APPENDIX 10.5

MONITORING PROGRAMS

APPENDIX 10.5-1

CALIBRATION CERTIFICATES FOR NOISE MONITORING EQUIPMENT

Certificate of Calibration and Conformance

Certificate Number 2006-79080

Instrument Model 824, Serial Number 0366, was calibrated on 14APR2006. The instrument meets factory specifications per Procedure D0001.8046, IEC 61672-1:2002 Class 1; IEC 60651-2001, 60804-2000 and ANSI S1.4-1983 Type 1 1/3, 1/1 Oct. Filters; S1.11-1986 Type 1C; IEC61260-am1-2001 Class 1 .

Instrument found to be in calibration as received: NO
Date Calibrated: 14APR2006
Calibration due: 14APR2007

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0248 / 0107	12 Months	12JAN2007	2006-75919

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 25 ° Centigrade

Relative Humidity: 26 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Corporate Headquarters. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

See "As received" data.
Tested with PRM902 S/N 0699

Signed: Nick Rasmussen
Technician: Nick Rasmussen

Larson Davis A PCB GROUP CO.

Larson Davis, Inc. is an ISO 9001-2000 Registered Company

1681 West 820 North • Provo, UT 84601 U.S.A. • 801.375.0177 • Fax: 801.375.0182 • www.larsondavis.com

Certificate of Calibration and Conformance

Certificate Number 2006-78969

Microphone Model 2560, Serial Number 2814, was calibrated on 12APR2006. The microphone meets current factory specifications per Test Procedure D0001.8167.

Instrument found to be in calibration as received: YES
Date Calibrated: 12APR2006
Calibration due: 12APR2007

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	CAL250	0102	12 Months	26MAY2006	2005-69011
Larson Davis	2900	0575	12 Months	28JUN2006	2005-69833
Larson Davis	2559	3034LE	12 Months	31AUG2006	2005-71985
Larson Davis	PRM902	0529	12 Months	01SEP2006	2005-71766
Larson Davis	PRM902	0528	12 Months	01SEP2006	2005-71734
Larson Davis	MTS1000 / 2201	1000 / 0101	12 Months	08SEP2006	2005-0908-2
Larson Davis	PRM915	0102	12 Months	07NOV2006	2005-73818
Larson Davis	PRM902	0206	12 Months	07NOV2006	2005-73826
Larson Davis	PRM916	0102	12 Months	07NOV2006	2005-73819
Hewlett Packard	34401A	3146A62099	12 Months	10NOV2006	285335
Larson Davis	2559	3026	12 Months	08FEB2007	13866-1

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Environmental test conditions as printed on microphone calibration chart.

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Corporate Headquarters. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As Received" data is the same as shipped data.

Signed: Scott Montgomery

Technician: Scott Montgomery

Larson Davis A PCB GROUP CO.

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APPENDIX 10.6

TRAFFIC STUDY

TRAFFIC IMPACT STUDY

PROGRESS ENERGY
CR 3 UPRATE PROJECT
CRYSTAL RIVER ENERGY COMPLEX
Citrus County, Florida

400 North Tampa Street
Suite 1140
Tampa, FL 33602
Ph: 813-386-3630
Fax: 813-386-3635

Prepared For:
Progress Energy

June 7, 2007

GOLAS00-07219

TRAFFIC IMPACT STUDY

PROGRESS ENERGY
CR 3 UPRATE PROJECT
CRYSTAL RIVER ENERGY COMPLEX
Citrus County, Florida

400 North Tampa Street
Suite 1140
Tampa, FL 33602
Ph: 813-386-3630
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TRAFFIC IMPACT STUDY
PROGRESS ENERGY
CR3 UPRATE PROJECT
CRYSTAL RIVER ENERGY COMPLEX
Citrus County, Florida

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INTRODUCTION

Trans Associates (TA) has completed a traffic impact study for the proposed capacity expansion of the existing Unit 3 at Crystal River Energy Complex (CREC) located on West Power Line Road approximately 3.7 miles west of US-19/US -98 in Citrus County, Florida. The CR3 Uprate project represents a modernization of the facility to allow it to produce additional electricity. The purpose of this study is to identify the potential traffic impacts from the construction and operation of the proposed expansion and to identify any necessary mitigation measures that will provide satisfactory access to the site while maintaining acceptable traffic operations within the study area.

The following sections of this report detail with the methodology, project description, data collection of existing conditions, site traffic generation and distribution, existing and projected traffic volumes, traffic analysis, and conclusions/recommendations.

METHODOLOGY

The Progress Energy CR3 Uprate Project traffic impact study is prepared consistent with the Florida Department of Transportation study requirements and the Citrus County Traffic Study Guidelines towards the proposed full build-out year of 2013. The traffic impact study encompasses the following study elements:

- Trip Generation
- Transportation Study Impact Area
- Existing Conditions
- Background/Vested Traffic Projections
- Project Traffic Assignment
- Total Traffic Volumes and Conditions
- Report Documentation

PROJECT DESCRIPTION/DATA COLLECTION/EXISTING CONDITIONS

Project Description

As shown in Figure 1, the site is located on West Power Line Street approximately 3.7 miles west of US-19/US-98 in Citrus County, Florida. The Crystal River Energy Center (CREC) site currently has 1,400 employees and 125 daily truck trips. The numbers of employees, construction crews, and truck traffic is expected to vary between 2007 and 2011. At the conclusion of the uprate project in 2011, no additional employees are anticipated.

Table 1 summarizes the anticipated variation in employment and truck traffic between 2007 – 2012. In 2009, 650 temporary employees are anticipated for the construction of the CR3 project along with 600 temporary employees required for construction of the Crystal River Clean Air Project (CRCA) for Units 4 and 5 at the site, and 800 required for construction associated with the CR3 Steam Generator Replacement Project during only the 3rd and 4th quarters. An additional 200 daily construction truck trips are also anticipated during the 2009 year. Therefore, for approximately between one-two months in 2009, the Crystal River Energy Complex (CREC) may have a combined total of 2,050 employees, 1,400 construction employees, 125 daily truck trips, and 200 daily construction truck trips.

After completion of the uprate project, the CREC will have a total of 1,400 permanent employees and 285 daily truck trips. The additional 160 truck trips are projected as part of the CR4 and 5 Operations (which is already approved). These truck trips, however, are not part of the new CR3 uprate project trips and are considered background traffic for this analysis.

Traffic analyses have been performed for both the 2009 and the 2012 scenarios. The 2009 year represents the highest volume for traffic from the CREC, and the build-out (operational) year is 2012.

PLOTTED: $$date$$

N SCALE: N.T.S.	Trans Associates Transportation Solutions for Today and Tomorrow Park Tower Suite 1140 /400 North Tampa Street Tampa, Florida 33602 /(813) 386-3630	PROJECT NO. GOLAS00-07199 PROJECT: Progress Energy Uprate TITLE: Proposed Site Location	FIGURE 1 D.B. N.A.S. C.B. N.A.S. REV.

FILE NAME: $$designfile$$

[Home use only]

Table 1: CREC Employee Data (Permanent and Temporary)

	2007	2008	2009	2010	2011	2012
Existing project Information						
CREC	1,400	1,400	1,400	1,400	1,400	1,400
CR3 Refueling Outages[1]	800	--	800	--	800	--
CRCA Construction[2]	600	600	600	--	--	--
CR 4 and 5 Operations[3]	125	125	125	285	285	285
SGRP[4]	--	--	800	--	--	--
CR3 Uprate Project Information						
Uprate Project	305	400	650	405	580	--
Uprate Project (construction trucks)	--	--	200	200	200	--

1. Employees anticipated onsite during 4Q only.
2. Construction employees associated with Crystal River Clean Air (CRCA) Project (Icon, 2006).
3. Truck trips associated with operation of the additional pollution control equipment on CR 4 and 5.
4. Construction employees associated with CR3 Steam Generator Replacement Project during 3 and 4 Q only.
5. Construction trucks do not operate/arrive during outage periods.

West Power Line Road is a two lane east-west roadway and provides the only public roadway access to the site. Thus, the traffic on West Power Line Road comes primarily to/from the CREC. Therefore, the site provides a good opportunity to obtain a trip generation rate for the existing CREC.

Data Collection

The intersection of US-19/US-98 & West Power Line Road has been studied as part of this traffic impact study in accordance with the Florida Department of Transportation requirements. Moreover, the US-19/US-98 roadway segment north and south of the US-19/US-98 & West Power Line Road intersection has also been studied for project impact.

A.M. as well as P.M. Peak Hour analysis has been conducted as part of the traffic impact study. Manual turning movement counts were performed at the existing study intersection for a three hour duration during a typical weekday between the hours of 6:00 – 9:00 A.M. and 3:00 - 6:00 P.M.

The raw turning movement counts were then multiplied by the FDOT seasonal adjustment factor. The seasonal adjustment factor as obtained from 2005 Florida Traffic Information System (FTIS) CD for the week when the count was performed. The intersection peak hour (four consecutive 15-minute periods comprising the highest volume) as determined by the traffic counts occurred between 6:15 – 7:15 in the A.M. and between 4:45 – 5:45 in the P.M. The 2007 existing peak hour traffic volumes are presented in Figure 2 for the A.M. and P.M. peak hours. The manual turning movement counts are included in Appendix A.

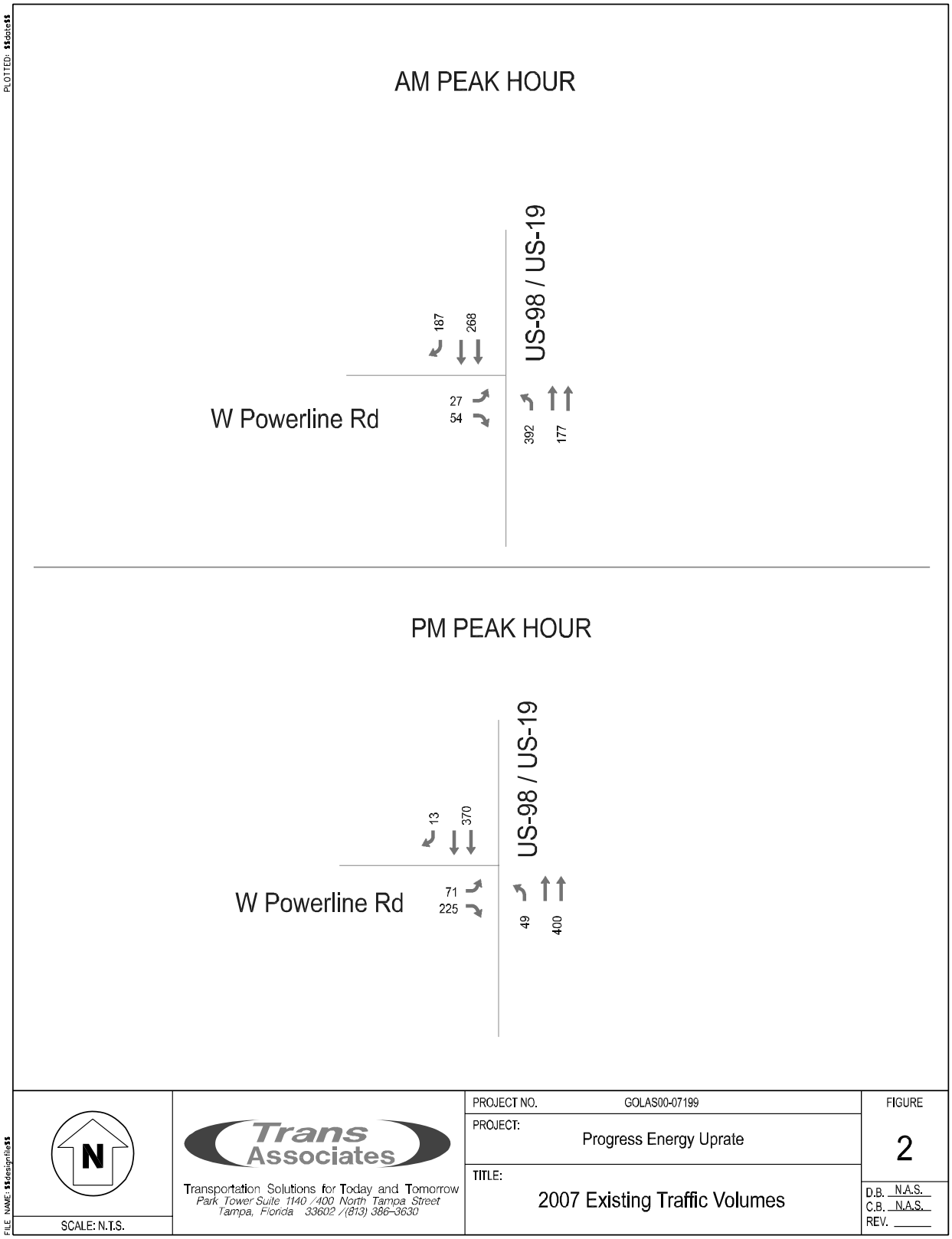
Existing Conditions

A field reconnaissance of the study area was conducted to obtain information on lane configurations, posted speed limits, traffic signal timings, and other pertinent features. The following provides a brief description of the study area roadways.

US-19 / US-98 is a state maintained, northbound-southbound principal rural arterial. Within the study area the roadway has a posted speed limit of 60 miles per hour (mph). At the intersection with West Power Line Road, the US 19/US-98 northbound approach consists of one exclusive left turn, and two through lanes. The southbound approach consists of two through lanes and one dedicated right turn lane. The traffic signal control at the intersection with West Power Line Road is actuated-uncoordinated with a variable cycle length.

West Power Line Road is an eastbound-westbound roadway and is used for access to and from the existing power plant. Within the study area West Power Line Road has a 55 mph posted speed limit. At the intersection with US-19/US-98, the West Power Line Road eastbound approach consists of one left turn and one right lane. The traffic signal control at the intersection with US-19/US-98 is actuated-uncoordinated with a variable cycle length.

It was observed during data collection that approximately half of the eastbound right turning vehicles made a right turn on red as large gaps in southbound traffic on US-19/US-98 are available. The intersection is designed as a three leg approach intersection.


PLOTTED: $$date$$
AM PEAK HOUR
US-98 / US-19
187
268
W Powerline Rd
27
54
392
177
PM PEAK HOUR
US-98 / US-19
13
370
W Powerline Rd
71
225
49
400
FILE NAME: $$designfile$$
N
SCALE: N.T.S.
Trans Associates
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Park Tower Suite 1140 / 400 North Tampa Street
Tampa, Florida 33602 / (813) 386-3630
PROJECT NO. GOLAS00-07199
PROJECT: Progress Energy Uprate
TITLE: 2007 Existing Traffic Volumes
FIGURE 2
D.B. N.A.S.
C.B. N.A.S.
REV.

[1]

SITE TRAFFIC GENERATION AND DISTRIBUTION

Vehicle Trip Generation

As per the *Trip Generation, 7th Edition*, published by the Institute of Transportation Engineers (ITE), none of the available land use categories accurately describe the characteristics of an energy plant. Thus, trip generation rates based on the existing traffic and number of employees were used for the current analysis. As presented in the *"Progress Energy Crystal River Energy Complex: Traffic Access Analysis Clean Air Project"* prepared in April 2006, the site currently has 1,400 employees. The total peak hour passenger car trips obtained from field data collection were divided by the total number of employees (1,400) to obtain the passenger car trip generation rates which were used to forecast the total number of passenger car trips resulting from the proposed expansion. In addition, the total peak hour numbers of truck trips obtained from field data collection were divided by the total number of trucks (125) to obtain the truck trip generation rates which were used to forecast the total number of truck trips resulting from the proposed increase in truck activity. A summary of the existing and future trip generation calculations are presented in Table 2 below:

Table 2: Trip Generation Summary

TIME PERIOD	Existing Passenger Car Trips (1,400 employees)		Trip Rates (trips/employee)		2009 Additional CR3 Project Generated Trips (650 additional temporary employees + 1,400 construction employees compared to existing conditions)		2012 Additional CR3 Project Generated Trips (as compared to existing conditions)	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
A.M. PEAK HOUR	569	75	0.406	0.054	832	111	0	0
P.M. PEAK HOUR	58	291	0.041	0.208	84	426	0	0
TIME PERIOD	Existing Truck Trips (125 trucks)		Trip Rates (trips/truck)		2009 Additional CR3 Project Generated Trips (200 additional construction truck trips)		2012 Additional Project Generated Background Trips for CR 4 & 5 (160 additional truck trips)*	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
A.M. PEAK HOUR	10	6	0.080	0.048	16	10	13	8
P.M. PEAK HOUR	4	5	0.032	0.040	6	8	5	6
TOTAL A.M. PEAK HOUR	579	81	--	--	848	121	13	8
TOTAL P.M. PEAK HOUR	62	296	--	--	90	434	5	6

*Note: the 160 additional truck trips for CR4 & 5 were included in the 2012 background traffic volumes. These trips are not associated with the CR3 Uprate project.

After completion of the uprate project, the CREC will have a total of 1,400 permanent employees and 285 daily truck trips. The additional 160 truck trips are projected as part of the CR4 and 5 Operations (which is already approved). These truck trips, however, are not included in the new CR3 uprate project trips and are considered background traffic for this analysis. Therefore, for the 2012 conditions, no new external site-generated trips are projected as compared to the 2007 existing conditions.

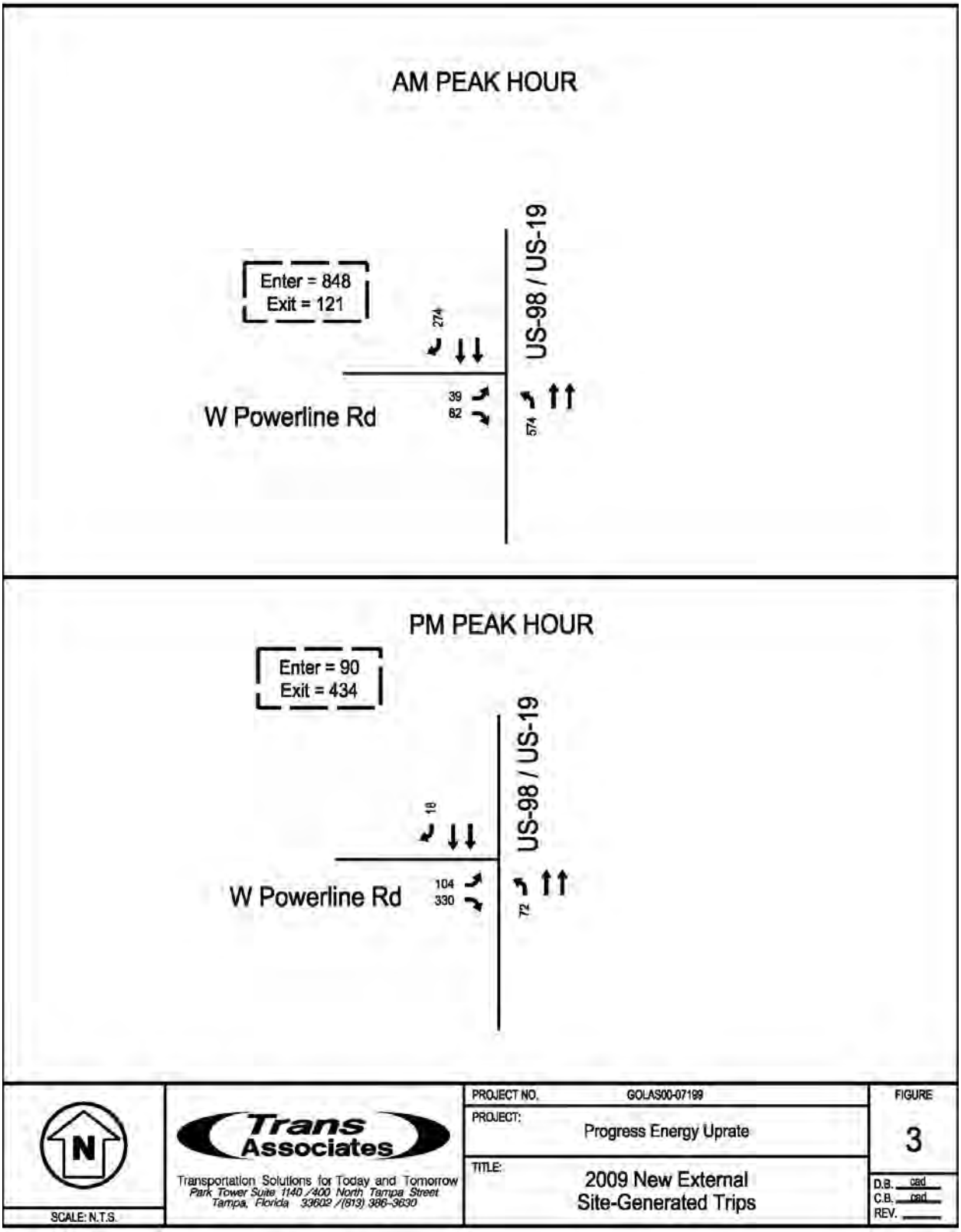
Site Traffic Distribution

The arrival/departure distribution of the project site traffic was based on the existing traffic volumes of the study area. The percentage of new project traffic arriving/departing has been distributed as presented in Table 3 below:

Table 3: Total Project Traffic Arrival / Departure Pattern

To/From	A.M. Peak Hour		P.M. Peak Hour	
	Arriving	Departing	Arriving	Departing
South on US-19/US-98	67.7%	66.7%	79.0%	76.0%
North on US-19/US-98	32.3%	33.3%	21.0%	24.0%
Total	100.0%	100.0%	100.0%	100.0%

The net external site generated trips are presented in Figure 3.


AM PEAK HOUR
Enter = 848
Exit = 121
274
US-98 / US-19
W Powerline Rd
39
82
574
PM PEAK HOUR
Enter = 90
Exit = 434
18
US-98 / US-19
W Powerline Rd
104
330
72
N
SCALE: N.T.S.
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Tampa, Florida 33602 /(813) 386-3630
PROJECT NO. GOLAS00-07199
PROJECT: Progress Energy Uprate
TITLE: 2009 New External Site-Generated Trips
FIGURE
3
D.B. cad
C.B. cad
REV.

PROJECTED TRAFFIC VOLUMES

Traffic volumes were projected for the 2012 full build-out year and also during the 2009 when additional construction traffic is present. Existing 2007 traffic volumes were increased using a linear 3.1 percent annual growth rate, which was calculated based upon the previous five years (2002 – 2006) annual average daily traffic (AADT) volumes for the US-19/US-98. Data to identify the existing 2006 AADT came from the FDOT Central Office while historical AADT's were obtained from the most recent edition of the Florida DOT Florida Traffic Information (FTI) CD for counter #0250 located at SR55/US19, North of CR488/Dunnellon Rd in Citrus County. Background growth rate calculations are included in Appendix B.

2009 No Build Traffic Volumes

The 2009 no build (without project traffic) traffic volumes, shown in Figure 4, were derived by applying the aforementioned growth rate of 3.1% per year compounded to the 2007 existing traffic volumes (Figure 2).

2012 No Build Traffic Volumes

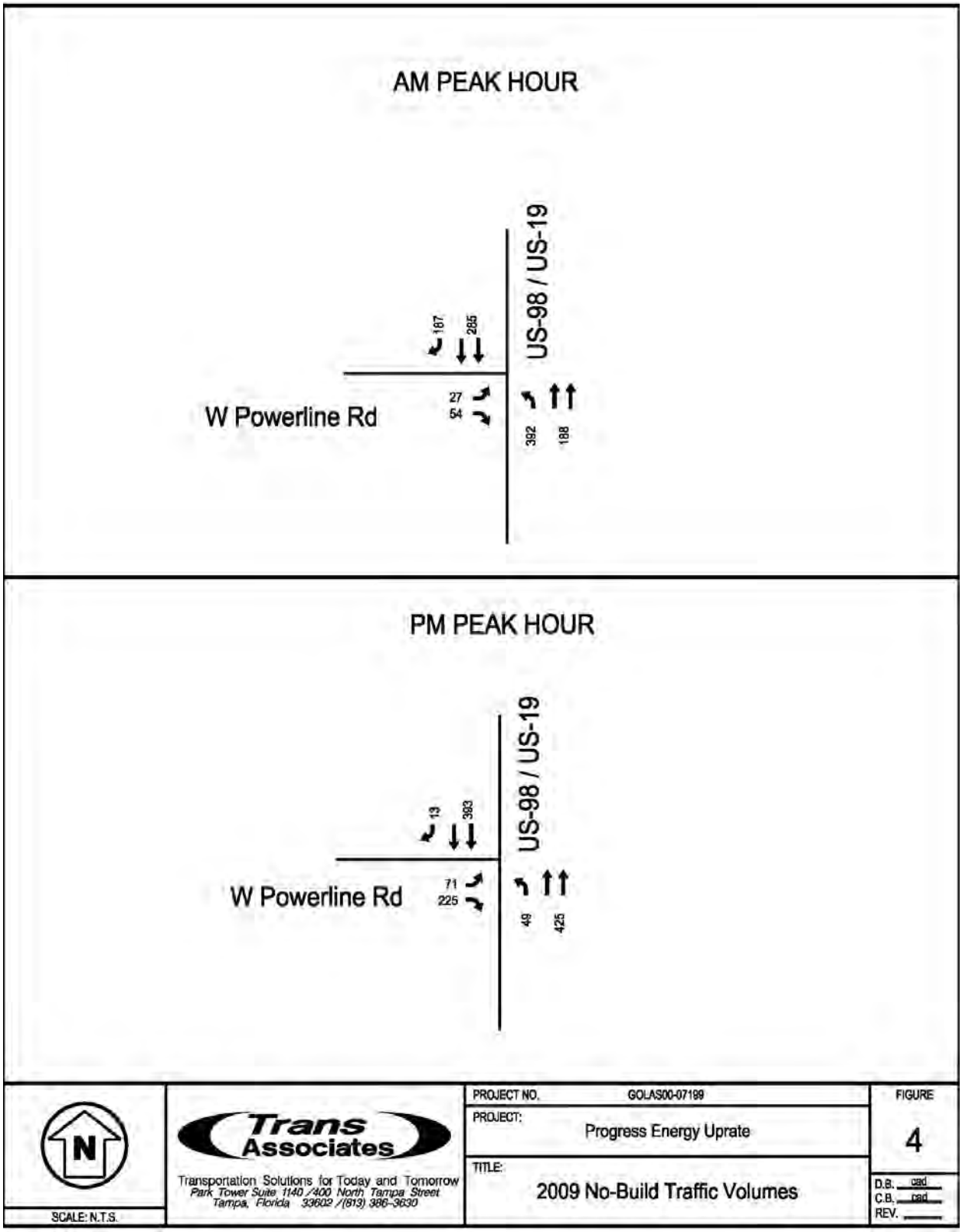
The 2012 no build (without project traffic) traffic volumes, shown in Figure 5, were derived by applying the aforementioned growth rate of 3.1% per year compounded to the 2007 existing traffic volumes (Figure 2).

2009 Build Traffic Volumes

The 2009 build (with project traffic) traffic volumes, shown in Figure 6, were derived by adding the Progress Energy Uprate project generates trips (Figure 3) to the 2009 no build traffic volumes (Figure 4).

2012 Build Traffic Volumes

The 2012 build (with project traffic) traffic volumes, shown in Figure 7, result in the same traffic volumes as the 2012 No Build traffic volumes. This is due to the fact that after completion of the CR3 project, all temporary employees and construction employees will be gone, leaving only the original 1,400 permanent employees.


AM PEAK HOUR
US-98 / US-19
167
285
27
54
W Powerline Rd
392
188
PM PEAK HOUR
US-98 / US-19
13
393
71
225
W Powerline Rd
49
425
N
SCALE: N.T.S.
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PROJECT NO. GOLAS00-07199
PROJECT: Progress Energy Uprate
TITLE: 2009 No-Build Traffic Volumes
FIGURE 4
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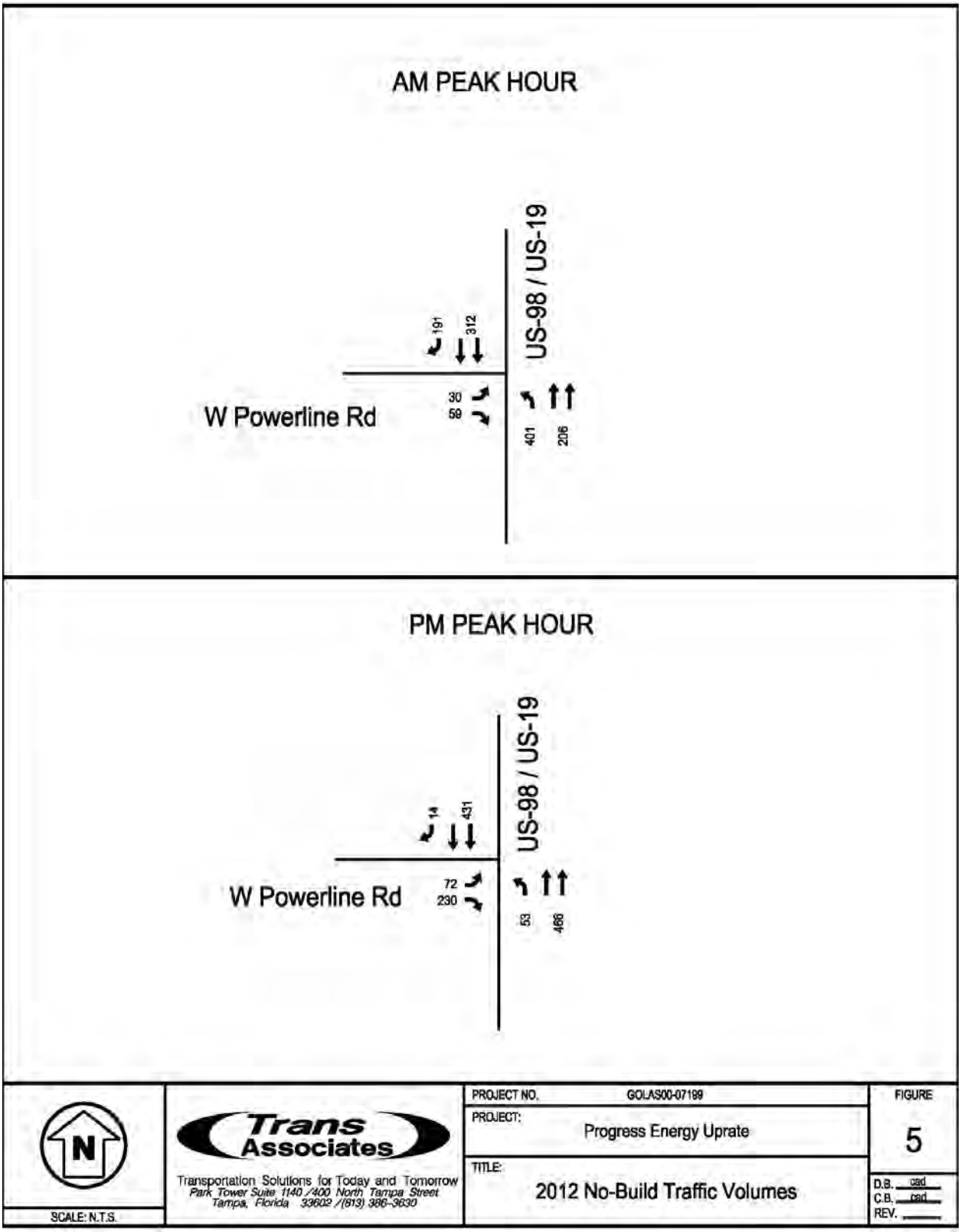
C.B. cad
REV.


AM PEAK HOUR
US-98 / US-19
191
312
30
59
W Powerline Rd
401
206
PM PEAK HOUR
US-98 / US-19
14
431
72
230
W Powerline Rd
53
466
N
SCALE: N.T.S.
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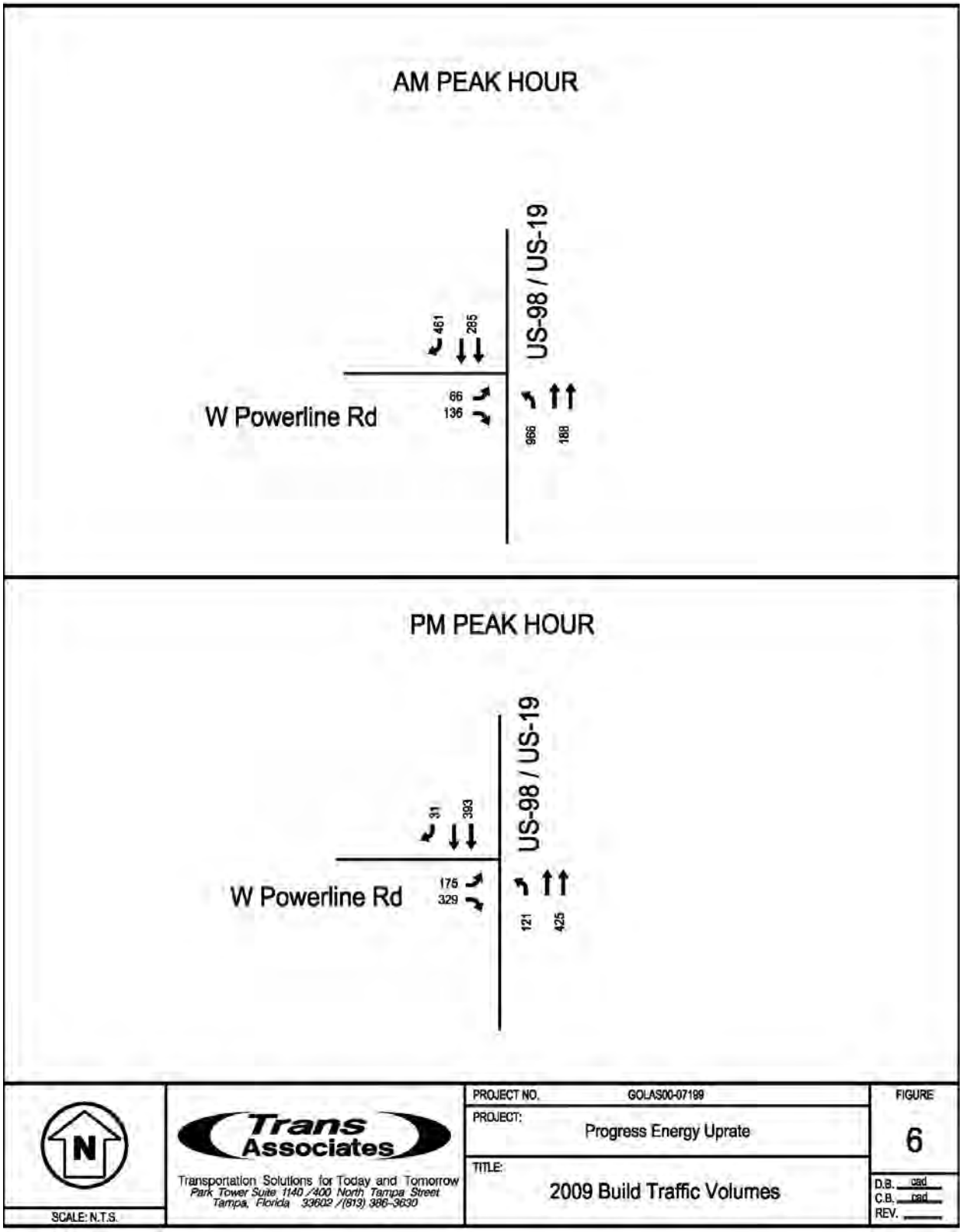
Tampa, Florida 33602 /(813) 386-3630
PROJECT NO. GOLAS00-07199
PROJECT: Progress Energy Uprate
TITLE: 2012 No-Build Traffic Volumes
FIGURE
5
D.B. cad
C.B. cad
REV.


AM PEAK HOUR
US-98 / US-19
461
285
W Powerline Rd
66
136
966
188
PM PEAK HOUR
US-98 / US-19
31
393
W Powerline Rd
175
329
121
425
N
SCALE: N.T.S.
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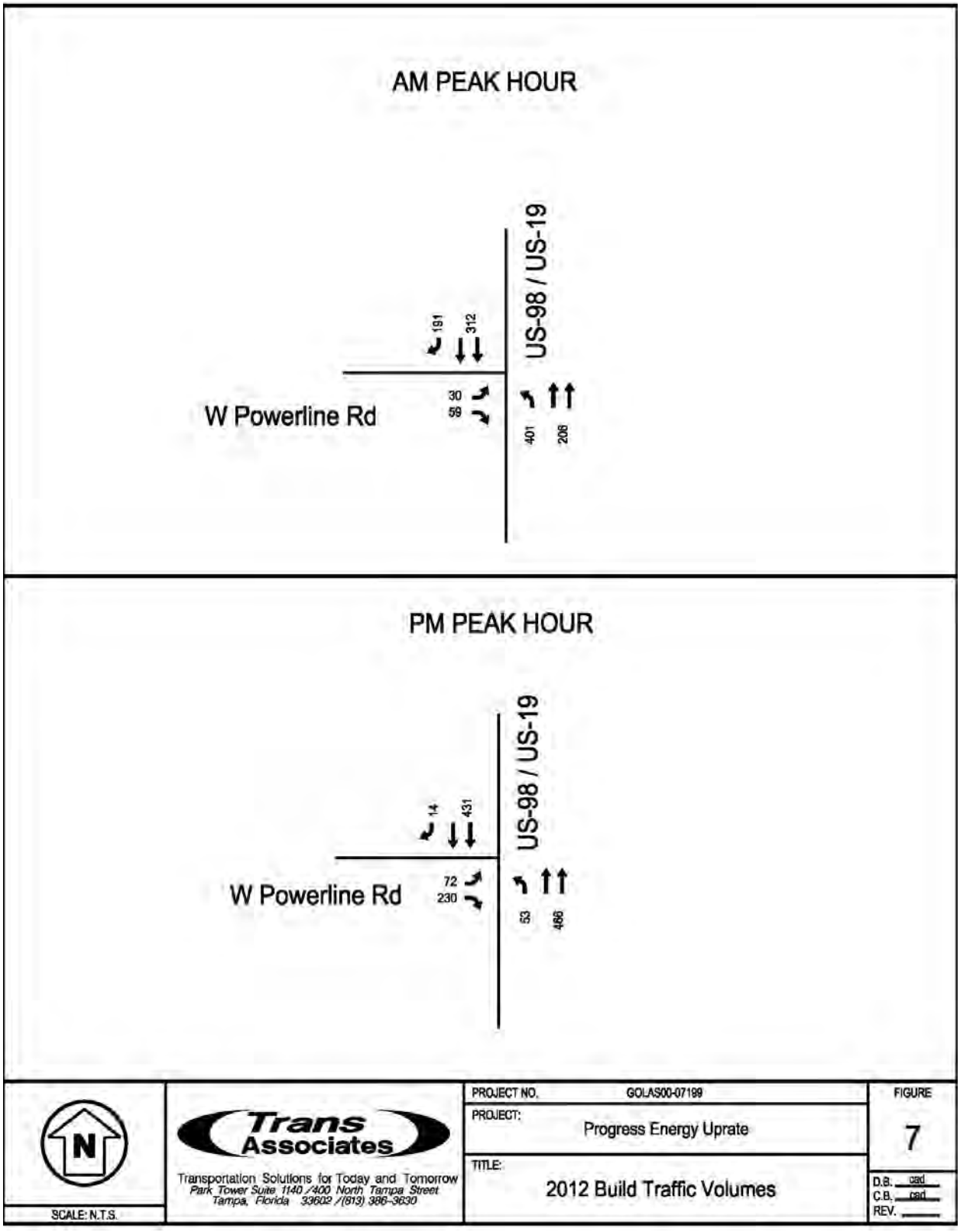
PROJECT NO. GOLAS00-07199
PROJECT: Progress Energy Uprate
TITLE: 2009 Build Traffic Volumes
FIGURE
6
D.B. cad
C.B. cad
REV.


AM PEAK HOUR
US-98 / US-19
W Powerline Rd
191
312
30
59
401
206
PM PEAK HOUR
US-98 / US-19
W Powerline Rd
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230
53
486
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SCALE: N.T.S.
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Tampa, Florida 33602 /(813) 386-3630
PROJECT NO. GOLAS00-07199
PROJECT: Progress Energy Uprate
TITLE: 2012 Build Traffic Volumes
FIGURE
7
D.B. cad
C.B. cad
REV.

TRAFFIC ANALYSIS

The analyses performed included a capacity analysis of the study intersections, roadway capacity analysis, and turn lane length calculations at the US-19/US-98 & West Power Line Road intersection.

Intersection Capacity Analysis

Intersection capacity analyses were performed for the following three conditions:

- 2007 existing conditions
- 2009 no build conditions without project traffic
- 2012 no build conditions without project traffic
- 2009 build conditions with project traffic
- 2012 build conditions with project traffic

Levels of Service (LOS) were determined at the study intersections using the methodologies contained in the 2000 Highway Capacity Manual and the supporting Synchro Traffic Signal Coordination Software version 7. LOS A through F are determined as a ranking system for the operations with LOS A representing short delays and LOS F representing long delays.

Table 4 summarizes the A.M. and P.M. peak hour LOS for the study intersection for each of the study conditions.

2007 Existing Conditions - Existing intersection geometry, traffic volumes (Figure 3), and signal timings (without optimization) were used for this analysis. The intersection is found to currently operate at LOS of B during the A.M. peak hour and at LOS A during the P.M. peak hour. Moreover, all the movements are observed to operate at LOS D or better in both analysis periods. The LOS for each scenario is presented in Table 4. Capacity analysis printouts for the 2007 existing condition are included in Appendix C.

2009 No Build Conditions Without Proposed CR3 Uprate - Existing intersection geometry, optimized signal timings, and the forecasted traffic volumes from Figure 4 were used for this analysis. For this future scenario, a southbound right turn overlap phase that occurs during the eastbound phase was added to take advantage of the existing southbound exclusive right turn lane. This can allow the intersection to operate with even greater efficiency. As determined by the analyses performed, the intersection is projected to operate at LOS B during the A.M. peak hour and at LOS of A during the P.M. peak hour. Moreover, all the movements are observed to operate at LOS D or better in both analysis periods. The LOS for the 2009 no build conditions without the proposed project expansion are presented in Table 4. Capacity analysis printouts for the 2009 no build conditions are included in Appendix C.

2012 No Build Conditions Without Proposed CR3 Uprate - Existing intersection geometry, optimized signal timings, and the forecasted traffic volumes from Figure 5 were used for this analysis. The additional 160 truck trips projected as part of the CR4 and 5 Operations (which is already approved) were included in the 2012 No Build scenario traffic volumes since they are not part of the CR3 Uprate. For this future scenario, a southbound right turn overlap phase that occurs during the eastbound phase was added to take advantage of the existing southbound exclusive right turn lane. This can allow the intersection to operate with even greater efficiency. As determined by the analyses performed, the intersection is projected to operate at LOS B during the A.M. peak hour and at LOS A

during the P.M. peak hour. Moreover, all the movements are observed to operate at LOS D or better in both analysis periods. The LOS for the 2012 no build conditions without the proposed project expansion are presented in Table 4. Capacity analysis printouts for the 2012 no build conditions are included in Appendix C.

2009 Build Conditions With Proposed CR3 Uprate – This condition represents the greatest demand at the signalized intersection, but also represents a temporary condition due to construction. 600 construction employees as part of the Crystal River Clean Air Project will be finishing up their work during this year. In addition, 800 construction employees associated with the CR3 Steam Generator Replacement Project will occur only during the 3rd and 4th quarters of 2009. These conditions are expected for a one-two month duration in 2009. Existing intersection geometry, optimized signal timings, and forecasted traffic volumes from Figure 6 were used for this analysis. For this future scenario, a southbound right turn overlap phase that occurs during the eastbound phase was added to take advantage of the existing southbound exclusive right turn lane. This will allow the intersection to operate with greater efficiency. As determined by the analyses performed, the intersection is projected to operate at LOS D during the A.M. peak hour and at LOS B during the P.M. peak hour. Moreover, all the movements are observed to operate at LOS E or better during the A.M. peak hour and at LOS D or better for the P.M. peak hour. Capacity analysis results are summarized in Table 4. Detailed Synchro capacity analysis results for 2009 build conditions are provided in Appendix C.

2012 Build Conditions With Proposed CR3 Uprate – This condition represents the total build-out condition. Existing intersection geometry, optimized signal timings, and forecasted traffic volumes from Figure 7 were used for this analysis. After completion of the uprate project, the CREC will have a total of 1,400 permanent employees and 285 daily truck trips. The additional 160 truck trips are projected as part of the CR4 and 5 Operations (which is already approved). These truck trips, however, are not included in the new CR3 uprate project trips and are considered background traffic (2012 No Build) for this analysis. Therefore, for the 2012 conditions, no new external site-generated trips are projected as compared to the 2007 existing conditions. For this future scenario, a southbound right turn overlap phase that occurs during the eastbound phase was added to take advantage of the existing southbound exclusive right turn lane. This will allow the intersection to operate with greater efficiency. As determined by the analyses performed, the intersection is projected to operate at LOS C during the A.M. peak hour and at LOS B during the P.M. peak hour. Moreover, all the movements are observed to operate at LOS D or better in both analysis periods. Capacity analysis results are summarized in Table 4. Detailed Synchro capacity analysis results for 2012 build conditions are provided in Appendix C.

Table 4: Intersection Capacity Analysis Summary

Intersection	Time Period	Existing 2007		No-Build 2009		Build 2009		No-Build 2012		Build 2012	
		LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
US-19 / US-98 & West Power Line Road	A.M. Peak Hour	B	19.8	B	20.0	D	40.7	B	19.9	C	20.4
	P.M. Peak Hour	A	8.4	A	8.5	B	11.7	A	8.7	B	10.0

Roadway Capacity Analysis

The identification of the peak hour site traffic impact to the study roadway network was completed following the LOS D capacity methodologies presented in Table 4-6 of the Florida Department of Transportation 2002 Q/LOS Manual. Trips generated by the project in the A.M. peak hour are expected to be more than the P.M. Peak Hour. Thus, the roadway capacity analysis has been based on the A.M. peak hour Trips. In the future 2009 build scenario the Progress Energy CR3 Uprate project is anticipated to generate a total of 969 temporary trips to the roadway network in the A.M. peak hour. In the future 2012 full build-out scenario, the Progress Energy CR3 Uprate project is anticipated to be completed with no additional employees. Results of Progress Energy Uprate total project build-out impact on the study network is presented in Table 5.

Table 5: Roadway Capacity Analysis Summary

Road Name	From/To	Lanes	Peak Hour Service Volume LOS D	2009 Peak Hour Project Volume	Percent Impact	2012 Peak Hour Project Volume	Percent Impact
US-19/US-98	South of West Power Line Road	4D	5,140	656	12.76%	0	0.00 %
	North of West Power Line Road	4D	5,140	313	6.09%	0	0.00%
West Power Line Road	West of US-19/US-98	2U	1,190	969	81.4%	0	0.00%

(1) Level of Service D Capacity obtained from Table 4-6 of the Florida Department of Transportation 2002 Q/LOS Manual.
(2) 2009 represents a temporary condition expected to last one-two months.

According to the State of Florida Department of Transportation 2002 Quality/Level of Service Handbook, Table 4-6, a four lane divided uninterrupted flow highway for a LOS B has a peak hour two-way traffic volume of 2,800 vehicles. Table 6 presents the two way traffic volumes for US-19/US-98 within the study area. As presented in Table 6, US-19/US-98 operates below the 2,800 two-way peak hour traffic volume established by FDOT for a LOS B four lane divided uninterrupted flow highway.

Table 6: Two-Way Peak Hour Traffic Volumes Summary

US-19/US-98 at West Power Line Road									
TIME PERIOD	FLORIDA DOT GENERALIZED LOS B TWO-WAY PEAK HOUR TRAFFIC VOLUME	TWO-WAY PEAK HOUR TRAFFIC VOLUMES							
		2009 No-Build		2009 Build		2012 No-Build		2012 Build	
		NB	SB	NB	SB	NB	SB	NB	SB
A.M. Peak Hour	2,800	919	687	1,575	1,000	978	739	978	739
P.M. Peak Hour	2,800	1,092	902	1,268	1,024	1,180	983	1,180	983

(2) Volumes represent total approach volumes at the intersection.

CONCLUSIONS/RECOMMENDATIONS

The purpose of this study was to determine the traffic impacts associated with the proposed Progress Energy CR3 Uprate project and, if necessary, to develop mitigation measures providing satisfactory access to the site while maintaining acceptable traffic operations within the study area. The CR3 Uprate project represents a modernization of the existing CREC. The Progress Energy CR3 Uprate Traffic Impact Study is prepared consistent with the Florida Department of Transportation study requirements towards a proposed build-out year of 2012.

Results of the 2009 temporary construction build scenario represent the greatest demand. This is due to the expected construction activities associated with the CRCA, CR3, 4 and 5 projects, and represents a temporary condition. The 2009 capacity analyses demonstrate that the intersection is anticipated to perform at LOS D in the A.M. peak hour and at LOS B in the P.M. peak hour. The sections of US-19/US-98 north and south of West Power Line Road are expected to operate at or better then LOS B. However, due to the temporary and fluctuating conditions expected in 2009 it is suggested that Progress Energy consider Travel Demand Management techniques (such as flexible work hours, etc.) to help facilitate peak operating conditions. It is suggested that the Progress Energy also monitor the intersection at US-19/US-98 & West Power Line Road and coordinate special events at the CREC with the local public agencies, such as the Citrus County Sheriff's Department, to help ensure acceptable traffic operations.

Results of the 2012 build scenario capacity analyses demonstrate that the intersection is anticipated to perform at a LOS C in the A.M. peak hour and at LOS B in the P.M. peak hour. The sections of US-19/US-98 north and south of West Power Line Road are expected to operate at or better than LOS B for the build-out condition. The CR3 uprate project is expected to represent no additional trips upon project buildout and all roadway Level of Service conditions are expected to be maintained with the proposed project.

APPENDIX A
MANUAL TURNING MOVEMENT COUNTS

A.M. Peak Hour Total Traffic Volumes

Trans Associates Engineering Consultants, Inc.

Transportation Solutions for Today and Tomorrow

File Name : 042507 6-9 am US19-98 & power line
Site Code : 00000003
Start Date : 4/25/2007
Page No : 1

US-19 / US-98 & W Power Line Road
Crystal River, Florida
06:00 A.M. to 09:00 A.M.

Weather: Clear

Groups Printed- Unshifted - Bank 1

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App Total	Left	Thru	Right	RTOR	App Total	Left	Thru	Right	RTOR	App Total	Left	Thru	Right	RTOR	App Total	Int Total
Factor	1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		
06:00 AM	0	31	13	8	52	0	0	0	0	0	54	40	1	0	95	3	0	4	6	13	160
06:15 AM	0	54	25	34	113	0	0	0	0	0	82	35	0	0	117	2	0	11	5	18	248
06:30 AM	0	40	31	32	103	0	2	2	2	6	125	35	0	0	160	8	1	1	10	20	289
06:45 AM	0	85	26	28	139	0	0	0	0	0	117	52	0	0	169	6	0	8	1	15	323
Total	0	210	95	102	407	0	2	2	2	6	378	162	1	0	541	19	1	24	22	66	1020
07:00 AM	0	89	6	5	100	0	0	1	0	1	68	55	0	0	123	11	0	12	6	29	253
07:15 AM	0	94	3	4	101	0	0	0	0	0	43	70	0	0	113	13	0	12	7	32	246
07:30 AM	0	104	15	3	122	0	0	0	0	0	24	71	0	0	95	0	0	0	1	1	218
07:45 AM	0	102	7	1	110	0	0	0	0	0	15	73	0	0	88	2	0	1	3	6	204
Total	0	389	31	13	433	0	0	1	0	1	150	269	0	0	419	26	0	25	17	68	921
08:00 AM	0	78	1	0	79	0	0	0	0	0	16	56	0	0	72	7	0	2	8	17	168
08:15 AM	0	81	1	4	86	0	0	0	0	0	10	64	0	0	74	2	0	2	5	9	169
08:30 AM	0	74	1	3	78	0	0	0	0	0	19	64	0	0	83	2	2	3	4	11	172
08:45 AM	0	112	3	0	115	0	0	0	0	0	15	74	0	0	89	3	0	0	7	10	214
Total	0	345	6	7	358	0	0	0	0	0	60	258	0	0	318	14	2	7	24	47	723
Grand Total	0	944	132	122	1198	0	2	3	2	7	588	689	1	0	1278	59	3	56	63	181	2664
Apprch %	0	78.8	11	10.2		0	28.6	42.9	28.6		46	53.9	0.1	0		32.6	1.7	30.9	34.8		
Total %	0	35.4	5	4.6	45	0	0.1	0.1	0.1	0.3	22.1	25.9	0	0	48	2.2	0.1	2.1	2.4	6.8	
Unshifted	0	880	124	119	1123	0	2	3	2	7	568	620	1	0	1189	45	3	48	56	152	2471
% Unshifted																					
Bank 1	0	64	8	3	75	0	0	0	0	0	20	69	0	0	89	14	0	8	7	29	193
% Bank 1	0	6.8	6.1	2.5	6.3	0	0	0	0	0	3.4	10	0	0	7	23.7	0	14.3	11.1	16	7.2

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App Total	Left	Thru	Right	RTOR	App Total	Left	Thru	Right	RTOR	App Total	Left	Thru	Right	RTOR	App Total	Int Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:15 AM																					
06:15 AM	0	54	25	**34**																	
06:30 AM	**0**	**40**	**31**	**32**	**103**	**0**	**2**	**2**	**2**	**6**	**125**	**35**	**0**	**0**	**160**	**8**	**1**	**1**	**10**	**20**	**289**
06:45 AM	**0**	**85**	**26**	**28**	**139**	0	0	0	0	0	117	52	0	0	**169**	6	0	8	1	15	**323**
07:00 AM	0	**89**	6	5	100	0	0	1	0	1	68	**55**				**11**		**12**		**29**	253
Total Volume	0	268	88	99	455	0	2	3	2	7	392	177	0	0	569	27	1	32	22	82	1113
% App. Total	0	58.9	19.3	21.8		0	28.6	42.9	28.6		68.9	31.1	0	0		32.9	1.2	39	26.8		
PHF	.000	.753	.710	.728	.818	.000	.250	.375	.250	.292	.784	.805	.000	.000	.842	.614	.250	.667	.550	.707	.861
Unshifted	0	244	85	98	427	0	2	3	2	7	386	152	0	0	538	24	1	29	22	76	1048
% Unshifted	0	91.0	96.6	99.0	93.8	0	100	100	100	100	98.5	85.9	0	0	94.6	88.9	100	90.6	100	92.7	94.2
Bank 1	0	24	3	1	28	0	0	0	0	0	6	25	0	0	31	3	0	3	0	6	65
% Bank 1	0	9.0	3.4	1.0	6.2	0	0	0	0	0	1.5	14.1	0	0	5.4	11.1	0	9.4	0	7.3	5.8

A.M. Peak Hour Truck Traffic Volumes

Trans Associates Engineering Consultants, Inc.

Transportation Solutions for Today and Tomorrow

US-19 / US-98 & W Power Line Road
Crystal River, Florida
06:00 A.M. to 09:00 A.M.

File Name : 042507 6-9 am US19-98 & power line
Site Code : 00000003
Start Date : 4/25/2007
Page No : 1

Weather: Clear

Groups Printed- Bank 1

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Factor	1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		
06:00 AM	0	2	0	0	2	0	0	0	0	0	0	9	0	0	9	1	0	1	0	2	13
06:15 AM	0	6	2	0	8	0	0	0	0	0	0	6	0	0	6	0	0	3	0	3	17
06:30 AM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
06:45 AM	0	7	1	1	9	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	19
Total	0	18	3	1	22	0	0	0	0	0	1	26	0	0	27	1	0	4	0	5	54
07:00 AM	0	8	0	0	8	0	0	0	0	0	5	8	0	0	13	3	0	0	0	3	24
07:15 AM	0	9	0	0	9	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	15
07:30 AM	0	3	1	1	5	0	0	0	0	0	2	10	0	0	12	0	0	0	0	0	17
07:45 AM	0	9	2	0	11	0	0	0	0	0	2	2	0	0	4	0	0	0	1	1	16
Total	0	29	3	1	33	0	0	0	0	0	10	25	0	0	35	3	0	0	1	4	72
08:00 AM	0	4	1	0	5	0	0	0	0	0	2	2	0	0	4	5	0	1	3	9	18
08:15 AM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	2	0	1	1	4	14
08:30 AM	0	4	1	1	6	0	0	0	0	0	5	5	0	0	10	1	0	2	1	4	20
08:45 AM	0	4	0	0	4	0	0	0	0	0	2	6	0	0	8	2	0	0	1	3	15
Total	0	17	2	1	20	0	0	0	0	0	9	18	0	0	27	10	0	4	6	20	67
Grand Total	0	64	8	3	75	0	0	0	0	0	20	69	0	0	89	14	0	8	7	29	193
Apprch %	0	85.3	10.7	4		0	0	0	0		22.5	77.5	0	0		48.3	0	27.6	24.1		
Total %	0	33.2	4.1	1.6	38.9	0	0	0	0	0	10.4	35.8	0	0	46.1	7.3	0	4.1	3.6	15	

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 06:15 AM to 07:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:15 AM																					
06:15 AM	0	6	**2**															**3**		**3**	17
06:30 AM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
06:45 AM	0	7	1	**1**	**9**	0	0	0	0	0	1	**9**									
07:00 AM	**0**	**8**	0	0	8	0	0	0	0	0	**5**	**8**	**0**	**0**	**13**	**3**	**0**	**0**	**0**	**3**	**24**
Total Volume	0	24	3	1	28	0	0	0	0	0	6	25	0	0	31	3	0	3	0	6	65
% App. Total	0	85.7	10.7	3.6		0	0	0	0		19.4	80.6	0	0		50	0	50	0		
PHF	.000	.750	.375	.250	.778	.000	.000	.000	.000	.000	.300	.694	.000	.000	.596	.250	.000	.250	.000	.500	.677

P.M. Peak Hour Total Traffic Volumes

Trans Associates Engineering Consultants, Inc.

Transportation Solutions for Today and Tomorrow

US-19 / US-98 & W Power Line Road
Crystal River, Florida
03:00 P.M. to 06:00 P.M.

File Name : 042407 3-6 PM US19-98 & Power Line Rd
Site Code : 00000001
Start Date : 4/24/2007
Page No : 1

Weather: Clear

Groups Printed- Unshifted - Bank 1

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Factor	1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		
03:00 PM	0	84	2	0	86	0	0	0	0	0	4	93	0	0	97	23	4	33	29	89	272
03:15 PM	0	102	2	0	104	1	0	0	0	1	2	106	3	0	111	21	0	40	35	96	312
03:30 PM	0	92	0	0	92	0	0	2	0	2	5	119	0	0	124	18	0	14	32	64	282
03:45 PM	1	92	2	1	96	0	0	0	0	0	4	107	0	0	111	8	0	13	12	33	240
Total	1	370	6	1	378	1	0	2	0	3	15	425	3	0	443	70	4	100	108	282	1106
04:00 PM	0	97	0	0	97	0	0	0	0	0	4	124	0	0	128	10	0	16	26	52	277
04:15 PM	0	81	0	0	81	1	0	0	0	1	8	106	0	0	114	6	0	21	12	39	235
04:30 PM	0	94	1	0	95	0	0	0	0	0	0	95	0	0	95	19	0	31	28	78	268
04:45 PM	0	99	2	0	101	0	0	0	0	0	12	97	0	0	109	8	0	18	35	61	271
Total	0	371	3	0	374	1	0	0	0	1	24	422	0	0	446	43	0	86	101	230	1051
05:00 PM	0	96	1	0	97	0	0	0	0	0	15	114	0	0	129	11	0	19	34	64	290
05:15 PM	0	80	4	0	84	0	0	0	0	0	16	101	0	0	117	29	0	44	22	95	296
05:30 PM	0	95	3	3	101	0	0	0	0	0	6	88	0	0	94	23	1	30	23	77	272
05:45 PM	0	80	2	1	83	0	0	0	0	0	6	87	0	0	93	8	0	10	21	39	215
Total	0	351	10	4	365	0	0	0	0	0	43	390	0	0	433	71	1	103	100	275	1073
Grand Total	1	1092	19	5	1117	2	0	2	0	4	82	1237	3	0	1322	184	5	289	309	787	3230
Apprch %	0.1	97.8	1.7	0.4		50	0	50	0		6.2	93.6	0.2	0		23.4	0.6	36.7	39.3		
Total %	0	33.8	0.6	0.2	34.6	0.1	0	0.1	0	0.1	2.5	38.3	0.1	0	40.9	5.7	0.2	8.9	9.6	24.4	
Unshifted	1	1059	15	5	1080	2	0	2	0	4	68	1214	3	0	1285	179	5	282	300	766	3135
% Unshifted	100	97	78.9	100	96.7	100	0	100	0	100	82.9	98.1	100	0	97.2	97.3	100	97.6	97.1	97.3	97.1
Bank 1	0	33	4	0	37	0	0	0	0	0	14	23	0	0	37	5	0	7	9	21	95
% Bank 1	0	3	21.1	0	3.3	0	0	0	0	0	17.1	1.9	0	0	2.8	2.7	0	2.4	2.9	2.7	2.9

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	**99**	2	0	**101**	0	0	0	0	0	12	97	0	0	109	8	0	18	**35**		
05:00 PM	**0**	**96**	**1**	**0**	**97**	**0**	**0**	**0**	**0**	**0**	**15**	**114**	**0**	**0**	**129**	11	0	19	34	64	290
05:15 PM	0	80	**4**								**16**					**29**		**44**		**95**	**296**
05:30 PM	0	95	3	**3**													**1**	30	23	77	272
Total Volume	0	370	10	3	383	0	0	0	0	0	49	400	0	0	449	71	1	111	114	297	1129
% App. Total	0	96.6	2.6	0.8		0	0	0	0		10.9	89.1	0	0		23.9	0.3	37.4	38.4		
PHF	.000	.934	.625	.250	.948	.000	.000	.000	.000	.000	.766	.877	.000	.000	.870	.612	.250	.631	.814	.782	.954
Unshifted	0	362	9	3	374	0	0	0	0	0	46	398	0	0	444	70	1	110	111	292	1110
% Unshifted	0	97.8	90.0	100	97.7	0	0	0	0	0	93.9	99.5	0	0	98.9	98.6	100	99.1	97.4	98.3	98.3
Bank 1	0	8	1	0	9	0	0	0	0	0	3	2	0	0	5	1	0	1	3	5	19
% Bank 1	0	2.2	10.0	0	2.3	0	0	0	0	0	6.1	0.5	0	0	1.1	1.4	0	0.9	2.6	1.7	1.7

P.M. Peak Hour Truck Traffic Volumes

Trans Associates Engineering Consultants, Inc.
Transportation Solutions for Today and Tomorrow

US-19 / US-98 & W Power Line Road
Crystal River, Florida
03:00 P.M. to 06:00 P.M.

File Name : 042407 3-6 PM US19-98 & Power Line Rd
Site Code : 00000001
Start Date : 4/24/2007
Page No : 1

Weather: Clear

Groups Printed- Bank 1

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Factor	1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		1.03	1.03	1.03	1.03		
03:00 PM	0	1	1	0	2	0	0	0	0	0	2	0	0	0	2	0	0	5	0	5	9
03:15 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	1	0	1	1	3	7
03:30 PM	0	2	0	0	2	0	0	0	0	0	3	3	0	0	6	0	0	0	2	2	10
03:45 PM	0	3	1	0	4	0	0	0	0	0	2	8	0	0	10	0	0	0	2	2	16
Total	0	9	2	0	11	0	0	0	0	0	7	12	0	0	19	1	0	6	5	12	42
04:00 PM	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	1	0	0	0	1	5
04:15 PM	0	5	0	0	5	0	0	0	0	0	2	2	0	0	4	0	0	0	1	1	10
04:30 PM	0	9	1	0	10	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	14
04:45 PM	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	0	0	0	2	2	7
Total	0	18	1	0	19	0	0	0	0	0	4	8	0	0	12	2	0	0	3	5	36
05:00 PM	0	3	1	0	4	0	0	0	0	0	2	1	0	0	3	1	0	1	1	3	10
*** BREAK ***																					
05:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	1	0	0	0	1	5
Total	0	6	1	0	7	0	0	0	0	0	3	3	0	0	6	2	0	1	1	4	17
Grand Total	0	33	4	0	37	0	0	0	0	0	14	23	0	0	37	5	0	7	9	21	95
Apprch %	0	89.2	10.8	0		0	0	0	0		37.8	62.2	0	0		23.8	0	33.3	42.9		
Total %	0	34.7	4.2	0	38.9	0	0	0	0	0	14.7	24.2	0	0	38.9	5.3	0	7.4	9.5	22.1	

	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	3	0	0	3	0	0	0	0	0	1	1							2		
05:00 PM	**0**	**3**	**1**	**0**	**4**	0	0	0	0	0	**2**	**1**	**0**	**0**	**3**	**1**	**0**	**1**	**1**	**3**	**10**
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	8	1	0	9	0	0	0	0	0	3	2	0	0	5	1	0	1	3	5	19
% App. Total	0	88.9	11.1	0		0	0	0	0		60	40	0	0		20	0	20	60		
PHF	.000	.667	.250	.000	.563	.000	.000	.000	.000	.000	.375	.500	.000	.000	.417	.250	.000	.250	.375	.417	.475

APPENDIX B
GROWTH RATE CALCULATION

GROWTH RATE CALCULATION

Year	AADT	Growth
2002	8,900	
2003	9,100	2.2%
2004	6,900	-24.2%
2005	10,100	46.4%
2006	8,900	-11.9%
Average		3.1%

*Traffic Count Site #0250 – SR 55/US 19, North of CR 488 / Dunellon Road

		2009	2012
Growth Factor	=	(1 + 3.1 / 100)^2	(1 + 3.1 / 100)^5
	=	1.063	1.165

Source: 2006 Traffic Counts obtained from FDOT Central Office
2002 – 2005 Traffic Counts obtained from 2005 Florida Traffic Information System CD.

APPENDIX C
SYNCHRO CAPACITY ANALYSIS RESULTS
2007 EXISTING CONDITIONS

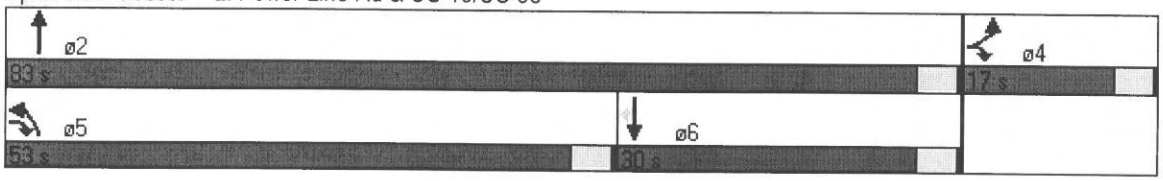
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	27	54	392	177	268	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1687	1509	1719	3438	3406	1524
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1687	1509	1719	3438	3406	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		76				228
Link Speed (mph)	30			30	30	
Link Distance (ft)	333			364	384	
Travel Time (s)	7.6			8.3	8.7	
Peak Hour Factor	0.71	0.71	0.84	0.84	0.82	0.82
Heavy Vehicles (%)	7%	7%	5%	5%	6%	6%
Adj. Flow (vph)	38	76	467	211	327	228
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	76	467	211	327	228
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			Perm
Protected Phases	4	4 5	5	2	6	
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	15.0		8.0	20.0	20.0	20.0
Total Split (s)	17.0	70.0	53.0	83.0	30.0	30.0
Total Split (%)	17.0%	70.0%	53.0%	83.0%	30.0%	30.0%
Maximum Green (s)	13.0		49.0	79.0	26.0	26.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	Max
Act Effct Green (s)	7.6	43.8	31.7	80.2	43.6	43.6
Actuated g/C Ratio	0.08	0.45	0.34	0.86	0.47	0.47
v/c Ratio	0.28	0.10	0.80	0.07	0.20	0.27
Control Delay	46.0	2.7	37.8	1.5	17.9	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	2.7	37.8	1.5	17.9	4.1
LOS	D	A	D	A	B	A
Approach Delay	17.1			26.5	12.2	
Approach LOS	B			C	B	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 92.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 19.8 Intersection LOS: B
Intersection Capacity Utilization 42.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Power Line Rd & US-19/US-98



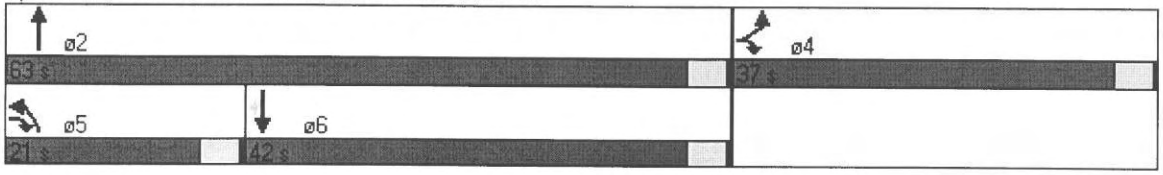
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	71	225	49	400	370	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1787	3574	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1787	3574	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		288				14
Link Speed (mph)	30			30	30	
Link Distance (ft)	347			401	329	
Travel Time (s)	7.9			9.1	7.5	
Peak Hour Factor	0.78	0.78	0.87	0.87	0.95	0.95
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Adj. Flow (vph)	91	288	56	460	389	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	288	56	460	389	14
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			Perm
Protected Phases	4	4 5	5	2	6	
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	20.0		8.0	20.0	20.0	20.0
Total Split (s)	37.0	58.0	21.0	63.0	42.0	42.0
Total Split (%)	37.0%	58.0%	21.0%	63.0%	42.0%	42.0%
Maximum Green (s)	33.0		17.0	59.0	38.0	38.0
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	0.5		0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	Max
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	9.2	21.0	7.8	59.1	47.3	47.3
Actuated g/C Ratio	0.12	0.28	0.10	0.77	0.62	0.62
v/c Ratio	0.43	0.45	0.31	0.17	0.18	0.01
Control Delay	37.2	5.1	36.3	2.6	7.0	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	5.1	36.3	2.6	7.0	3.8
LOS	D	A	D	A	A	A
Approach Delay	12.8			6.2	6.9	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 76.3
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 30.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Power Line Rd & US-19/US-98



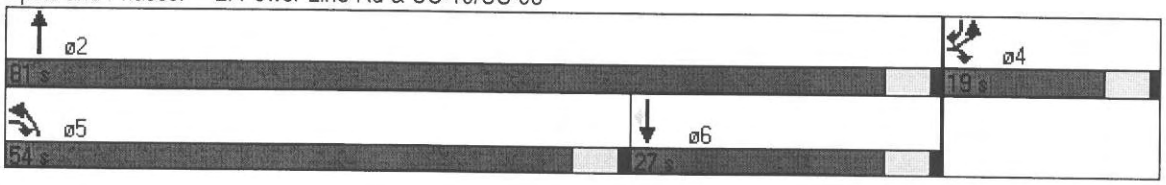
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	27	54	392	188	285	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1687	1509	1719	3438	3406	1524
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1687	1509	1719	3438	3406	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		57				197
Link Speed (mph)	30			30	30	
Link Distance (ft)	333			364	384	
Travel Time (s)	7.6			8.3	8.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	5%	5%	6%	6%
Adj. Flow (vph)	28	57	413	198	300	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	57	413	198	300	197
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	15.0		9.0	20.0	20.0	15.0
Total Split (s)	19.0	73.0	54.0	81.0	27.0	19.0
Total Split (%)	19.0%	73.0%	54.0%	81.0%	27.0%	19.0%
Maximum Green (s)	14.0		49.0	76.0	22.0	14.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Act Effct Green (s)	7.1	40.7	28.6	76.0	42.4	54.5
Actuated g/C Ratio	0.08	0.44	0.31	0.82	0.46	0.59
v/c Ratio	0.22	0.08	0.78	0.07	0.19	0.20
Control Delay	44.4	3.4	39.5	1.8	17.5	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	3.4	39.5	1.8	17.5	2.5
LOS	D	A	D	A	B	A
Approach Delay	16.9			27.3	11.5	
Approach LOS	B			C	B	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 93.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 20.0 Intersection LOS: B
Intersection Capacity Utilization 45.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Power Line Rd & US-19/US-98



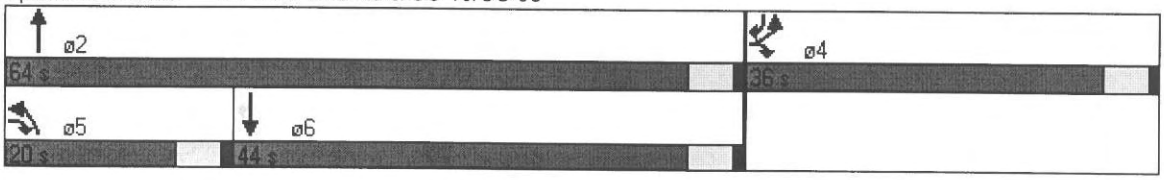
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	71	225	49	425	393	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1787	3574	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1787	3574	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		237				14
Link Speed (mph)	30			30	30	
Link Distance (ft)	347			401	329	
Travel Time (s)	7.9			9.1	7.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Adj. Flow (vph)	75	237	52	447	414	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	237	52	447	414	14
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	21.0		9.0	21.0	21.0	21.0
Total Split (s)	36.0	56.0	20.0	64.0	44.0	36.0
Total Split (%)	36.0%	56.0%	20.0%	64.0%	44.0%	36.0%
Maximum Green (s)	31.0		15.0	59.0	39.0	31.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	8.6	21.3	7.6	59.1	46.4	60.1
Actuated g/C Ratio	0.11	0.27	0.10	0.76	0.60	0.77
v/c Ratio	0.38	0.39	0.30	0.16	0.20	0.01
Control Delay	37.7	5.1	37.1	2.9	8.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	5.1	37.1	2.9	8.0	1.2
LOS	D	A	D	A	A	A
Approach Delay	12.9			6.5	7.8	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 77.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 33.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Power Line Rd & US-19/US-98



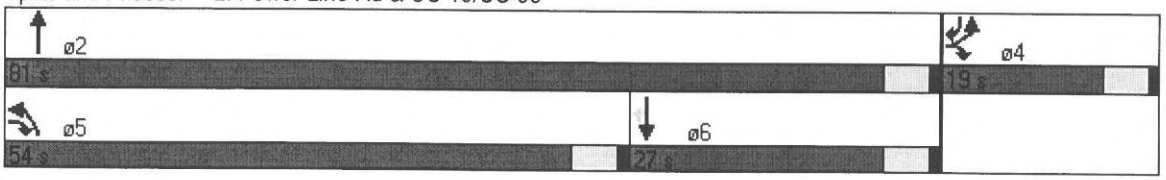
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	30	59	401	206	312	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1687	1509	1719	3438	3406	1524
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1687	1509	1719	3438	3406	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		62				201
Link Speed (mph)	30			30	30	
Link Distance (ft)	333			364	384	
Travel Time (s)	7.6			8.3	8.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	5%	5%	6%	6%
Adj. Flow (vph)	32	62	422	217	328	201
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	62	422	217	328	201
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	15.0		9.0	20.0	20.0	15.0
Total Split (s)	19.0	73.0	54.0	81.0	27.0	19.0
Total Split (%)	19.0%	73.0%	54.0%	81.0%	27.0%	19.0%
Maximum Green (s)	14.0		49.0	76.0	22.0	14.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Act Effct Green (s)	7.3	41.5	29.2	76.0	41.8	54.1
Actuated g/C Ratio	0.08	0.44	0.31	0.81	0.45	0.58
v/c Ratio	0.24	0.09	0.78	0.08	0.21	0.21
Control Delay	44.8	3.2	39.4	1.9	18.2	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	3.2	39.4	1.9	18.2	2.5
LOS	D	A	D	A	B	A
Approach Delay	17.3			26.7	12.2	
Approach LOS	B			C	B	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 93.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 19.9 Intersection LOS: B
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Power Line Rd & US-19/US-98



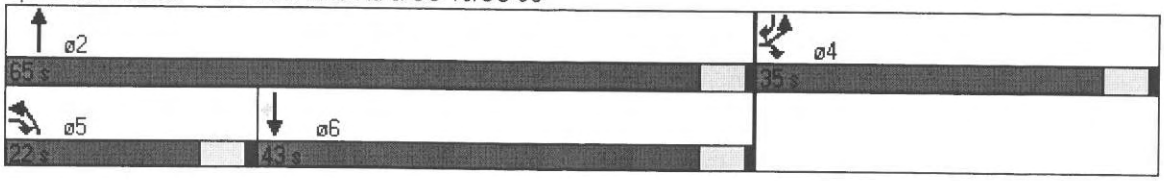
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	72	230	53	466	431	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1787	3574	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1787	3574	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		229				15
Link Speed (mph)	30			30	30	
Link Distance (ft)	347			401	329	
Travel Time (s)	7.9			9.1	7.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Adj. Flow (vph)	76	242	56	491	454	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	76	242	56	491	454	15
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	21.0		9.0	21.0	21.0	21.0
Total Split (s)	35.0	57.0	22.0	65.0	43.0	35.0
Total Split (%)	35.0%	57.0%	22.0%	65.0%	43.0%	35.0%
Maximum Green (s)	30.0		17.0	60.0	38.0	30.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	8.7	21.5	7.8	60.0	47.2	60.9
Actuated g/C Ratio	0.11	0.27	0.10	0.76	0.60	0.77
v/c Ratio	0.39	0.40	0.31	0.18	0.21	0.01
Control Delay	38.4	5.9	37.7	2.9	8.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	5.9	37.7	2.9	8.2	1.3
LOS	D	A	D	A	A	A
Approach Delay	13.6			6.5	7.9	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 78.7
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 8.7 Intersection LOS: A
Intersection Capacity Utilization 34.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Power Line Rd & US-19/US-98



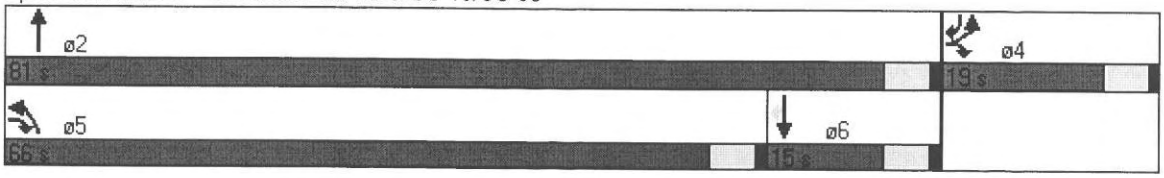
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	66	136	966	188	285	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1687	1509	1719	3438	3406	1524
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1687	1509	1719	3438	3406	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		18				121
Link Speed (mph)	30			30	30	
Link Distance (ft)	333			364	384	
Travel Time (s)	7.6			8.3	8.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	5%	5%	6%	6%
Adj. Flow (vph)	69	143	1017	198	300	485
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	143	1017	198	300	485
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	19.0	85.0	66.0	81.0	15.0	19.0
Total Split (%)	19.0%	85.0%	66.0%	81.0%	15.0%	19.0%
Maximum Green (s)	14.0		61.0	76.0	10.0	14.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Act Effct Green (s)	13.4	78.9	60.5	76.0	10.5	28.9
Actuated g/C Ratio	0.13	0.79	0.61	0.76	0.11	0.29
v/c Ratio	0.31	0.12	0.97	0.08	0.83	0.92
Control Delay	42.7	2.2	41.8	3.1	64.6	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	2.2	41.8	3.1	64.6	50.2
LOS	D	A	D	A	E	D
Approach Delay	15.4			35.5	55.7	
Approach LOS	B			D	E	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 99.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 40.7 Intersection LOS: D
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Power Line Rd & US-19/US-98



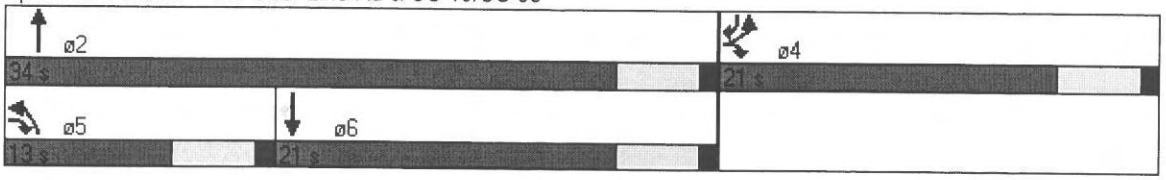
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	175	329	121	425	393	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1787	3574	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1787	3574	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		169				33
Link Speed (mph)	30			30	30	
Link Distance (ft)	347			401	329	
Travel Time (s)	7.9			9.1	7.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Adj. Flow (vph)	184	346	127	447	414	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	346	127	447	414	33
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	21.0		9.0	21.0	21.0	21.0
Total Split (s)	21.0	34.0	13.0	34.0	21.0	21.0
Total Split (%)	38.2%	61.8%	23.6%	61.8%	38.2%	38.2%
Maximum Green (s)	16.0		8.0	29.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	10.7	23.1	7.4	29.1	16.7	32.4
Actuated g/C Ratio	0.21	0.46	0.15	0.58	0.33	0.65
v/c Ratio	0.48	0.42	0.48	0.21	0.35	0.03
Control Delay	21.4	5.8	27.0	5.9	14.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	5.8	27.0	5.9	14.6	1.4
LOS	C	A	C	A	B	A
Approach Delay	11.2			10.5	13.6	
Approach LOS	B			B	B	

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 49.9
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 39.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Power Line Rd & US-19/US-98



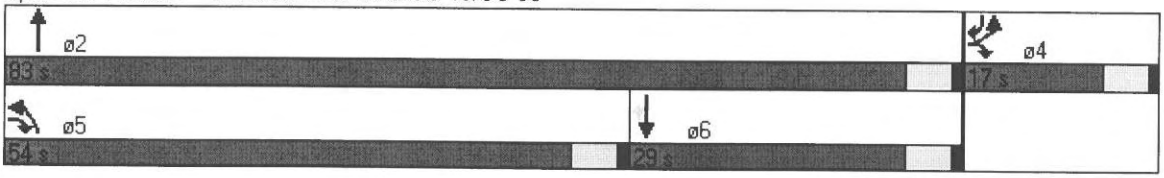
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	30	59	401	206	312	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1687	1509	1719	3438	3406	1524
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1687	1509	1719	3438	3406	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		83				233
Link Speed (mph)	30			30	30	
Link Distance (ft)	333			364	384	
Travel Time (s)	7.6			8.3	8.7	
Peak Hour Factor	0.71	0.71	0.84	0.84	0.82	0.82
Heavy Vehicles (%)	7%	7%	5%	5%	6%	6%
Adj. Flow (vph)	42	83	477	245	380	233
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	83	477	245	380	233
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	15.0		9.0	20.0	20.0	15.0
Total Split (s)	17.0	71.0	54.0	83.0	29.0	17.0
Total Split (%)	17.0%	71.0%	54.0%	83.0%	29.0%	17.0%
Maximum Green (s)	12.0		49.0	78.0	24.0	12.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Act Effct Green (s)	7.9	46.1	33.2	78.0	39.8	52.7
Actuated g/C Ratio	0.08	0.48	0.35	0.81	0.42	0.55
v/c Ratio	0.30	0.11	0.80	0.09	0.27	0.25
Control Delay	47.0	2.4	38.4	2.0	21.4	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.0	2.4	38.4	2.0	21.4	2.8
LOS	D	A	D	A	C	A
Approach Delay	17.4			26.0	14.3	
Approach LOS	B			C	B	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 95.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Power Line Rd & US-19/US-98



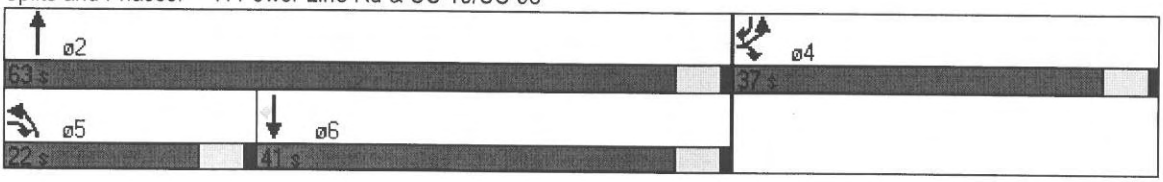
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	72	230	53	466	431	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200	250			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1787	3574	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1787	3574	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		210				15
Link Speed (mph)	30			30	30	
Link Distance (ft)	347			401	329	
Travel Time (s)	7.9			9.1	7.5	
Peak Hour Factor	0.78	0.78	0.87	0.87	0.95	0.95
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Adj. Flow (vph)	92	295	61	536	454	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	295	61	536	454	15
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type		pt+ov	Prot			pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4 5	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	21.0		9.0	21.0	21.0	21.0
Total Split (s)	37.0	59.0	22.0	63.0	41.0	37.0
Total Split (%)	37.0%	59.0%	22.0%	63.0%	41.0%	37.0%
Maximum Green (s)	32.0		17.0	58.0	36.0	32.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	Max	Max	None
Walk Time (s)	5.0			5.0	5.0	5.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	10.1	23.1	8.0	58.1	45.1	60.2
Actuated g/C Ratio	0.13	0.30	0.10	0.74	0.58	0.77
v/c Ratio	0.40	0.48	0.33	0.20	0.22	0.01
Control Delay	36.2	9.3	38.1	3.6	9.3	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	9.3	38.1	3.6	9.3	1.3
LOS	D	A	D	A	A	A
Approach Delay	15.7			7.1	9.0	
Approach LOS	B			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 78.2
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 10.0 Intersection LOS: B
Intersection Capacity Utilization 34.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Power Line Rd & US-19/US-98



APPENDIX D
SIMTRAFFIC SIMULATION RESULTS

2: Power Line Rd & US-19/US-98 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.9	0.3	137.7	30.0	23.9	39.0	231.8
Delay / Veh (s)	38.8	7.5	604.7	616.9	337.9	335.8	442.2
Total Stops	66	25	490	41	296	640	1558
Travel Dist (mi)	4.2	7.5	51.3	11.0	16.9	27.9	118.7
Travel Time (hr)	1.1	0.6	139.8	30.4	24.6	40.2	236.7
Avg Speed (mph)	4	16	9	20	3	2	5
Vehicles Entered	79	139	821	175	253	420	1887
Vehicles Exited	80	138	820	175	257	417	1887
Hourly Exit Rate	80	138	820	175	257	417	1887
Input Volume	66	136	966	188	285	461	2102
% of Volume	121	101	85	93	90	90	90
Denied Entry Before	0	0	68	6	0	0	74
Denied Entry After	0	0	179	45	36	49	309

Intersection: 2: Power Line Rd & US-19/US-98

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	115	69	275	392	330	365	403	225
Average Queue (ft)	54	17	273	271	38	145	359	223
95th Queue (ft)	95	53	279	479	137	287	415	226
Link Distance (ft)	274			329	329	351	351	
Upstream Blk Time (%)				4	0	0	49	
Queuing Penalty (veh)				0	0	0	0	
Storage Bay Dist (ft)		200	250					200
Storage Blk Time (%)			12				1	64
Queuing Penalty (veh)			12				4	91

7: Power Line Rd & US-19/US-98 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.9	1.0	0.9	0.6	1.1	0.1	4.5
Delay / Veh (s)	18.0	10.5	27.1	5.1	9.9	6.1	10.9
Total Stops	132	176	108	134	206	8	764
Travel Dist (mi)	10.2	19.1	8.3	29.9	21.8	2.1	91.5
Travel Time (hr)	1.4	1.9	1.2	1.7	1.9	0.2	8.2
Avg Speed (mph)	8	14	8	19	12	18	13
Vehicles Entered	183	338	120	430	386	38	1495
Vehicles Exited	184	339	120	430	384	38	1495
Hourly Exit Rate	184	339	120	430	384	38	1495
Input Volume	175	329	121	425	393	31	1474
% of Volume	105	103	99	101	98	123	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	2	0	0	0	0	2

Intersection: 7: Power Line Rd & US-19/US-98

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	138	108	138	54	96	95	96	31
Average Queue (ft)	61	49	61	29	51	50	64	7
95th Queue (ft)	107	86	106	62	79	84	97	26
Link Distance (ft)	289			366	366	296	296	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		200	250					200
Storage Blk Time (%)								
Queuing Penalty (veh)								

2: Power Line Rd & US-19/US-98 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.4	0.1	4.0	0.2	1.0	0.7	6.5
Delay / Veh (s)	43.6	7.0	35.0	3.6	12.2	13.3	19.2
Total Stops	32	33	313	17	135	77	607
Travel Dist (mi)	1.8	3.7	25.6	12.6	19.7	13.4	76.8
Travel Time (hr)	0.5	0.3	5.0	0.6	1.7	1.3	9.5
Avg Speed (mph)	4	16	6	26	12	13	9
Vehicles Entered	33	69	410	201	295	202	1210
Vehicles Exited	33	69	410	202	295	202	1211
Hourly Exit Rate	33	69	410	202	295	202	1211
Input Volume	30	59	401	206	312	191	1199
% of Volume	110	117	102	98	95	106	101
Denied Entry Before	0	0	1	2	0	0	3
Denied Entry After	0	0	2	1	0	1	4

Intersection: 2: Power Line Rd & US-19/US-98

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	69	46	275	344	76	139	117	120
Average Queue (ft)	24	16	205	80	12	49	60	54
95th Queue (ft)	57	37	302	303	46	93	106	107
Link Distance (ft)	274			329	329	351	351	
Upstream Blk Time (%)				2				
Queuing Penalty (veh)				0				
Storage Bay Dist (ft)		200	250					200
Storage Blk Time (%)			4					
Queuing Penalty (veh)			4					

7: Power Line Rd & US-19/US-98 Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.6	0.6	0.6	0.3	0.7	0.0	2.9
Delay / Veh (s)	33.0	10.2	36.0	2.4	6.1	5.6	8.2
Total Stops	48	153	54	74	139	2	470
Travel Dist (mi)	3.4	12.4	4.2	32.6	24.2	1.2	78.0
Travel Time (hr)	0.7	1.2	0.8	1.4	1.6	0.1	5.9
Avg Speed (mph)	5	14	6	23	15	19	15
Vehicles Entered	61	221	60	468	429	22	1261
Vehicles Exited	62	219	60	468	428	22	1259
Hourly Exit Rate	62	219	60	468	428	22	1259
Input Volume	72	230	53	466	431	14	1266
% of Volume	86	95	113	100	99	157	99
Denied Entry Before	0	1	0	0	0	0	1
Denied Entry After	0	0	0	0	1	1	2

Intersection: 7: Power Line Rd & US-19/US-98

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	R
Maximum Queue (ft)	67	110	97	73	94	98	118	31
Average Queue (ft)	34	41	45	19	38	44	63	2
95th Queue (ft)	60	76	96	56	78	89	108	15
Link Distance (ft)	289			366	366	296	296	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		200	250					200
Storage Blk Time (%)								
Queuing Penalty (veh)								