:00	72		113	0		119	50	0					135	129			618
16:15	41		85	0		129	65	0					103	125			548
16:30	56		94	0		154	59	0					128	150			641
16:45	56		89	0		112	56	0					132	123			568
TOTAL	225		381	0		514	230	0					498	527			2375
17:00	51		94	0		123	65	0					125	148			606
17:15	39		83	0		96	46	0					126	136			526
17:30	50		90	0		128	81	0					95	94			538
17:45	55		54	0		90	57	0					116	107			479
TOTAL	195		321	0		437	249	0					462	485			2149

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & SR 89

COUNTED BY: DB COUNT DATE: 7-Dec-10 FILE NAME: us90 & sr89 tmc.xls

	SR 89 Southbound				US 90 Westbound				Big 10 Tires driveway Northbound				US 90 Eastbound				
Time	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	TOTAL
6:00	16	1	80	0	0	49	13	0	0	0	0	1	47	50	1	0	258
6:15	17	1	118	0	0	48	3	2	0	0	0	1	55	76	2	0	323
6:30	18	3	109	1	2	69	10	6	1	0	0	2	64	110	5	0	400
6:45	24	3	140	0	3	89	7	4	1	2	0	3	71	99	1	1	448
TOTAL	75	8	447	1	5	255	33	12	2	2	0	7	237	335	9	1	1429
7:00	23	6	160	0	5	99	24	1	1	1	0	1	74	89	2	0	486
7:15	30	12	175	1	7	135	16	6	2	2	0	4	90	94	2	0	576
7:30	40	8	143	0	3	171	15	9	0	3	0	3	100	161	3	0	659
7:45	34	36	150	0	9	174	26	12	1	1	0	3	98	181	1	0	726
TOTAL	127	62	628	1	24	579	81	28	4	7	0	11	362	525	8	0	2447
8:00	35	9	103	0	7	152	21	4	1	3	1	0	85	143	6	0	570
8:15	33	2	102	0	4	161	23	4	1	4	1	5	66	134	3	0	543
8:30	20	10	149	0	7	164	27	10	2	2	0	5	72	165	2	2	637
8:45	29	8	136	1	14	120	27	5	1	5	0	3	81	182	1	1	614
TOTAL	117	29	490	1	32	597	98	23	5	14	2	13	304	624	12	3	2364
11:30	35	6	162	1	11	211	21	10	4	8	3	1	96	216	4	4	793
11:45	40	18	118	2	15	175	22	12	3	9	5	8	127	203	3	1	761
12:00	46	17	140	2	15	202	27	13	2	10	4	12	94	199	7	1	791
12:15	32	6	134	0	19	194	30	8	1	4	2	15	122	228	3	1	799
TOTAL	153	47	554	5	60	782	100	43	10	31	14	36	439	846	17	7	3144
12:30	48	9	113	0	14	168	24	11	4	17	3	11	118	211	6	0	757
12:45	39	17	143	3	19	168	34	8	8	12	3	20	133	222	7	1	837
13:00	40	16	148	1	10	171	18	13	6	15	4	7	152	220	5	1	827
13:15	36	14	125	1	12	141	22	6	2	4	2	8	129	223	7	3	735
TOTAL	163	56	529	5	55	648	98	38	20	48	12	46	532	876	25	5	3156
15:00	29	8	144	1	24	161	25	16	8	7	1	8	151	159	5	4	751
15:15	24	8	132	2	10	195	24	4	4	12	5	4	139	227	6	0	796
15:30	30	12	148	3	20	159	31	11	4	10	7	10	156	191	3	4	799
15:45	36	9	193	5	18	228	28	8	3	10	1	7	157	230	7	3	943
TOTAL	119	37	617	11	72	743	108	39	19	39	14	29	603	807	21	11	3289
16:00	22	9	161	2	20	183	29	13	2	11	7	22	138	249	6	1	875
16:15	44	18	138	0	7	153	26	12	5	15	5	11	152	187	4	3	780
16:30	32	6	146	2	19	201	31	19	8	33	13	17	174	230	5	3	939
16:45	43	7	142	2	18	210	31	8	7	9	1	11	174	248	8	1	920
TOTAL	141	40	587	6	64	747	117	52	22	68	26	61	638	914	23	8	3514
17:00	27	8	134	2	6	199	36	15	5	20	5	6	151	248	9	2	873
17:15	32	7	143	0	22	148	28	5	7	9	4	6	154	237	11	3	816
17:30	23	12	116	0	13	186	30	9	4	8	0	3	167	183	6	0	760
17:45	17	9	102	0	21	145	30	5	5	10	4	7	141	225	7	2	730
TOTAL	99	36	495	2	62	678	124	34	21	47	13	22	613	893	33	7	3179

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & Old US 90

COUNTED BY: MC COUNT DATE: 7-Dec-10 FILE NAME: us90 & old90 tmc.xls

	Car Dealer driveway Southbound				US 90 Westbound				Old US 90 Northbound				US 90 Eastbound				
Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		TOTAL
6:00	0	0	0		1	127	0		2	0	0		0	101	3		234
6:15	0	0	0		1	147	0		3	0	0		0	132	7		290
6:30	0	0	0		1	167	0		2	0	1		0	172	5		348
6:45	0	0	0		2	212	1		6	0	2		0	173	17		413
TOTAL	0	0	0		5	653	1		13	0	3		0	578	32		1285
7:00	1	0	0		0	199	0		3	0	1		0	172	9		385
7:15	0	0	0		0	284	2		4	0	1		0	207	11		509
7:30	0	0	0		0	262	1		13	0	2		0	239	26		543
7:45	0	0	1		0	280	1		29	0	3		0	320	13		647
TOTAL	1	0	1		0	1025	4		49	0	7		0	938	59		2084
8:00	1	0	0		1	210	0		11	0	5		0	242	14		484
8:15	0	0	1		1	239	2		7	0	2		0	204	12		468
8:30	0	0	1		1	258	0		8	0	4		0	227	8		507
8:45	0	0	1		1	241	0		4	0	1		1	270	5		524
TOTAL	1	0	3		4	948	2		30	0	12		1	943	39		1983
11:30	1	0	0		2	364	2		9	0	5		0	304	10		697
11:45	0	0	1		1	314	2		3	0	2		1	315	3		642
12:00	0	0	0		0	328	0		4	0	3		2	296	5		638
12:15	0	0	1		2	303	2		2	0	6		0	302	8		626
TOTAL	1	0	2		5	1309	6		18	0	16		3	1217	26		2603
12:30	1	0	0		1	288	1		9	0	2		0	311	7		620
12:45	0	0	0		1	325	0		5	0	3		0	354	16		704
13:00	0	0	0		1	324	1		7	0	5		1	280	21		640
13:15	1	0	2		5	245	0		12	0	3		1	347	15		631
TOTAL	2	0	2		8	1182	2		33	0	13		2	1292	59		2595
15:00	0	0	0		2	332	1		6	0	3		1	325	10		680
15:15	0	0	0		2	321	2		9	0	4		1	357	11		707
15:30	1	0	2		5	320	2		11	0	4		1	337	3		686
15:45	0	0	0		3	393	3		6	0	3		2	363	9		782
TOTAL	1	0	2		12	1366	8		32	0	14		5	1382	33		2855
16:00	0	0	0		3	356	2		13	0	1		0	388	10		773
16:15	0	0	2		0	352	0		5	0	1		0	345	7		712
16:30	0	0	0		2	337	1		5	0	1		0	358	4		708
16:45	0	0	0		2	353	0		1	0	1		0	348	9		714
TOTAL	0	0	2		7	1398	3		24	0	4		0	1439	30		2907
17:00	0	0	0		1	362	0		9	0	8		0	418	9		807
17:15	0	0	0		1	298	0		12	0	2		0	323	9		645
17:30	0	0	1		0	299	0		11	0	3		1	349	5		669
17:45	0	0	1		0	258	0		8	0	6		0	364	12		649
TOTAL	0	0	2		2	1217	0		40	0	19		1	1454	35		2770

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 10 (US 90) & Glover Lane

COUNTED BY: JJ COUNT DATE: 7-Dec-10 FILE NAME: us90 & glover tmc.xls

	GLOVER LN Southbound					US 90 Westbound							US 90 Eastbound				
Time	Left		Right			Thru	Right	RTOR					Left	Thru			TOTAL
6:00	6		56			126	1	0					13	90			292
6:15	9		95			152	3	0					22	131			412
6:30	13		95			165	6	0					40	169			488
6:45	15		118			207	9	0					33	167			549
TOTAL	43		364			650	19	0					108	557			1741
7:00	10		130			191	6	0					33	182			552
7:15	11		151			287	11	0					37	192			689
7:30	14		148			262	14	0					72	253			763
7:45	23		147			294	18	0					69	348			899
TOTAL	58		576			1034	49	0					211	975			2903
8:00	20		109			211	8	0					65	224			637
8:15	9		100			259	9	0					57	217			651
8:30	15		101			257	17	0					52	226			668
8:45	10		104			239	10	0					67	264			694
TOTAL	54		414			966	44	0					241	931			2650
11:30	14		82			370	13	0					73	297			849
11:45	17		84			323	16	0					79	315			834
12:00	21		69			319	9	0					62	266			746
12:15	23		56			286	15	0					73	272			725
TOTAL	75		291			1298	53	0					287	1150			3154
12:30	16		80			268	17	0					77	315			773
12:45	12		63			321	19	0					77	373			865
13:00	19		66			312	14	0					95	294			800
13:15	16		66			269	20	0					87	345			803
TOTAL	63		275			1170	70	0					336	1327			3241
15:00	16		62			305	24	0					89	323			819
15:15	18		73			311	18	0					103	360			883
15:30	22		78			326	9	0					91	326			852
15:45	15		75			390	21	0					85	381			967
TOTAL	71		288			1332	72	0					368	1390			3521
16:00	25		74			342	16	0					102	367			926
16:15	22		71			352	19	0					107	332			903
16:30	17		81			322	13	0					97	365			895
16:45	15		83			367	17	0					101	357			940
TOTAL	79		309			1383	65	0					407	1421			3664
17:00	19		72			362	17	0					99	401			970
17:15	17		78			299	10	0					96	310			810
17:30	13		76			302	12	0					135	334			872
17:45	19		58			239	20	0					110	371			817
TOTAL	68		284			1202	59	0					440	1416			3469

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 87 North & SR 89 / Dogwood Drive

COUNTED BY: GS COUNT DATE: 8-Dec-10 FILE NAME: sr87n & dogwood tmc.xls

	SR 87 NORTH Southbound				ARLINGWOOD DR Westbound				SR 87 NORTH Northbound				SR 89 / DOGWOOD DR Eastbound				
Time	Left	Thru	Right	Rt bypass	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	Left	Thru	Right	RTOR	TOTAL
6:00	0	28	1	44	2	0	0	0	2	44	0	0	97	0	0	0	218
6:15	0	45	0	55	1	0	0	0	4	35	0	0	90	1	0	1	232
6:30	1	54	4	58	2	2	0	1	1	47	1	0	112	2	1	0	286
6:45	1	53	3	76	4	5	0	1	5	43	0	0	112	0	2	0	305
TOTAL	2	180	8	233	9	7	0	2	12	169	1	0	411	3	3	1	1041
7:00	0	66	5	71	2	1	2	0	6	57	2	0	119	1	4	0	336
7:15	0	73	2	67	3	2	1	0	5	64	1	0	142	1	0	0	361
7:30	1	59	0	69	1	1	0	0	4	51	2	0	115	0	1	0	304
7:45	0	54	4	69	0	6	0	0	8	47	1	0	95	0	2	1	287
TOTAL	1	252	11	276	6	10	3	0	23	219	6	0	471	2	7	1	1288
8:00	1	49	3	51	1	2	0	0	3	43	1	0	65	1	3	0	223
8:15	0	42	3	61	4	1	0	0	2	55	2	0	76	0	3	0	249
8:30	0	51	3	56	3	0	0	0	2	34	3	0	73	0	2	0	227
8:45	1	44	2	53	1	1	0	0	5	38	2	0	66	1	5	0	219
TOTAL	2	186	11	221	9	4	0	0	12	170	8	0	280	2	13	0	918
11:30	0	38	1	60	3	3	0	0	2	50	1	0	77	1	1	0	237
11:45	3	30	1	72	1	2	0	0	4	52	0	0	80	1	0	0	246
12:00	1	39	0	47	2	0	0	0	2	43	0	0	58	1	1	2	196
12:15	0	32	4	68	2	0	0	0	6	51	0	0	77	2	2	1	245
TOTAL	4	139	6	247	8	5	0	0	14	196	1	0	292	5	4	3	924
12:30	1	41	1	69	2	0	0	0	4	45	1	0	72	2	3	1	242
12:45	0	41	2	71	1	1	0	0	2	40	0	0	75	1	1	1	236
13:00	1	52	1	68	0	4	0	0	3	62	0	1	54	2	3	1	252
13:15	1	30	0	73	4	3	0	1	4	59	1	0	92	3	1	1	273
TOTAL	3	164	4	281	7	8	0	1	13	206	2	1	293	8	8	4	1003
15:00	2	60	2	135	1	4	1	2	3	54	5	0	63	7	1	3	343
15:15	1	53	1	105	0	4	1	0	1	66	3	0	93	1	5	2	336
15:30	3	76	1	142	5	4	0	0	4	56	2	1	70	3	2	2	371
15:45	0	50	3	128	2	0	0	1	1	72	2	2	81	4	1	2	349
TOTAL	6	239	7	510	8	12	2	3	9	248	12	3	307	15	9	9	1399
16:00	5	58	3	122	4	4	0	0	5	96	1	0	90	3	3	2	396
16:15	1	46	2	89	1	2	2	0	4	72	5	5	82	3	0	1	315
16:30	2	58	0	93	1	5	0	0	4	63	4	1	84	4	2	3	324
16:45	1	54	3	78	4	1	1	2	1	83	4	1	112	2	4	2	353
TOTAL	9	216	8	382	10	12	3	2	14	314	14	7	368	12	9	8	1388
17:00	0	51	1	84	4	5	0	0	3	89	0	2	76	2	1	4	322
17:15	2	47	2	82	1	3	0	0	4	58	3	0	116	1	1	1	321
17:30	2	37	3	60	4	5	0	0	2	69	0	2	105	4	0	2	295
17:45	3	42	1	84	1	1	0	2	0	65	2	0	68	4	5	3	281
TOTAL	7	177	7	310	10	14	0	2	9	281	5	4	365	11	7	10	1219

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 87 North & SR 89 Oriole Street

COUNTED BY: AD COUNT DATE: 8-Dec-10 FILE NAME: sr87n & sr89 tmc.xls

	SR 87 NORTH Southbound							SR 87 NORTH Northbound				SR 89 Oriole Street Eastbound				
Time		Thru	Right					Left	Thru			Left		Right		TOTAL
6:00		43	0					9	122			3		12		189
6:15		68	0					10	119			6		27		230
6:30		78	1					9	133			3		24		248
6:45		88	2					14	175			7		20		306
TOTAL		277	3					42	549			19		83		973
7:00		104	1					10	134			1		13		263
7:15		83	1					11	177			8		28		308
7:30		71	2					14	158			5		30		280
7:45		85	1					10	123			4		24		247
TOTAL		343	5					45	592			18		95		1098
8:00		54	1					9	83			6		27		180
8:15		52	0					17	90			4		23		186
8:30		62	0					12	93			3		21		191
8:45		67	2					8	96			2		20		195
TOTAL		235	3					46	362			15		91		752
11:30		84	3					11	95			2		16		211
11:45		83	1					13	89			3		13		202
12:00		56	3					13	81			2		11		166
12:15		72	4					21	87			5		19		208
TOTAL		295	11					58	352			12		59		787
12:30		87	4					16	87			2		13		209
12:45		78	3					16	101			2		10		210
13:00		95	6					15	84			3		15		218
13:15		75	1					15	98			3		9		201
TOTAL		335	14					62	370			10		47		838
15:00		181	3					18	81			0		25		308
15:15		125	3					30	90			3		13		264
15:30		178	7					24	92			2		23		326
15:45		147	3					24	92			0		17		283
TOTAL		631	16					96	355			5		78		1181
16:00		160	2					18	109			0		12		301
16:15		106	8					36	102			1		14		267
16:30		124	4					23	93			0		24		268
16:45		90	4					24	107			1		13		239
TOTAL		480	18					101	411			2		63		1075
17:00		120	3					28	106			1		17		275
17:15		91	1					37	85			2		14		230
17:30		68	3					28	108			1		22		230
17:45		88	4					17	82			0		19		210
TOTAL		367	11					110	381			4		72		945

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: SR 87 North & Langley Street

COUNTED BY: KB COUNT DATE: 8-Dec-10 FILE NAME: sr87n & langley tmc.xls

	SR 87 NORTH Southbound				LANGLEY ST Westbound				SR 87 NORTH Northbound								
Time	Left	Thru			Left		Right	RTOR	Left	Thru	Right	RTOR					TOTAL
6:00	4	21			10		0	0	1	12	99	10					157
6:15	10	35			25		1	2	2	15	73	52					215
6:30	6	54			17		0	0	1	17	90	24					209
6:45	6	37			34		0	0	2	24	143	57					303
TOTAL	26	147			86		1	2	6	68	405	143					884
7:00	6	44			36		3	0	2	18	58	51					218
7:15	8	45			14		0	2	3	36	116	44					268
7:30	1	44			25		0	2	1	17	117	49					256
7:45	4	48			24		0	0	6	16	92	17					207
TOTAL	19	181			99		3	4	12	87	383	161					949
8:00	0	26			24		0	0	0	11	41	27					129
8:15	1	34			13		1	2	5	26	56	3					141
8:30	3	26			22		0	0	4	24	51	8					138
8:45	9	26			26		0	0	1	12	53	21					148
TOTAL	13	112			85		1	2	10	73	201	59					556
11:30	2	27			43		1	0	2	29	47	0					151
11:45	1	23			56		1	0	4	17	45	0					147
12:00	1	20			50		2	2	4	20	40	0					139
12:15	4	17			57		0	1	2	26	29	0					136
TOTAL	8	87			206		4	3	12	92	161	0					573
12:30	2	24			62		1	4	5	22	40	0					160
12:45	6	34			40		0	0	4	29	40	0					153
13:00	2	28			70		1	1	3	16	42	0					163
13:15	0	26			48		1	3	3	29	48	0					158
TOTAL	10	112			220		3	8	15	96	170	0					634
15:00	4	29			155		3	3	4	28	16	1					243
15:15	0	33			94		0	3	6	38	22	0					196
15:30	1	33			159		1	3	4	38	27	0					266
15:45	1	29			130		1	1	7	26	25	0					220
TOTAL	6	124			538		5	10	21	130	90	1					925
16:00	1	33			128		4	9	7	38	26	0					246
16:15	1	33			80		1	0	9	41	18	0					183
16:30	2	37			99		2	4	5	37	19	0					205
16:45	2	30			63		1	0	4	49	21	0					170
TOTAL	6	133			370		8	13	25	165	84	0					804
17:00	0	36			89		2	2	7	35	25	0					196
17:15	2	26			67		0	1	4	27	18	1					146
17:30	1	27			50		0	0	4	55	19	0					156
17:45	0	27			53		0	1	5	37	16	0					139
TOTAL	3	116			259		2	4	20	154	78	1					637

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

Location: Munson Highway & SR 87 North

COUNTED BY: GS COUNT DATE: 7-Dec-10 FILE NAME: munson & sr87N tmc.xls

	SR 87 N Southbound				MUNSON HWY Westbound				SR 87N Northbound				MILTON H.S. EXIT Eastbound				
Time	Left	Thru			Left		Right			Thru	Right		Left	Thru	Right		TOTAL
6:00	4	45			12		2			36	3		0	0	0		102
6:15	6	91			14		5			49	3		0	0	0		168
6:30	14	96			19		7			67	8		0	0	0		211
6:45	9	84			20		13			75	3		0	0	0		204
TOTAL	33	316			65		27			227	17		0	0	0		685
7:00	15	122			20		15			66	4		0	0	0		242
7:15	18	156			13		15			77	7		0	0	0		286
7:30	8	149			15		5			107	10		0	0	1		295
7:45	3	128			13		7			129	12		3	0	2		297
TOTAL	44	555			61		42			379	33		3	0	3		1120
8:00	8	127			17		12			107	10		0	0	0		281
8:15	8	111			10		12			107	9		1	1	5		264
8:30	7	100			10		9			108	12		1	1	11		259
8:45	11	94			19		12			108	14		5	0	16		279
TOTAL	34	432			56		45			430	45		7	2	32		1083
11:30	8	103			23		5			97	18		0	0	0		254
11:45	11	100			15		10			96	18		1	0	1		252
12:00	14	103			17		14			106	17		0	0	3		274
12:15	12	99			16		12			115	21		1	0	2		278
TOTAL	45	405			71		41			414	74		2	0	6		1058
12:30	13	99			17		9			110	20		1	0	1		270
12:45	15	103			15		8			115	19		0	0	0		275
13:00	9	110			12		6			114	23		1	1	5		281
13:15	10	115			16		12			123	22		0	0	0		298
TOTAL	47	427			60		35			462	84		2	1	6		1124
15:00	13	122			14		7			101	5		1	0	3		266
15:15	12	109			11		6			150	18		0	0	1		307
15:30	14	117			21		9			141	24		0	0	4		330
15:45	15	148			9		10			161	27		15	0	49		434
TOTAL	54	496			55		32			553	74		16	0	57		1337
16:00	6	116			21		14			148	29		1	0	12		347
16:15	5	118			16		11			145	22		0	0	1		318
16:30	10	122			17		16			163	17		1	0	2		348
16:45	7	127			15		12			155	32		1	0	1		350
TOTAL	28	483			69		53			611	100		3	0	16		1363
17:00	10	134			21		11			146	36		0	0	3		361
17:15	12	114			17		11			144	24		1	0	4		327
17:30	14	112			18		11			177	27		0	0	1		360
17:45	13	108			18		10			130	25		0	0	1		305
TOTAL	49	468			74		43			597	112		1	0	9		1353

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

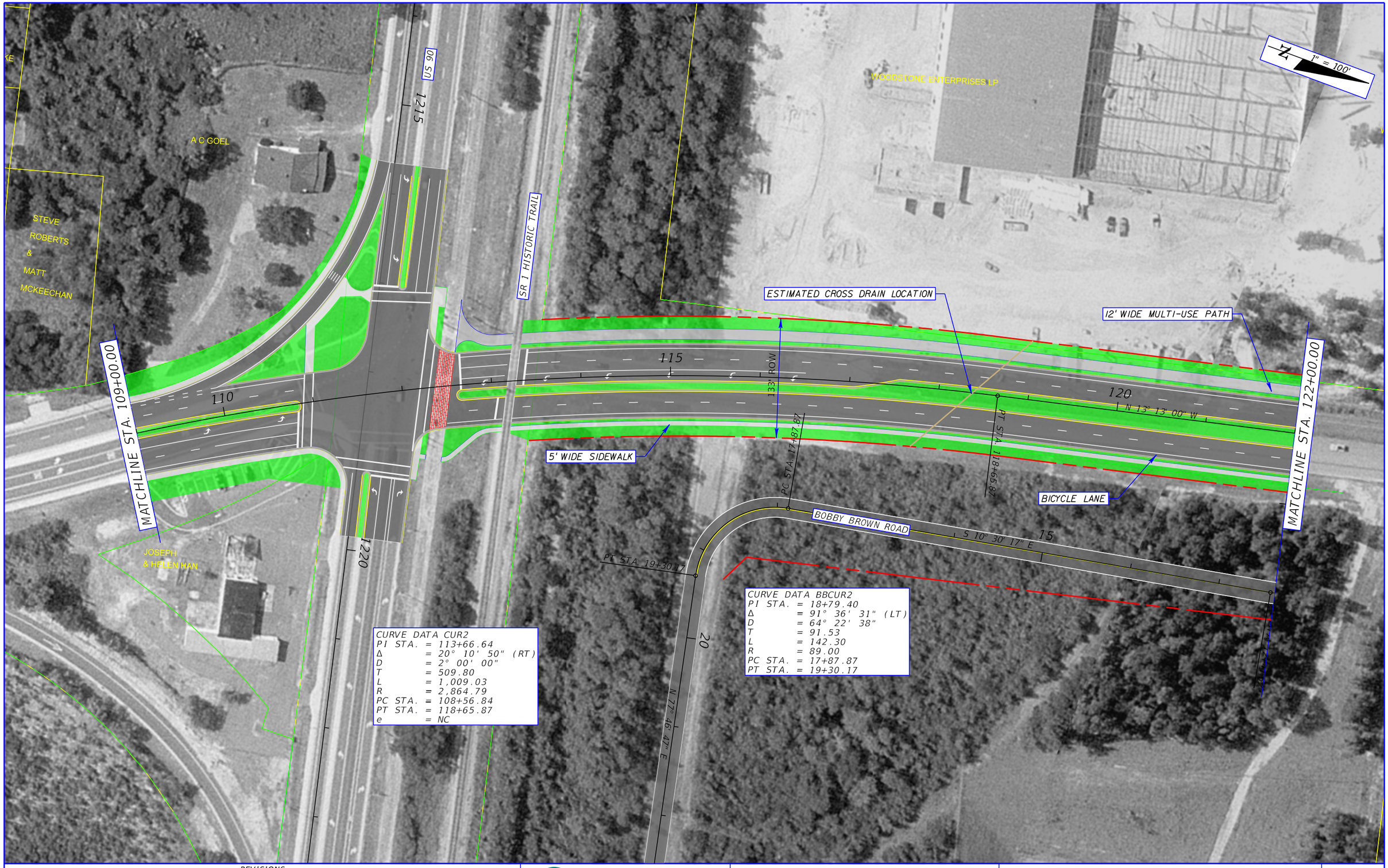
Location: Munson Highway & Broad Street / Okaloosa Street

COUNTED BY: AR COUNT DATE: 7-Dec-10 FILE NAME: munson & broad tmc.xls

	OKALOOSA ST Southbound				MUNSON HWY Westbound				BROAD ST Northbound				MUNSON HWY Eastbound				
Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		TOTAL
6:00	0	1	0		13	16	0		1	2	8		0	5	2		48
6:15	0	1	0		20	24	0		3	0	8		1	9	4		70
6:30	0	0	0		24	31	0		0	0	15		0	7	11		88
6:45	0	0	0		22	47	2		5	0	18		0	5	6		105
TOTAL	0	2	0		79	118	2		9	2	49		1	26	23		311
7:00	0	1	1		23	46	0		9	1	15		0	9	13		118
7:15	0	0	0		21	33	0		9	0	12		0	12	13		100
7:30	0	2	3		22	41	0		2	1	10		1	14	7		103
7:45	0	2	1		9	40	0		9	0	11		1	13	2		88
TOTAL	0	5	5		75	160	0		29	2	48		2	48	35		409
8:00	0	0	0		16	28	0		10	0	7		0	11	10		82
8:15	0	0	1		15	20	0		10	0	6		0	14	7		73
8:30	1	1	1		7	25	1		5	0	4		1	13	4		63
8:45	0	0	1		8	33	1		3	2	14		2	23	10		97
TOTAL	1	1	3		46	106	2		28	2	31		3	61	31		315
11:30	0	4	0		12	21	0		9	1	5		1	18	10		81
11:45	0	2	4		7	16	0		5	0	6		0	25	5		70
12:00	0	1	0		10	15	0		5	0	6		1	22	6		66
12:15	0	1	0		9	18	0		5	0	5		1	25	1		65
TOTAL	0	8	4		38	70	0		24	1	22		3	90	22		282
12:30	0	1	2		4	25	0		3	3	10		0	27	7		82
12:45	0	0	1		9	19	0		6	1	12		0	18	4		70
13:00	0	0	0		10	21	0		8	0	12		2	28	7		88
13:15	0	0	1		2	21	0		4	0	16		2	23	5		74
TOTAL	0	1	4		25	86	0		21	4	50		4	96	23		314
15:00	0	1	1		27	23	0		7	1	11		1	36	12		120
15:15	0	1	2		22	20	0		10	3	10		1	28	6		103
15:30	0	1	1		14	21	1		8	3	10		1	44	5		109
15:45	0	0	3		24	23	0		5	3	10		1	39	8		116
TOTAL	0	3	7		87	87	1		30	10	41		4	147	31		448
16:00	0	0	1		14	27	0		12	4	14		0	44	8		124
16:15	0	0	1		23	20	1		8	1	14		1	39	7		115
16:30	0	2	1		12	25	1		10	1	20		0	38	0		110
16:45	0	0	1		12	23	0		5	0	14		5	40	6		106
TOTAL	0	2	4		61	95	2		35	6	62		6	161	21		455
17:00	0	2	1		14	30	0		8	0	12		0	36	9		112
17:15	0	2	1		14	26	0		9	0	18		1	34	2		107
17:30	0	0	0		5	29	0		5	3	15		0	32	7		96
17:45	0	0	3		9	27	0		7	1	11		1	46	4		109
TOTAL	0	4	5		42	112	0		29	4	56		2	148	22		424

Appendix: H

Layout of SR 87 Connector Intersections for Corridor 1 (US 90 / Munson Highway / SR 87 North)



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

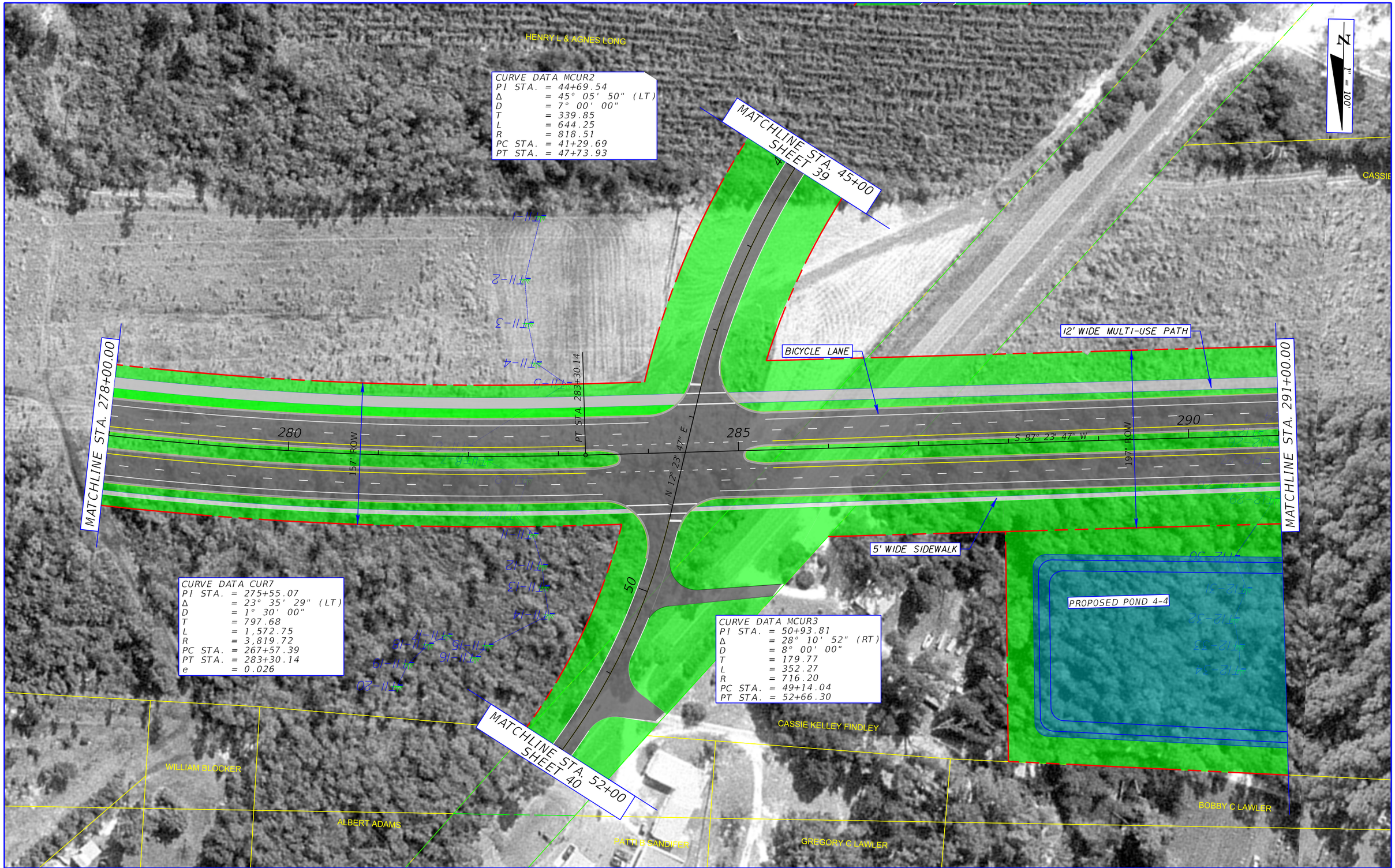
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PLAN SHEET

SHEET NO. 10

NMauntler 7/27/2012 2:02:01 PM F:\E\projects\41674832202\roadway\PLANRD02.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

- ENGINEERS
- PLANNERS
- SURVEYORS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PLAN SHEET

SHEET NO. 23

NMauntler 7/27/2012 2:04:24 PM F:\E\projects\41674832202\roadway\PLANRD15.dgn

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING

- ENGINEERS
- PLANNERS
- SURVEYORS

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

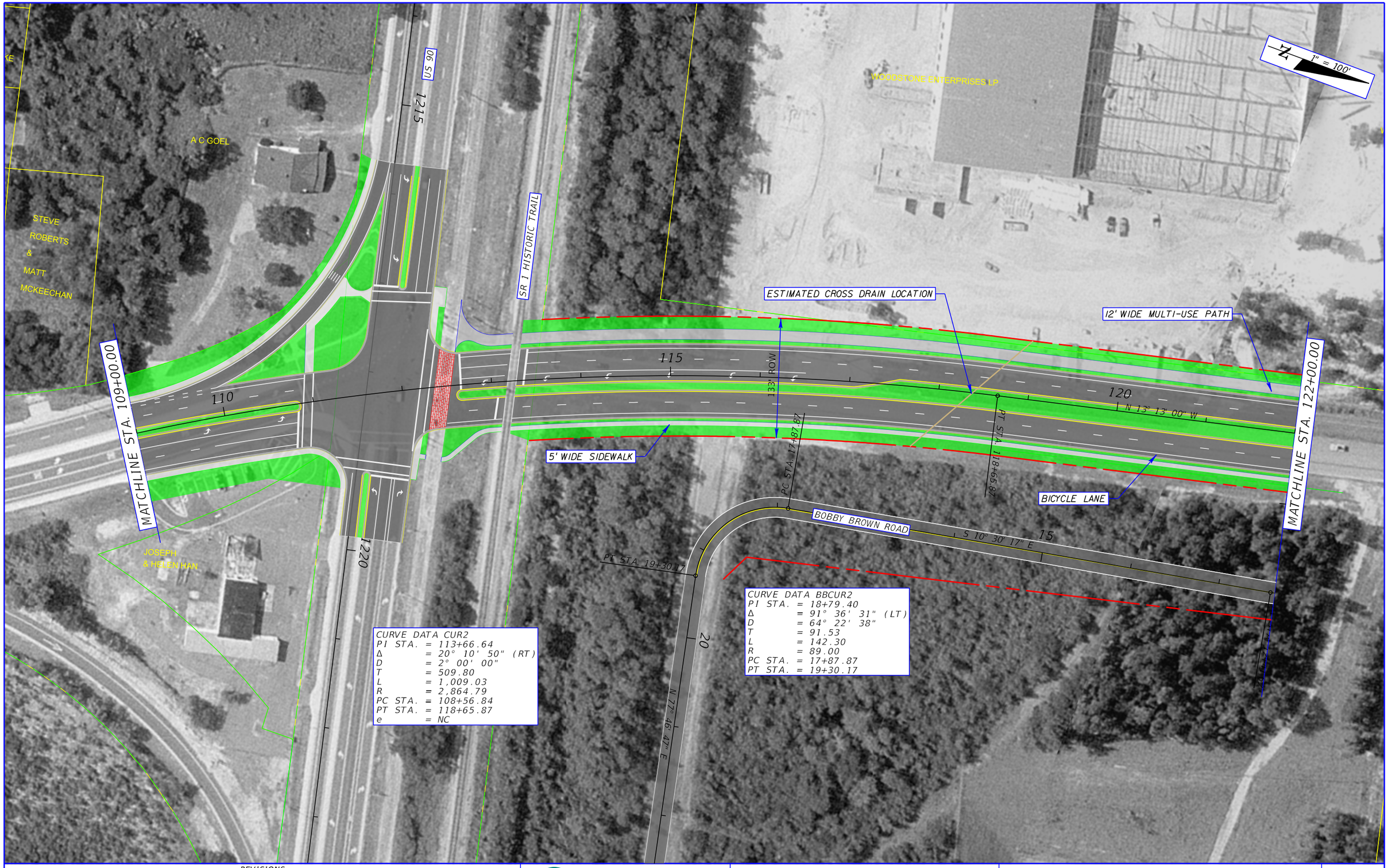
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PLAN SHEET

SHEET NO.
36

Appendix: I

Layout of SR 87 Connector Intersections for Corridor 2 (US 90 / Munson Highway / SR 87 North / SR 89)



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

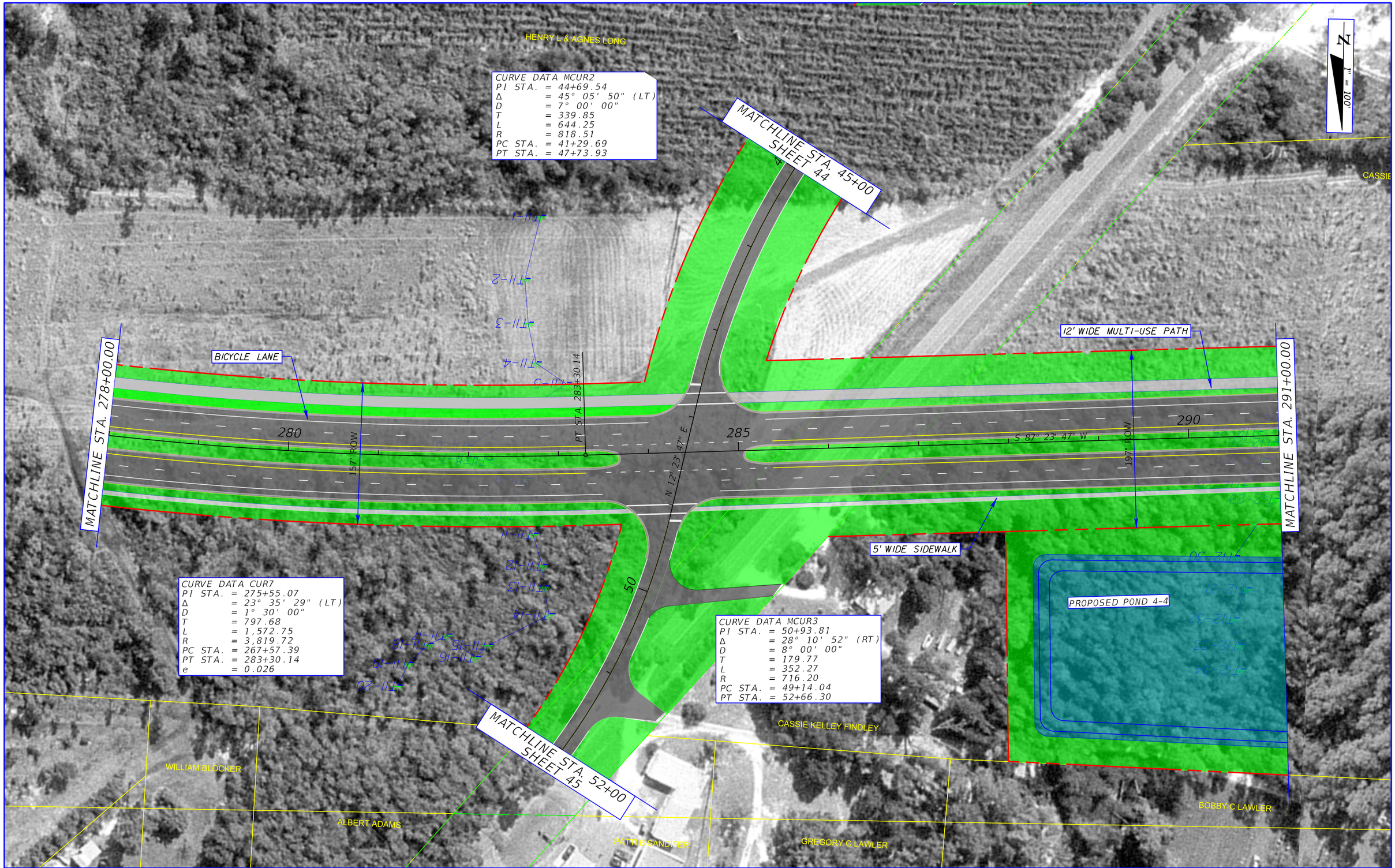
● ENGINEERS
● PLANNERS
● SURVEYORS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PLAN SHEET

SHEET NO. 10



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

- ENGINEERS
- PLANNERS
- SURVEYORS

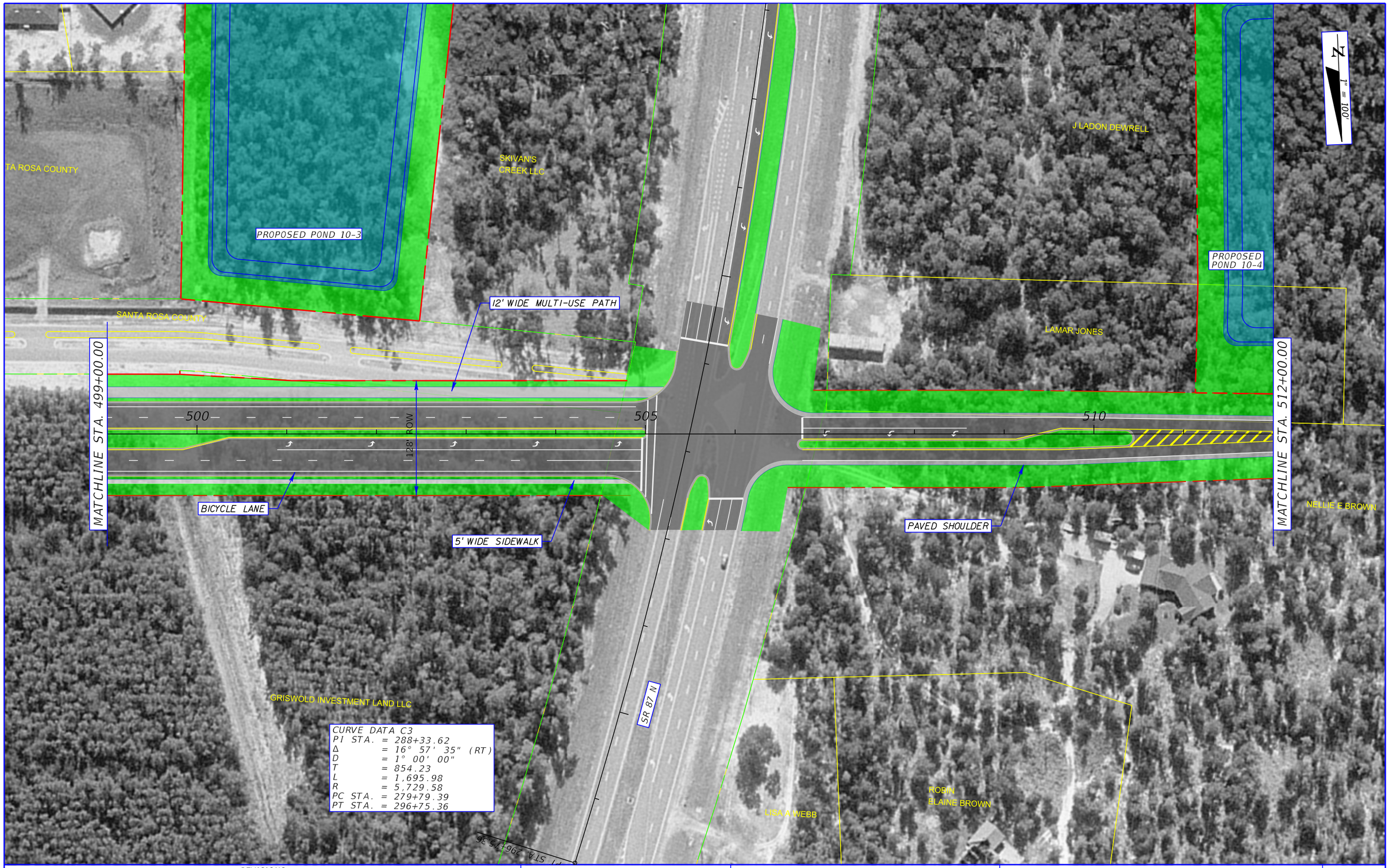
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PLAN SHEET

SHEET NO. 23

NMauntler 7/27/2012 2:11:44 PM F:\E\projects\41674832202\roadway\PLANRD52.dgn



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING
● ENGINEERS
● PLANNERS
● SURVEYORS

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PLAN SHEET

SHEET NO.
40

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

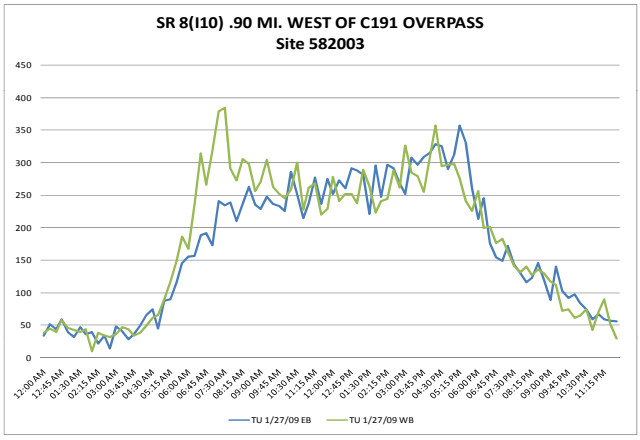
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

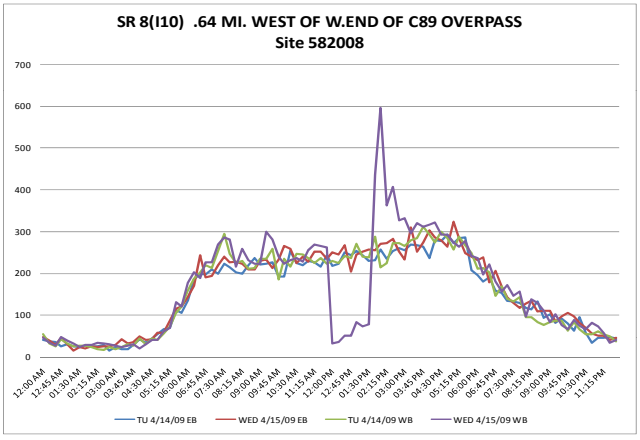
PLAN SHEET

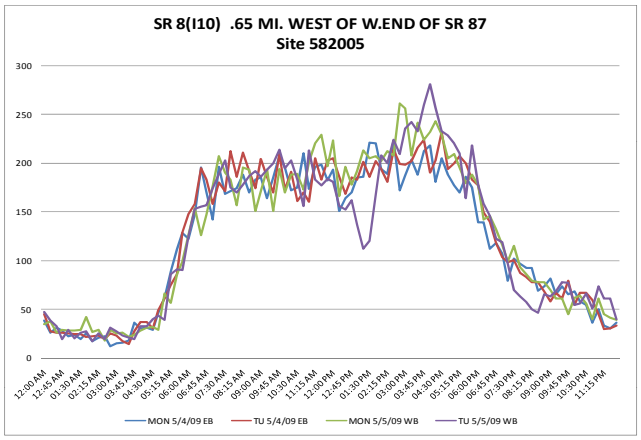
SHEET NO. 41

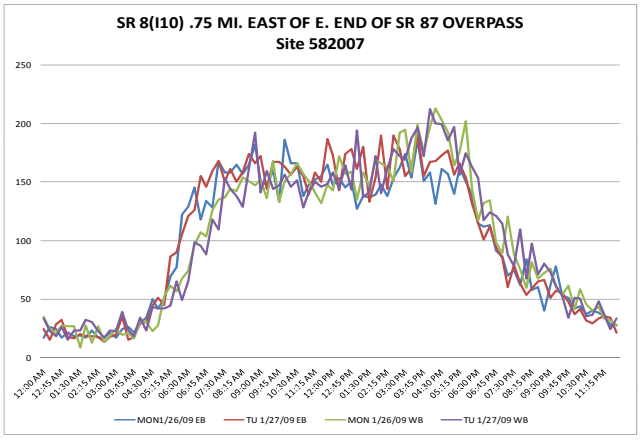
Appendix: J

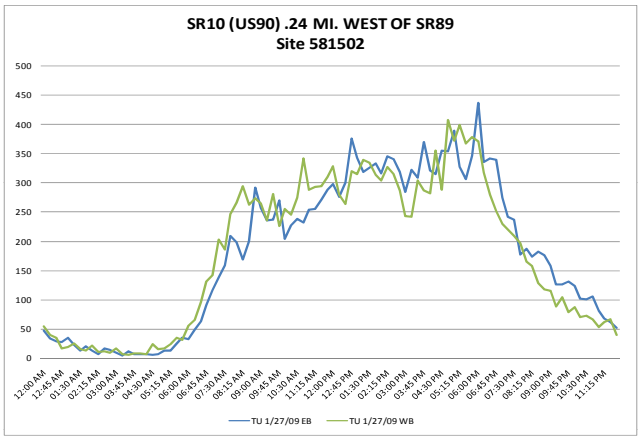
Hourly Distribution of Weekday Traffic

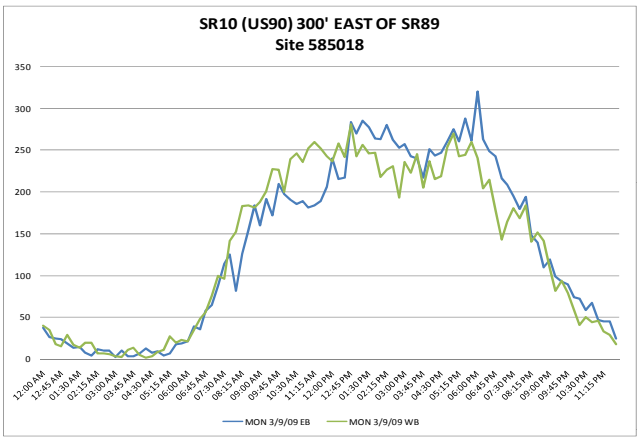

SR 8(I10) .90 MI. WEST OF C191 OVERPASS
Site 582003
TU 1/27/09 EB
TU 1/27/09 WB

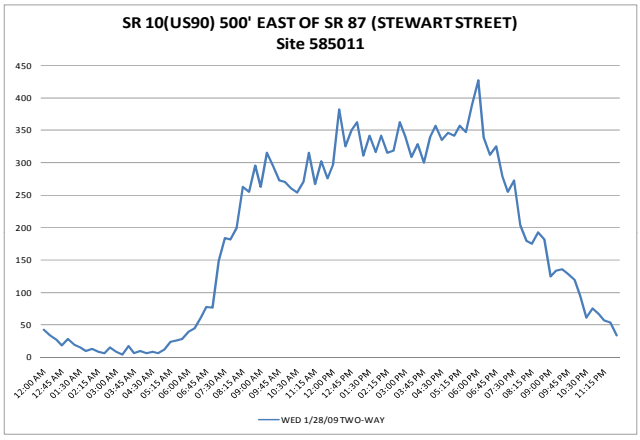

SR 8(I10) .64 MI. WEST OF W.END OF C89 OVERPASS
Site 582008
TU 4/14/09 EB
WED 4/15/09 EB
TU 4/14/09 WB
WED 4/15/09 WB

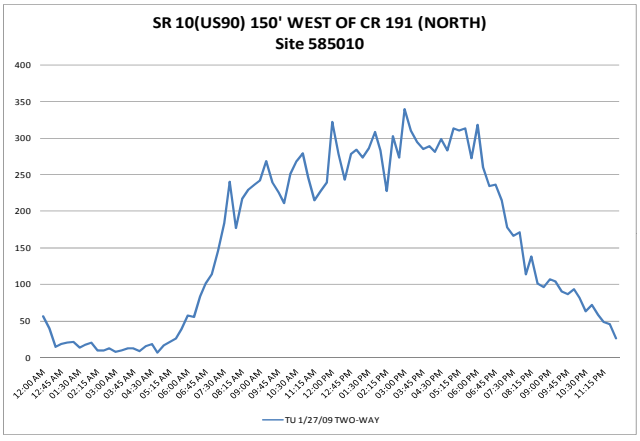

SR 8(I10) .65 MI. WEST OF W.END OF SR 87
Site 582005
MON 5/4/09 EB
TU 5/4/09 EB
MON 5/5/09 WB
TU 5/5/09 WB

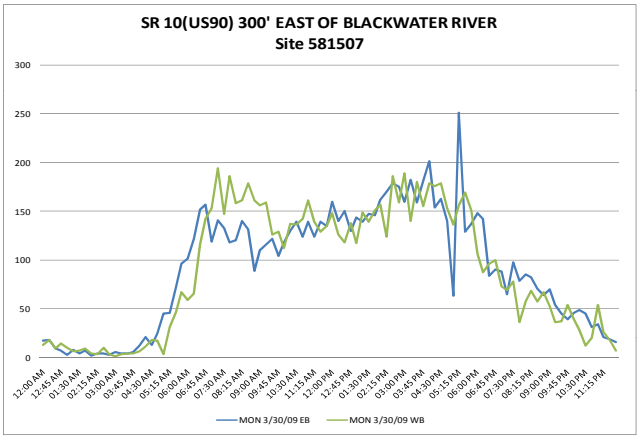

SR 8(I10) .75 MI. EAST OF E. END OF SR 87 OVERPASS
Site 582007
MON1/26/09 EB
TU 1/27/09 EB
MON 1/26/09 WB
TU 1/27/09 WB

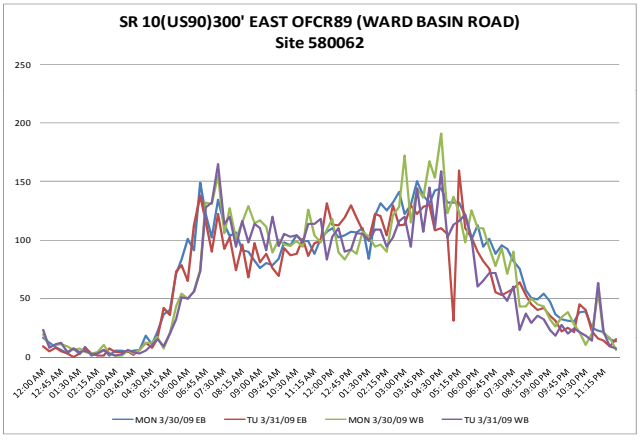

SR10 (US90) .24 MI. WEST OF SR89
Site 581502
TU 1/27/09 EB
TU 1/27/09 WB

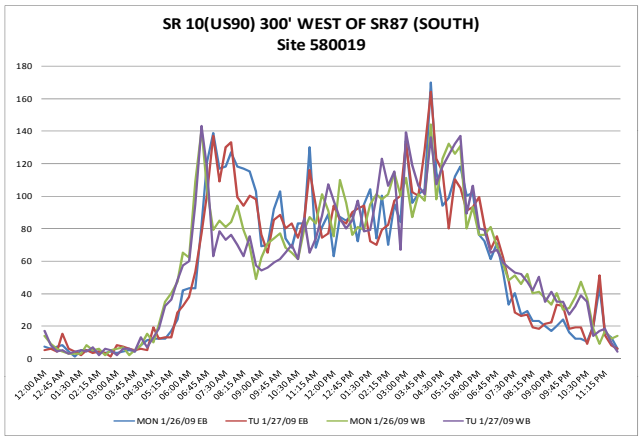

SR10 (US90) 300' EAST OF SR89
Site 585018
MON 3/9/09 EB
MON 3/9/09 WB

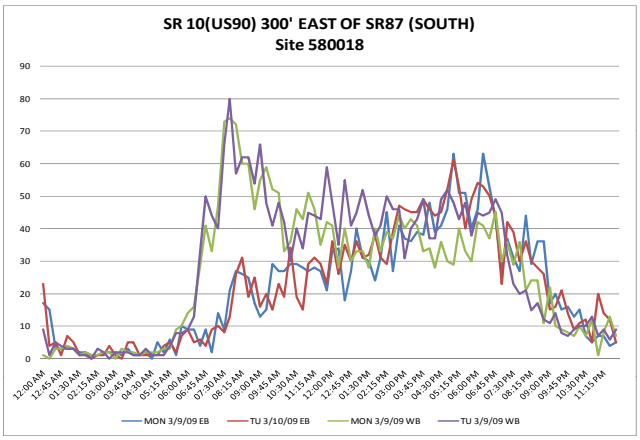

SR 10(US90) 500' EAST OF SR 87 (STEWART STREET)
Site 585011
WED 1/28/09 TWO-WAY

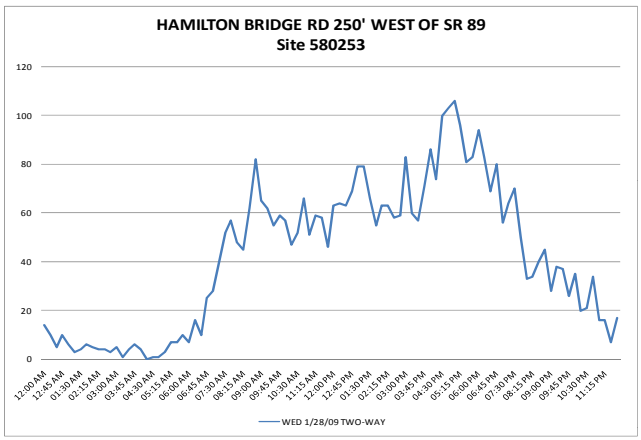

SR 10(US90) 150' WEST OF CR 191 (NORTH)
Site 585010
TU 1/27/09 TWO-WAY

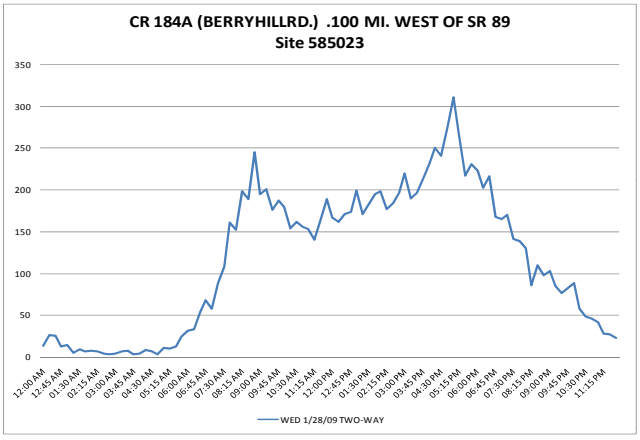

SR 10(US90) 300' EAST OF BLACKWATER RIVER
Site 581507
MON 3/30/09 EB
MON 3/30/09 WB

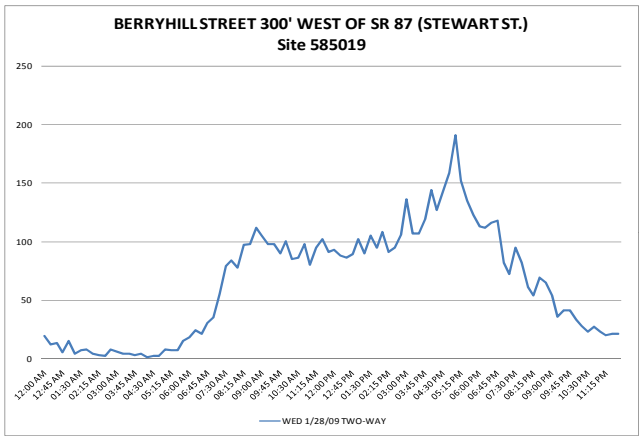

SR 10(US90)300' EAST OFCR89 (WARD BASIN ROAD)
Site 580062
MON 3/30/09 EB
TU 3/31/09 EB
MON 3/30/09 WB
TU 3/31/09 WB

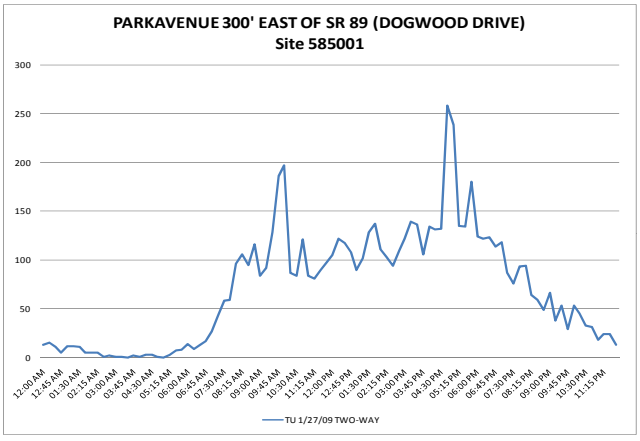

SR 10(US90) 300' WEST OF SR87 (SOUTH)
Site 580019
MON 1/26/09 EB
TU 1/27/09 EB
MON 1/26/09 WB
TU 1/27/09 WB

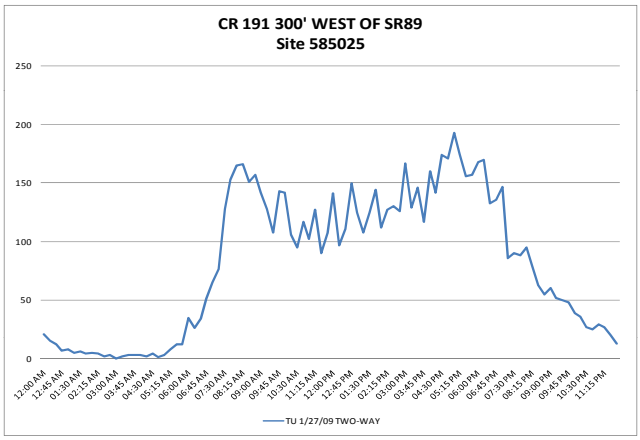

SR 10(US90) 300' EAST OF SR87 (SOUTH)
Site 580018
MON 3/9/09 EB
TU 3/10/09 EB
MON 3/9/09 WB
TU 3/9/09 WB

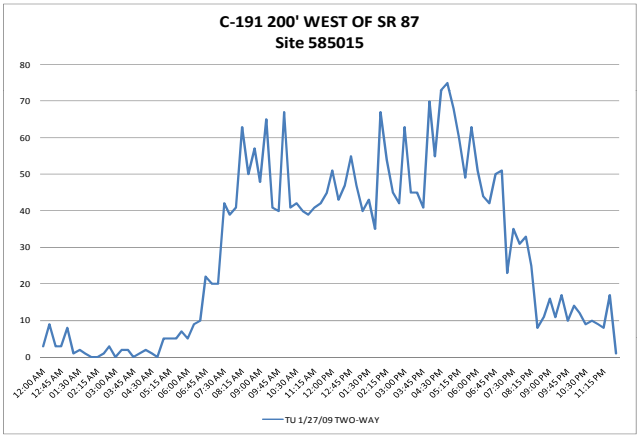

HAMILTON BRIDGE RD 250' WEST OF SR 89
Site 580253
WED 1/28/09 TWO-WAY

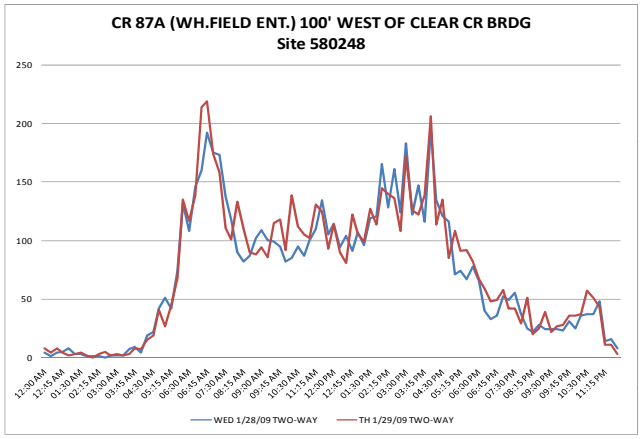

CR 184A (BERRYHILLRD.) .100 MI. WEST OF SR 89
Site 585023
WED 1/28/09 TWO-WAY

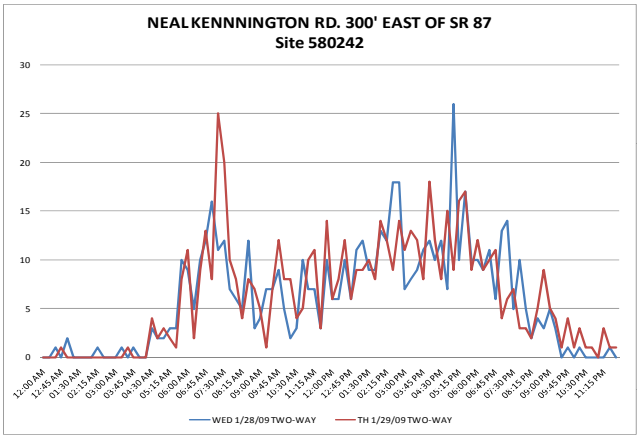

BERRYHILL STREET 300' WEST OF SR 87 (STEWART ST.)
Site 585019
WED 1/28/09 TWO-WAY

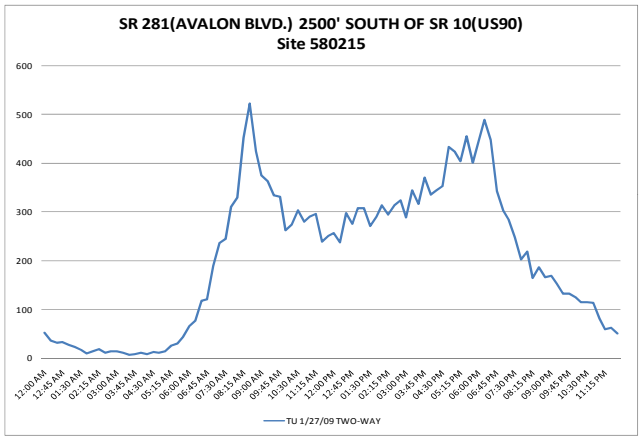

PARKAVENUE 300' EAST OF SR 89 (DOGWOOD DRIVE)
Site 585001
TU 1/27/09 TWO-WAY

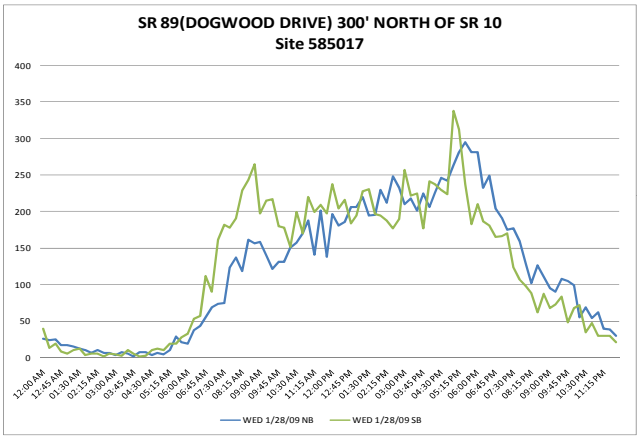

CR 191 300' WEST OF SR89
Site 585025
TU 1/27/09 TWO-WAY

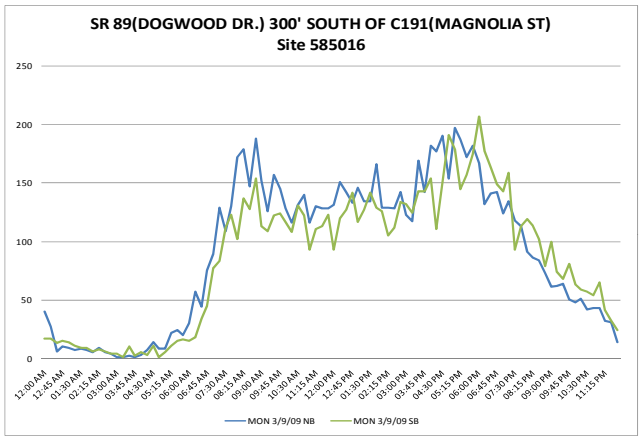

C-191 200' WEST OF SR 87
Site 585015
TU 1/27/09 TWO-WAY

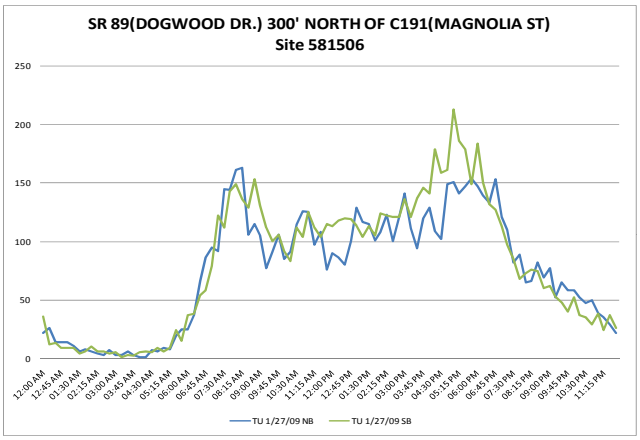

CR 87A (WH.FIELD ENT.) 100' WEST OF CLEAR CR BRDG
Site 580248
WED 1/28/09 TWO-WAY
TH 1/29/09 TWO-WAY

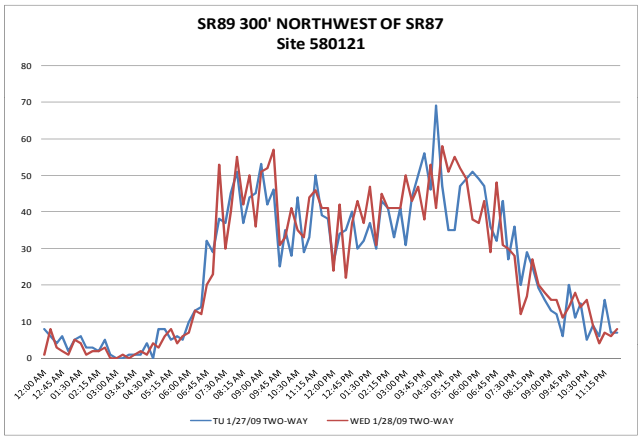

NEAL KENNNINGTON RD. 300' EAST OF SR 87
Site 580242
WED 1/28/09 TWO-WAY
TH 1/29/09 TWO-WAY

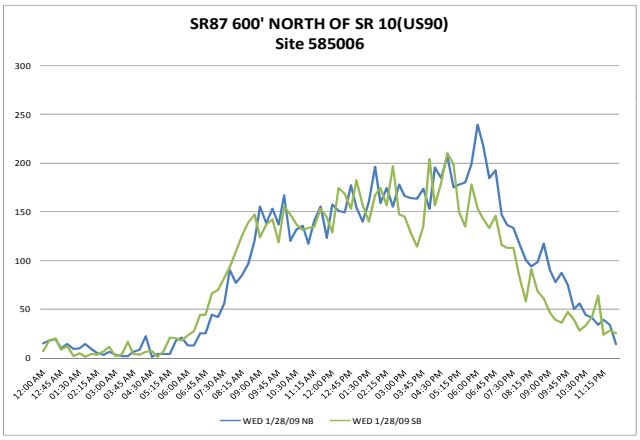

SR 281(AVALON BLVD.) 2500' SOUTH OF SR 10(US90)
Site 580215
TU 1/27/09 TWO-WAY

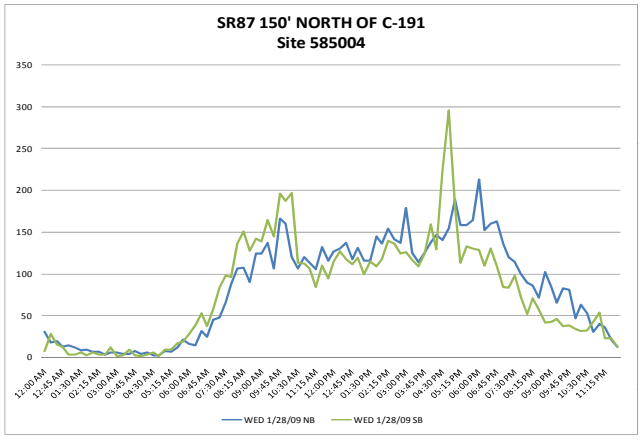

SR 89(DOGWOOD DRIVE) 300' NORTH OF SR 10
Site 585017
WED 1/28/09 NB
WED 1/28/09 SB

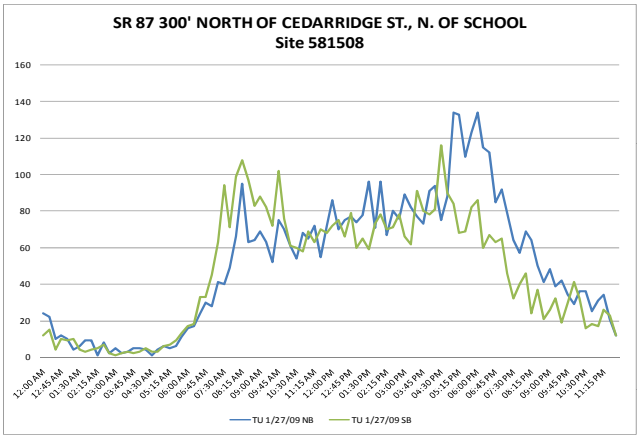

SR 89(DOGWOOD DR.) 300' SOUTH OF C191(MAGNOLIA ST)
Site 585016
MON 3/9/09 NB
MON 3/9/09 SB

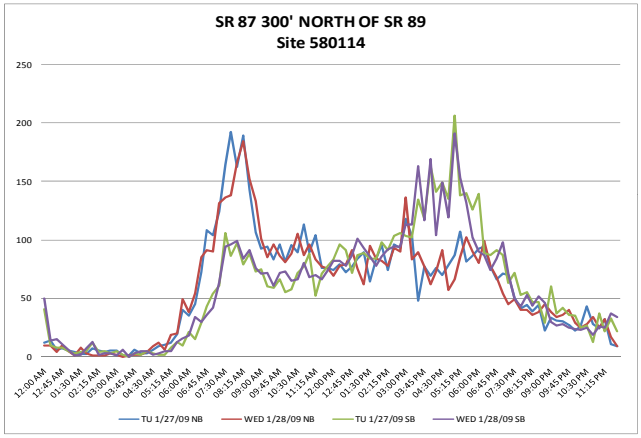

SR 89(DOGWOOD DR.) 300' NORTH OF C191(MAGNOLIA ST)
Site 581506
TU 1/27/09 NB
TU 1/27/09 SB

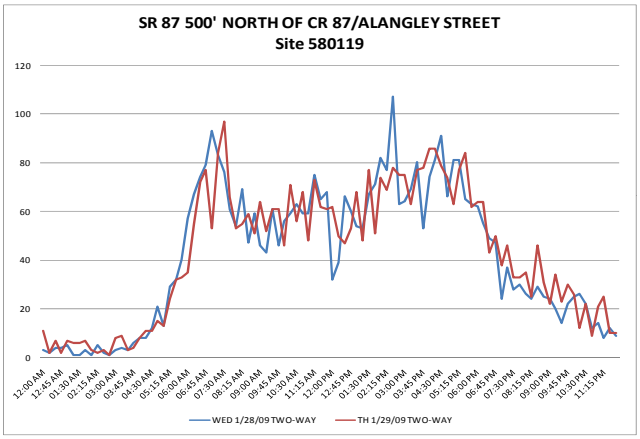

SR89 300' NORTHWEST OF SR87
Site 580121
TU 1/27/09 TWO-WAY
WED 1/28/09 TWO-WAY

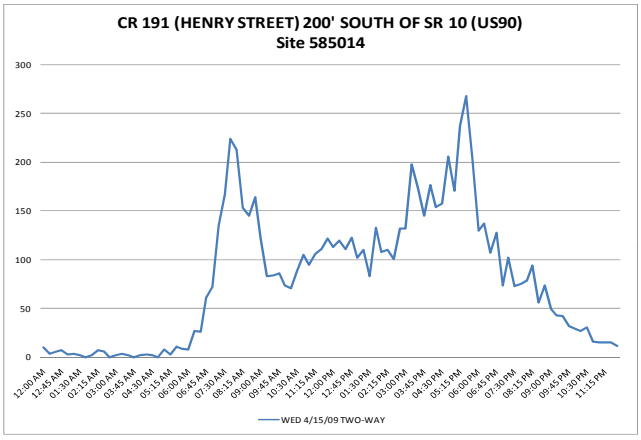

SR87 600' NORTH OF SR 10(US90)
Site 585006
WED 1/28/09 NB
WED 1/28/09 SB

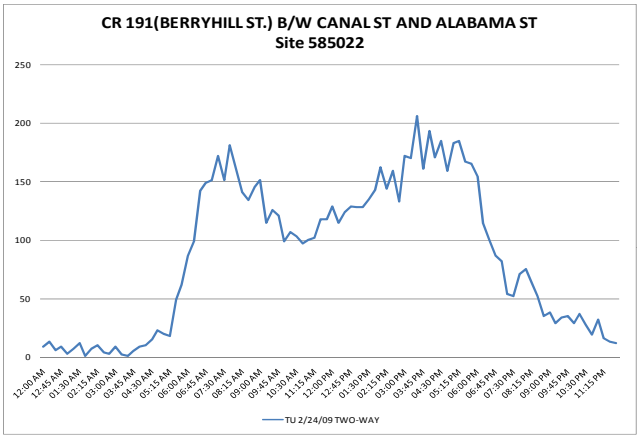

SR87 150' NORTH OF C-191
Site 585004
WED 1/28/09 NB
WED 1/28/09 SB

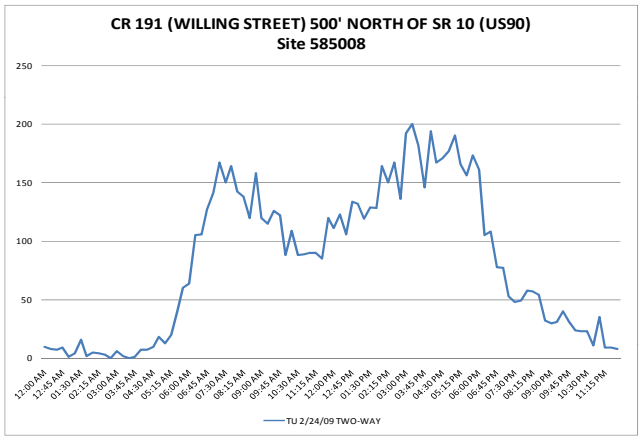

SR 87 300' NORTH OF CEDARRIDGE ST., N. OF SCHOOL
Site 581508
TU 1/27/09 NB
TU 1/27/09 SB

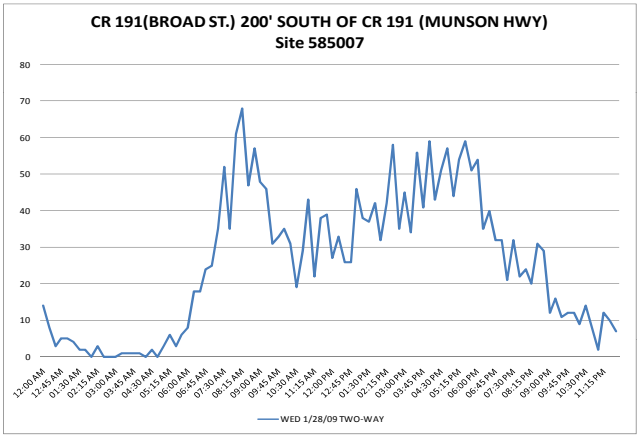

SR 87 300' NORTH OF SR 89
Site 580114
TU 1/27/09 NB
WED 1/28/09 NB
TU 1/27/09 SB
WED 1/28/09 SB

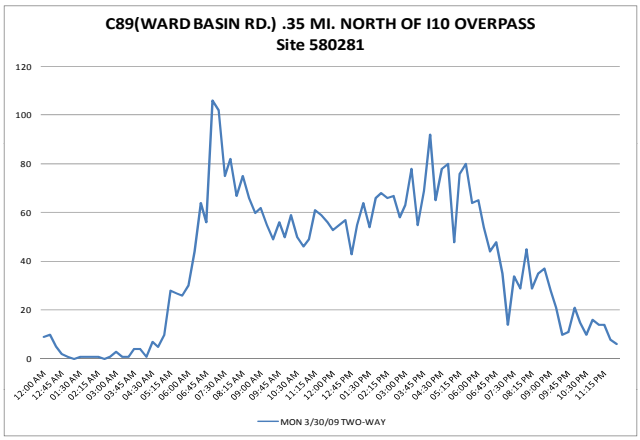

SR 87 500' NORTH OF CR 87/ALANGLEY STREET
Site 580119
WED 1/28/09 TWO-WAY
TH 1/29/09 TWO-WAY

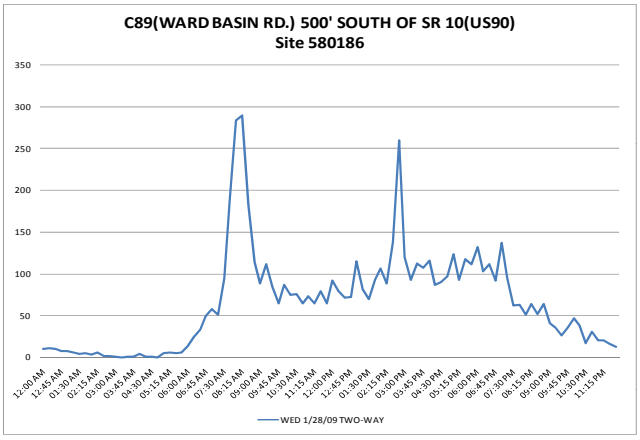

CR 191 (HENRY STREET) 200' SOUTH OF SR 10 (US90)
Site 585014
WED 4/15/09 TWO-WAY

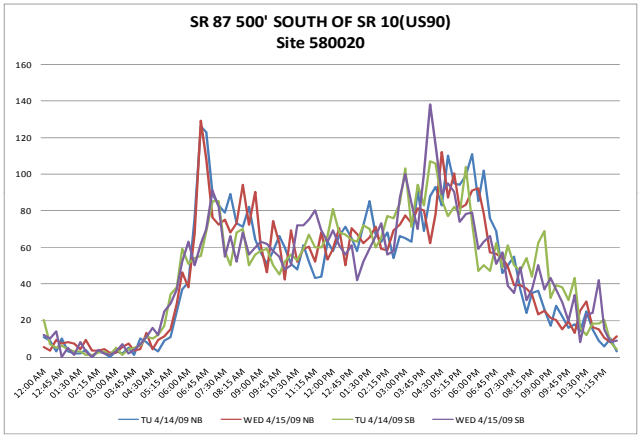

CR 191(BERRYHILL ST.) B/W CANAL ST AND ALABAMA ST
Site 585022
TU 2/24/09 TWO-WAY

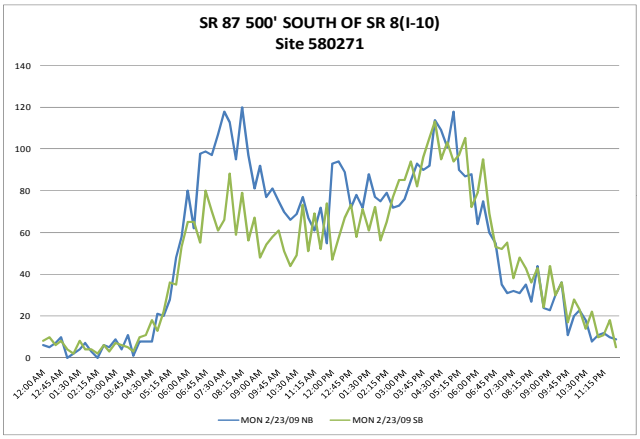

CR 191 (WILLING STREET) 500' NORTH OF SR 10 (US90)
Site 585008
TU 2/24/09 TWO-WAY

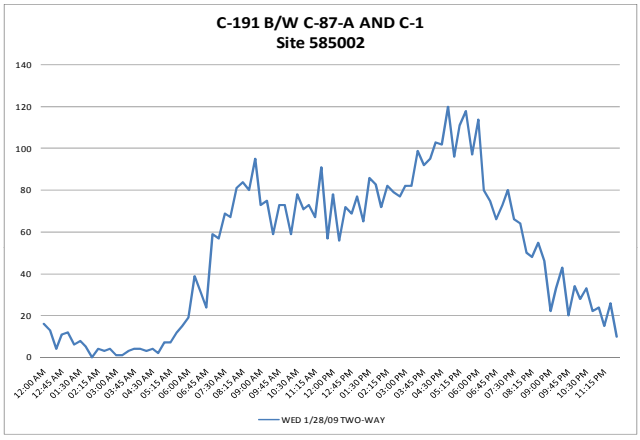

CR 191(BROAD ST.) 200' SOUTH OF CR 191 (MUNSON HWY)
Site 585007
WED 1/28/09 TWO-WAY

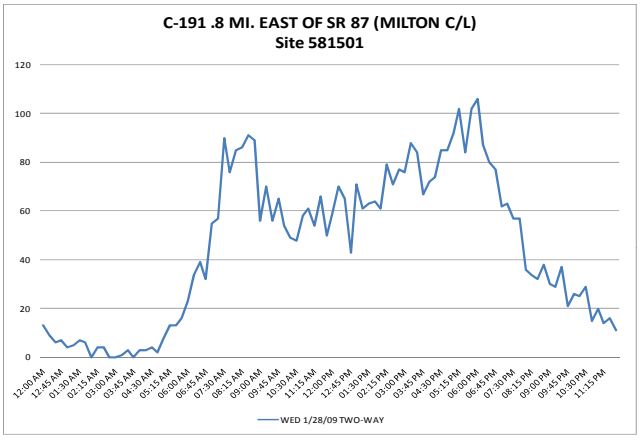

C89(WARD BASIN RD.) .35 MI. NORTH OF I10 OVERPASS
Site 580281
MON 3/30/09 TWO-WAY

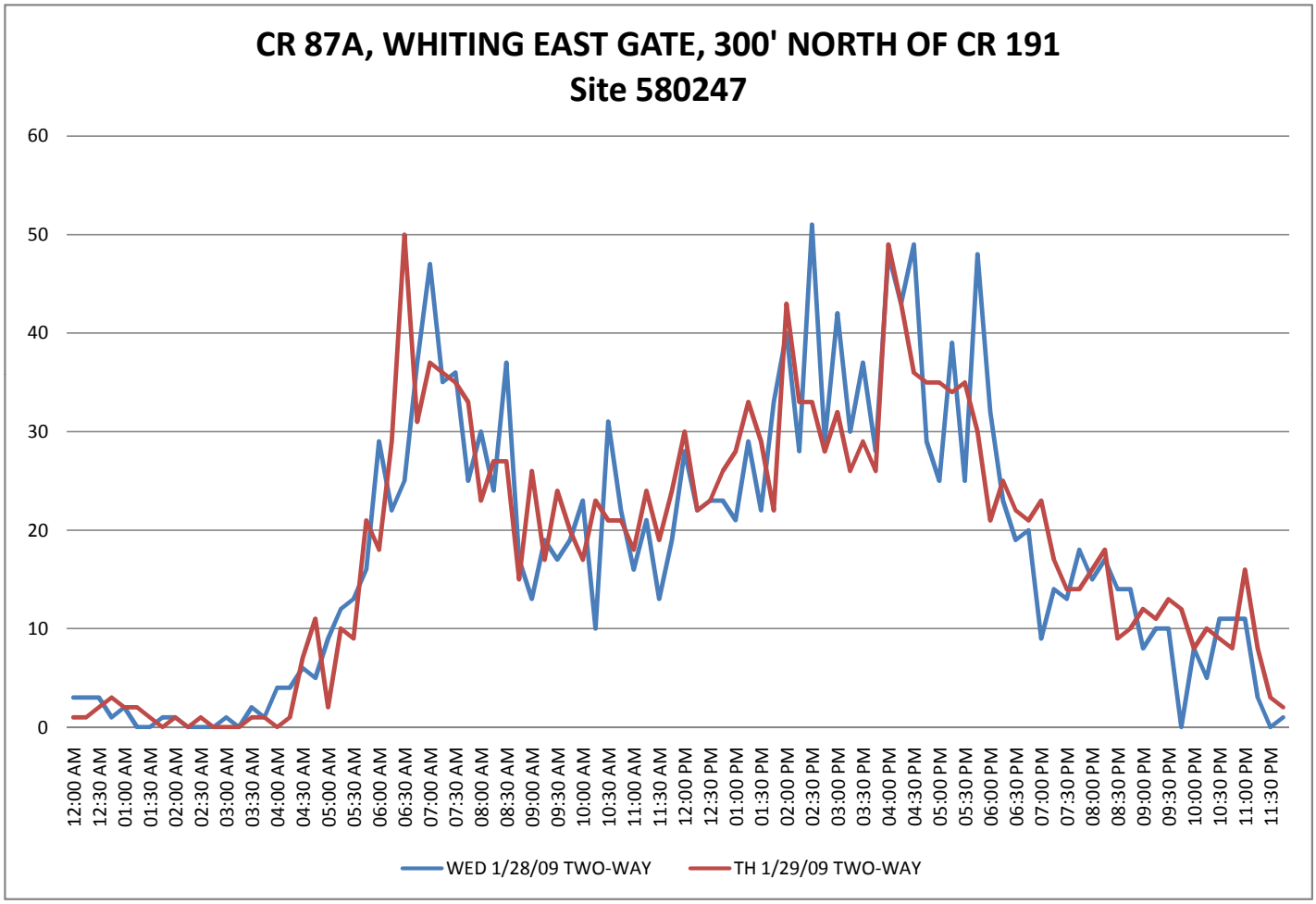

C89(WARD BASIN RD.) 500' SOUTH OF SR 10(US90)
Site 580186
WED 1/28/09 TWO-WAY


SR 87 500' SOUTH OF SR 10(US90)
Site 580020
TU 4/14/09 NB
WED 4/15/09 NB
TU 4/14/09 SB
WED 4/15/09 SB


SR 87 500' SOUTH OF SR 8(I-10)
Site 580271
MON 2/23/09 NB
MON 2/23/09 SB


C-191 B/W C-87-A AND C-1
Site 585002
WED 1/28/09 TWO-WAY


C-191 .8 MI. EAST OF SR 87 (MILTON C/L)
Site 581501
WED 1/28/09 TWO-WAY


CR 87A, WHITING EAST GATE, 300' NORTH OF CR 191
Site 580247
60
50
40
30
20
10
0
12:00 AM
12:30 AM
01:00 AM
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02:00 AM
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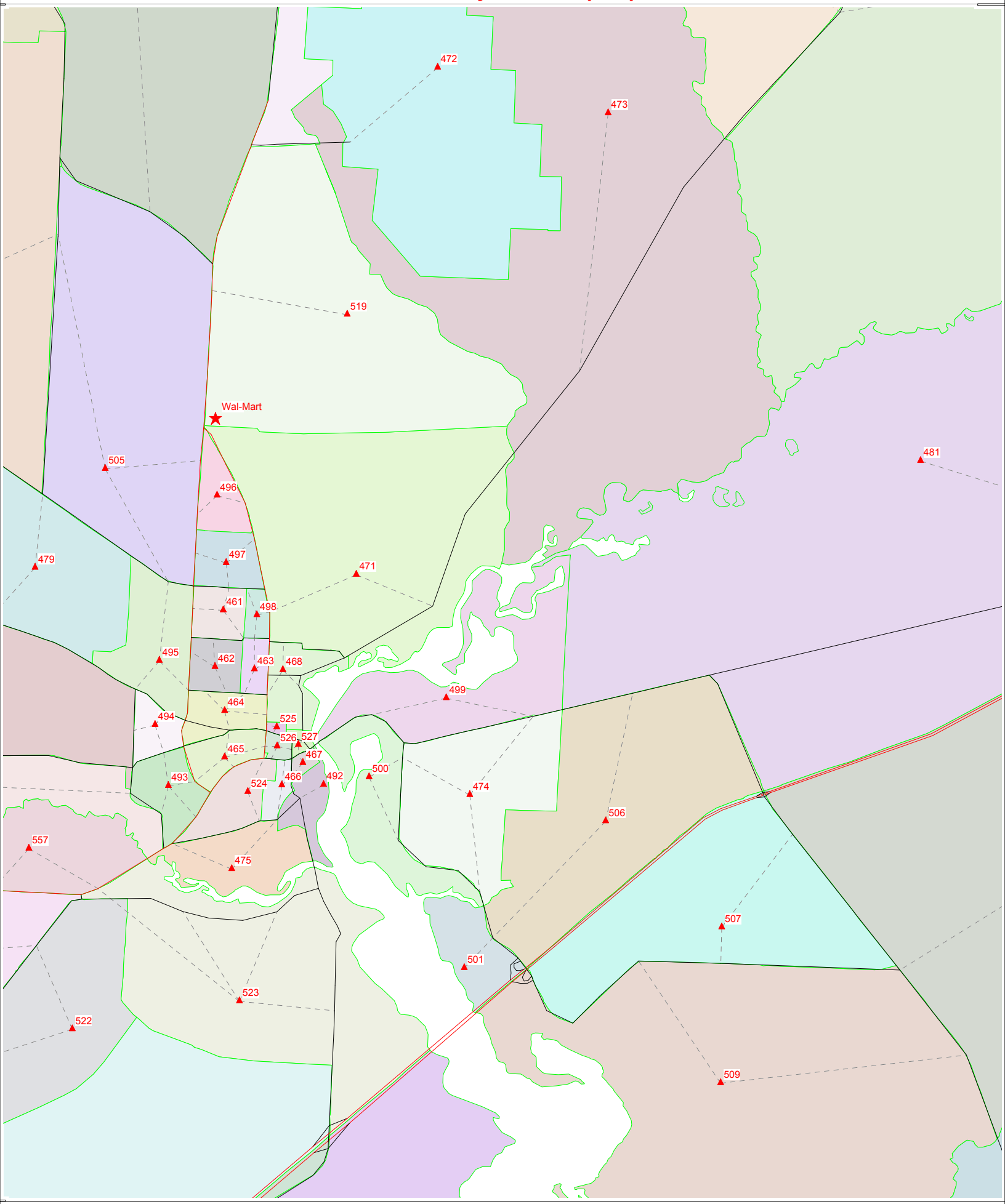
10:30 PM
11:00 PM
11:30 PM
WED 1/28/09 TWO-WAY
TH 1/29/09 TWO-WAY

Appendix: K

Wal-Mart Traffic Impact Evaluation

NWFRPM - Validated 2005 - SR 87 Connector Study Area
Traffic Analysis Zones (TAZ)



C:\FSUTMS\D3\NWFRPM_V1.1\Base\Output\HWYLOAD_B06-ATEC-TAZ.NET 10/17/2012 7:16 PM

cube

Licensed to Metric Engineering Inc.

From: John Flora
Sent: Tuesday, June 05, 2012 9:43 AM
To: Fadi E. Nassar
Subject: FW: Walmart N. Milton
Attachments: Concurrency Supplement.pdf

From: Shawn Ward [mailto:ShawnW@santarosa.fl.gov]
Sent: Tuesday, June 05, 2012 9:45 AM
To: John Flora
Subject: Walmart N. Milton

John,
Santa Rosa County received a request from Walmart in January 2012 to extend the development order for the above referenced project pursuant to Section 494, Chapter 2011-142, Laws of Florida. The development order for this project is now valid until November 27, 2014.
I have attached a copy of the traffic analysis that was submitted for the 2006 large scale future land use amendment and rezoning. The supplement references an original analysis. I reviewed the original analysis that was submitted and it was incorrect therefore the attached will be the best available information.
Let me know if I can provide any additional information or assistance,
Shawn Ward, Transportation Planner
Santa Rosa County Development Services
Office Ph: 850.981.7082 Fax: 850.983.9874

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SUPPLEMENT TO THE

TRAFFIC CONCURRENCY REPORT

IN SUPPORT OF THE

FUTURE LAND USE AMENDMENT

FOR

38.95 Acres of Parcel No. 16-2N-28-0000-05700-000

LOCATED IN

MILTON, FLORIDA

Prepared For
Creech Engineers, Inc.
(321) 255-5434

Prepared By
Ramey Kemp & Associates, Inc.

October 2006

SUPPLEMENT TO THE

TRAFFIC CONCURRENCY REPORT

Parcel No. 16-2N-28-0000-05700-000

MILTON, FLORIDA

This supplement to the traffic concurrency report submitted in August, 2006 shall serve to:

(1) revise the trip generation for the proposed land use amendment.

(2) present an analysis of the projected levels of service in 2010 and 2020

The proposed land use amendment covers 38.95 acres, approximately 10 acres of which are currently designated "Highway Commercial District" and the remaining 28.95 acres are designated "Agricultural". The proposed future land use, Highway Commercial District, will generate a greater volume of trips than the existing Agricultural land use. To determine the total number of new trips that can be expected upon maximum buildout of the 38.95 acres, it is necessary to determine the total number of trips that will be generated by the Highway Commercial District land use and then subtract from that total the number of trips that will be generated by the Agricultural land use. Tables 1a and 1b present the trip generation for 28.95 acres of Highway Commercial District land use at maximum buildout. During an average 24 hour period, 28.95 acres of Highway Commercial District will generate 9,088 new daily trips. During the PM peak hour, 28.95 acres of Highway Commercial District will generate 325 new peak hour peak direction trips. The Agricultural land use will generate the most traffic assuming it were built out at the maximum allowable density of one dwelling unit per acre, or a total of 29 dwelling units. Refer to Tables 2a and 2b for the daily and PM peak hour trip generation for 28.95 acres of Agricultural land use. At maximum buildout, 28.95 acres of Agricultural land use is expected to generate 139 daily trips and 10 PM peak hour peak direction trips.

Subtracting the Agricultural trips from the Highway Commercial District trips results in the net trips due to changing the future land use to Highway Commercial District from the existing Agricultural land use. The change in future land use is expected to produce 8,949 new trips during an average 24 hour period and 315 new PM peak hour, peak direction trips. The approximately 10 acres currently designated as "Highway Commercial District" will not add to

the increase in net trips. Refer to Table 3 for a summary of the net trip generation due to change in future land use.

Tables 4 and 5 from the Traffic Concurrency Report submitted in August, 2006 have been revised to reflect the change in trip generation. The tables continue to show that there is an adequate service volume for all of the roadway segments.

Table 6 summarizes the projected roadway impact conditions for 2010 and 2020 traffic conditions. The adopted LOS standard, maximum service volume, 2010 AADT and 2020 AADT was obtained from the Santa Rosa County Comprehensive Plan: Transportation Element Foundation Documentation, Table 4-1A.

Adjusted AADTs were determined by adding the net trips to the 2010 AADT and 2020 AADT for each roadway segment. Levels of service were obtained from the FDOT Level of Service guidelines for roadway segments (Tables 4-1, 4-2, and 4-3).

Table 6 shows that there is adequate capacity for each roadway segment through the planning timeframe except for the three segments of US 90 between Parkmore Plaza and Airport Road.

The segments of US 90 with unacceptable projected levels of service are expected to experience unacceptable levels of service (LOS E or F) regardless of whether the proposed future land use amendment is approved. Only a small portion (1%-7%) of the traffic originating from the site of the proposed change in future land use is expected to travel on US 90.

US 90 has a number of improvement projects either currently funded or planned for completion prior to 2025 based on the "Cost Feasible Report" of the Florida – Alabama 2025 Long Range Transportation Plan. These improvements will help to maintain level of service standards along US 90. US 90 from Avalon Boulevard to Dogwood Road (SR 89) is currently scheduled to be widened from four to six lanes. The planning and design work for this widening project is complete and construction is pending. US 90 from Airport Road to SR 87 South is scheduled to be widened from two lanes to four lanes between 2010 and 2024. The segment of US 90

between Dogwood Road (SR 89) and Airport Road will be the focus of $750,000 per year in Corridor Management Plan expenditures.

Trip Estimations for Proposed HCD Uses:

Table 1a

Specialty Retail Center (814) - Daily Trips

Land Size:	28.95 acres =	**1,261,062.00**	square feet
Site Plan Requirements:		15% pervious cover required	
Parking Requirements:			
	Equipment Service @ 1 space for every 250 sq. ft. gross area (4 spaces/1,000 sq. ft.)		
	Parking/Driveway/Aisle Estimation @ 325 sq. ft. per space		
Wetland area:	N/A		

Buildable area = building pad + parking lot

y = sq. ft. gross floor area of building pad in thousands

1,261,062.00	x 0.85	=	$1{,}000y + (y \times 4 \times 325)$
	1,071,902.70	=	$1{,}000y + 1{,}300y$
	1,071,902.70	=	$2{,}300y$
	y	=	**466.04**

Specialty Retail Center (814) for 1,000 sq. ft. gross leaseable area on a weekday for the following roadways:

		Total
Building size:	466.04 x 1,000 sq. ft. = (acreage x units allowed per acre = total possible units)	**466,044.65 sq. ft. gross floor area**
ITE Average Rate:	44.32 per 1,000 sq. ft. (ITE rate x bldg size = ITE average daily trips)	**20,655.10 average daily trips**
Driveway %:	50% entering/exiting (driveway % x ITE average daily trips = total average trips driveway %)	**10,327.55 average daily trips**
New Trip %:	88% (new trip % x average daily trip driveway % = new daily trips)	**9,088.24 new daily trips**

Trip Estimations for Proposed HCD Uses:

Table 1b

Specialty Retail Center (814) - PM Peak Trips

Land Size: 28.95 acres = **1,261,062.00** square feet
Site Plan Requirements: 15% pervious cover required
Parking Requirements:
Equipment Service @ 1 space for every 250 sq. ft. gross area (4 spaces/1,000 sq. ft.)
Parking/Driveway/Aisle Estimation @ 325 sq. ft. per space
Wetland area: N/A

Buildable area = building pad + parking lot

y = sq. ft. gross floor area of building pad in thousands

1,261,062.00	x 0.85	=	$1{,}000y + (y \times 4 \times 325)$
	1,071,902.70	=	$1{,}000y + 1{,}300y$
	1,071,902.70	=	$2{,}300y$
	y	=	**466.04**

Specialty Retail Center (814) for 1,000 sq. ft. gross leaseable area on a weekday for the following roadways:

		Total
Building size:	466.04 x 1,000 sq. ft. = (acreage x units allowed per acre = total possible units)	**466,044.65 sq. ft. gross floor area**
ITE Average Rate:	2.71 per 1,000 sq. ft. (ITE rate x bldg size = ITE PM Peak Hour trips)	**1,262.98 PM peak hour trips**
Driveway %:	56% entering/exiting (driveway % x ITE PM Peak Hour trips = total PM Peak Hour driveway %)	**707.27 PM peak hour trips**
New Trip %:	88% (new trip % x PM Peak trip driveway % = new PM Peak Hour trips)	**622.40 new PM peak hour trips**
Directional Distribution Factor:	0.522 (new PM Peak Hour trips x Directional Distribution Factor = new PM peak hour peak direction trips)	**324.89 new PM peak hour peak direction trips**

Trip Estimations for Existing AG Uses:

Table 2a

Single Family Residential (210) - Daily Trips

Land Size: 28.95 acres =

Allowable Density: 1 dwelling units per acre

Wetland area: N/A

Single Family Residential (210) for 1 Dwelling unit on a weekday for the following roadways:

		Total
Building size:	29 dwelling units	
ITE Average Rate:	9.57 per dwelling unit (ITE rate x # dwelling units = ITE average daily trips)	**277.53 average daily trips**
Driveway %:	50% entering/exiting (driveway % x ITE average daily trips = total average trips driveway %)	**138.77 average daily trips**
New Trip %:	100% (new trip % x average daily trip driveway % = new daily trips)	**138.77 new daily trips**

Trip Estimations for Existing AG Uses:

Table 2b

Single Family Residential (210) - Daily Trips

Land Size: 28.95 acres =

Allowable Density: 1 dwelling units per acre

Wetland area: N/A

Single Family Residential (210) for 1 Dwelling unit on a weekday for the following roadways:

		Total
Building size:	29 dwelling units	
ITE Average Rate:	1.01 per dwelling unit (ITE rate x # dwelling units = ITE average daily trips)	**29.29 PM peak hour trips**
Driveway %:	63% entering/exiting (driveway % x ITE PM Peak Hour trips = total PM Peak Hour driveway %)	**18.45 PM peak hour trips**
New Trip %:	100% (new trip % x PM Peak trip driveway % = new PM Peak Hour trips)	**18.45 new PM peak hour trips**
Directional Distribution Factor:	0.522 (new PM Peak Hour trips x Directional Distribution Factor = new PM peak hour peak direction trips)	**9.63 new PM peak hour peak direction trips**

Table 3 - Net Trips from Change in Future Land Use

	Daily	PM
Proposed HCD land use for 28.95 acres (Specialty Retail - 814)	9,088	325
Existing AG land use for 28.95 acres (Single Family Resid - 210)	139	10
NET TRIPS (HCD trips minus AG Trips)	**8,949**	**315**

NOTE:
In an effort to be conservative, the original study reflected trip generation for 38.95 acres of HCD and did not account for the 10 acres currently designated as HCD. It also did not account for the traffic due to the existing 28.95 acres designated as Agricultural land use.

The original study estimated site trips to be 12,228 vehicles per day and 437 vehicles in the peak hour, peak direction.

Table 4 - Impacted Roadway Segments

Seg #	On Street	From	To	Allowable Volume	1% of Allowable Volume	Trip Dist %	HCD Project Trips	HCD Project Trips ≥ 1%?
11	SR 10 (US 90) *	Parkmore Plaza	SR 87 (Stewart St)	2560	26	1	3	No
12	SR 10 (US 90) *	SR 87 (Stewart St)	Ward Basin Rd	870	9	7	22	Yes
13	SR 10 (US 90) *	Ward Basin Rd	Airport Rd	1660	17	3	9	No
14	SR 10 (US 90) *	Airport Rd	SR 87 S	740	7	2	6	No
25	SR 87 N	SR 10	SR 89	35500	355	100	8,949	Yes
26	SR 87 N	SR 89	Whiting Field	32800	328	25	2,237	Yes
27	SR 87 N	Whiting Field	Alabama St Line	8200	82	7	626	Yes
31	SR 89 N	Hamilton Bridge Rd	SR 87	35000	350	100	8,949	Yes
34	SR 89	Shell Rd	SR 87	13000	130	15	1,342	Yes
41	CR 184A/Berryhill Rd	CR 197	SR 89	16600	166	16	1,432	Yes
42	CR 191/Munson Hwy	SR 87	CR 87A/Eastgate	16600	166	4	358	Yes
52	CR 87 (Langley St)	SR 87	Whiting Field Main	10900	109	15	1,342	Yes
54	CR 182 (Allentown Rd)	Chumuckla Hwy	SR 89	10700	107	2	179	Yes
55	CR 182 (Allentown Rd)	SR 89	SR 87	10700	107	2	179	Yes
58	CR 191 (Garcon Pt Rd)	SR 8 (I-10)	Bagdad	10900	109	2	179	Yes
59	CR 191 (Munson Hwy)	CR 87A	SR 4	10900	109	10	895	Yes
60	CR 191 (Willard Norris)	Chumuckla Hwy	SR 87	10900	109	10	895	Yes
62	CR 191A (Old Bagdad Hwy)	US 90	CR 191	10900	109	3	268	Yes
71	Hamilton Bridge Rd	East Spencer Field	Milton City Limits	10900	109	5	447	Yes

* PM peak hour

Table 5 - Current Level of Service

Seg #	On Street	From	To	Existing Traffic	Committed Trips	HCD Project Trips	Total Trips	Allowable Volume	Seg ok?
11	SR 10 (US 90) *	Parkmore Plaza	SR 87 (Stewart St)	1611	22.49	3	1,636	2560	Yes
12	SR 10 (US 90) *	SR 87 (Stewart St)	Ward Basin Rd	226	2.83	22	251	870	Yes
13	SR 10 (US 90) *	Ward Basin Rd	Airport Rd	697	4.44	9	710	1660	Yes
14	SR 10 (US 90) *	Airport Rd	SR 87 S	684	5.87	6	696	740	Yes
25	SR 87 N	SR 10	SR 89	17100	62.75	8,949	26,112	35500	Yes
26	SR 87 N	SR 89	Whiting Field	9300	71.73	2,237	11,609	32800	Yes
27	SR 87 N	Whiting Field	Alabama St Line	3600	32.9	626	4,259	8200	Yes
31	SR 89 N	Hamilton Bridge Rd	SR 87	12700	158.73	8,949	21,808	35000	Yes
34	SR 89	Shell Rd	SR 87	1900	8.2	1,342	3,250	13000	Yes
41	CR 184A/Berryhill Rd	CR 197	SR 89	9750	2321.93	1,432	13,504	16600	Yes
42	CR 191/Munson Hwy	SR 87	CR 87A/Eastgate	4600	0	358	4,958	16600	Yes
52	CR 87 (Langley St)	SR 87	Whiting Field Main	5100	53.91	1,342	6,496	10900	Yes
54	CR 182 (Allentown Rd)	Chumuckla Hwy	SR 89	1200	0	179	1,379	10700	Yes
55	CR 182 (Allentown Rd)	SR 89	SR 87	550	0	179	729	10700	Yes
58	CR 191 (Garcon Pt Rd)	SR 8 (I-10)	Bagdad	5400	460.37	179	6,039	10900	Yes
59	CR 191 (Munson Hwy)	CR 87A	SR 4	1000	11.48	895	1,906	10900	Yes
60	CR 191 (Willard Norris)	Chumuckla Hwy	SR 87	8300	321	895	9,516	10900	Yes
62	CR 191A (Old Bagdad Hwy)	US 90	CR 191	2300	30.95	268	2,599	10900	Yes
71	Hamilton Bridge Rd	East Spencer Field	Milton City Limits	3200	119.55	447	3,767	10900	Yes

* PM peak hour

Table 6 - Projected Level of Service

Seg #	4-1A Seg #	On Street	From	To	Adopted Standards Max Service Volume	Adopted Standards LOS	2010 AADT	2010 LOS	2020 AADT	2020 LOS	Net HCD Daily Trips	Adjusted 2010 AADT	Adjusted 2010 LOS	Adjusted 2020 AADT	Adjusted 2020 LOS
11	10	SR 10 (US 90)	Parkmore Plaza	SR 87 (Stewart St)	32,700	D	33,500	E	35,700	F	89	**33,589**	**E**	**35,789**	**F**
12	11	SR 10 (US 90)	SR 87 (Stewart St)	Ward Basin Rd	16,400	D	18,100	F	20,700	F	626	**18,726**	**F**	**21,326**	**F**
13	12	SR 10 (US 90)	Ward Basin Rd	Airport Rd	16,400	D	14,700	D	18,000	F	268	14,968	D	**18,268**	**F**
14	13	SR 10 (US 90)	Airport Rd	SR 87 S	15,500	D	11,900	C	14,800	D	179	12,079	C	14,979	D
25	24	SR 87 N	SR 10	SR 89	35,700	E	19,500	B	23,700	B	8,949	28,449	B	32,649	C
26	25	SR 87 N	SR 89	Whiting Field	34,200	D	11,100	B	13,500	B	2,237	13,337	B	15,737	B
27	26	SR 87 N	Whiting Field	Alabama St Line	13,800	D	3,300	B	3,900	B	626	3,926	B	4,526	B
31	30	SR 89 N	Hamilton Bridge Rd	SR 87	35,700	E	11,800	B	12,500	B	8,949	20,749	B	21,449	B
34	33	SR 89	Shell Rd	SR 87	13,800	D	2,400	A	2,900	A	1,342	3,742	B	4,242	B
41	40	CR 184A/Berryhill Rd	CR 197	SR 89	14,600	D	9,500	C	9,800	C	1,432	10,932	D	11,232	D
42	41	CR 191/Munson Hwy	SR 87	CR 87A/Eastgate	14,600	D	5,000	C	5,700	C	358	5,358	C	6,058	C
52	51	CR 87 (Langley St)	SR 87	Whiting Field Main	14,600	D	7,400	C	9,000	C	1,342	8,742	C	10,342	D
54	53	CR 182 (Allentown Rd)	Chumuckla Hwy	SR 89	13,800	D	600	A	700	A	179	779	A	879	A
55	54	CR 182 (Allentown Rd)	SR 89	SR 87	13,800	D	600	A	700	A	179	779	A	879	A
58	57	CR 191 (Garcon Pt Rd)	SR 8 (I-10)	Bagdad	14,600	D	6,200	C	7,700	C	179	6,379	C	7,879	C
59	58	CR 191 (Munson Hwy)	CR 87A	SR 4	14,600	D	1,276 *	C	2,079 *	C	895	2,171	C	2,974	C
60	59	CR 191 (Willard Norris)	Chumuckla Hwy	SR 87	14,600	D	9,700	D	12,400	D	895	10,595	D	13,295	D
62	61	CR 191A (Old Bagdad Hwy)	US 90	CR 191	14,600	D	2,500	C	3,100	C	268	2,768	C	3,368	C
71	70	Hamilton Bridge Rd	East Spencer Field	Milton City Limits	14,600	D	4,084 *	C	6,653 *	C	447	4,531	C	7,100	C

Projected Volumes exceeding Maximum Allowable Volumes in BOLD

* 2010 and 2020 AADT traffic projections not available. 2005 count data was obtained from the Santa Rosa County 2005 Road Segment Data report. The 2005 AADTs were then grown by 5% per year to obtain the 2010 and 2020 AADT traffic volume projections.

HCM Signalized Intersection Capacity Analysis
20: SR 87 Connector & SR 87 N

AM 2035 - ALT 1 - DESIGN YEAR - With WalMart

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	237	2	47	74	587	9	1034	369	341	1234	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1861		1770	1863	1583	1770	3400		1770	3516	
Flt Permitted	0.70	1.00		0.42	1.00	1.00	0.17	1.00		0.07	1.00	
Satd. Flow (perm)	1313	1861		790	1863	1583	315	3400		131	3516	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	258	2	51	80	638	10	1124	401	371	1341	61
RTOR Reduction (vph)	0	0	0	0	0	211	0	30	0	0	2	0
Lane Group Flow (vph)	33	260	0	51	80	427	10	1495	0	371	1400	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	31.0	31.0		31.0	31.0	31.0	51.8	51.0		77.0	72.2	
Effective Green, g (s)	31.0	31.0		31.0	31.0	31.0	51.8	51.0		77.0	72.2	
Actuated g/C Ratio	0.26	0.26		0.26	0.26	0.26	0.43	0.42		0.64	0.60	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	4.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	339	481		204	481	409	146	1445		357	2115	
v/s Ratio Prot		0.14			0.04		0.00	0.44		c0.17	0.40	
v/s Ratio Perm	0.03			0.06		c0.27	0.03			c0.49		
v/c Ratio	0.10	0.54		0.25	0.17	1.04	0.07	1.03		1.04	0.66	
Uniform Delay, d1	33.9	38.4		35.3	34.5	44.5	19.6	34.5		40.4	15.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.70	0.70		1.00	1.00	
Incremental Delay, d2	0.1	1.2		0.6	0.2	56.7	0.2	32.5		58.2	1.6	
Delay (s)	34.0	39.6		35.9	34.7	101.2	14.0	56.6		98.6	17.5	
Level of Service	C	D		D	C	F	B	E		F	B	
Approach Delay (s)		39.0			90.0			56.3			34.4	
Approach LOS		D			F			E			C	

Intersection Summary			
HCM Average Control Delay	52.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	5	6	8
Movement	SBL	NBTL	EBTL	NBL	SBTL	WBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	None	None	C-Max	None
Maximum Split (s)	26	57	37	8	75	37
Maximum Split (%)	21.7%	47.5%	30.8%	6.7%	62.5%	30.8%
Minimum Split (s)	10	22	22	8	22	22
Yellow Time (s)	4	4	4	3.5	4	4
All-Red Time (s)	2	2	2	0.5	2	2
Minimum Initial (s)	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		5	5		5	5
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	94	0	57	94	102	57
End Time (s)	0	57	94	102	57	94
Yield/Force Off (s)	114	51	88	98	51	88
Yield/Force Off 170(s)	114	40	77	98	40	77
Local Start Time (s)	94	0	57	94	102	57
Local Yield (s)	114	51	88	98	51	88
Local Yield 170(s)	114	40	77	98	40	77

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	140
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

HCM Signalized Intersection Capacity Analysis
7: Arlingwood Dr & SR 87 N

PM 2035 - ALT 1 - DESIGN YEAR - With WalMart

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	710	3	19	2	6	3	20	556	1	13	387	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.87			0.97		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1618			1785		1752	3504		1770	3488	
Flt Permitted	0.95	1.00			0.99		0.46	1.00		0.38	1.00	
Satd. Flow (perm)	3433	1618			1785		854	3504		714	3488	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	772	3	21	2	7	3	22	604	1	14	421	45
RTOR Reduction (vph)	0	15	0	0	3	0	0	0	0	0	5	0
Lane Group Flow (vph)	772	9	0	0	9	0	22	605	0	14	461	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	36.2	36.2			1.7		64.1	64.1		64.1	64.1	
Effective Green, g (s)	36.2	36.2			1.7		64.1	64.1		64.1	64.1	
Actuated g/C Ratio	0.30	0.30			0.01		0.53	0.53		0.53	0.53	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1036	488			25		456	1872		381	1863	
v/s Ratio Prot	c0.22	0.01			c0.01			c0.17			0.13	
v/s Ratio Perm							0.03			0.02		
v/c Ratio	0.75	0.02			0.36		0.05	0.32		0.04	0.25	
Uniform Delay, d1	37.7	29.4			58.6		13.4	15.7		13.3	15.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	0.0			11.8		0.2	0.5		0.1	0.1	
Delay (s)	40.9	29.5			70.4		13.6	16.2		13.3	15.1	
Level of Service	D	C			E		B	B		B	B	
Approach Delay (s)		40.5			70.4			16.1			15.0	
Approach LOS		D			E			B			B	

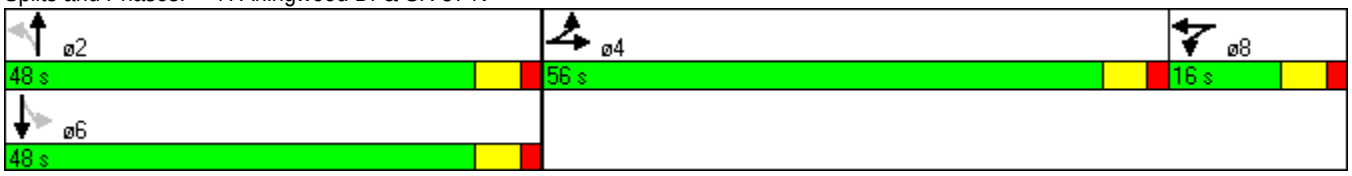
Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	48	56	48	16
Maximum Split (%)	40.0%	46.7%	40.0%	13.3%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	48	0	104
End Time (s)	48	104	48	0
Yield/Force Off (s)	42	98	42	114
Yield/Force Off 170(s)	33	78	42	114
Local Start Time (s)	0	48	0	104
Local Yield (s)	42	98	42	114
Local Yield 170(s)	33	78	42	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	208	2	45	138	637	4	1105	459	280	1105	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1860		1770	1863	1583	1770	3383		1770	3528	
Flt Permitted	0.50	1.00		0.27	1.00	1.00	0.23	1.00		0.06	1.00	
Satd. Flow (perm)	936	1860		505	1863	1583	426	3383		105	3528	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	226	2	49	150	692	4	1201	499	304	1201	26
RTOR Reduction (vph)	0	0	0	0	0	20	0	32	0	0	1	0
Lane Group Flow (vph)	28	228	0	49	150	672	4	1668	0	304	1226	0
Turn Type	Perm			Perm		pm+ov	Perm			pm+pt		
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	20.3	20.3		20.3	20.3	57.0	65.0	65.0		107.7	107.7	
Effective Green, g (s)	20.3	20.3		20.3	20.3	57.0	65.0	65.0		107.7	107.7	
Actuated g/C Ratio	0.15	0.15		0.15	0.15	0.41	0.46	0.46		0.77	0.77	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	136	270		73	270	712	198	1571		517	2714	
v/s Ratio Prot		0.12			0.08	c0.25		c0.49		0.15	0.35	
v/s Ratio Perm	0.03			0.10		0.18	0.01			0.30		
v/c Ratio	0.21	0.84		0.67	0.56	0.94	0.02	1.06		0.59	0.45	
Uniform Delay, d1	52.7	58.3		56.7	55.7	40.0	20.3	37.5		36.7	5.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	20.8		21.6	2.5	21.1	0.2	41.1		1.7	0.5	
Delay (s)	53.5	79.1		78.3	58.1	61.1	20.5	78.6		38.4	6.3	
Level of Service	D	E		E	E	E	C	E		D	A	
Approach Delay (s)		76.3			61.5			78.4			12.6	
Approach LOS		E			E			E			B	

Intersection Summary			
HCM Average Control Delay	51.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	4	6	8
Movement	SBL	NBTL	EBTL	SBTL	WBTL
Lead/Lag	Lead	Lag			
Lead-Lag Optimize	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None
Maximum Split (s)	41	71	28	112	28
Maximum Split (%)	29.3%	50.7%	20.0%	80.0%	20.0%
Minimum Split (s)	10	22	22	22	22
Yellow Time (s)	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5	5	5
Flash Dont Walk (s)		11	11	11	11
Dual Entry	No	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	99	0	71	99	71
End Time (s)	0	71	99	71	99
Yield/Force Off (s)	134	65	93	65	93
Yield/Force Off 170(s)	134	54	82	54	82
Local Start Time (s)	99	0	71	99	71
Local Yield (s)	134	65	93	65	93
Local Yield 170(s)	134	54	82	54	82

Intersection Summary	
Cycle Length	140
Control Type	Actuated-Coordinated
Natural Cycle	130
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 20: SR 87 Connector & SR 87 N

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	22	128	57	1140	0	776	9
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	139	62	1239	0	843	10
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked	0.83	0.83	0.83		0.00		
vC, conflicting volume	1592	427	853		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1294	0	398		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	80	84	94		0		
cM capacity (veh/h)	117	889	954		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	163	62	620	620	562	291	0
Volume Left	24	62	0	0	0	0	0
Volume Right	139	0	0	0	0	10	0
cSH	452	954	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.06	0.36	0.36	0.33	0.17	0.00
Queue Length 95th (ft)	41	5	0	0	0	0	0
Control Delay (s)	17.4	9.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	17.4	0.4			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

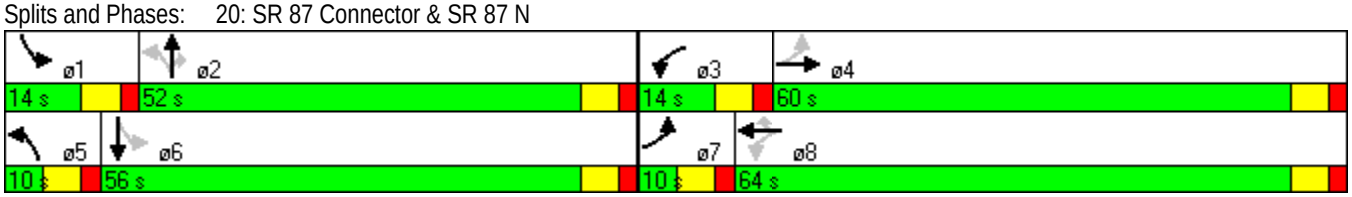
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	478	12	143	653	209	8	941	143	142	906	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1856		1770	1863	1583	1770	3539	1583	1770	3524	
Flt Permitted	0.08	1.00		0.15	1.00	1.00	0.16	1.00	1.00	0.09	1.00	
Satd. Flow (perm)	151	1856		271	1863	1583	305	3539	1583	173	3524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	520	13	155	710	227	9	1023	155	154	985	30
RTOR Reduction (vph)	0	1	0	0	0	72	0	0	63	0	1	0
Lane Group Flow (vph)	59	532	0	155	710	155	9	1023	92	154	1014	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	52.6	49.5		62.6	54.5	54.5	52.0	51.2	51.2	65.3	58.5	
Effective Green, g (s)	52.6	49.5		62.6	54.5	54.5	52.0	51.2	51.2	65.3	58.5	
Actuated g/C Ratio	0.37	0.35		0.44	0.39	0.39	0.37	0.36	0.36	0.46	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	92	652		207	721	612	121	1286	575	172	1463	
v/s Ratio Prot	0.01	0.29		c0.04	c0.38		0.00	0.29		c0.05	0.29	
v/s Ratio Perm	0.23			0.29		0.10	0.03		0.06	c0.36		
v/c Ratio	0.64	0.82		0.75	0.98	0.25	0.07	0.80	0.16	0.90	0.69	
Uniform Delay, d1	36.1	41.6		29.9	42.8	29.4	29.9	40.2	30.3	29.6	33.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.3	7.8		13.8	29.5	0.2	0.3	5.2	0.6	39.9	2.7	
Delay (s)	50.4	49.4		43.7	72.3	29.6	30.1	45.3	30.9	69.5	36.6	
Level of Service	D	D		D	E	C	C	D	C	E	D	
Approach Delay (s)		49.5			59.3			43.3			40.9	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	47.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	14	52	14	60	10	56	10	64
Maximum Split (%)	10.0%	37.1%	10.0%	42.9%	7.1%	40.0%	7.1%	45.7%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	14	66	80	0	10	66	76
End Time (s)	14	66	80	0	10	66	76	0
Yield/Force Off (s)	8	60	74	134	4	60	70	134
Yield/Force Off 170(s)	8	49	74	123	4	49	70	123
Local Start Time (s)	126	0	52	66	126	136	52	62
Local Yield (s)	134	46	60	120	130	46	56	120
Local Yield 170(s)	134	35	60	109	130	35	56	109

Intersection Summary	
Cycle Length	140
Control Type	Semi Act-Uncoord
Natural Cycle	90

Splits and Phases: 20: SR 87 Connector & SR 87 N



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	917	1	3	1	4	8	6	555	0	16	551	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00			1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.89			0.91		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3433	1653			1695		1752	3505		1770	3500	
Flt Permitted	0.95	1.00			1.00		0.34	1.00		0.36	1.00	
Satd. Flow (perm)	3433	1653			1695		622	3505		674	3500	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	997	1	3	1	4	9	7	603	0	17	599	48
RTOR Reduction (vph)	0	2	0	0	9	0	0	0	0	0	4	0
Lane Group Flow (vph)	997	2	0	0	5	0	7	603	0	17	643	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Split			Split			Perm			Perm		
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	44.1	44.1			3.3		54.6	54.6		54.6	54.6	
Effective Green, g (s)	44.1	44.1			3.3		54.6	54.6		54.6	54.6	
Actuated g/C Ratio	0.37	0.37			0.03		0.46	0.46		0.46	0.46	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	1262	607			47		283	1595		307	1593	
v/s Ratio Prot	c0.29	0.00			c0.00			0.17			c0.18	
v/s Ratio Perm							0.01			0.03		
v/c Ratio	0.79	0.00			0.11		0.02	0.38		0.06	0.40	
Uniform Delay, d1	33.8	24.0			56.9		18.0	21.5		18.3	21.8	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	0.0			1.4		0.2	0.7		0.1	0.2	
Delay (s)	37.5	24.0			58.4		18.2	22.2		18.4	22.1	
Level of Service	D	C			E		B	C		B	C	
Approach Delay (s)		37.4			58.4			22.2			22.0	
Approach LOS		D			E			C			C	

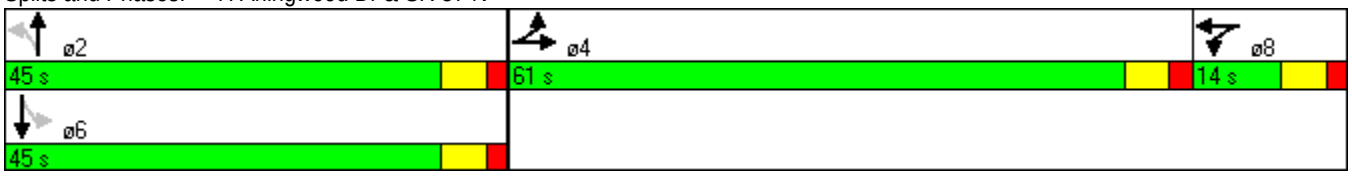
Intersection Summary			
HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	Ped	Min	None
Maximum Split (s)	45	61	45	14
Maximum Split (%)	37.5%	50.8%	37.5%	11.7%
Minimum Split (s)	20	14	22	14
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	8	10	8
Vehicle Extension (s)	4	4	4	4
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	5	12		
Flash Dont Walk (s)	9	20		
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	45	0	106
End Time (s)	45	106	45	0
Yield/Force Off (s)	39	100	39	114
Yield/Force Off 170(s)	30	80	39	114
Local Start Time (s)	0	45	0	106
Local Yield (s)	39	100	39	114
Local Yield 170(s)	30	80	39	114

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green	

Splits and Phases: 7: Arlingwood Dr & SR 87 N



Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (veh/h)	8	105	118	763	0	1173	26
Sign Control	Stop			Free		Free	
Grade	0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	114	128	829	0	1275	28
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type				None		None	
Median storage veh)							
Upstream signal (ft)						1307	
pX, platoon unblocked	0.83	0.83	0.83		0.00		
vC, conflicting volume	1960	652	1303		0		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1749	173	958		0		
tC, single (s)	6.9	7.0	4.1		0.0		
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2		0.0		
p0 queue free %	82	84	78		0		
cM capacity (veh/h)	49	693	593		0		

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	123	128	415	415	850	453	0
Volume Left	9	128	0	0	0	0	0
Volume Right	114	0	0	0	0	28	0
cSH	359	593	1700	1700	1700	1700	1700
Volume to Capacity	0.34	0.22	0.24	0.24	0.50	0.27	0.00
Queue Length 95th (ft)	37	20	0	0	0	0	0
Control Delay (s)	20.1	12.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	B					
Approach Delay (s)	20.1	1.7			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

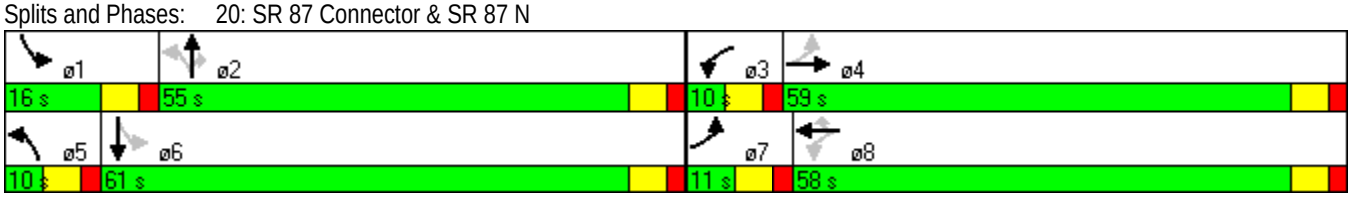
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	487	11	38	356	226	9	876	156	119	792	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1857		1770	1863	1583	1770	3539	1583	1770	3524	
Flt Permitted	0.28	1.00		0.10	1.00	1.00	0.26	1.00	1.00	0.15	1.00	
Satd. Flow (perm)	515	1857		184	1863	1583	491	3539	1583	285	3524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	529	12	41	387	246	10	952	170	129	861	26
RTOR Reduction (vph)	0	1	0	0	0	99	0	0	71	0	1	0
Lane Group Flow (vph)	65	540	0	41	387	147	10	952	99	129	886	0
Turn Type	pm+pt			pm+pt		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	45.1	41.3		43.5	40.5	40.5	55.4	54.7	54.7	69.8	63.1	
Effective Green, g (s)	45.1	41.3		43.5	40.5	40.5	55.4	54.7	54.7	69.8	63.1	
Actuated g/C Ratio	0.34	0.31		0.33	0.31	0.31	0.42	0.41	0.41	0.53	0.48	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	212	581		97	571	485	213	1465	655	253	1683	
v/s Ratio Prot	0.01	c0.29		c0.01	0.21		0.00	c0.27		c0.04	c0.25	
v/s Ratio Perm	0.10			0.13		0.09	0.02		0.06	0.23		
v/c Ratio	0.31	0.93		0.42	0.68	0.30	0.05	0.65	0.15	0.51	0.53	
Uniform Delay, d1	31.3	44.0		34.5	40.1	35.0	22.8	31.0	24.2	20.2	24.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	21.4		3.0	3.2	0.4	0.1	2.2	0.5	1.6	1.2	
Delay (s)	32.2	65.4		37.5	43.3	35.4	22.9	33.3	24.7	21.8	25.3	
Level of Service	C	E		D	D	D	C	C	C	C	C	
Approach Delay (s)		61.8			40.0			31.9			24.8	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	132.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	16	55	10	59	10	61	11	58
Maximum Split (%)	11.4%	39.3%	7.1%	42.1%	7.1%	43.6%	7.9%	41.4%
Minimum Split (s)	10	22	10	22	10	22	10	22
Yellow Time (s)	4	4	4	4	4	4	4	4
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	4	4	4	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		5		5		5		5
Flash Dont Walk (s)		11		11		11		11
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	71	81	0	10	71	82
End Time (s)	16	71	81	0	10	71	82	0
Yield/Force Off (s)	10	65	75	134	4	65	76	134
Yield/Force Off 170(s)	10	54	75	123	4	54	76	123
Local Start Time (s)	124	0	55	65	124	134	55	66
Local Yield (s)	134	49	59	118	128	49	60	118
Local Yield 170(s)	134	38	59	107	128	38	60	107

Intersection Summary	
Cycle Length	140
Control Type	Semi Act-Uncoord
Natural Cycle	90

Splits and Phases: 20: SR 87 Connector & SR 87 N



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