Traffic Impact Analysis

Buc-ee's – West Orange County
Efland, NC

Prepared for:

Buc-ee's, Ltd.

Kimley»Horn

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Traffic Impact Analysis for

Buc-ee's – West Orange County

Efland, North Carolina

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Executive Summary

Kimley-Horn and Associates, Inc. has performed a Traffic Impact Analysis for the proposed Buc-ee's - West Orange County project located generally north of I-40 between Mt. Willing Road and the US-70/I-40 Connector in Efland, North Carolina. As currently envisioned, the project is assumed to include a 120-pump gas station with convenience store. Project build-out is anticipated in 2022. The project will be accessed via one full-movement driveway on the US-70/I-40 Connector aligning with Ben Johnston Road as well as two right-in/right-out driveways along the I-40 WB Service Road.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2019) traffic condition as well as the projected (2022) background and build-out traffic conditions. Note that I-40 and I-85 routes overlap in the study area. Because the freeway's east-west orientation through the study area generally matches I-40's overall alignment, this report refers to this roadway segment as I-40 for clarity and consistency.

The proposed project possesses unique trip generation characteristics that outside the data range published in *Trip Generation* (Institute of Transportation Engineers, Tenth Edition, 2017) for land-use code 945 (gas station with convenience store). Therefore, the trip generation rates for this project were based on volume data collected at nine similar sites in Texas. Multiple municipalities in several states have previously approved this methodology for use in traffic impact analyses of proposed sites. The Texas volume data and detailed trip generation calculations are included in the Appendix of this report.

As shown in Table ES-1, the proposed project development has the potential to 1,219 new trips in the AM peak hour and 1,692 new trips in the PM peak hour on a typical weekday, and 2,452 new trips during the Saturday peak hour.

Table ES-1
ITE Traffic Generation (Vehicles)

Land Use	Intensity		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
			In	Out	In	Out	In	Out
Gasoline Station with Convenience Store	120	pumps	646	573	880	812	1,251	1,201
Net New External Trips			**646**	**573**	**880**	**812**	**1,251**	**1,201**

Capacity analyses were performed using Synchro Version 10 software for all intersections. Table ES-2 summarizes the operation of the study intersections for the AM, PM, and Saturday peak hour traffic conditions.

Table ES-2 Level-of-Service Summary			
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**	**Saturday Peak Hour LOS (Delay)**
US-70 & Efland-Cedar Grove Road (Signalized)			
Existing (2019) Traffic	C (23.2)	B (15.7)	A (9.8)
Background (2022) Traffic	C (25.4)	B (16.8)	B (10.1)
Build-out (2022) Traffic	C (27.3)	B (19.1)	B (10.7)
Mt. Willing Road & Forrest Avenue (Unsignalized)*			
Existing (2019) Traffic	EB – A (9.9)	WB – A (9.1)	WB – A (5.8)
Background (2022) Traffic	EB – B (13.2)	WB – A (9.9)	WB – A (5.9)
Build-out (2022) Traffic	EB – B (13.3)	WB – B (12.8)	WB – A (6.4)
Mt. Willing Road & I-40 WB Ramps			
Existing (2019) Traffic (Unsignalized)*	WB – A (4.1)	WB – B (13.0)	WB – A (3.0)
Background (2022) Traffic (Unsignalized)*	WB – A (4.1)	WB – D (27.0)	WB – A (3.3)
Build-out (2022) Traffic (Signalized)	B (10.7)	A (9.8)	B (11.4)
Mt. Willing Road & I-40 EB Ramps (Unsignalized)*			
Existing (2019) Traffic	EB – C (17.0)	EB – A (5.4)	EB – A (4.9)
Background (2022) Traffic	EB – D (28.7)	EB – A (5.5)	EB – A (4.8)
Build-out (2022) Traffic	EB – C (21.0)	EB – A (5.6)	EB – A (5.4)
US-70/I-40 Connector & I-40 EB Ramps			
Existing (2019) Traffic (Unsignalized)*	EB – A (9.3)	EB – A (7.5)	EB – A (3.9)
Background (2022) Traffic (Unsignalized)*	EB – A (9.3)	EB – A (7.5)	EB – A (4.0)
Build-out (2022) Traffic (Signalized)	C (30.6)	C (34.5)	D (40.8)
US-70/I-40 Connector & I-40 WB Ramps			
Existing (2019) Traffic (Unsignalized)*	WB – A (3.1)	WB – A (3.7)	WB – A (2.7)
Background (2022) Traffic (Unsignalized)*	WB – A (3.0)	WB – A (3.2)	WB – A (2.7)
Build-out (2022) Traffic (Signalized)	B (14.9)	C (23.1)	B (18.7)
US-70/I-40 Connector & Ben Johnston Road/Site Driveway			
Existing (2019) Traffic (Unsignalized)*	WB – B (10.7)	WB – B (12.6)	WB – A (5.2)
Background (2022) Traffic (Unsignalized)*	WB – B (10.9)	WB – C (17.0)	WB – A (4.9)
Build-out (2022) Traffic (Signalized)	B (17.2)	C (20.7)	B (14.3)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

Table ES-2 (cont.) Level-of-Service Summary			
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**	**Saturday Peak Hour LOS (Delay)**
I-40 WB Service Road & East RI/RO Site Driveway (Unsignalized)*			
Build-out (2022) Traffic	SB – A (2.4)	SB – A (3.3)	SB – A (3.7)
I-40 WB Service Road &West RI/RO Site Driveway (Unsignalized)*			
Build-out (2022) Traffic	SB – A (2.1)	SB – A (6.6)	SB – A (2.5)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

A weaving analysis (see Appendix) was performed for the weekday AM, PM and Saturday peak hours for the projected (2022) build-out traffic condition using Highway Capacity Software (HCS Version 7.8.5) to determine the operating conditions of the I-40 Service Road segments between Mt. Willing Road and US-70/I-40 Connector. The peak hour weaving LOS and volume-to-capacity ratio for the projected (2022) build-out condition is shown below in Table ES-3.

Table ES-3 Weaving Level-of-Service Summary			
Condition	**AM Peak Hour LOS (Density)**	**PM Peak Hour LOS (Density)**	**Saturday Peak Hour LOS (Density)**
I-40 EB Service Road (Mt. Willing Road to US-70/I-40 Connector)			
Build (2022) Traffic	C (24.1) v/c = 0.83	B (14.5) v/c = 0.51	B (17.2) v/c = 0.60
I-40 WB Service Road (East RI/RO Site Driveway to Mt. Willing Road)			
Build (2022) Traffic	A (10.6) v/c = 0.30	B (21.3) v/c = 0.63	B (13.1) v/c = 0.41

** Note: density is measured in passenger cars per mile per lane (pc/mi/ln).*

Recommended Improvements

The following improvements are recommended to accommodate projected site traffic demands:

Mt. Willing Road – I-40 WB Ramps

- Construct a westbound left-turn lane with 280 feet of storage and an appropriate taper on the I-40 WB Ramp.
- Extend the existing channelized westbound right-turn lane on I-40 WB Ramp to provide a continuous channelized westbound right-turn lane between West RI/RO Driveway and Mt. Willing Road.
- Restripe the existing westbound shared left-turn lane on I-40 WB Ramp to provide an exclusive through lane.
- Install a traffic signal.

US-70/I-40 Connector – I-40 EB Ramps

- Restripe the existing eastbound right turn lane and remove right turn channelization on the I-40 EB Ramp to provide a continuous shared left/through/right-turn lane.
- Widen the I-40 EB Ramp to provide and exclusive eastbound left-turn lane with 400 feet of storage and an appropriate taper.
- Extend the existing exclusive southbound left-turn lane on US-70/I-40 Connector to provide 400 feet of storage and an appropriate taper.
- Construct an additional northbound receiving lane on US-70/I-40 Connector.
- Install a traffic signal.

US-70/I-40 Connector – I-40 WB Ramps

- Restripe the existing westbound left-turn lane on I-40 WB Ramp to provide an exclusive through lane
- Construct a westbound shared through/left-turn lane with 450 feet of storage and an appropriate taper on I-40 WB Ramp
- Widen the I-40 WB Ramp to provide dual westbound right-turn lanes with 450 feet of storage and appropriate tapers
- Construct a second receiving lane on I-40 WB ramp departure, extending to I-40 WB Service Road
- Extend the existing northbound left-turn lane to provide a continuous left-turn lane and a continuous through lane on the northbound approach of US-70/I-40 Connector
- Install a traffic signal

US-70/I-40 Connector – Ben Johnston Road/Site Driveway

- Construct a site driveway on US-70/I-40 Connector Road opposite Ben Johnston Road to provide two ingress lanes, and three egress lanes: (a left-turn lane with a minimum 100 feet of storage, a continuous through lane, and a right-turn lane with a minimum 250 feet of storage).

- Construct an exclusive westbound left-turn lane on Ben Johnston Road with 200 feet of storage and an appropriate taper
- Restripe the existing lane on Ben Johnston Road to provide a continuous westbound shared through/right-turn lane
- Construct dual northbound left-turn lanes with 300 feet of storage and appropriate tapers on US-70/I-40 Connector
- Install a traffic signal.

<u>I-40 WB Ramp – East RI/RO Site Driveway</u>

- Construct the site driveway as a right-in/right-out access, with one ingress lane and one egress lane.
- Remove the existing I-40 WB Exit Ramp (WB Exit 160)
- Widen the westbound I-40 WB Ramp to provide a continuous through lane and a continuous shared through/right-turn lane on I-40 WB Service Road through this intersection, tying into the existing two-lane cross section on the I-40 WB Service Road just west of the exiting WB Exit 160 Ramp junction.

<u>I-40 WB Ramp – West RI/RO Site Driveway</u>

- Construct the site driveway as a right-in/right-out access, with one ingress lane and one egress lane.
- Widen the I-40 WB Ramp to provide an exclusive right-turn lane with 200 feet of storage and an appropriate taper.

The recommended roadway laneage is shown on **Figure ES-1.**

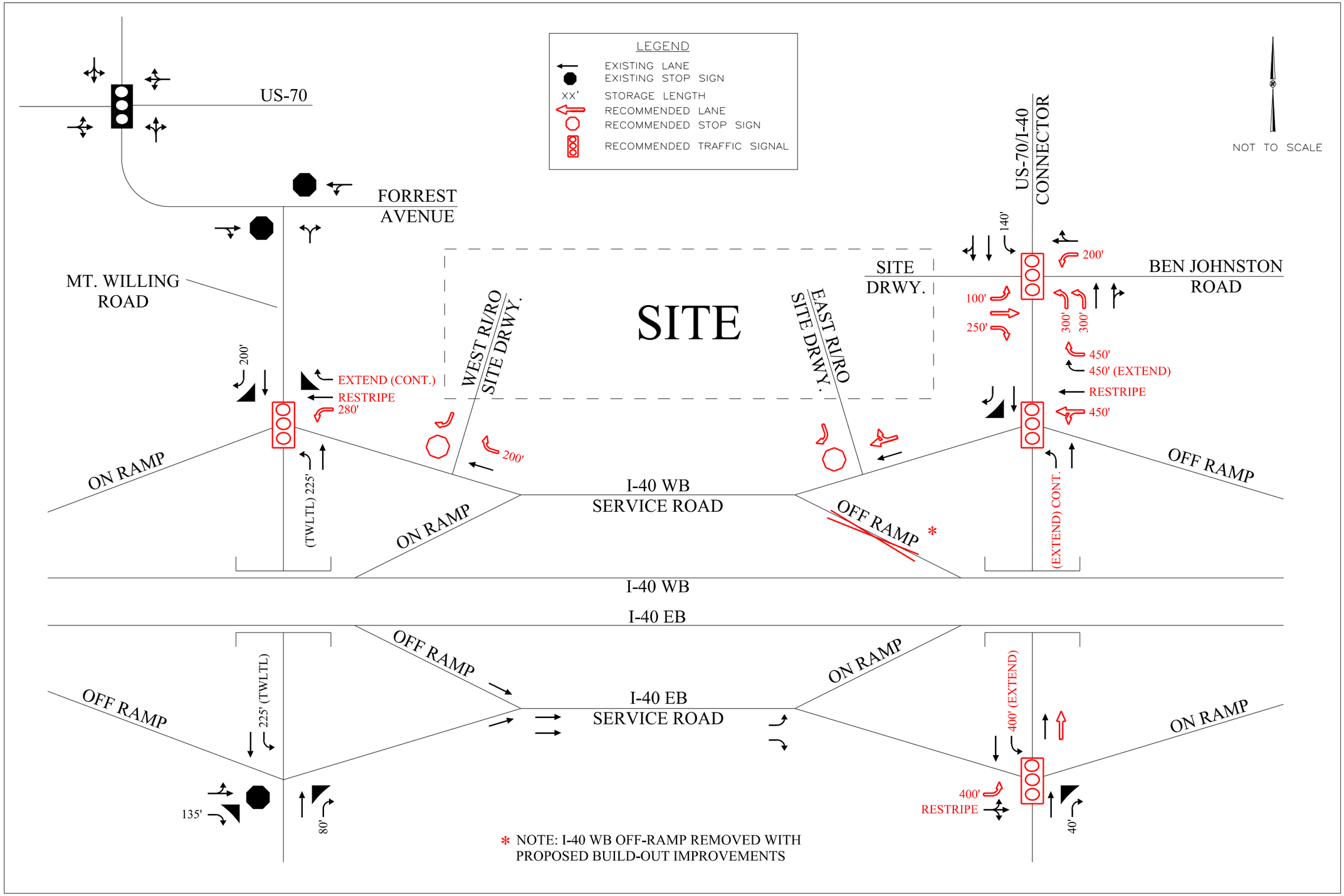

FIGURE ES-1

RECOMMENDED ROADWAY LANEAGE

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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1.0 Introduction

Kimley-Horn and Associates, Inc. has performed a Traffic Impact Analysis for the proposed Buc-ee's - West Orange County project located generally north of I-40 between Mt. Willing Road and the US-70/I-40 Connector in Efland, North Carolina. As currently envisioned, the project is assumed to include a 120-pump gas station with convenience store. Project build-out is anticipated in 2022. The project will be accessed via one full-movement driveway on the US-70/I-40 Connector aligning with Ben Johnston Road as well as two right-in/right-out driveways along the I-40 WB Service Road.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2019) traffic condition as well as the projected (2022) background and build-out traffic conditions. Note that I-40 and I-85 routes overlap in the study area. Because the freeway's east-west orientation through the study area generally matches I-40's overall alignment, this report refers to this roadway as I-40 for clarity and consistency.

2.0 Inventory

2.1 *Study Area*

The study area for this development in includes the following intersections:

- US-70 – Efland-Cedar Grove Road
- Mt. Willing Road – Forrest Avenue
- Mt. Willing Road – I-40 WB Ramps
- Mt. Willing Road – I-40 EB Ramps
- US-70/I-40 Connector – I-40 EB Ramps
- US-70/I-40 Connector – I-40 WB Ramps
- US-70/I-40 Connector – Ben Johnston Road/Site Driveway
- I-40 WB Service Road – East RI/RO Site Driveway
- I-40 WB Service Road – West RI/RO Site Driveway

Figure 2.1 shows the site location.

2.2 *Existing Conditions*

The proposed Buc-ee's - West Orange County project is located generally north of I-40 between Mt. Willing Road and the US-70/I-40 Connector in Efland, North Carolina. Significant roadways in the study area include I-40, Mt. Willing Road, US-70/I-40 Connector, and US-70. **Figure 2.2** shows the existing roadway laneage.

I-40 is generally an eight-lane divided freeway with a posted speed limit of 65 mph in the vicinity of the site. NCDOT reports that the 2018 average daily traffic (ADT) volume was approximately 126,000 vehicles per day (vpd) between Mt. Willing Road and US-70/I-40 Connector. Note that I-40 and I-85 routes overlap in the study area. Because the freeway's east-west orientation through the study area generally matches I-40's overall alignment, this report refers to this roadway as I-40.

Mt. Willing Road is generally a two-lane undivided road with a posted speed limit of 45 mph in the vicinity of the site. The 2017 ADT volume was approximately 8,100 vpd north of I-40.

The US-70/I-40 Connector varies between a three-lane undivided road and a four-lane divided road with a posted speed limit of 45 mph south of Ben Johnson Road. The 2018 ADT volume was approximately 5,900 vpd north of Ben Johnston Road.

US-70 is generally a two-lane undivided road with a posted speed limit of 45 mph in the vicinity of Efland-Cedar Grove Road. The 2017 ADT volume was approximately 4,400 vpd east of Efland-Cedar Grove Road.

Kimley»Horn	WEST ORANGE SITE EFLAND, NC TRAFFIC CAPACITY ANALYSIS	SITE LOCATION	FIGURE 2.1

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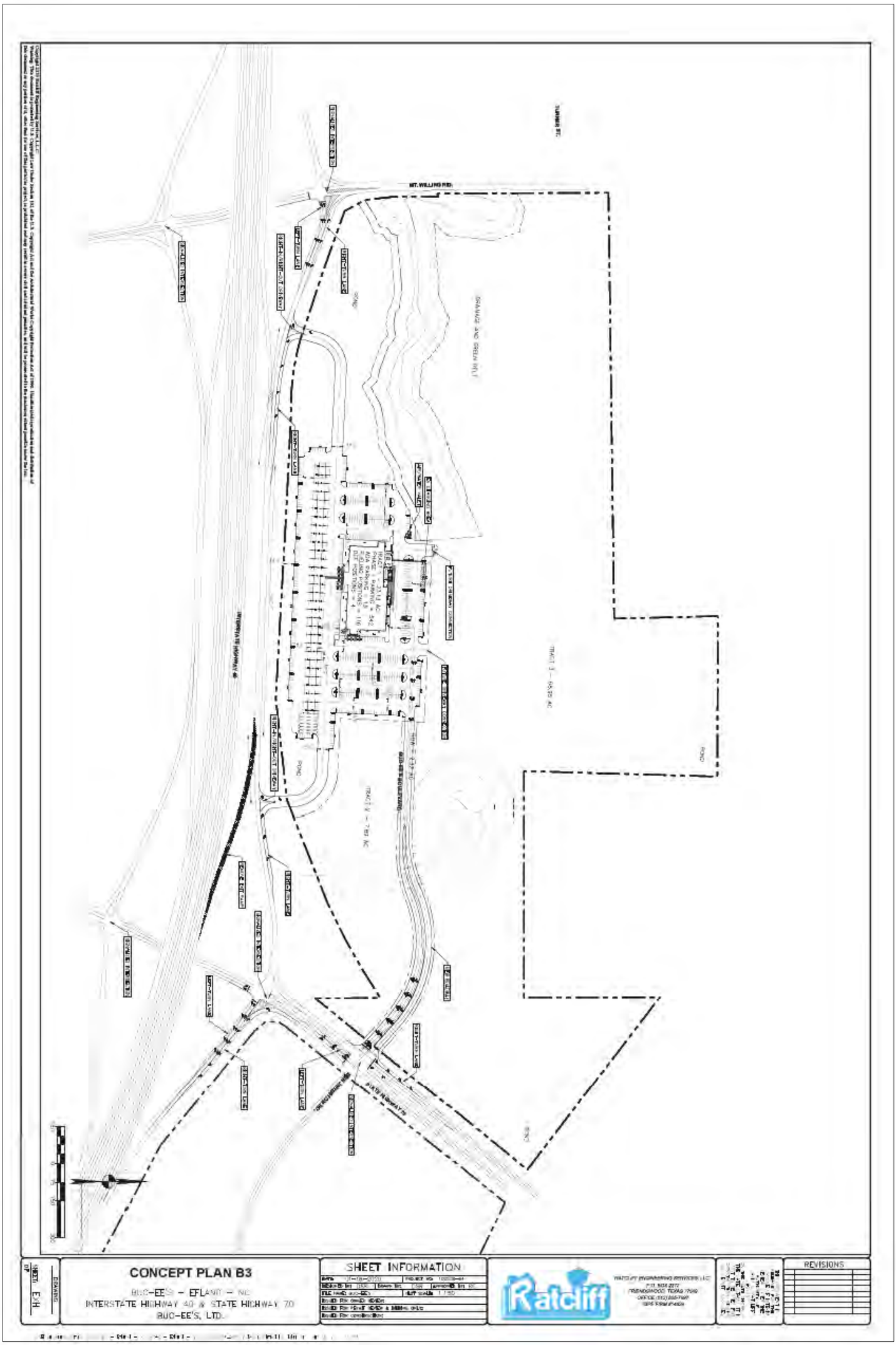

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WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

CONCEPTUAL SITE PLAN

FIGURE
2.2

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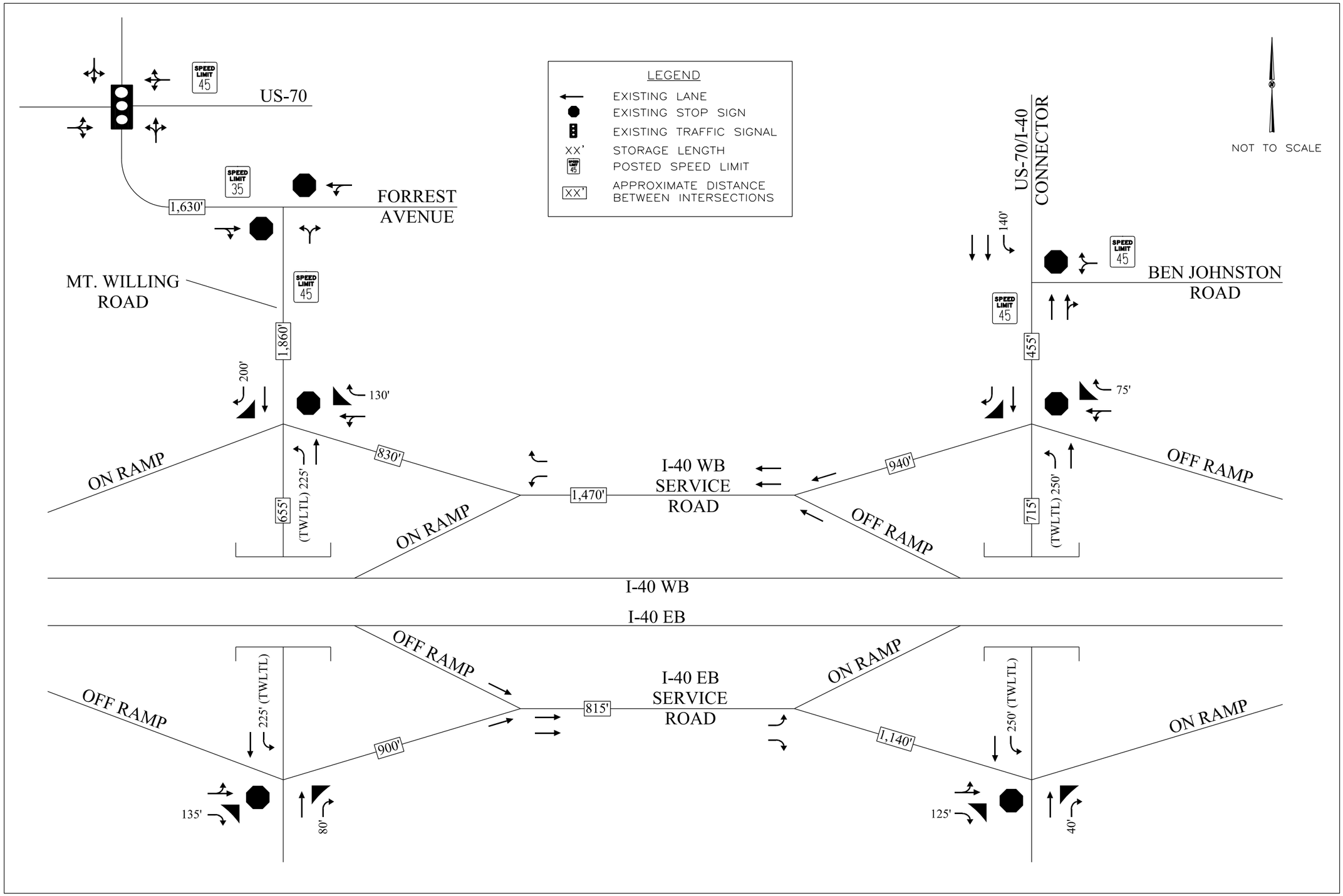

FIGURE 2.3

EXISTING ROADWAY LANEAGE

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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3.0 Traffic Generation

As envisioned on the current site plan, the project is assumed to include a 120-pump gas station with convenience store which possesses unique trip generation characteristics that outside the data range published in *Trip Generation* (Institute of Transportation Engineers, Tenth Edition, 2017) for land-use code 945 (gas station with convenience store). Therefore, the trip generation rates for this project were based on data collected at nine similar sites in Texas. These rates are shown in Table 3.1.

Table 3.1
Trip Generation Rates (trips per pump) – User-Specific Data

Scenario	Rate (trips/pump)	Percent In	Percent Out
Daily (weekday)	192.37	50%	50%
AM Peak Hour	10.16	53%	47%
PM Peak Hour	14.10	52%	48%
Saturday Peak Hour	20.43	51%	49%

It should be noted that the rates shown in Table 3.1 reflect total site-generated trips. This methodology differs from the guidance provided in ITE's *Trip Generation* manual, which indicates that pass-by traffic (trips already on the network that will make a trip to the site as they pass by on the adjacent street) will account for between 56-62% of peak hour site-generated traffic for land-use code 945. However, receipt records from the nine similar Texas sites indicate that over 90% of customers live outside a site's zip code. This data, combined with this project's proposed use and location along I-40, suggests that nearly all site-generated trips can be expected to act as pass-by traffic. Therefore, rather than distinguish between primary and pass-by site traffic, this analysis instead used a single site trip generation rate for each peak hour and a single trip assignment, discussed in *Section 4.0*, which reflects this unique traffic pattern.

Multiple municipalities in several states have previously approved this methodology for use in traffic impact analyses of proposed sites. The Texas volume data and detailed trip generation calculations are included in the Appendix of this report.

Table 3.2 summarizes the estimated traffic generation for the proposed project.

Table 3.2
Traffic Generation (Vehicles) – Buc-ee's - West Orange County

Land Use	Intensity		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
			In	Out	In	Out	In	Out
Gasoline Station with Convenience Store	120	pumps	646	573	880	812	1,251	1,201
Net New External Trips			**646**	**573**	**880**	**812**	**1,251**	**1,201**

As shown in Table 3.2, the proposed development has the potential to generate 1,219 trips in the AM peak hour and 1,692 trips in the PM peak hour, and 2,452 trips during the daily peak hour on a typical Saturday.

4.0 Site Traffic Distribution

The site-generated trips were assigned to the surrounding roadway network based on the following distribution:

- 47% to/from the east on I-40
- 47% to/from the west on I-40
- 2% to/from the north on Mt. Willing Road
- 2% to/from the north on US-70/I-40 Connector
- 1% to/from the south on US-70/I-40 Connector
- 1% to/from the east on Ben Johnston Road

As noted in Section 3.0, based on receipt records from similar sites, nearly all site-generated trips are expected to function as pass-by traffic. Therefore, trips assigned to I-40 were functionally analyzed as pass-by trips: site trips from the west on I-40 were assigned to exit the site and continue eastbound, with a similar assumption for trips from the east. As overall distribution was assumed to be equal to/from the east and west on I-40, the distribution listed above was simplified accordingly.

All other trips were assigned to/from the site consistent with typical primary trip methodology, which assumes those trips would return to their origin upon exiting the site.

The site traffic distribution and percent assignment for the development are shown on **Figure 4.1.**

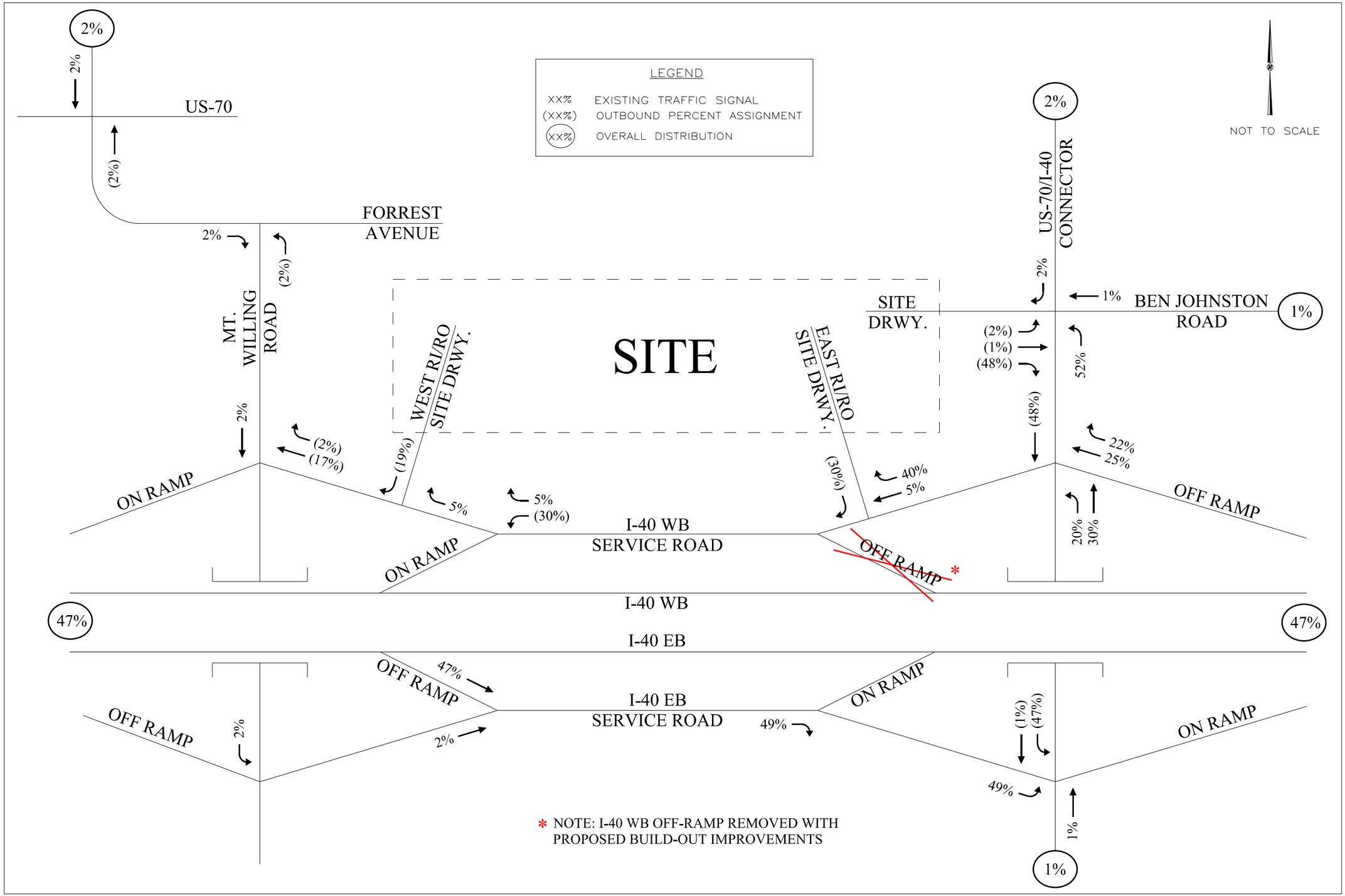

FIGURE 4.1

SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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5.0 Projected Traffic Volumes

5.1 *Existing Traffic*

AM peak hour (7:00 to 9:00 AM), PM peak hour (4:00 to 6:00 PM), and Saturday peak hour (11:00 AM to 1:00 PM) turning movement counts were performed at the following intersections:

- Mt. Willing Road – I-40 EB Ramps
- I-40 EB Service Road – I-40 EB Entrance Ramp
- US-70/I-40 Connector – I-40 EB Ramps
- US-70/I-40 Connector – I-40 WB Ramps
- I-40 WB Service Road – I-40 WB Entrance Ramp
- Mt. Willing Road – I-40 WB Ramps
- US-70/I-40 Connector – Ben Johnston Road
- Mt. Willing Road – Forrest Avenue
- US-70 – Efland-Cedar Grove Road

The AM and PM peak hour counts were collected on May 21-23, 2019. The Saturday peak hour counts were collected on October 26 and November 2, 2019. Traffic volumes at two intersection merge points (I-40 EB Service Road – I-40 EB Exit Ramp and I-40 WB Service Road – I-40 WB Exit Ramp) were derived by balancing actual count volumes at adjacent intersections. The existing AM, PM and Saturday peak hour traffic volumes are shown on **Figures 5.1, 5.2 and 5.3**, and the intersection traffic counts are included in the Appendix.

5.2 *Historic Growth Traffic*

Historic growth traffic is the increase in traffic due to non-specific growth throughout the area. An annual growth rate of 2.0% was applied to existing volumes in the study area up through the project build-out year 2022. Background growth calculations are detailed on intersection spreadsheets in the Appendix of this report.

5.3 *Background Traffic*

Background traffic volumes, which include existing and historic growth traffic, are shown on **Figures 5.1, 5.2** and **5.3** for the AM, PM and Saturday peak hours, respectively.

5.4 *Site Traffic*

The proposed site traffic was generated and assigned to the adjacent roadway network according to the distribution discussed previously in *Section 4.0*. The site traffic volumes for the AM, PM and Saturday peak hours are shown in **Figures 5.4, 5.5** and **5.6**, respectively.

5.5 *Build-Out Traffic*

To obtain the projected (2022) build-out traffic volumes, the projected site traffic was added to the projected (2022) background traffic. Traffic volume calculations are detailed in intersection spreadsheets in the Appendix of this report. **Figures 5.4, 5.5** and **5.6** show the projected (2022) AM, PM and Saturday peak hour build-out traffic volumes, respectively.

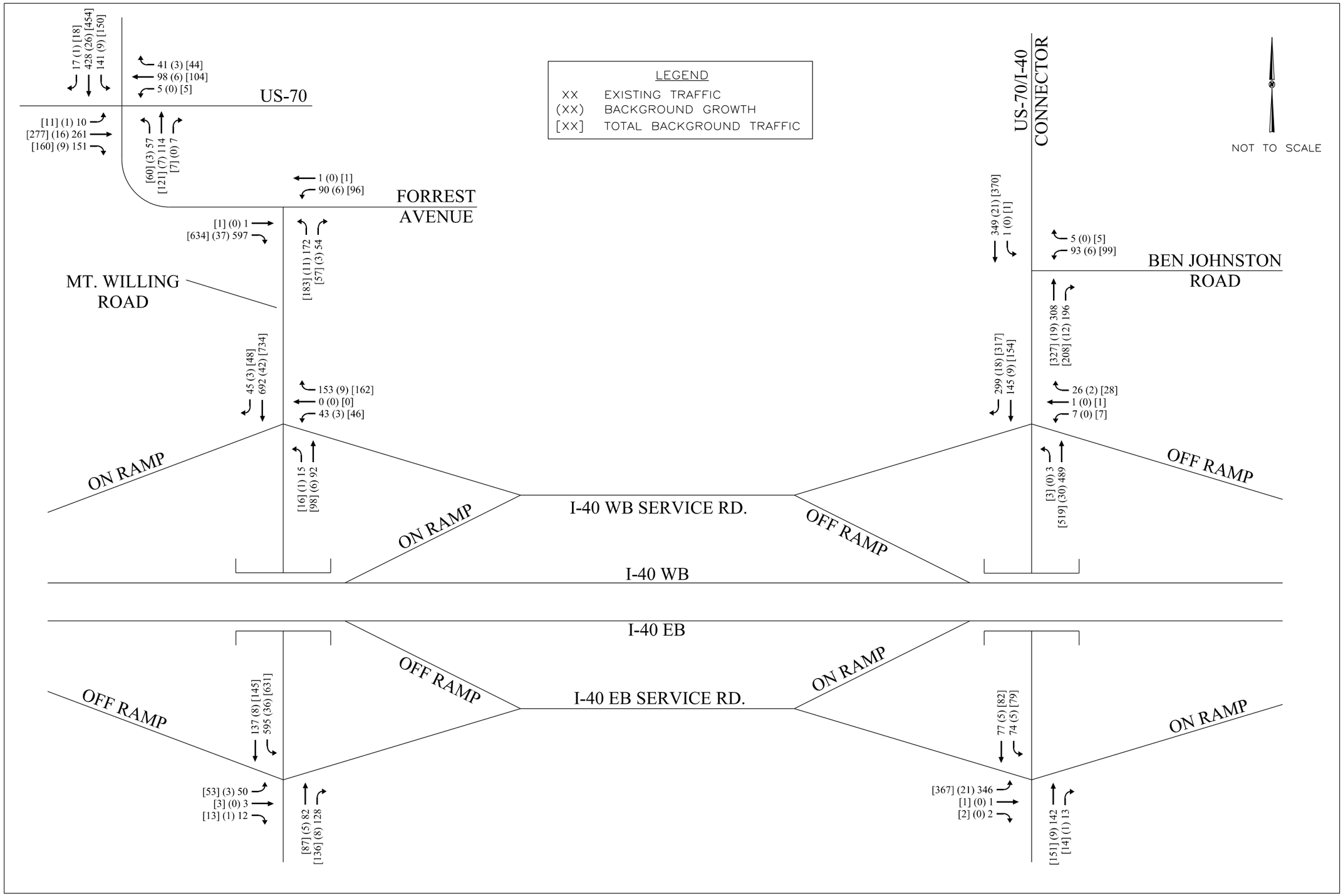

FIGURE 5.1

EXISTING AND PROJECTED (2022) BACKGROUND AM PEAK HOUR TRAFFIC VOLUMES

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

Kimley»Horn

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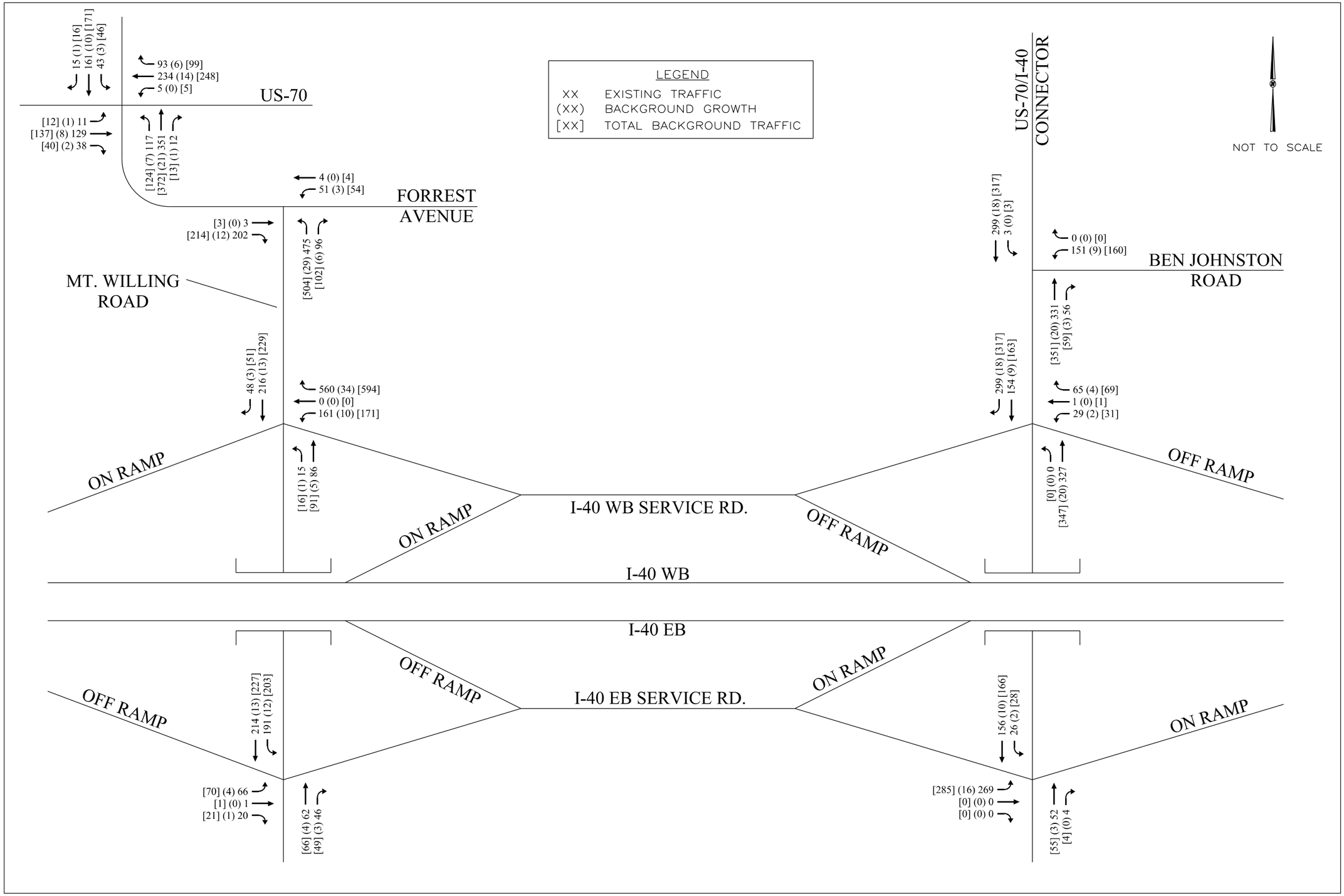

FIGURE 5.2

EXISTING AND PROJECTED (2022) BACKGROUND PM PEAK HOUR TRAFFIC VOLUMES

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EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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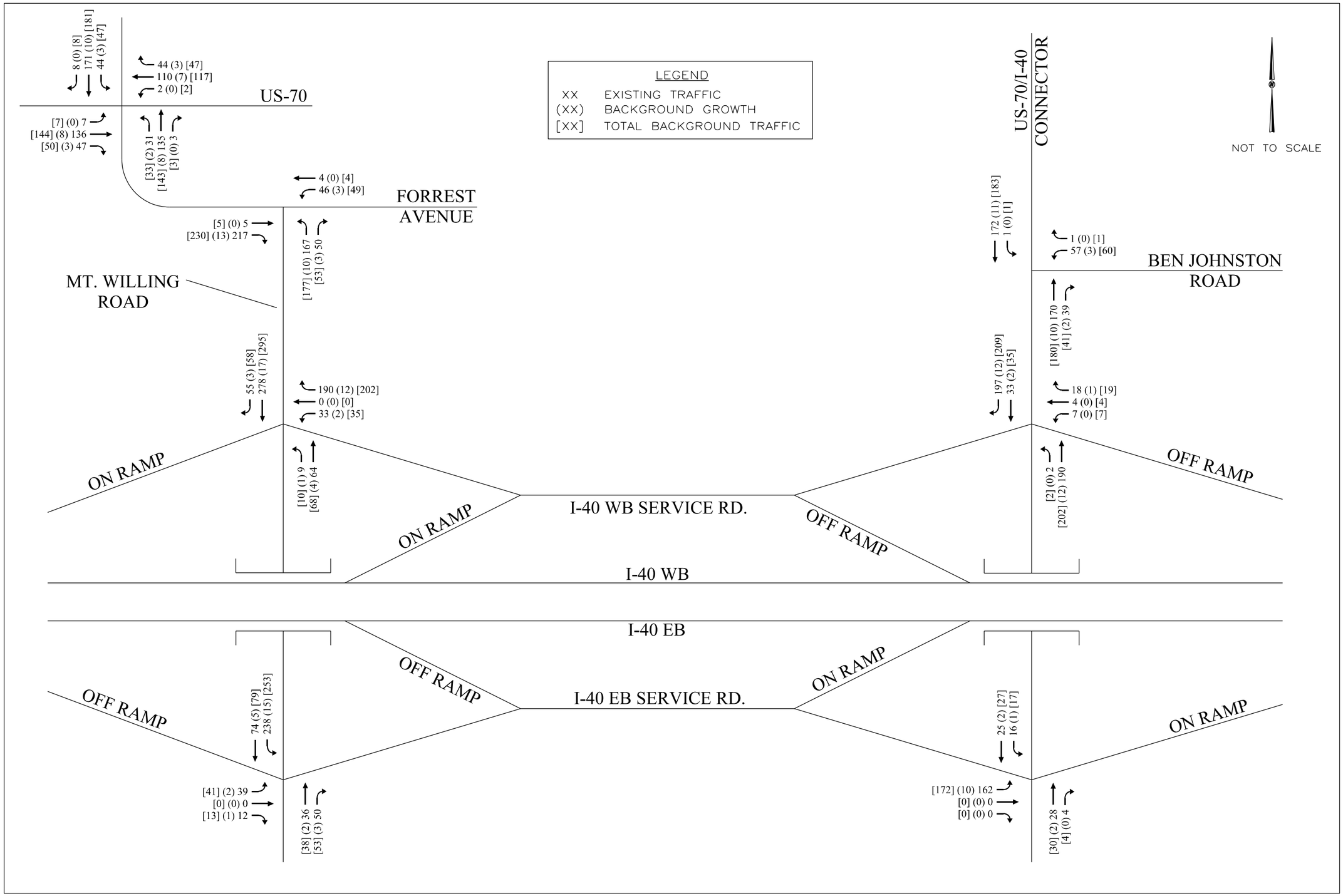

FIGURE 5.3

EXISTING AND PROJECTED (2022) BACKGROUND SATURDAY PEAK HOUR TRAFFIC VOLUMES

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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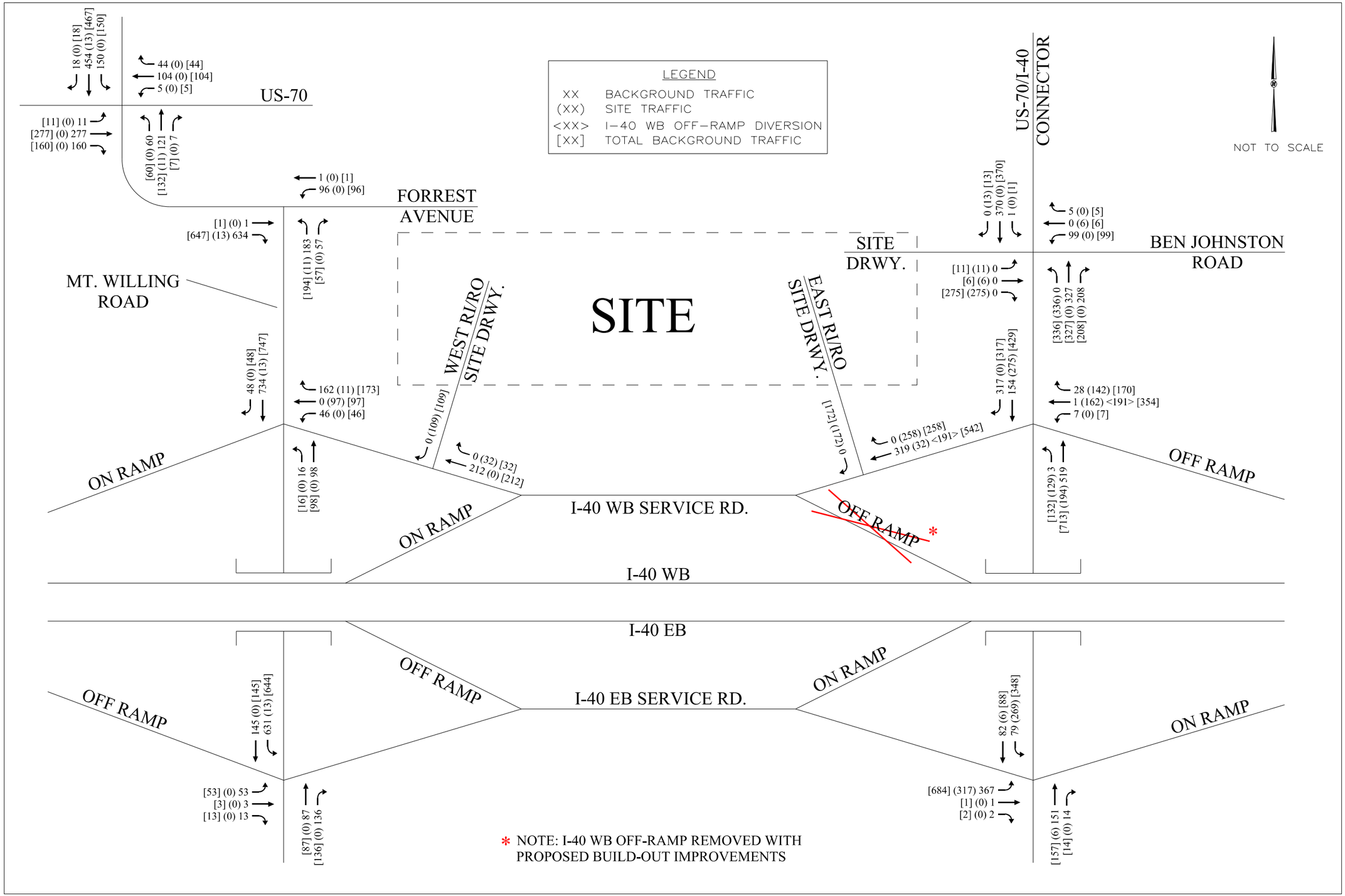

FIGURE 5.4

PROJECTED (2022) BUILD-OUT AM PEAK HOUR TRAFFIC VOLUMES

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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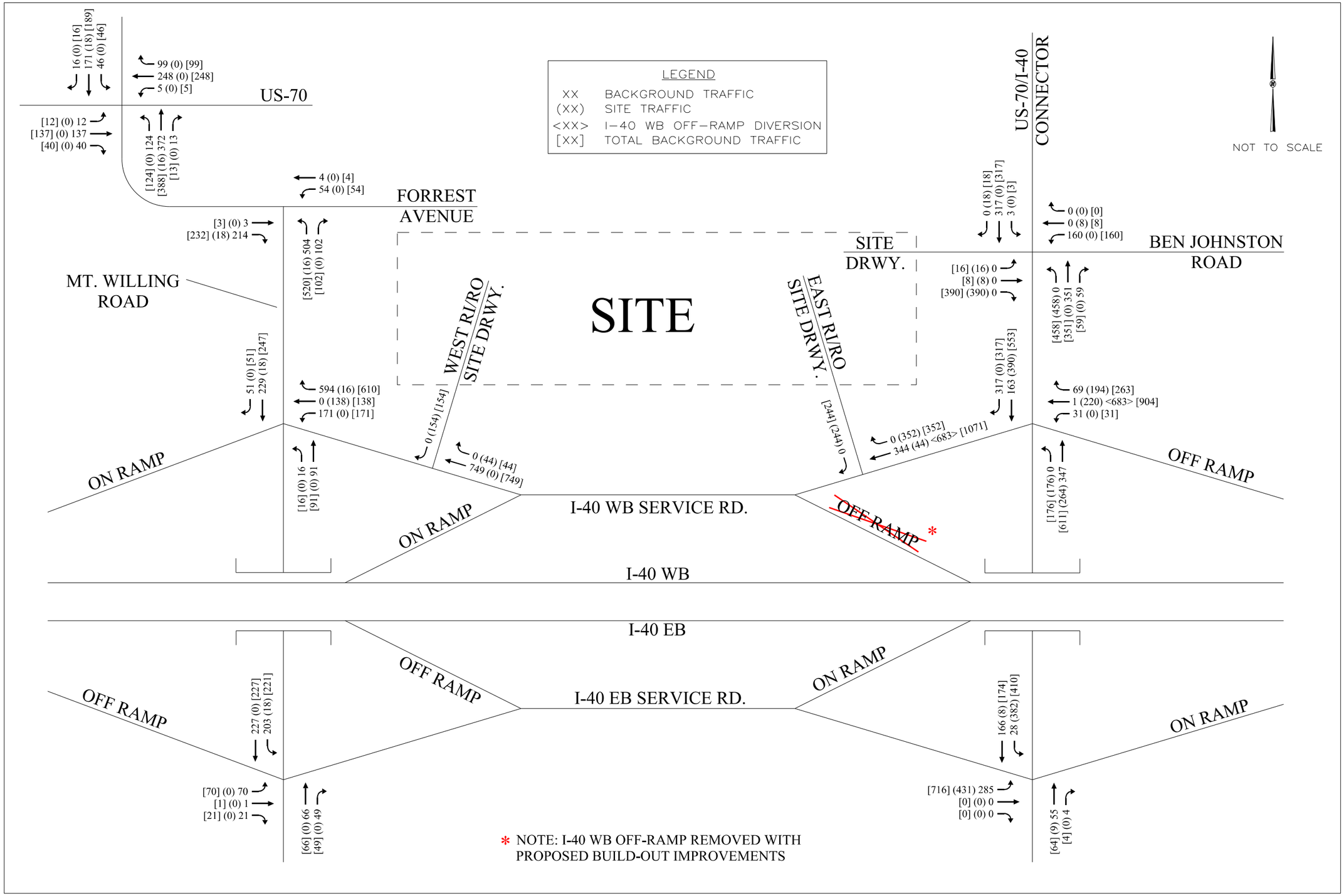

FIGURE 5.5

PROJECTED (2022) BUILD-OUT PM PEAK HOUR TRAFFIC VOLUMES

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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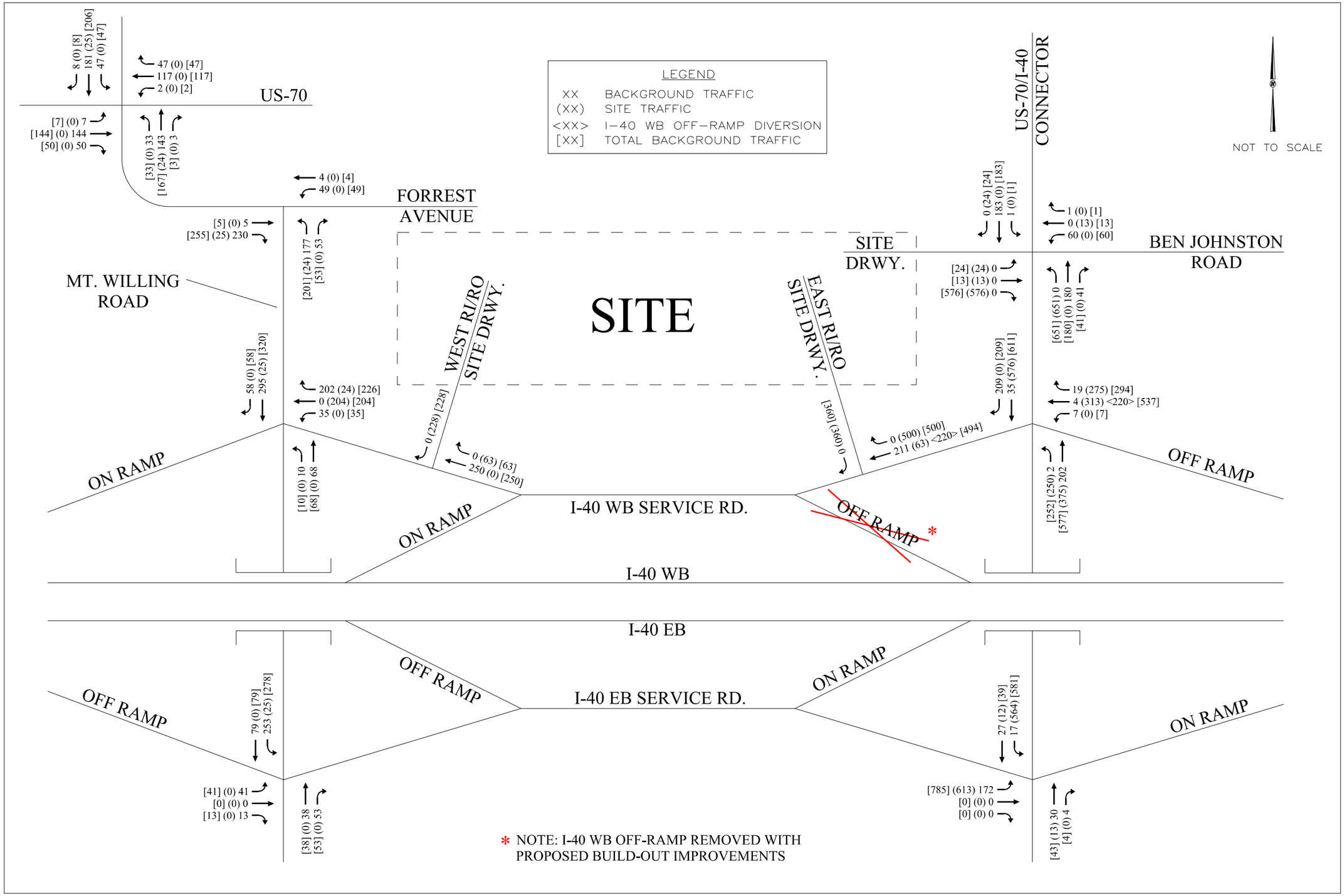

FIGURE 5.6

PROJECTED (2022) BUILD-OUT SATURDAY PEAK HOUR TRAFFIC VOLUMES

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

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6.0 Capacity Analysis

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a set time duration. Capacity is combined with Level-of-Service (LOS) to describe operating characteristics of a road segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays. LOS D is the typically accepted standard for signalized intersections in urbanized areas. For signalized intersections, LOS is defined for the overall intersection operation.

For unsignalized intersections, only the movements that must yield right-of-way experience control delay. Therefore, LOS criteria for the overall intersection is not reported by Synchro/SimTraffic Version 10 or computable using methodology published in the *Highway Capacity Manual.* It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay.

Table 6.0 lists the LOS control delay thresholds published in the *Highway Capacity Manual* for signalized and unsignalized intersections, and all capacity analyses are included in the Appendix and are briefly summarized in the following sub-sections.

Table 6.0
Level-of-Service Control Delay Thresholds

Level-of-Service	Signalized Intersections – Control Delay Per Vehicle [sec/veh]	Unsignalized Intersections – Average Control Delay [sec/veh] & Qualitative Operational Description	
A	≤ 10	≤ 10	Short Delays
B	> 10 – 20	> 10 – 15	
C	> 20 – 35	> 15 – 25	
D	> 35 – 55	> 25 – 35	Moderate Delays
E	> 55 – 80	> 35 – 50	
F	> 80	> 50	Long Delays

Capacity analyses (see Appendix) were performed for the weekday AM, PM and Saturday peak hours for the existing (2019) traffic condition and the projected (2022) background and build-out traffic conditions using Synchro/SimTraffic Version 10 software to determine the operating characteristics of the adjacent road network and the impacts of the proposed project. Capacity analyses were performed at the following intersections:

- US-70 – Efland-Cedar Grove Road
- Mt. Willing Road – Forrest Avenue
- Mt. Willing Road – I-40 WB Ramps
- Mt. Willing Road – I-40 EB Ramps
- US-70/I-40 Connector – I-40 EB Ramps
- US-70/I-40 Connector – I-40 WB Ramps
- US-70/I-40 Connector – Ben Johnston Road/Site Driveway
- I-40 WB Service Road – East RI/RO Site Driveway
- I-40 WB Service Road – West RI/RO Site Driveway

Existing peak hour factors (PHF's) were used where current conditions exceed the default value of 0.90 in the existing and background traffic conditions, while a consistent PHF of 0.90 was used at all study intersections in the build-out analyses. Where count or projected volumes are less than 4, a minimum volume of 4 was used in the Synchro analysis to be conservative.

6.1 *US-70 – Efland-Cedar Grove Road*

Analyses indicate that the signalized US-70 – Efland-Cedar Grove Road intersection currently operates at LOS C in the AM peak hour, LOS B in the PM peak hour, and LOS A in the Saturday peak hour. With the addition of background and site traffic, the intersection is expected to operate at LOS C in the AM peak hour and LOS B in the PM and Saturday peak hours. No queuing issues are expected at this intersection based on SimTraffic simulations.

Based on the minor increase in intersection delay associated with the addition of site traffic, and since no queuing issues are anticipated, no improvements are recommended at this intersection to accommodate site traffic.

Table 6.1 summarizes the operation of the intersection for the existing (2019) and projected (2022) background and build-out traffic conditions.

Table 6.1
Level-of-Service
US-70 – Efland-Cedar Grove Road (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Existing (2019) Traffic	C (23.2)	B (15.7)	A (9.8)
Background (2022) Traffic	C (25.4)	B (16.8)	B (10.1)
Build-out (2022) Traffic	C (27.3)	B (19.1)	B (10.7)

6.2 *Mt. Willing Road – Forrest Avenue*

Analyses indicate that the unsignalized Forrest Avenue – Mt. Willing Road intersection currently operates with short delays on the minor-street approaches (Forrest Avenue). With the addition of background and site-generated traffic, the minor streets are expected to continue operating with short delays in the build-out condition. Furthermore, site traffic has minimal impact on intersection operations. No queuing issues are expected at this intersection based on SimTraffic simulations.

No improvements are recommended at this intersection to accommodate site traffic.

Table 6.2 summarizes the operation of the intersection for the existing (2019) and projected (2022) background and build-out traffic conditions.

Table 6.2
Level-of-Service
Mt. Willing Road – Forrest Avenue (Unsignalized)*

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Existing (2019) Traffic	EB – A (9.9)	WB – A (9.1)	WB – A (5.8)
Background (2022) Traffic	EB – B (13.2)	WB – A (9.9)	WB – A (5.9)
Build-out (2022) Traffic	EB – B (13.3)	WB – B (12.8)	WB – A (6.4)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

6.3 *Mt. Willing Road – I-40 WB Ramps*

Analyses indicate that unsignalized intersection of Mt. Willing Road – I-40 WB Ramps currently operates with short delays on the westbound minor street approach (I-40 WB Ramp) in each of the studied peak hours. With the addition of background traffic, the minor street approach is expected to continue operating with short delays in AM and Saturday peak hours but with moderate delays in the PM peak hour.

The following improvements are recommended to accommodate projected site traffic demands:

- Construct a westbound left-turn lane with 280 feet of storage and an appropriate taper on the I-40 WB Ramp
- Extend the existing channelized westbound right-turn lane on I-40 WB Ramp to provide a continuous channelized westbound right-turn lane between West RI/RO Driveway and Mt. Willing Road
- Restripe the existing westbound shared left-turn lane on I-40 WB Ramp to provide an exclusive through lane
- Install a traffic signal.

With the recommended improvements in place, the intersection is expected to operate with short delays in each of the studied peak hours in the build-out traffic condition. No queuing issues are expected at this intersection based on SimTraffic simulations, and no additional improvements are recommended at this intersection to accommodate site traffic.

Table 6.3 summarizes the operation of the intersection for the existing (2019) and projected (2022) background and build-out traffic conditions.

Table 6.3
Level-of-Service
Mt. Willing Road – I-40 WB Ramps

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Existing (2019) Traffic – *Unsignalized**	WB – A (4.1)	WB – B (13.0)	WB – A (3.0)
Background (2022) Traffic – *Unsignalized**	WB – A (4.1)	WB – D (27.0)	WB – A (3.3)
Build-out (2022) Traffic – *Signalized*	B (10.7)	A (9.8)	B (11.4)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

6.4 *Mt. Willing Road – I-40 EB Ramps*

Analyses indicate that the unsignalized Mt. Willing Road – I-40 EB Ramps intersection currently operates with short delays on the minor street approach (I-40 EB Ramp). With the addition of background and site-generated traffic, the minor street approach is expected to continue operating with short delays on the minor street approach in the build-out traffic condition. Note that it is typical for the stop-controlled approach with a major street to experience long delays while the major street experiences little or no delay. Furthermore, in the highest volume peak hour site traffic is expected to account for less than 2% of build-out intersection traffic volumes. No site trips are expected to be added to the eastbound minor-street approach. SimTraffic simulations indicate that maximum queues on the eastbound approach are expected to be less than 100 feet in all peak hours. Note that delays are reported to decrease with the site traffic in the AM Peak Hour. This is due to variations in simulation results and is not uncommon in instances with low-volumes on stop-controlled approaches.

No improvements are recommended at this intersection to accommodate site traffic.

Table 6.4 summarizes the operation of the intersection for the existing (2019) and projected (2022) background and build-out traffic conditions.

Table 6.4
Level-of-Service
Mt. Willing Road – I-40 EB Ramps (Unsignalized)*

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Existing (2019) Traffic	EB – C (17.0)	EB – A (5.4)	EB – A (4.9)
Background (2022) Traffic	EB – D (28.7)	EB – A (5.5)	EB – A (4.8)
Build-out (2022) Traffic	EB – C (21.0)	EB – A (5.6)	EB – A (5.4)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

6.5 *US-70/I-40 Connector – I-40 EB Ramps*

Analyses indicate that unsignalized intersection of US-70/I-40 Connector – I-40 EB Ramps currently operates with short delays on the minor street approach (I-40 EB Ramp). The minor street approach is expected to continue operating with short delays in the background condition.

The following improvements are recommended to accommodate projected site traffic demands:

- Restripe the existing eastbound right turn lane and remove right turn channelization on the I-40 EB Ramp to provide a continuous shared left/through/right-turn lane
- Widen the I-40 EB Ramp to provide and exclusive eastbound left-turn lane with 400 feet of storage and an appropriate taper
- Extend the existing exclusive southbound left-turn lane on US-70/I-40 Connector to provide 400 feet of storage and an appropriate taper
- Construct an additional northbound receiving lane on US-70/I-40 Connector.
- Install a traffic signal.

With the recommended improvements in place, the intersection is projected to operate at LOS C in the weekday AM and PM peak hours and LOS D in the Saturday peak hour of the build-out traffic condition. All approaches are expected to operate acceptably. SimTraffic simulations indicate that queues are expected to be manageable and accommodated within the recommended storage lengths. Therefore, no additional improvements are recommended at this intersection to accommodate site traffic.

Table 6.5 summarizes the operation of the intersection for the existing (2019) and projected (2023) background and build-out traffic conditions.

Table 6.5
Level-of-Service
US-70/I-40 Connector – I-40 EB Ramps

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Existing (2019) Traffic – *Unsignalized**	EB – A (9.3)	EB – A (7.5)	EB – A (3.9)
Background (2022) Traffic – *Unsignalized**	EB – A (9.3)	EB – A (7.5)	EB – A (4.0)
Build-out (2022) Traffic – *Signalized*	C (30.6)	C (34.5)	D (40.8)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

6.6 *US-70/I-40 Connector – I-40 WB Ramps*

Analyses indicate that unsignalized intersection of US-70/I-40 Connector – I-40 WB Ramps currently operates with short delays on the minor street approach (I-40 WB Ramp) in all peak hours. The minor street approach is expected to continue operating with short delays in the background condition.

The following improvements are recommended to accommodate projected site traffic demands:

- Restripe the existing westbound left-turn lane on I-40 WB Ramp to provide an exclusive through lane
- Construct a westbound shared through/left-turn lane with 450 feet of storage and an appropriate taper on I-40 WB Ramp
- Widen the I-40 WB Ramp to provide dual westbound right-turn lanes with 450 feet of storage and appropriate tapers
- Construct a second receiving lane on I-40 WB ramp departure, extending to I-40 WB Service Road
- Extend the existing northbound left-turn lane to provide a continuous left-turn lane and a continuous through lane on the northbound approach of US-70/I-40 Connector
- Install a traffic signal

With the recommended improvements in place, the intersection is projected to operate at LOS B in the weekday AM peak hour and the Saturday peak hour and LOS C in the PM peak hour of the build-out traffic condition. SimTraffic simulations indicate that queues are expected to be manageable and accommodated within the recommended storage lengths. Therefore, no additional improvements are recommended at this intersection to accommodate site traffic.

Table 6.6 summarizes the operation of the intersection for the existing (2019) and projected (2023) background and build-out traffic conditions.

Table 6.6
Level-of-Service
US-70/I-40 Connector – I-40 WB Ramps

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Existing (2019) Traffic – *Unsignalized**	WB – A (3.1)	WB – A (3.7)	WB – A (2.7)
Background (2022) Traffic – *Unsignalized**	WB – A (3.0)	WB – A (3.2)	WB – A (2.7)
Build-out (2022) Traffic – *Signalized*	B (14.9)	C (23.1)	B (18.7)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

6.7 *US-70/I-40 Connector – Ben Johnston Road/Site Driveway*

Analyses indicate that unsignalized intersection of US-70/I-40 Connector – Ben Johnston Road currently operates with short delays on the minor street approach (Ben Johnston Road) in all peak hours. The minor street approach is expected to continue operating with short delays in the background condition.

The following improvements are recommended to accommodate projected site traffic demands:

- Construct a site driveway on US-70/I-40 Connector Road opposite Ben Johnston Road to provide two ingress lanes, and three egress lanes: (a left-turn lane with a minimum 100 feet of storage, a continuous through lane, and a right-turn lane with a minimum 250 feet of storage)
- Construct an exclusive westbound left-turn lane on Ben Johnston Road with 200 feet of storage and an appropriate taper
- Restripe the existing lane on Ben Johnston Road to provide a continuous westbound shared through/right-turn lane
- Construct dual northbound left-turn lanes with 300 feet of storage and appropriate tapers on US-70/I-40 Connector
- Install a traffic signal.

With the recommended improvements in place, the intersection is projected to operate at LOS B in the AM and Saturday peak hours and LOS B in the PM peak hour of the build-out traffic condition. While long delays are expected on the westbound approach in the AM and PM peak hours, SimTraffic simulations indicate that maximum queues on this approach are expected to be manageable and to be contained within the recommended storage length. Therefore, no additional improvements are recommended at this intersection to accommodate site traffic.

Table 6.7 summarizes the operation of the intersection for the existing (2019) and projected (2023) background and build-out traffic conditions.

Table 6.7
Level-of-Service
US-70/I-40 Connector – Ben Johnston Road/Site Driveway

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Existing (2019) Traffic – *Unsignalized**	WB – B (10.7)	WB – B (12.6)	WB – A (5.2)
Background (2022) Traffic – *Unsignalized**	WB – B (10.9)	WB – C (17.0)	WB – A (4.9)
Build-out (2022) Traffic – *Signalized*	B (17.2)	C (20.7)	B (14.3)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

6.8 *I-40 WB Service Road – East RI/RO Site Driveway*

The current site plan proposes constructing a right-in/right-out (RI/RO) driveway on the I-40 WB Service Road approximately 750 feet west of the US-70/I-40 Connector. The following improvements are recommended to accommodate projected site traffic demands:

- Construct the site driveway as a right-in/right-out access, with one ingress lane and one egress lane
- Remove the existing I-40 WB Exit Ramp (WB Exit 160)
- Widen the westbound I-40 WB Ramp to provide a continuous through lane and a continuous shared through/right-turn lane on I-40 WB Service Road through this intersection, tying into the existing two-lane cross section on the I-40 WB Service Road just west of the exiting WB Exit 160 Ramp junction.

With the recommended improvements in place, the southbound approach (East RI/RO Site Driveway) is expected to operate with short delays in the build-out traffic condition. SimTraffic simulations indicate that maximum queues on the westbound approach are expected to be less than 25 feet in all peak hours. Therefore, no additional improvements are recommended at this intersection to accommodate site traffic.

Table 6.8 summarizes the operation of the intersection for the projected (2023) build-out traffic condition.

Table 6.8
Level-of-Service
I-40 WB Service Road – East RI/RO Site Driveway (Unsignalized)*

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Build-out (2022) Traffic	SB – A (2.4)	SB – A (3.3)	SB – A (3.7)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

6.9 *I-40 WB Ramp – West RI/RO Site Driveway*

The current site plan proposes constructing a right-in/right-out (RI/RO) driveway on the I-40 WB Service Road approximately 565 feet east of Mt. Willing Road. The following additional improvements are recommended to accommodate projected site traffic demands:

- Construct the site driveway as a right-in/right-out access, with one ingress lane and one egress lane
- Widen the I-40 WB Ramp to provide an exclusive right-turn lane with 200 feet of storage and an appropriate taper.

With the recommended improvements in place, the minor street approach (West RI/RO Site Driveway) is expected to operate with short delays in the build-out traffic condition. No queuing issues are expected at this intersection. Therefore, no additional improvements are recommended at this intersection to accommodate site traffic.

Table 6.9 summarizes the operation of the intersection for the projected (2023) build-out traffic condition.

Table 6.9
Level-of-Service
I-40 WB Service Road – West RI/RO Site Driveway (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	Saturday Peak Hour LOS (Delay)
Build-out (2022) Traffic*	SB – A (2.1)	SB – A (6.6)	SB – A (2.5)

** Note: HCM methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach (per SimTraffic) are reported above for unsignalized intersections.*

7.0 Weaving Analysis

Weaving occurs when one vehicle must cross the path of another vehicle along the length of a one-way road segment without the aid of traffic control devices. Excessive weaving can increase collision risk and impede traffic operations within the weaving segment.

Weaving capacity, which is measured in density, is defined as the maximum volume of vehicles that can weave across one lane within a particular roadway segment. Weaving capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a weaving segment. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six weaving levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays.

The volume-to-capacity ratio (v/c) is also considered when examining weaving capacity. If a segment's v/c is greater than 1.00, then demand exceeds theoretical capacity, and the segment is assigned LOS F regardless of the segment's calculated density.

Table 7.0 lists the LOS density thresholds published in the *Highway Capacity Manual* for freeway, multilane highway, and collector-distributor road segments. All weaving analyses are included in the Appendix and are briefly summarized in the following paragraphs.

Table 7.0
Weaving Level-of-Service Density Thresholds

Level-of-Service	Freeway Weaving Segments [pc/mi/ln]	Multilane Highways or Collector-Distributor Roadways [pc/mi/ln]
A	≤ 10	≤ 12
B	> 10 – 20	> 12 – 24
C	> 20 – 28	> 24 – 32
D	> 28 – 35	> 32 – 36
E	> 35	> 36
F	v/c > 1.00*	v/c > 1.00*

** Note: a weaving segment is assigned LOS F if v/c > 1.00 regardless of the calculated density.*

A weaving analysis (see Appendix) was performed for the weekday AM, PM and Saturday peak hours for the projected (2022) build-out traffic condition using Highway Capacity Software (HCS Version 7.8.5) to determine the operating conditions of the roadway segments listed below. Volumes associated with these weaving movements are including in the intersection spreadsheets in the appendix.

- I-40 EB Service Road from Mt. Willing Road to US-70/I-40 Connector
- I-40 EB Service Road from East RI/RO Site Driveway to Mt. Willing Road

The I-40 EB Service Road segment was analyzed as a one-sided collector-distributor weave. Vehicles exiting Eastbound I-40 via Exit 161 to make a turn onto US-70/I-40 Connector must make one lane change in the same segment where vehicles exiting Mt. Willing Road must make one lane change to merge onto I-40 EB. A free-flow speed of 50 mph and a weaving length of 705 feet were assumed for the mainline segment. A free-flow speed of 45 mph was assumed for the I-40 EB ramps.

The I-40 WB Service Road segment was also analyzed as a one-sided collector-distributor weave. Vehicles exiting the East RIRO Site Drive must make one lane change to merge onto I-40 WB. A free-flow speed of 50 mph and a weaving length of 1075 feet were assumed for the mainline segment. A free-flow speed of 45 mph was assumed for the I-40 EB ramps. Note that the proposed removal of the existing I-40 WB Exit 160 off-ramp eliminates the existing weave made by traffic exiting Exit 160 and turning onto Mt. Willing Road.

A 0.90 peak hour factor and a 2.0% heavy vehicle percentage were used for all scenarios. Ramp distances and grades were measured using Orange County GIS data.

The peak hour weaving LOS for the projected (2022) build-out condition is shown in Table 7.1.

Table 7.1
Weaving Level-of-Service Summary

Condition	AM Peak Hour LOS (Density)	PM Peak Hour LOS (Density)	Saturday Peak Hour LOS (Density)
I-40 EB Service Road (Mt. Willing Road to US-70/I-40 Connector)			
Build (2022) Traffic	C (24.1) v/c = 0.83	B (14.5) v/c = 0.51	B (17.2) v/c = 0.60
I-40 WB Service Road (East RI/RO Site Driveway to Mt. Willing Road)			
Build (2022) Traffic	A (10.6) v/c = 0.30	B (21.3) v/c = 0.63	B (13.1) v/c = 0.41

As shown in Table 7.1, both I-40 service road segments operate with an acceptable weaving LOS and v/c ratio in the projected build-out traffic condition.

8.0 Recommendations

The following improvements are recommended to accommodate projected site traffic demands:

Mt. Willing Road – I-40 WB Ramps

- Construct a westbound left-turn lane with 280 feet of storage and an appropriate taper on the I-40 WB Ramp.
- Extend the existing channelized westbound right-turn lane on I-40 WB Ramp to provide a continuous channelized westbound right-turn lane between West RI/RO Driveway and Mt. Willing Road.
- Restripe the existing westbound shared left-turn lane on I-40 WB Ramp to provide an exclusive through lane.
- Install a traffic signal.

US-70/I-40 Connector – I-40 EB Ramps

- Restripe the existing eastbound right turn lane and remove right turn channelization on the I-40 EB Ramp to provide a continuous shared left/through/right-turn lane.
- Widen the I-40 EB Ramp to provide and exclusive eastbound left-turn lane with 400 feet of storage and an appropriate taper.
- Extend the existing exclusive southbound left-turn lane on US-70/I-40 Connector to provide 400 feet of storage and an appropriate taper.
- Construct an additional northbound receiving lane on US-70/I-40 Connector.
- Install a traffic signal.

US-70/I-40 Connector – I-40 WB Ramps

- Restripe the existing westbound left-turn lane on I-40 WB Ramp to provide an exclusive through lane
- Construct a westbound shared through/left-turn lane with 450 feet of storage and an appropriate taper on I-40 WB Ramp
- Widen the I-40 WB Ramp to provide dual westbound right-turn lanes with 450 feet of storage and appropriate tapers
- Construct a second receiving lane on I-40 WB ramp departure, extending to I-40 WB Service Road
- Extend the existing northbound left-turn lane to provide a continuous left-turn lane and a continuous through lane on the northbound approach of US-70/I-40 Connector
- Install a traffic signal

US-70/I-40 Connector – Ben Johnston Road/Site Driveway

- Construct a site driveway on US-70/I-40 Connector Road opposite Ben Johnston Road to provide two ingress lanes, and three egress lanes: (a left-turn lane with a minimum 100 feet of storage, a continuous through lane, and a right-turn lane with a minimum 250 feet of storage).
- Construct an exclusive westbound left-turn lane on Ben Johnston Road with 200 feet of storage and an appropriate taper
- Restripe the existing lane on Ben Johnston Road to provide a continuous westbound shared through/right-turn lane
- Construct dual northbound left-turn lanes with 300 feet of storage and appropriate tapers on US-70/I-40 Connector,
- Install a traffic signal.

I-40 WB Ramp – East RI/RO Site Driveway

- Construct the site driveway as a right-in/right-out access, with one ingress lane and one egress lane.
- Remove the existing I-40 WB Exit Ramp (WB Exit 160)
- Widen the westbound I-40 WB Ramp to provide a continuous through lane and a continuous shared through/right-turn lane on I-40 WB Service Road through this intersection, tying into the existing two-lane cross section on the I-40 WB Service Road just west of the exiting WB Exit 160 Ramp junction.

I-40 WB Ramp – West RI/RO Site Driveway

- Construct the site driveway as a right-in/right-out access, with one ingress lane and one egress lane.
- Widen the I-40 WB Ramp to provide an exclusive right-turn lane with 200 feet of storage and an appropriate taper.

The recommended roadway laneage is shown on **Figure 8.1**.

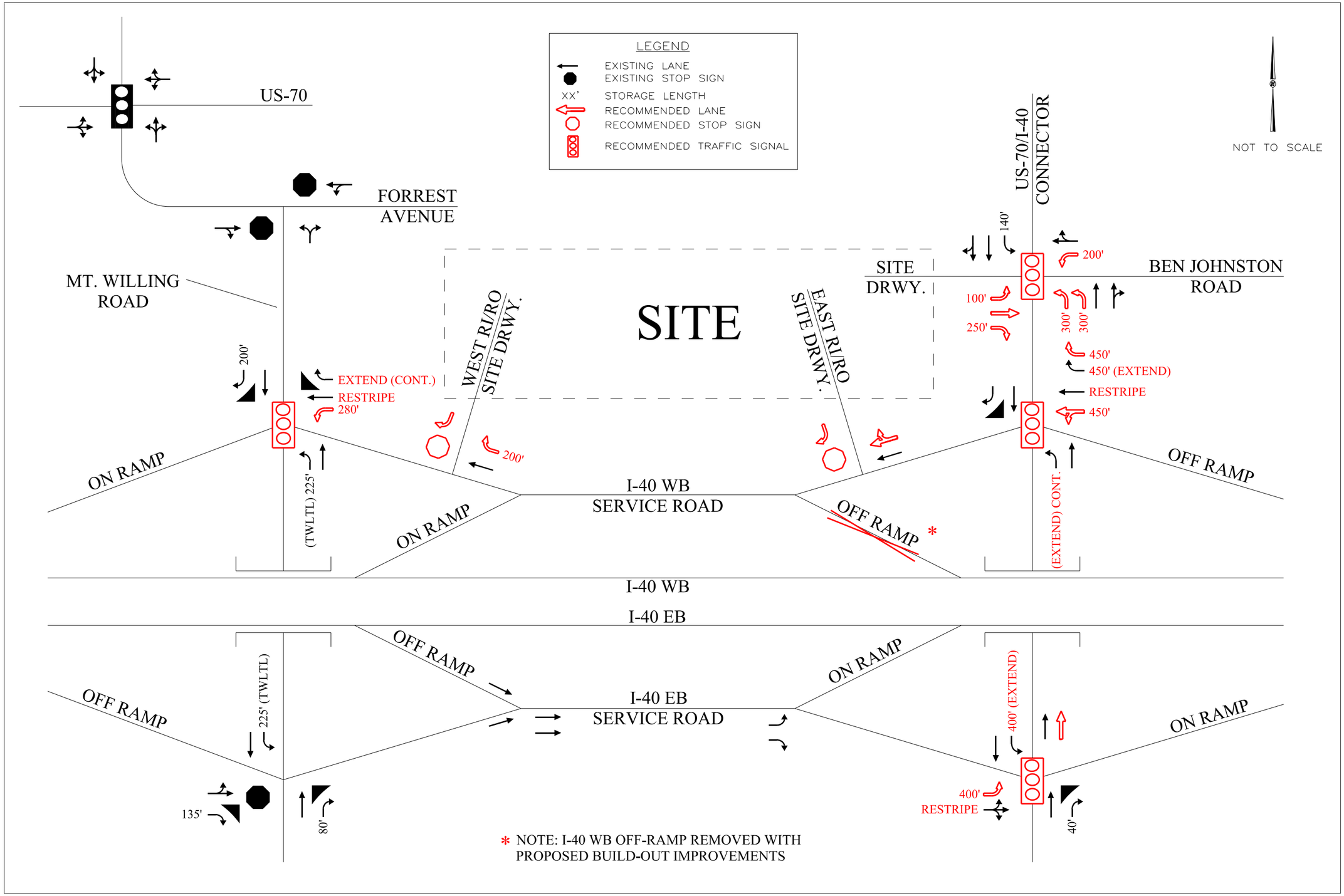


FIGURE 8.1

RECOMMENDED ROADWAY LANEAGE

WEST ORANGE SITE
EFLAND, NC
TRAFFIC CAPACITY ANALYSIS

Kimley»Horn

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

Appendix

Appendix A:

Trip Generation

West Orange Site

Table 1 - Trip Generation

Land Use	Intensity	Daily (Weekday)			AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
		Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
945 Gasoline/Service Station with Convenience Market[1]	120 pumps	23,084	11,542	11,542	1,219	646	573	1,692	880	812	2,452	1,251	1,201
Total Net New External Trips		**23,084**	**11,542**	**11,542**	**1,219**	**646**	**573**	**1,692**	**880**	**812**	**2,452**	**1,251**	**1,201**

[1] Trip generation is based on data collected at 9 sites in Texas and approved for use at new sites in several municipalities across the country.

Daily Traffic Generation

Gasoline/Service Station with Convenience Market rate from similar stores = 192.37(X) (50% in, 50% out)

AM Peak Hour Traffic Generation

Gasoline/Service Station with Convenience Market rate from similar stores = 10.16(X) (53% in, 47% out)

PM Peak Hour Traffic Generation

Gasoline/Service Station with Convenience Market rate from similar stores = 14.10(X) (52% in, 48% out)

Saturday Peak Hour Traffic Generation

Gasoline/Service Station with Convenience Market rate from similar stores = 20.43(X) (51% in, 49% out)

Table 4.0A - Phase 1 Trip Generation (Florence, SC site; submitted on 10/24/2019)								
Land Use	**Intensity**	**Daily**	**AM Peak Hour**			**PM Peak Hour**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Gasoline/Service Station with Convenience Market rate from Similar Stores	120 VFP	23,684	1,219	646	573	1,692	880	812
Subtotal		**23,684**	**1,219**	**646**	**573**	**1,692**	**880**	**812**
Internal Capture		**0**	**0**	**0**	**0**	**0**	**0**	**0**
Pass-By		**64**	**32**	**16**	**16**	**32**	**16**	**16**
Net New External Trips		**23,620**	**1,187**	**630**	**557**	**1,660**	**864**	**796**

Note: Trip generation was calculated using the following data:

Daily Traffic Generation

Gasoline/Service Station with Convenience Market rate from Similar Stores = T = 192.37 (X); (50% in, 50% out)

AM Peak-Hour Traffic Generation

Gasoline/Service Station with Convenience Market rate from Similar Stores = T = 10.16 (X); (53% in,47% out)

PM Peak-Hour Traffic Generation

Gasoline/Service Station with Convenience Market rate from Similar Stores = T = 14.10 (X); (52% in, 48% out)

		POS	Weekday Daily Rate	Weekend Daily Rate	AM Rate	PM Rate	Weekend AM Rate	Weekend PM Rate		AM IN	AM Out	PM IN	PM Out	Weekend AM IN	Weekend AM OUT	Weekend PM IN	Weekend PM OUT
1	Waller TX	80	281.27	350.79	16.31	21.59	14.33	26.00		50%	50%	50%	50%	49%	51%	49%	51%
2	Texas City, TX	56	355.77	538.96	10.81	32.16	6.48	59.99		53%	47%	50%	50%	53%	47%	50%	50%
3	Baytown, TX	96	191.48	217.56	9.90	13.13	6.74	15.49		50%	50%	52%	48%	52%	48%	50%	50%
4	Terrell, TX	84	161.23	223.58	8.89	12.93	5.74	18.27		52%	48%	52%	48%	48%	52%	50%	50%
5	Luling, TX	64	158.97	300.72	9.27	10.73	11.45	19.09		53%	47%	50%	50%	55%	45%	51%	49%
6	New Braunfels, TX	120	202.19	222.18	11.48	13.05	9.50	15.58		56%	44%	58%	42%	55%	45%	55%	45%
7	Madisonville, TX	64	222.90	388.89	12.06	15.22	17.34	28.77		53%	47%	51%	49%	49%	51%	49%	51%
8	Fort Worth, TX	96	130.51	174.70	7.79	8.58	7.44	12.77		51%	49%	49%	51%	52%	48%	46%	54%
9	Katy, TX	124	122.86	148.95	7.03	9.12	6.44	11.25		56%	44%	54%	46%	54%	46%	54%	46%
Weighted Average			192.37	260.14	10.16	14.10	9.10	20.43		53%	47%	52%	48%	52%	48%	51%	49%

Waller, TX - 80 Points of Sale										
	Driveway #1		Driveway #2		Driveway #3		Total		Daily Rate	Weekday Average
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting		281.27
Wednesday, December 2, 2015	7791	8326	2704	1010	549	1813	11044	11149	277.41	
Thursday, December 3, 2015	8214	9264	2928	926	652	1988	11794	12178	299.65	Weeknd Average
Friday, December 4, 2015	11616	12085	3734	1312	725	2711	16075	16108	402.29	
Saturday, December 5, 2015	10435	11580	4050	1436	704	2235	15189	15251	380.50	350.79
Sunday, December 6, 2015	8443	9699	3637	1337	614	1956	12694	12992	321.08	
Monday, December 7, 2015	7169	8133	3063	963	770	1783	11002	10879	273.51	
Tuesday, December 8, 2015	7049	7785	2889	985	768	1863	10706	10633	266.74	

AM Peak Hour																
	Driveway #1		Driveway #2		Driveway #3		Total		AM Peak Hour Rate	Average AM Rate - Weekday					Weekday Average	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting			In	Out			IN	Out
Wednesday, December 2, 2015	547	551	142	47	30	93	719	691	17.63	16.31	0.51	0.49			0.50	0.50
Thursday, December 3, 2015	508	539	110	24	18	101	636	664	16.25		0.49	0.51				
Friday, December 4, 2015	491	604	108	21	13	102	612	727	16.74	Average AM Rate - Weekend	0.46	0.54			Weekend Average	
Saturday, December 5, 2015	614	666	119	45	30	80	763	791	19.43		0.49	0.51			In	Out
Sunday, December 6, 2015	298	330	55	10	15	30	368	370	9.23	14.33	0.50	0.50			0.49	0.51
Monday, December 7, 2015	463	484	131	49	47	110	641	643	16.05		0.50	0.50				
Tuesday, December 8, 2015	406	459	151	30	39	119	596	608	15.05		0.50	0.50				

PM Peak Hour																
	Driveway #1		Driveway #2		Driveway #3		Total		PM Peak Hour Rate	Average PM Rate - Weekday					Weekday Average	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting			In	Out			IN	Out
Wednesday, December 2, 2015	610	622	169	78	67	185	846	885	21.64	21.59	0.49	0.51			0.50	0.50
Thursday, December 3, 2015	608	668	221	85	52	199	881	952	22.91		0.48	0.52				
Friday, December 4, 2015	1004	874	293	111	52	290	1349	1275	32.80	Average PM Rate - Weekend	0.51	0.49			Weekend Average	
Saturday, December 5, 2015	745	760	281	110	38	210	1064	1080	26.80		0.50	0.50			In	Out
Sunday, December 6, 2015	666	767	278	96	35	174	979	1037	25.20	26.00	0.49	0.51			0.49	0.51
Monday, December 7, 2015	475	555	219	54	22	165	716	774	18.63		0.48	0.52				
Tuesday, December 8, 2015	582	559	210	56	47	164	839	779	20.23		0.52	0.48				

	Driveway #1		Driveway #2		Driveway #3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Wednesday, December 2, 2015	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00
Thursday, December 3, 2015	7:00-8:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00
Friday, December 4, 2015	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00
Saturday, December 5, 2015	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00
Sunday, December 6, 2015	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00
Monday, December 7, 2015	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00
Tuesday, December 8, 2015	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00

Texas City, TX - 56 Points of Sale

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		Daily Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Wednesday, December 2, 2015	482	311	2046	509	2149	3763	1760	3104	1348	62	1696	1684	9481	9433	337.75
Thursday, December 3, 2015	372	315	1900	409	2276	3800	1867	3134	1341	92	1836	1838	9592	9588	342.50
Friday, December 4, 2015	513	350	2188	417	2861	4752	2349	3925	1638	101	2530	2508	12079	12053	430.93
Saturday, December 5, 2015	594	348	2866	283	3811	6732	3145	5574	2469	86	3304	3240	16189	16263	579.50
Sunday, December 6, 2015	436	299	2634	264	3061	5641	2520	4666	2201	68	3056	3066	13908	14004	498.43
Monday, December 7, 2015	406	260	2003	358	2129	3879	1743	3202	1453	51	1861	1903	9595	9653	343.71
Tuesday, December 8, 2015	335	330	2295	333	2452	4503	2012	3723	1740	52	1943	1958	10777	10899	387.07

Weekday Average
355.77

Average AM Rate - Weekend
538.96

AM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		AM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Wednesday, December 2, 2015	15	17	84	35	74	105	60	85	43	3	47	44	323	289	10.93
Thursday, December 3, 2015	28	12	45	30	84	91	69	74	38	5	57	54	321	266	10.48
Friday, December 4, 2015	36	14	32	20	89	101	72	82	32	2	83	81	344	300	11.50
Saturday, December 5, 2015	17	16	17	11	65	72	54	59	16	3	41	39	210	200	7.32
Sunday, December 6, 2015	26	10	18	7	46	56	38	45	20	1	25	24	173	143	5.64
Monday, December 7, 2015	29	17	51	26	80	102	65	83	20	3	59	57	304	288	10.57
Tuesday, December 8, 2015	21	10	50	18	88	119	72	98	21	2	62	56	314	303	11.02

Average AM Rate - Weekday
10.81

Average AM Rate - Weekend
6.48

	In	Out
	0.53	0.47
	0.55	0.45
	0.53	0.47
	0.51	0.49
	0.55	0.45
	0.51	0.49
	0.51	0.49

Weekday Average

IN	Out
0.53	0.47

Weekend Average

In	Out
0.53	0.47

PM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		PM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Wednesday, December 2, 2015	14	20	196	40	195	364	161	302	150	6	163	161	879	893	31.64
Thursday, December 3, 2015	38	22	224	36	208	406	172	337	177	7	151	159	970	967	34.59
Friday, December 4, 2015	69	25	249	49	277	520	229	432	210	11	227	224	1261	1261	45.04
Saturday, December 5, 2015	35	17	366	36	372	732	308	608	322	5	313	310	1716	1708	61.14
Sunday, December 6, 2015	47	25	315	19	367	706	305	587	287	6	314	317	1635	1660	58.84
Monday, December 7, 2015	42	15	173	26	161	314	132	261	127	0	165	177	800	793	28.45
Tuesday, December 8, 2015	34	23	179	16	183	361	131	254	182	6	160	165	869	825	30.25

Average PM Rate - Weekday
32.16

Average PM Rate - Weekend
59.99

	In	Out
	0.50	0.50
	0.50	0.50
	0.50	0.50
	0.50	0.50
	0.50	0.50
	0.50	0.50
	0.51	0.49

Weekday Average

IN	Out
0.50	0.50

Weekend Average

In	Out
0.50	0.50

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Wednesday, December 2, 2015	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00
Thursday, December 3, 2015	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Friday, December 4, 2015	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00
Saturday, December 5, 2015	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00
Sunday, December 6, 2015	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Monday, December 7, 2015	7:00-8:00	17:00-18:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00
Tuesday, December 8, 2015	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	18:00-19:00	8:00-9:00	17:00-18:00

Baytown, TX - 96 Points of Sale													
	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Total		Daily Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Wednesday, December 2, 2015	266	132	1126	874	1432	1914	4648	3166	1601	3050	9073	9136	189.68
Thursday, December 3, 2015	203	141	1205	799	1595	2134	4893	3492	1631	3070	9527	9636	199.61
Friday, December 4, 2015	229	204	1356	820	1579	2439	5711	4291	1897	3102	10772	10856	225.29
Saturday, December 5, 2015	378	156	1389	1119	1571	2517	5857	4077	1706	3056	10901	10925	227.35
Sunday, December 6, 2015	575	251	1311	1222	1372	2253	5439	4017	1270	2235	9967	9978	207.76
Monday, December 7, 2015	538	157	1229	1277	1344	1852	4622	3354	1606	2731	9339	9371	194.90
Tuesday, December 8, 2015	358	187	1160	905	1247	1787	4442	3461	1639	2588	8846	8928	185.15

Weekday Average
191.48

Average AM Rate - Weekend
217.56

AM Peak Hour													
	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Total		AM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Wednesday, December 2, 2015	9	3	75	43	95	126	257	168	66	158	502	498	10.42
Thursday, December 3, 2015	6	7	76	28	91	114	271	156	64	181	508	486	10.35
Friday, December 4, 2015	8	4	60	39	94	110	251	188	72	112	485	453	9.77
Saturday, December 5, 2015	7	2	63	32	91	98	168	137	44	84	373	353	7.56
Sunday, December 6, 2015	16	2	57	29	65	81	120	110	42	47	300	269	5.93
Monday, December 7, 2015	8	4	68	43	72	116	239	188	63	112	450	463	9.51
Tuesday, December 8, 2015	9	2	64	43	53	104	223	161	75	123	424	433	8.93

Average AM Rate - Weekday
9.90

Average AM Rate - Weekend
6.74

	In	Out
	0.50	0.50
	0.51	0.49
	0.52	0.48
	0.51	0.49
	0.53	0.47
	0.49	0.51
	0.49	0.51

Weekday Average	
IN	Out
0.50	0.50

Weekend Average	
In	Out
0.52	0.48

PM Peak Hour													
	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Total		PM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Wednesday, December 2, 2015	20	8	58	67	65	135	286	221	209	207	638	638	13.29
Thursday, December 3, 2015	20	15	104	34	87	144	250	229	197	190	658	612	13.23
Friday, December 4, 2015	24	21	74	53	82	160	339	308	227	207	746	749	15.57
Saturday, December 5, 2015	30	19	104	73	83	159	384	247	134	237	735	735	15.31
Sunday, December 6, 2015	53	33	78	77	94	158	428	325	91	168	744	761	15.68
Monday, December 7, 2015	57	21	76	115	80	149	311	250	196	184	720	719	14.99
Tuesday, December 8, 2015	32	19	63	60	69	127	290	206	213	157	667	569	12.88

Average PM Rate - Weekday
13.13

Average PM Rate - Weekend
15.49

	In	Out
	0.50	0.50
	0.52	0.48
	0.50	0.50
	0.50	0.50
	0.49	0.51
	0.50	0.50
	0.54	0.46

Weekday Average	
IN	Out
0.52	0.48

Weekend Average	
In	Out
0.50	0.50

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Wednesday, December 2, 2015	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00
Thursday, December 3, 2015	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Friday, December 4, 2015	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Saturday, December 5, 2015	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00
Sunday, December 6, 2015	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00
Monday, December 7, 2015	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00
Tuesday, December 8, 2015	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00

Terell, TX - 84 Points of Sale

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		Daily Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Tuesday, December 15, 2015	1559	1302	3519	2923	829	1222	170	566	440	233	82	183	6599	6429	155.10
Wednesday, December 16, 2015	1653	1332	3535	2841	600	1227	196	636	460	226	89	132	6533	6394	153.89
Thursday, December 17, 2015	1962	1587	3883	3328	706	1293	184	612	539	286	140	156	7414	7262	174.71
Friday, December 18, 2015	2115	1784	4934	3964	802	1482	314	1006	623	352	104	274	8892	8862	211.36
Saturday, December 19, 2015	2256	1870	5329	4266	955	1551	501	1473	776	401	186	425	10003	9986	237.96
Sunday, December 20, 2015	2033	1659	4660	3745	816	1300	471	1342	673	362	108	404	8761	8812	209.20
Monday, December 21, 2015	1848	1513	3980	3304	845	1220	348	1230	550	329	129	255	7700	7851	185.13

Weekday Average
161.23

Average AM Rate - Weekend
223.58

AM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		AM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Tuesday, December 15, 2015	115	81	203	154	41	65	8	19	29	14	3	4	399	337	8.76
Wednesday, December 16, 2015	118	98	187	174	33	67	5	17	13	11	4	4	360	371	8.70
Thursday, December 17, 2015	155	106	212	175	17	46	6	17	20	13	2	5	412	362	9.21
Friday, December 18, 2015	120	93	186	170	9	34	13	24	25	16	1	4	354	341	8.27
Saturday, December 19, 2015	87	80	152	140	16	14	11	35	12	10	1	11	279	290	6.77
Sunday, December 20, 2015	56	54	105	100	10	18	4	24	11	6	2	5	188	207	4.70
Monday, December 21, 2015	97	91	151	161	40	55	8	38	16	12	1	3	313	360	8.01

Average AM Rate - Weekday
8.89

Average AM Rate - Weekend
5.74

	In	Out
	0.54	0.46
	0.49	0.51
	0.53	0.47
	0.51	0.49
	0.49	0.51
	0.48	0.52
	0.47	0.53

Weekday Average	
IN	Out
0.52	0.48

Weekend Average	
In	Out
0.48	0.52

PM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		PM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Tuesday, December 15, 2015	101	86	284	241	73	87	11	44	36	19	5	15	510	492	11.93
Wednesday, December 16, 2015	145	94	356	228	42	118	18	51	37	14	10	15	608	520	13.43
Thursday, December 17, 2015	133	111	311	251	47	100	17	46	51	27	16	18	575	553	13.43
Friday, December 18, 2015	189	124	495	344	77	173	33	106	60	23	15	23	869	793	19.79
Saturday, December 19, 2015	170	151	424	345	76	98	39	106	57	44	25	41	791	785	18.76
Sunday, December 20, 2015	185	147	373	256	62	145	47	103	73	42	16	44	756	737	17.77
Monday, December 21, 2015	108	84	320	245	61	102	31	105	53	34	19	23	592	593	14.11

Average PM Rate - Weekday
12.93

Average PM Rate - Weekend
18.27

	In	Out
	0.51	0.49
	0.54	0.46
	0.51	0.49
	0.52	0.48
	0.50	0.50
	0.51	0.49
	0.50	0.50

Weekday Average	
IN	Out
0.52	0.48

Weekend Average	
In	Out
0.50	0.50

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Tuesday, December 15, 2015	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00	7:00-8:00	17:00-18:00
Wednesday, December 16, 2015	7:00-8:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00
Thursday, December 17, 2015	7:00-8:00	16:00-17:00	7:00-8:00	16:00-17:00	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00
Friday, December 18, 2015	8:00-9:00	15:00-16:00	7:00-8:00	16:00-17:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00
Saturday, December 19, 2015	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	6:00-7:00	17:00-18:00	8:00-9:00	17:00-18:00
Sunday, December 20, 2015	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00
Monday, December 21, 2015	7:00-8:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	7:00-8:00	16:00-17:00	6:00-7:00	15:00-16:00

Luling, TX - 64 Points of Sale										
	Driveway #1		Driveway #2		Driveway #3		Total		Daily Rate	Weekday Average
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting		158.97
Thursday, September 7, 2017	27	418	3163	2191	2635	2840	5825	5449	176.16	
Friday, September 8, 2017	39	814	4243	2978	4357	4236	8639	8028	260.42	Average AM Rate - Weekend
Saturday, September 9, 2017	54	855	3989	2553	3999	4287	8042	7695	245.89	
Sunday, September 10, 2017	100	1392	5242	8112	3680	4229	9022	13733	355.55	300.72
Monday, September 11, 2017	30	358	2952	2009	2299	2573	5281	4940	159.70	
Tuesday, September 12, 2017	29	299	2663	1920	2186	2426	4878	4645	148.80	
Wednesday, September 13, 2017	45	330	2809	1966	2160	2415	5014	4711	151.95	

AM Peak Hour																
	Driveway #1		Driveway #2		Driveway #3		Total		AM Peak Hour Rate	Average AM Rate - Weekday	In	Out		Weekday Average		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting						IN	Out	
Thursday, September 7, 2017	1	17	153	114	169	170	323	301	9.75	9.27	0.52	0.48		0.53	0.47	
Friday, September 8, 2017	1	21	163	124	156	159	320	304	9.75		0.51	0.49				
Saturday, September 9, 2017	8	31	241	138	223	233	472	402	13.66	Average AM Rate - Weekend	0.54	0.46		Weekend Average		
Sunday, September 10, 2017	5	19	191	117	132	127	328	263	9.23		0.55	0.45		In	Out	
Monday, September 11, 2017	0	9	178	105	147	164	325	278	9.42	11.45	0.54	0.46		0.55	0.45	
Tuesday, September 12, 2017	0	13	173	116	120	149	293	278	8.92		0.51	0.49				
Wednesday, September 13, 2017	2	14	178	98	141	152	321	264	9.14		0.55	0.45				

PM Peak Hour																
	Driveway #1		Driveway #2		Driveway #3		Total		PM Peak Hour Rate	Average PM Rate - Weekday	In	Out		Weekday Average		
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting						IN	Out	
Thursday, September 7, 2017	0	46	199	149	182	196	381	391	12.06	10.73	0.49	0.51		0.50	0.50	
Friday, September 8, 2017	4	71	353	235	347	289	704	595	20.30		0.54	0.46				
Saturday, September 9, 2017	6	82	318	176	215	244	539	502	16.27	Average PM Rate - Weekend	0.52	0.48		Weekend Average		
Sunday, September 10, 2017	8	126	404	191	288	386	700	703	21.92		0.50	0.50		In	Out	
Monday, September 11, 2017	2	16	168	133	146	157	316	306	9.72	19.09	0.51	0.49		0.51	0.49	
Tuesday, September 12, 2017	1	23	179	129	136	165	316	317	9.89		0.50	0.50				
Wednesday, September 13, 2017	2	20	176	141	151	166	329	327	10.25		0.50	0.50				

	Driveway #1		Driveway #2		Driveway #3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Thursday, September 7, 2017	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00
Friday, September 8, 2017	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00
Saturday, September 9, 2017	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00
Sunday, September 10, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00
Monday, September 11, 2017	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00
Tuesday, September 12, 2017	7:00-8:00	17:00-18:00	7:00-8:00	16:00-17:00	7:00-8:00	16:00-17:00
Wednesday, September 13, 2017	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00

New Braunfels, TX - 120 Points of Sale

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		Daily Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Thursday, September 7, 2017	2453	1026	5468	3741	801	3395	3759	1947	174	220	2211	1756	14866	12085	224.59
Friday, September 8, 2017	3825	1538	5744	4143	1064	3877	3581	1647	114	178	1540	1377	15868	12760	238.57
Saturday, September 9, 2017	3970	1598	6380	4532	1086	4305	2381	1264	96	97	1491	1215	15404	13011	236.79
Sunday, September 10, 2017	2784	1211	5526	4131	876	4037	2258	1168	85	80	1452	1301	12981	11928	207.58
Monday, September 11, 2017	2063	787	5071	3477	673	3164	2335	1216	97	99	1532	1316	11771	10059	181.92
Tuesday, September 12, 2017	1924	741	4722	3415	681	3079	2360	1252	90	104	1613	1405	11390	9996	178.22
Wednesday, September 13, 2017	2152	813	4885	3541	735	3115	3211	1667	171	158	2143	1862	13297	11156	203.78

Weekday Average
202.19

Average AM Rate - Weekend
222.18

AM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		AM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Thursday, September 7, 2017	138	60	387	226	40	206	149	63	6	3	57	53	777	611	11.57
Friday, September 8, 2017	162	56	376	226	47	199	81	27	2	4	29	28	697	540	10.31
Saturday, September 9, 2017	128	20	337	201	30	227	128	60	6	6	85	71	714	585	10.83
Sunday, September 10, 2017	74	29	228	134	19	140	120	63	7	2	90	75	538	443	8.18
Monday, September 11, 2017	103	52	367	232	41	185	162	72	5	7	108	66	786	614	11.67
Tuesday, September 12, 2017	125	44	353	223	40	165	118	79	3	2	72	64	711	577	10.73
Wednesday, September 13, 2017	176	48	361	211	54	195	151	64	6	4	93	93	841	615	12.13

Average AM Rate - Weekday

	In	Out
	0.56	0.44
	0.56	0.44
	0.55	0.45
	0.55	0.45
	0.56	0.44
	0.55	0.45
	0.58	0.42

Average AM Rate - Weekend

	In	Out
	0.55	0.45
	0.55	0.45

Weekday Average

IN	Out
0.56	0.44

Weekend Average

In	Out
0.55	0.45

PM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Driveway #6		Total		PM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Thursday, September 7, 2017	226	106	303	200	38	160	233	100	24	19	180	102	1004	687	14.09
Friday, September 8, 2017	360	143	234	231	63	161	251	112	8	16	137	115	1053	778	15.26
Saturday, September 9, 2017	292	161	358	273	71	225	153	84	5	9	154	96	1033	848	15.68
Sunday, September 10, 2017	181	111	430	297	65	242	163	87	7	8	185	81	1031	826	15.48
Monday, September 11, 2017	193	74	247	199	30	122	141	109	10	4	136	77	757	585	11.18
Tuesday, September 12, 2017	186	58	222	183	33	117	142	99	13	4	178	108	774	569	11.19
Wednesday, September 13, 2017	166	62	298	218	40	151	212	125	17	10	220	144	953	710	13.86

Average PM Rate - Weekday

	In	Out
	0.59	0.41
	0.58	0.42
	0.55	0.45
	0.56	0.44
	0.56	0.44
	0.58	0.42
	0.57	0.43

Average PM Rate - Weekend

	In	Out
	0.55	0.45

Weekday Average

IN	Out
0.58	0.42

Weekend Average

In	Out
0.55	0.45

	Driveway #1		Driveway #2		Driveway #3	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Thursday, September 7, 2017	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Friday, September 8, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00
Saturday, September 9, 2017	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Sunday, September 10, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00
Monday, September 11, 2017	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00
Tuesday, September 12, 2017	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00
Wednesday, September 13, 2017	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00

Madisonville, TX - 64 Points of Sale

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Total		Daily Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Friday, September 22, 2017	5558	3856	809	3684	4086		1354	4631	1390	823	13197	12994	409.23
Saturday, September 23, 2017	4549	3268	743	3430	4010		989	4639	1035	472	11326	11809	361.48
Sunday, September 24, 2017	5665	4233	805	3797	4388		1088	4597	1245	825	13191	13452	416.30
Monday, September 25, 2017	3115	1845	492	2692	2449		798	2352	861	339	7715	7228	233.48
Tuesday, September 26, 2017	2598	1562	424	2322	2073		698	1932	822	364	6615	6180	199.92
Wednesday, September 27, 2017	2820	1662	461	2426	2218		735	1975	767	407	7001	6470	210.48
Thursday, September 28, 2017	3753	2251	555	2859	2585		784	2425	891	427	8568	7962	258.28

Weekday Average
222.90

Average AM Rate - Weekend
388.89

AM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Total		AM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Friday, September 22, 2017	156	81	32	145	135		50	145	52	22	425	393	12.78
Saturday, September 23, 2017	232	249	51	216	337		58	373	42	33	720	871	24.86
Sunday, September 24, 2017	135	73	19	95	121		24	124	29	9	328	301	9.83
Monday, September 25, 2017	198	93	36	170	168		62	127	50	17	514	407	14.39
Tuesday, September 26, 2017	131	76	22	157	147		32	124	54	18	386	375	11.89
Wednesday, September 27, 2017	171	82	25	134	116		45	109	52	34	409	359	12.00
Thursday, September 28, 2017	176	94	18	128	121		60	127	47	15	422	364	12.28

Average AM Rate - Weekday

	In	Out
	0.52	0.48
	0.45	0.55
	0.52	0.48
	0.56	0.44
	0.51	0.49
	0.53	0.47
	0.54	0.46

Weekday Average

IN	Out
0.53	0.47

Average AM Rate - Weekend

In	Out
0.49	0.51

PM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5		Total		PM Peak Hour Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Friday, September 22, 2017	385	294	57	256	317		63	299	88	64	910	913	28.48
Saturday, September 23, 2017	245	192	47	206	234		51	265	63	21	640	684	20.69
Sunday, September 24, 2017	541	366	66	316	354		106	430	109	71	1176	1183	36.86
Monday, September 25, 2017	154	995	28	150	147		30	147	65	25	424	1317	27.20
Tuesday, September 26, 2017	173	105	23	168	159		55	124	49	48	459	445	14.13
Wednesday, September 27, 2017	171	126	33	155	162		43	124	56	44	465	449	14.28
Thursday, September 28, 2017	215	152	41	199	210		38	156	65	29	569	536	17.27

Average PM Rate - Weekday

	In	Out
	0.50	0.50
	0.48	0.52
	0.50	0.50
	0.24	0.76
	0.51	0.49
	0.51	0.49
	0.51	0.49

Weekday Average

IN	Out
0.51	0.49

Average PM Rate - Weekend

In	Out
0.49	0.51

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Driveway #5	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Friday, September 22, 2017	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00
Saturday, September 23, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00
Sunday, September 24, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Monday, September 25, 2017	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	17:00-18:00
Tuesday, September 26, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00
Wednesday, September 27, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	7:00-8:00
Thursday, September 28, 2017	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	7:00-8:00

Fort Worth, TX - 96 Points of Sale

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Total		Daily Rate
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	
Wednesday, September 27, 2017	3269	1942	450	821	146	306	2341	3142	6206	6211	129.34
Thursday, September 28, 2017	3456	2050	424	803	187	335	2604	3460	6671	6648	138.74
Friday, September 29, 2017	4347	2618	428	953	308	647	3348	4060	8431	8278	174.05
Saturday, September 30, 2017	5077	3030	366	1144	331	1009	3519	4063	9293	9246	193.11
Sunday, October 1, 2017	4220	2471	142	667	155	420	2987	3942	7504	7500	156.29
Monday, October 2, 2017	3166	1909	465	780	133	255	2219	3032	5983	5976	124.57
Tuesday, October 3, 2017	3030	1890	464	779	142	294	2291	2961	5927	5924	123.45

Weekday Average
130.51

Average AM Rate - Weekend
174.70

AM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Total		AM Peak Hour Rate	Average AM Rate - Weekday	In	Out
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting				
Wednesday, September 27, 2017	213	111	24	63	9	12	157	166	403	352	7.86	7.79	0.53	0.47
Thursday, September 28, 2017	190	126	25	49	15	17	162	187	392	379	8.03		0.51	0.49
Friday, September 29, 2017	235	121	25	65	8	24	174	208	442	418	8.96	Average AM Rate - Weekend	0.51	0.49
Saturday, September 30, 2017	230	77	22	49	14	15	174	263	440	404	8.79		0.52	0.48
Sunday, October 1, 2017	154	67	8	30	8	12	136	170	306	279	6.09	7.44	0.52	0.48
Monday, October 2, 2017	185	134	22	65	10	8	153	192	370	399	8.01		0.48	0.52
Tuesday, October 3, 2017	191	100	15	78	8	15	136	174	350	367	7.47		0.49	0.51

Weekday Average

In	Out
0.51	0.49

Weekend Average

In	Out
0.52	0.48

PM Peak Hour

	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Total		PM Peak Hour Rate	Average PM Rate - Weekday	In	Out
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting				
Wednesday, September 27, 2017	177	134	37	28	5	21	162	233	381	416	8.30	8.58	0.48	0.52
Thursday, September 28, 2017	206	127	31	28	10	21	158	260	405	436	8.76		0.48	0.52
Friday, September 29, 2017	248	173	36	46	0	71	241	274	525	564	11.34	Average AM Rate - Weekend	0.48	0.52
Saturday, September 30, 2017	340	279	18	100	32	83	224	288	614	750	14.21		0.45	0.55
Sunday, October 1, 2017	304	184	14	56	11	29	193	297	522	566	11.33	12.77	0.48	0.52
Monday, October 2, 2017	199	133	40	44	9	17	137	192	385	386	8.03		0.50	0.50
Tuesday, October 3, 2017	200	128	50	31	9	32	162	221	421	412	8.68		0.51	0.49

Weekday Average

In	Out
0.49	0.51

Weekend Average

In	Out
0.46	0.54

	Driveway #1		Driveway #2		Driveway #3		Driveway #4	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Wednesday, September 27, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00
Thursday, September 28, 2017	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00
Friday, September 29, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00
Saturday, September 30, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00
Sunday, October 1, 2017	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00
Monday, October 2, 2017	7:00-8:00	17:00-18:00	7:00-8:00	16:00-17:00	7:00-8:00	17:00-18:00	8:00-9:00	16:00-17:00
Tuesday, October 3, 2017	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00

Katy, TX - 124 Points of Sale												
	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Total		Daily Rate	Weekday Average
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting		122.86
Tuesday, April 3, 2018	3192	3367	2170	2960	710	138	1970	429	8042	6894	120.45	
Wednesday, April 4, 2018	3268	3396	2115	2939	767	165	2008	469	8158	6969	121.99	Average AM Rate - Weekend
Thursday, April 5, 2018	3415	3547	2208	3160	687	136	2064	425	8374	7268	126.15	
Friday, April 6, 2018	4263	4717	2715	3940	796	173	2822	546	10596	9376	161.06	148.95
Saturday, April 7, 2018	3597	4176	2439	3579	681	144	2649	417	9366	8316	142.60	
Sunday, April 8, 2018	3489	4518	2727	3703	857	178	3222	564	10295	8963	155.31	
Monday, April 9, 2018	3122	3274	2008	2822	484	110	1648	383	7262	6589	111.70	

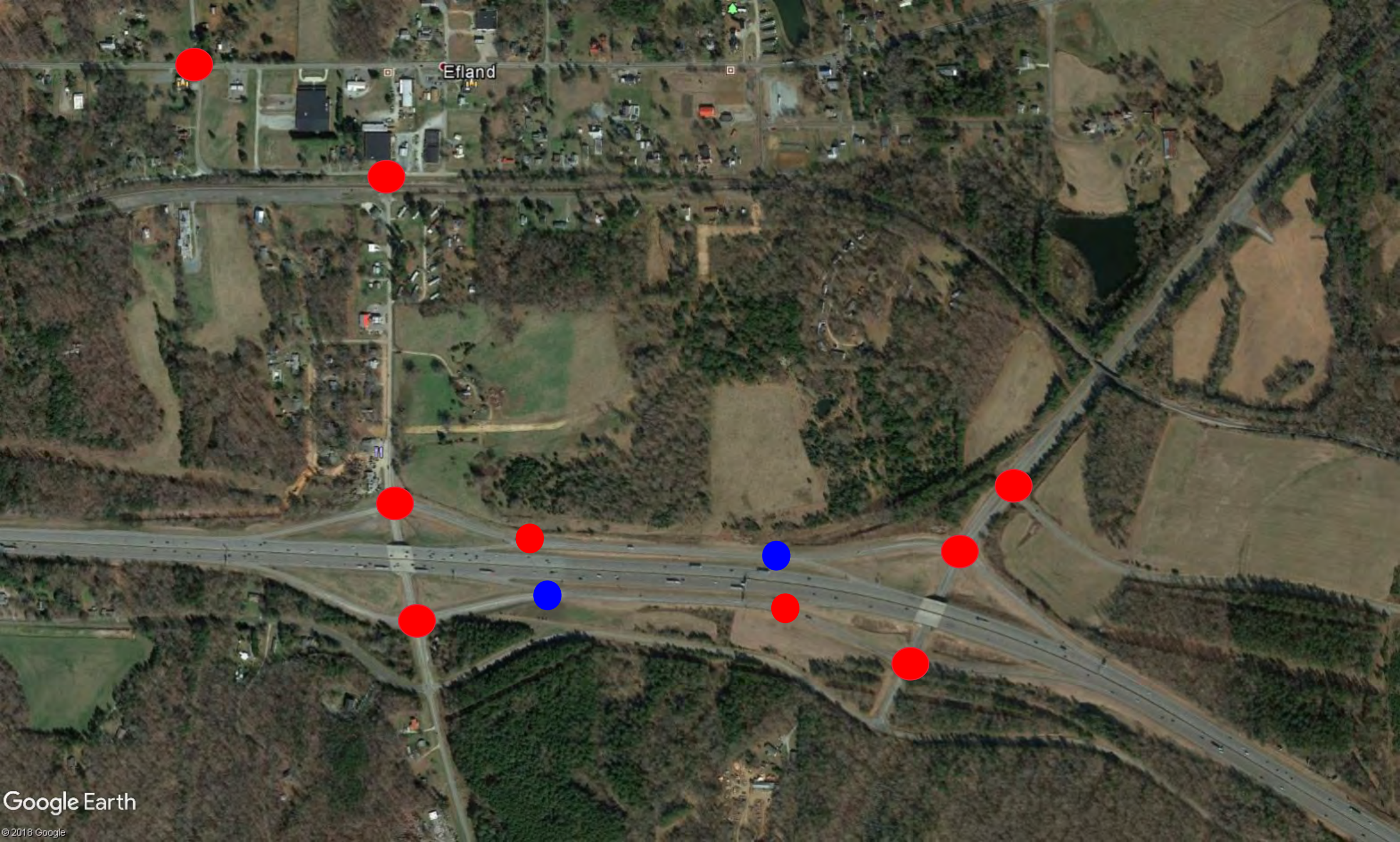
AM Peak Hour																	
	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Total		AM Peak Hour Rate	Average AM Rate - Weekday				Weekday Average	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting			In	Out		IN	Out
Tuesday, April 3, 2018	207	173	134	175	47	12	95	17	483	377	6.94	7.03	0.56	0.44		0.56	0.44
Wednesday, April 4, 2018	195	191	124	163	40	18	93	13	452	385	6.75		0.54	0.46			
Thursday, April 5, 2018	230	190	138	189	42	9	113	7	523	395	7.40	Average AM Rate - Weekend	0.57	0.43		Weekend Average	
Friday, April 6, 2018	231	195	171	210	51	8	130	20	583	433	8.19		0.57	0.43		In	Out
Saturday, April 7, 2018	226	261	137	193	27	3	140	19	530	476	8.11	6.44	0.53	0.47		0.54	0.46
Sunday, April 8, 2018	145	138	72	107	17	3	97	11	331	259	4.76		0.56	0.44			
Monday, April 9, 2018	165	160	151	185	23	6	68	19	407	370	6.27		0.52	0.48			

PM Peak Hour																	
	Driveway #1		Driveway #2		Driveway #3		Driveway #4		Total		PM Peak Hour Rate	Average PM Rate - Weekday				Weekday Average	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting			In	Out		IN	Out
Tuesday, April 3, 2018	201	248	137	185	61	12	159	49	558	494	8.48	9.12	0.53	0.47		0.54	0.46
Wednesday, April 4, 2018	233	259	166	194	60	18	165	53	624	524	9.26		0.54	0.46			
Thursday, April 5, 2018	266	278	152	212	52	18	165	50	635	558	9.62	Average PM Rate - Weekend	0.53	0.47		Weekend Average	
Friday, April 6, 2018	300	335	199	272	65	17	209	42	773	666	11.60		0.54	0.46		In	Out
Saturday, April 7, 2018	213	270	179	220	60	21	159	32	611	543	9.31	11.25	0.53	0.47		0.54	0.46
Sunday, April 8, 2018	266	353	213	311	84	16	332	61	895	741	13.19		0.55	0.45			
Monday, April 9, 2018	200	248	129	194	34	10	156	37	519	489	8.13		0.51	0.49			

	Driveway #1		Driveway #2		Driveway #3		Driveway #4	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Tuesday, April 3, 2018	7:00-8:00	17:00-18:00	7:00-8:00	16:00-17:00	8:00-9:00	17:00-18:00	7:00-8:00	17:00-18:00
Wednesday, April 4, 2018	7:00-8:00	17:00-18:00	7:00-8:00	17:00-18:00	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00
Thursday, April 5, 2018	7:00-8:00	16:00-17:00	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	7:00-8:00	16:00-17:00
Friday, April 6, 2018	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	8:00-9:00	17:00-18:00
Saturday, April 7, 2018	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00
Sunday, April 8, 2018	8:00-9:00	17:00-18:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	16:00-17:00
Monday, April 9, 2018	7:00-8:00	16:00-17:00	8:00-9:00	16:00-17:00	8:00-9:00	17:00-18:00	7:00-8:00	16:00-17:00

Appendix B:

Traffic Count Data


Efland
11
Google Earth
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I-40/85 EB Ramp @ Mt. Willing Rd.
Efland, NC
Counter: JCG
May 21, 2019

File Name : I40-85EBRampMtWilling
Site Code : 00019211
Start Date : 5/21/2019
Page No : 1

Groups Printed- Vehicles

	I-40/85 EB Ramp Eastbound				Westbound	Mt. Willing Rd. Northbound				Mt. Willing Rd. Southbound				
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	11	0	0	11	0	0	11	29	40	137	8	0	145	196
07:15 AM	17	1	1	19	0	0	19	25	44	187	28	0	215	278
07:30 AM	9	2	5	16	0	0	21	28	49	156	31	0	187	252
07:45 AM	15	0	3	18	0	0	16	38	54	137	47	0	184	256
Total	52	3	9	64	0	0	67	120	187	617	114	0	731	982
08:00 AM	9	0	3	12	0	0	26	37	63	115	31	0	146	221
08:15 AM	3	1	2	6	0	0	12	40	52	103	37	0	140	198
08:30 AM	13	1	4	18	0	0	10	16	26	73	10	0	83	127
08:45 AM	13	0	0	13	0	0	7	14	21	75	19	0	94	128
Total	38	2	9	49	0	0	55	107	162	366	97	0	463	674
*** BREAK ***														
04:00 PM	11	0	2	13	0	0	19	12	31	49	30	0	79	123
04:15 PM	10	0	4	14	0	0	11	10	21	62	30	0	92	127
04:30 PM	5	0	4	9	0	0	13	14	27	60	36	0	96	132
04:45 PM	13	0	3	16	0	0	15	10	25	37	30	0	67	108
Total	39	0	13	52	0	0	58	46	104	208	126	0	334	490
05:00 PM	14	0	4	18	0	0	15	13	28	51	33	0	84	130
05:15 PM	20	0	9	29	0	0	17	10	27	51	39	0	90	146
05:30 PM	21	0	2	23	0	0	14	11	25	48	71	0	119	167
05:45 PM	11	1	5	17	0	0	16	12	28	41	71	0	112	157
Total	66	1	20	87	0	0	62	46	108	191	214	0	405	600
Grand Total	195	6	51	252	0	0	242	319	561	1382	551	0	1933	2746
Apprch %	77.4	2.4	20.2			0	43.1	56.9		71.5	28.5	0		
Total %	7.1	0.2	1.9	9.2	0	0	8.8	11.6	20.4	50.3	20.1	0	70.4	

	I-40/85 EB Ramp Eastbound				Westbound	Mt. Willing Rd. Northbound				Mt. Willing Rd. Southbound				
Start Time	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	**17**	1	1	**19**	0	0	19	25	44	**187**	28	0	**215**	**278**
07:30 AM	9	**2**	**5**	16	0	0	21	28	49	156	31	0	187	252
07:45 AM	15	0	3	18	0	0	16	**38**	54	137	**47**	0	184	256
08:00 AM	9	0	3	12	0	0	**26**	37	**63**	115	31	0	146	221
Total Volume	50	3	12	65	0	0	82	128	210	595	137	0	732	1007
% App. Total	76.9	4.6	18.5			0	39	61		81.3	18.7	0		
PHF	.735	.375	.600	.855	.000	.000	.788	.842	.833	.795	.729	.000	.851	.906
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 05:00 PM														
05:00 PM	14	0	4	18	0	0	15	**13**	**28**	**51**	33	0	84	130
05:15 PM	20	0	**9**	**29**	0	0	**17**	10	27	51	39	0	90	146
05:30 PM	**21**	0	2	23	0	0	14	11	25	48	**71**	0	**119**	**167**
05:45 PM	11	**1**	5	17	0	0	16	12	28	41	71	0	112	157
Total Volume	66	1	20	87	0	0	62	46	108	191	214	0	405	600
% App. Total	75.9	1.1	23			0	57.4	42.6		47.2	52.8	0		
PHF	.786	.250	.556	.750	.000	.000	.912	.885	.964	.936	.754	.000	.851	.898

Your Company Name Here

Mt Willing Rd.@ I-40 EB Exit Ramp
Efland, NC
Counter:JF
October 26, 2019

File Name : 1MtWillingEBRamp
Site Code : 00019391
Start Date : 10/26/2019
Page No : 1

Groups Printed- Vehicles

	I-40 EB Exit Ramp Eastbound			Westbound	Mt. Willing Rd. Northbound			Mt. Willing Rd. Southbound			
Start Time	Left	Right	App. Total	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
11:00 AM	9	1	10	0	11	8	19	36	19	55	84
11:15 AM	10	3	13	0	10	15	25	64	17	81	119
11:30 AM	9	1	10	0	6	5	11	57	23	80	101
11:45 AM	11	4	15	0	13	14	27	56	13	69	111
Total	39	9	48	0	40	42	82	213	72	285	415
12:00 PM	9	4	13	0	7	16	23	61	21	82	118
12:15 PM	18	4	22	0	12	14	26	47	21	68	116
12:30 PM	16	1	17	0	11	11	22	45	19	64	103
12:45 PM	9	4	13	0	12	11	23	46	19	65	101
Total	52	13	65	0	42	52	94	199	80	279	438
Grand Total	91	22	113	0	82	94	176	412	152	564	853
Apprch %	80.5	19.5			46.6	53.4		73	27		
Total %	10.7	2.6	13.2	0	9.6	11	20.6	48.3	17.8	66.1	

	I-40 EB Exit Ramp Eastbound			Westbound	Mt. Willing Rd. Northbound			Mt. Willing Rd. Southbound			
Start Time	Left	Right	App. Total	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 11:15 AM											
11:15 AM	10	3	13	0	10	15	25	**64**	17	81	**119**
11:30 AM	9	1	10	0	6	5	11	57	**23**	80	101
11:45 AM	**11**	**4**	**15**	0	**13**	14	**27**	56	13	69	111
12:00 PM	9	4	13	0	7	**16**	23	61	21	**82**	118
Total Volume	39	12	51	0	36	50	86	238	74	312	449
% App. Total	76.5	23.5			41.9	58.1		76.3	23.7		
PHF	.886	.750	.850	.000	.692	.781	.796	.930	.804	.951	.943

Your Company Name Here

!-40-85EBExitService
Efland, NC
Counter: JF
May 21, 2019

File Name : I-40-85EBExitService
Site Code : 00019212
Start Date : 5/21/2019
Page No : 1

Groups Printed- Vehicles

	I-40/85 EB Service Rd/ EBRamp Eastbound				Westbound				Northbound	Southbound				
Start Time	Left	I-40-85 Ramp	Service	App. Total	Left	Thru	Right	App. Total	App. Total	Right	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	58	166	224	0	0	0	0	0	0	0	0	224	224
07:15 AM	0	107	213	320	0	0	0	0	0	0	0	0	320	320
07:30 AM	0	126	186	312	0	2	0	2	0	0	0	0	314	314
07:45 AM	0	106	175	281	0	0	0	0	0	0	0	0	281	281
Total	0	397	740	1137	0	2	0	2	0	0	0	0	1139	1139
08:00 AM	0	70	152	222	0	0	0	0	0	0	0	0	222	222
08:15 AM	0	62	144	206	0	0	0	0	0	0	0	0	206	206
08:30 AM	0	97	90	187	0	0	0	0	0	0	0	0	187	187
08:45 AM	0	71	89	160	0	0	0	0	0	0	0	0	160	160
Total	0	300	475	775	0	0	0	0	0	0	0	0	775	775
*** BREAK ***														
04:00 PM	0	33	61	94	0	0	0	0	0	0	0	0	94	94
04:15 PM	0	37	72	109	0	0	0	0	0	0	0	0	109	109
04:30 PM	0	42	74	116	0	0	0	0	0	0	0	0	116	116
04:45 PM	0	39	47	86	0	0	0	0	0	0	0	0	86	86
Total	0	151	254	405	0	0	0	0	0	0	0	0	405	405
05:00 PM	0	50	64	114	0	0	0	0	0	0	0	0	114	114
05:15 PM	0	58	61	119	0	0	0	0	0	0	0	0	119	119
05:30 PM	0	56	59	115	0	0	0	0	0	0	0	0	115	115
05:45 PM	0	57	53	110	0	0	0	0	0	0	0	0	110	110
Total	0	221	237	458	0	0	0	0	0	0	0	0	458	458
Grand Total	0	1069	1706	2775	0	2	0	2	0	0	0	0	2777	2777
Apprch %	0	38.5	61.5		0	100	0							
Total %	0	38.5	61.4	99.9	0	0.1	0	0.1	0		0	0	100	

	I-40/85 EB Service Rd/ EBRamp Eastbound				Westbound				Northbound	Southbound	
Start Time	Left	I-40-85 Ramp	Service	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:00 AM											
07:00 AM	0	58	166	224	0	0	0	0	0	0	224
07:15 AM	0	107	**213**	**320**	0	0	0	0	0	0	**320**
07:30 AM	0	**126**	186	312	0	**2**	0	**2**	0	0	314
07:45 AM	0	106	175	281	0	0	0	0	0	0	281
Total Volume	0	397	740	1137	0	2	0	2	0	0	1139
% App. Total	0	34.9	65.1		0	100	0				
PHF	.000	.788	.869	.888	.000	.250	.000	.250	.000	.000	.890
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:00 PM											
05:00 PM	0	50	**64**	114	0	0	0	0	0	0	114
05:15 PM	0	**58**	61	**119**	0	0	0	0	0	0	**119**
05:30 PM	0	56	59	115	0	0	0	0	0	0	115
05:45 PM	0	57	53	110	0	0	0	0	0	0	110
Total Volume	0	221	237	458	0	0	0	0	0	0	458
% App. Total	0	48.3	51.7		0	0	0				
PHF	.000	.953	.926	.962	.000	.000	.000	.000	.000	.000	.962

Your Company Name Here

I-40 EB Collector From Mt. Willing Rd.
Efland, NC
Counter:Calculated
October 26, 2019

File Name : 2ebi-40colfromwilling
Site Code : 00019393
Start Date : 10/26/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound			Westbound	Northbound	Southbound	
Start Time	I-40 Eb Ramp	From Mt. Willing Rd.	App. Total	App. Total	App. Total	App. Total	Int. Total
11:00 AM	31	44	75	0	0	0	75
11:15 AM	44	79	123	0	0	0	123
11:30 AM	37	62	99	0	0	0	99
11:45 AM	47	70	117	0	0	0	117
Total	159	255	414	0	0	0	414
12:00 PM	28	77	105	0	0	0	105
12:15 PM	45	61	106	0	0	0	106
12:30 PM	38	56	94	0	0	0	94
12:45 PM	33	57	90	0	0	0	90
Total	144	251	395	0	0	0	395
Grand Total	303	506	809	0	0	0	809
Apprch %	37.5	62.5					
Total %	37.5	62.5	100	0	0	0	

	Eastbound			Westbound	Northbound	Southbound	
Start Time	I-40 Eb Ramp	From Mt. Willing Rd.	App. Total	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 11:15 AM							
11:15 AM	44	**79**	**123**	0	0	0	**123**
11:30 AM	37	62	99	0	0	0	99
11:45 AM	**47**	70	117	0	0	0	117
12:00 PM	28	77	105	0	0	0	105
Total Volume	156	288	444	0	0	0	444
% App. Total	35.1	64.9					
PHF	.830	.911	.902	.000	.000	.000	.902

Your Company Name Here

I-40/85 Service Rd. & Ent. Ramp
Efland, NC
Counter: JF
May 21, 2019

File Name : I-40-85EBServiceEntRamp
Site Code : 00019213
Start Date : 5/21/2019
Page No : 1

Groups Printed- Vehicles

	I-40/85 EB Service Rd/ Ramp Eastbound				Westbound				Northbound				Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	173	0	51	224	0	0	0	0	0	0	0	0	0	0	0	0	224
07:15 AM	184	0	118	302	0	0	0	0	0	0	0	0	0	0	0	0	302
07:30 AM	202	0	110	312	0	2	0	2	0	0	0	0	0	0	0	0	314
07:45 AM	186	0	95	281	0	0	0	0	0	0	0	0	0	0	0	0	281
Total	745	0	374	1119	0	2	0	2	0	0	0	0	0	0	0	0	1121
08:00 AM	149	0	73	222	0	0	0	0	0	0	0	0	0	0	0	0	222
08:15 AM	143	0	63	206	0	0	0	0	0	0	0	0	0	0	0	0	206
08:30 AM	122	0	65	187	0	0	0	0	0	0	0	0	0	0	0	0	187
08:45 AM	94	0	66	160	0	0	0	0	0	0	0	0	0	0	0	0	160
Total	508	0	267	775	0	0	0	0	0	0	0	0	0	0	0	0	775
*** BREAK ***																	
04:00 PM	46	0	48	94	0	0	0	0	0	0	0	0	0	0	0	0	94
04:15 PM	46	0	63	109	0	0	0	0	0	0	0	0	0	0	0	0	109
04:30 PM	57	0	59	116	0	0	0	0	0	0	0	0	0	0	0	0	116
04:45 PM	39	0	47	86	0	0	0	0	0	0	0	0	0	0	0	0	86
Total	188	0	217	405	0	0	0	0	0	0	0	0	0	0	0	0	405
05:00 PM	57	0	57	114	0	0	0	0	0	0	0	0	0	0	0	0	114
05:15 PM	55	0	64	119	0	0	0	0	0	0	0	0	0	0	0	0	119
05:30 PM	49	0	66	115	0	0	0	0	0	0	0	0	0	0	0	0	115
05:45 PM	47	0	63	110	0	0	0	0	0	0	0	0	0	0	0	0	110
Total	208	0	250	458	0	0	0	0	0	0	0	0	0	0	0	0	458
Grand Total	1649	0	1108	2757	0	2	0	2	0	0	0	0	0	0	0	0	2759
Apprch %	59.8	0	40.2		0	100	0		0	0	0		0	0	0		
Total %	59.8	0	40.2	99.9	0	0.1	0	0.1	0	0	0	0	0	0	0	0	

	I-40/85 EB Service Rd/ Ramp Eastbound				Westbound				Northbound				Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	173	0	51	224	0	0	0	0	0	0	0	0	0	0	0	0	224
07:15 AM	184	0	**118**	302	0	0	0	0	0	0	0	0	0	0	0	0	302
07:30 AM	**202**	0	110	**312**	0	**2**	0	**2**	0	0	0	0	0	0	0	0	**314**
07:45 AM	186	0	95	281	0	0	0	0	0	0	0	0	0	0	0	0	281
Total Volume	745	0	374	1119	0	2	0	2	0	0	0	0	0	0	0	0	1121
% App. Total	66.6	0	33.4		0	100	0		0	0	0		0	0	0		
PHF	.922	.000	.792	.897	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.893
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**57**	0	57	114	0	0	0	0	0	0	0	0	0	0	0	0	114
05:15 PM	55	0	64	**119**	0	0	0	0	0	0	0	0	0	0	0	0	**119**
05:30 PM	49	0	**66**	115	0	0	0	0	0	0	0	0	0	0	0	0	115
05:45 PM	47	0	63	110	0	0	0	0	0	0	0	0	0	0	0	0	110
Total Volume	208	0	250	458	0	0	0	0	0	0	0	0	0	0	0	0	458
% App. Total	45.4	0	54.6		0	0	0		0	0	0		0	0	0		
PHF	.912	.000	.947	.962	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.962

Your Company Name Here

I-40 EB Collector to I-85 Connector
Efland, NC
Counter:JE
October 26, 2019

File Name : 3EBI-40ColSplit
Site Code : 00019393
Start Date : 10/26/2019
Page No : 1

Groups Printed- Vehicles

	I-40 Collector to I-85 Connector Eastbound			Westbound	Northbound	Southbound	
Start Time	Left	Right	App. Total	App. Total	App. Total	App. Total	Int. Total
11:00 AM	43	32	75	0	0	0	75
11:15 AM	78	45	123	0	0	0	123
11:30 AM	58	41	99	0	0	0	99
11:45 AM	68	49	117	0	0	0	117
Total	247	167	414	0	0	0	414
12:00 PM	71	34	105	0	0	0	105
12:15 PM	65	41	106	0	0	0	106
12:30 PM	51	43	94	0	0	0	94
12:45 PM	52	38	90	0	0	0	90
Total	239	156	395	0	0	0	395
Grand Total	486	323	809	0	0	0	809
Apprch %	60.1	39.9					
Total %	60.1	39.9	100	0	0	0	

	I-40 Collector to I-85 Connector Eastbound			Westbound	Northbound	Southbound	
Start Time	Left	Right	App. Total	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 11:15 AM							
11:15 AM	**78**	45	**123**	0	0	0	**123**
11:30 AM	58	41	99	0	0	0	99
11:45 AM	68	**49**	117	0	0	0	117
12:00 PM	71	34	105	0	0	0	105
Total Volume	275	169	444	0	0	0	444
% App. Total	61.9	38.1					
PHF	.881	.862	.902	.000	.000	.000	.902

Your Company Name Here

I-40/85 EB Service Rd. @ US 70 Connector
Efland, NC
Counter: LV
May 21, 2019

File Name : 4 I-40-85EBServUS70Con
Site Code : 00019214
Start Date : 5/21/2019
Page No : 1

Groups Printed- Vehicles

	I-40/85 EB Service Rd. Eastbound				Westbound				US 70/I-85 Connector Northbound				US 70/I-85 Connector Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	70	1	1	72	0	0	0	0	0	11	3	14	7	3	0	10	96
07:15 AM	83	0	0	83	0	0	0	0	0	27	3	30	11	2	0	13	126
07:30 AM	114	0	1	115	0	0	0	0	0	53	5	58	11	16	0	27	200
07:45 AM	110	0	1	111	0	0	0	0	0	30	3	33	19	24	0	43	187
Total	377	1	3	381	0	0	0	0	0	121	14	135	48	45	0	93	609
08:00 AM	57	0	0	57	0	0	0	0	0	30	3	33	26	22	0	48	138
08:15 AM	65	1	0	66	0	0	0	0	0	29	2	31	18	15	0	33	130
08:30 AM	43	0	0	43	0	0	0	0	0	16	5	21	8	10	0	18	82
08:45 AM	42	0	0	42	0	0	0	0	0	11	2	13	7	12	0	19	74
Total	207	1	0	208	0	0	0	0	0	86	12	98	59	59	0	118	424
*** BREAK ***																	
04:00 PM	46	0	0	46	0	0	0	0	0	20	0	20	9	17	0	26	92
04:15 PM	54	0	2	56	0	0	0	0	0	11	0	11	2	28	0	30	97
04:30 PM	49	0	0	49	0	0	0	0	0	7	1	8	13	29	0	42	99
04:45 PM	57	1	0	58	0	0	0	0	0	5	1	6	2	23	0	25	89
Total	206	1	2	209	0	0	0	0	0	43	2	45	26	97	0	123	377
05:00 PM	68	0	0	68	0	0	0	0	0	10	1	11	8	22	0	30	109
05:15 PM	67	0	0	67	0	0	0	0	0	19	1	20	9	20	0	29	116
05:30 PM	82	0	0	82	0	0	0	0	0	13	0	13	6	57	0	63	158
05:45 PM	52	0	0	52	0	0	0	0	0	10	2	12	3	57	0	60	124
Total	269	0	0	269	0	0	0	0	0	52	4	56	26	156	0	182	507
Grand Total	1059	3	5	1067	0	0	0	0	0	302	32	334	159	357	0	516	1917
Apprch %	99.3	0.3	0.5		0	0	0		0	90.4	9.6		30.8	69.2	0		
Total %	55.2	0.2	0.3	55.7	0	0	0	0	0	15.8	1.7	17.4	8.3	18.6	0	26.9	

	I-40/85 EB Service Rd. Eastbound				Westbound				US 70/I-85 Connector Northbound				US 70/I-85 Connector Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**114**	0	**1**	**115**	0	0	0	0	0	**53**	**5**	**58**	11	16	0	27	**200**
07:45 AM	110	0	1	111	0	0	0	0	0	30	3	33	19	**24**	0	43	187
08:00 AM	57	0	0	57	0	0	0	0	0	30	3	33	**26**	22	0	**48**	138
08:15 AM	65	**1**	0	66	0	0	0	0	0	29	2	31	18	15	0	33	130
Total Volume	346	1	2	349	0	0	0	0	0	142	13	155	74	77	0	151	655
% App. Total	99.1	0.3	0.6		0	0	0		0	91.6	8.4		49	51	0		
PHF	.759	.250	.500	.759	.000	.000	.000	.000	.000	.670	.650	.668	.712	.802	.000	.786	.819
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	68	0	0	68	0	0	0	0	0	10	1	11	8	22	0	30	109
05:15 PM	67	0	0	67	0	0	0	0	0	**19**	1	**20**	**9**	20	0	29	116
05:30 PM	**82**	0	0	**82**	0	0	0	0	0	13	0	13	6	**57**	0	**63**	**158**
05:45 PM	52	0	0	52	0	0	0	0	0	10	**2**	12	3	57	0	60	124
Total Volume	269	0	0	269	0	0	0	0	0	52	4	56	26	156	0	182	507
% App. Total	100	0	0		0	0	0		0	92.9	7.1		14.3	85.7	0		
PHF	.820	.000	.000	.820	.000	.000	.000	.000	.000	.684	.500	.700	.722	.684	.000	.722	.802

Your Company Name Here

I-40 WB Collector to Mt Willing Rd.
Efland, NC
Counter:BW
October 26, 2019

File Name : 4I-85ConI-40EB Ramp
Site Code : 00019394
Start Date : 10/26/2019
Page No : 1

Groups Printed- Unshifted

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	32	0	0	0	32	1	0	0	0	1	0	11	1	0	12	6	7	0	0	13	58
11:15 AM	46	0	0	0	46	0	0	0	0	0	0	5	1	0	6	5	5	0	0	10	62
11:30 AM	36	0	0	0	36	0	0	0	0	0	0	7	1	0	8	3	9	0	0	12	56
11:45 AM	48	0	0	0	48	0	0	0	0	0	0	5	1	0	6	2	4	0	0	6	60
Total	162	0	0	0	162	1	0	0	0	1	0	28	4	0	32	16	25	0	0	41	236
12:00 PM	36	1	0	0	37	0	0	0	0	0	0	4	2	0	6	3	4	0	0	7	50
12:15 PM	36	0	3	0	39	0	0	0	0	0	1	10	5	1	17	2	4	0	0	6	62
12:30 PM	45	0	0	0	45	0	0	0	0	0	0	3	0	0	3	5	7	0	0	12	60
12:45 PM	36	0	1	0	37	0	0	0	0	0	0	4	1	0	5	6	15	0	0	21	63
Total	153	1	4	0	158	0	0	0	0	0	1	21	8	1	31	16	30	0	0	46	235
Grand Total	315	1	4	0	320	1	0	0	0	1	1	49	12	1	63	32	55	0	0	87	471
Apprch %	98.4	0.3	1.2	0		100	0	0	0		1.6	77.8	19	1.6		36.8	63.2	0	0		
Total %	66.9	0.2	0.8	0	67.9	0.2	0	0	0	0.2	0.2	10.4	2.5	0.2	13.4	6.8	11.7	0	0	18.5	

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	32	0	0	0	32	**1**	0	0	0	**1**	0	**11**	**1**	0	**12**	**6**	7	0	0	**13**	58
11:15 AM	46	0	0	0	46	0	0	0	0	0	0	5	1	0	6	5	5	0	0	10	**62**
11:30 AM	36	0	0	0	36	0	0	0	0	0	0	7	1	0	8	3	**9**	0	0	12	56
11:45 AM	**48**	0	0	0	**48**	0	0	0	0	0	0	5	1	0	6	2	4	0	0	6	60
Total Volume	162	0	0	0	162	1	0	0	0	1	0	28	4	0	32	16	25	0	0	41	236
% App. Total	100	0	0	0		100	0	0	0		0	87.5	12.5	0		39	61	0	0		
PHF	.844	.000	.000	.000	.844	.250	.000	.000	.000	.250	.000	.636	1.00	.000	.667	.667	.694	.000	.000	.788	.952

Your Company Name Here

I-40/85 WB Exit @ US 70/85 Connector
Efland, NC
Counter: JCG
May 22, 2019

File Name : 5 I40-85WBExit@US70Con
Site Code : 00019215
Start Date : 5/22/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound				I-40/I-85 WB Ramp Westbound				US 70/I-85 Connector Northbound				US 70/I-85 Connector Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	0	0	1	0	80	0	80	0	10	60	70	151
07:15 AM	0	0	0	0	1	2	3	6	0	113	0	113	0	12	56	68	187
07:30 AM	0	0	0	0	1	0	7	8	2	166	0	168	0	26	85	111	287
07:45 AM	0	0	0	0	2	0	10	12	0	139	0	139	0	42	83	125	276
Total	0	0	0	0	5	2	20	27	2	498	0	500	0	90	284	374	901
08:00 AM	0	0	0	0	3	1	5	9	0	89	0	89	0	46	72	118	216
08:15 AM	0	0	0	0	1	0	4	5	1	95	0	96	0	31	59	90	191
08:30 AM	0	0	0	0	0	0	4	4	1	60	0	61	0	19	51	70	135
08:45 AM	0	0	0	0	4	0	10	14	0	52	0	52	0	14	48	62	128
Total	0	0	0	0	8	1	23	32	2	296	0	298	0	110	230	340	670
*** BREAK ***																	
04:00 PM	0	0	0	0	4	1	6	11	0	67	0	67	0	23	72	95	173
04:15 PM	0	0	0	0	4	0	12	16	0	64	0	64	0	24	78	102	182
04:30 PM	0	0	0	0	6	1	13	20	0	54	0	54	0	36	75	111	185
04:45 PM	0	0	0	0	4	1	11	16	0	65	0	65	0	18	72	90	171
Total	0	0	0	0	18	3	42	63	0	250	0	250	0	101	297	398	711
05:00 PM	0	0	0	0	6	0	8	14	0	76	0	76	0	24	110	134	224
05:15 PM	0	0	0	0	4	0	14	18	0	89	0	89	0	28	68	96	203
05:30 PM	0	0	0	0	10	0	22	32	0	98	0	98	0	53	73	126	256
05:45 PM	0	0	0	0	9	1	21	31	0	64	0	64	0	49	48	97	192
Total	0	0	0	0	29	1	65	95	0	327	0	327	0	154	299	453	875
Grand Total	0	0	0	0	60	7	150	217	4	1371	0	1375	0	455	1110	1565	3157
Apprch %	0	0	0		27.6	3.2	69.1		0.3	99.7	0		0	29.1	70.9		
Total %	0	0	0	0	1.9	0.2	4.8	6.9	0.1	43.4	0	43.6	0	14.4	35.2	49.6	

	Eastbound				I-40/I-85 WB Ramp Westbound				US 70/I-85 Connector Northbound				US 70/I-85 Connector Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	1	0	7	8	**2**	**166**	0	**168**	0	26	**85**	111	**287**
07:45 AM	0	0	0	0	2	0	**10**	**12**	0	139	0	139	0	42	83	**125**	276
08:00 AM	0	0	0	0	**3**	**1**	5	9	0	89	0	89	0	**46**	72	118	216
08:15 AM	0	0	0	0	1	0	4	5	1	95	0	96	0	31	59	90	191
Total Volume	0	0	0	0	7	1	26	34	3	489	0	492	0	145	299	444	970
% App. Total	0	0	0		20.6	2.9	76.5		0.6	99.4	0		0	32.7	67.3		
PHF	.000	.000	.000	.000	.583	.250	.650	.708	.375	.736	.000	.732	.000	.788	.879	.888	.845
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	6	0	8	14	0	76	0	76	0	24	**110**	**134**	224
05:15 PM	0	0	0	0	4	0	14	18	0	89	0	89	0	28	68	96	203
05:30 PM	0	0	0	0	**10**	0	**22**	**32**	0	**98**	0	**98**	0	**53**	73	126	**256**
05:45 PM	0	0	0	0	9	**1**	21	31	0	64	0	64	0	49	48	97	192
Total Volume	0	0	0	0	29	1	65	95	0	327	0	327	0	154	299	453	875
% App. Total	0	0	0		30.5	1.1	68.4		0	100	0		0	34	66		
PHF	.000	.000	.000	.000	.725	.250	.739	.742	.000	.834	.000	.834	.000	.726	.680	.845	.854

Your Company Name Here

I-85 Connector @ I-40 WB Ramps
Efland, NC
Counter:LV
October 26, 2019

File Name : 5I-85ConI-40WB Ramp
Site Code : 00019395
Start Date : 10/26/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound	I-40 WB Exit Ramp Westbound				I-85 Connector Northbound			I-85 Connector Southbound			
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	Int. Total
11:00 AM	0	4	3	5	12	1	45	46	8	51	59	117
11:15 AM	0	0	0	4	4	0	51	51	10	47	57	112
11:30 AM	0	2	1	5	8	0	43	43	12	48	60	111
11:45 AM	0	1	0	4	5	1	51	52	3	51	54	111
Total	0	7	4	18	29	2	190	192	33	197	230	451
12:00 PM	0	1	1	5	7	0	42	42	6	48	54	103
12:15 PM	0	2	1	2	5	2	45	47	4	37	41	93
12:30 PM	0	1	2	3	6	0	48	48	11	55	66	120
12:45 PM	0	4	0	7	11	0	40	40	17	54	71	122
Total	0	8	4	17	29	2	175	177	38	194	232	438
Grand Total	0	15	8	35	58	4	365	369	71	391	462	889
Apprch %		25.9	13.8	60.3		1.1	98.9		15.4	84.6		
Total %	0	1.7	0.9	3.9	6.5	0.4	41.1	41.5	8	44	52	

	Eastbound	I-40 WB Exit Ramp Westbound				I-85 Connector Northbound			I-85 Connector Southbound			
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1												
Peak Hour for Entire Intersection Begins at 11:00 AM												
11:00 AM	0	**4**	**3**	**5**	**12**	**1**	45	46	8	**51**	59	**117**
11:15 AM	0	0	0	4	4	0	**51**	51	10	47	57	112
11:30 AM	0	2	1	5	8	0	43	43	**12**	48	**60**	111
11:45 AM	0	1	0	4	5	1	51	**52**	3	51	54	111
Total Volume	0	7	4	18	29	2	190	192	33	197	230	451
% App. Total		24.1	13.8	62.1		1	99		14.3	85.7		
PHF	.000	.438	.333	.900	.604	.500	.931	.923	.688	.966	.958	.964

Your Company Name Here

I-40/85 Serv. Rd. @ I-40/85 WB Exit Ramp
Efland, NC
Developed from Count #'s 5 & 7

File Name : 6 I40-85WBServI40-85WBExit
Site Code : 19216
Start Date : 5/22/2019
Page No : 1

Groups Printed- Vehicles

	WB Service Rd.I-40/85 exit Eastbound					WB Service Rd. @ I-40/85 WB exit Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	From I-40/85	From #5	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	17	60	0	77	0	0	0	0	0	0	0	0	0	0	77
07:15 AM	0	0	0	0	0	0	37	58	0	95	0	0	0	0	0	0	0	0	0	0	95
07:30 AM	0	0	0	0	0	0	44	87	0	131	0	0	0	0	0	0	0	0	0	0	131
07:45 AM	0	0	0	0	0	0	43	83	0	126	0	0	0	0	0	0	0	0	0	0	126
Total	0	0	0	0	0	0	141	288	0	429	0	0	0	0	0	0	0	0	0	0	429
08:00 AM	0	0	0	0	0	0	56	73	0	129	0	0	0	0	0	0	0	0	0	0	129
08:15 AM	0	0	0	0	0	0	35	60	0	95	0	0	0	0	0	0	0	0	0	0	95
08:30 AM	0	0	0	0	0	0	31	52	0	83	0	0	0	0	0	0	0	0	0	0	83
08:45 AM	0	0	0	0	0	0	30	48	0	78	0	0	0	0	0	0	0	0	0	0	78
Total	0	0	0	0	0	0	152	233	0	385	0	0	0	0	0	0	0	0	0	0	385
*** BREAK ***																					
04:00 PM	0	0	0	0	0	0	100	73	0	173	0	0	0	0	0	0	0	0	0	0	173
04:15 PM	0	0	0	0	0	0	137	78	0	215	0	0	0	0	0	0	0	0	0	0	215
04:30 PM	0	0	0	0	0	0	140	76	0	216	0	0	0	0	0	0	0	0	0	0	216
04:45 PM	0	0	0	0	0	0	147	73	0	220	0	0	0	0	0	0	0	0	0	0	220
Total	0	0	0	0	0	0	524	300	0	824	0	0	0	0	0	0	0	0	0	0	824
05:00 PM	0	0	0	0	0	0	135	110	0	245	0	0	0	0	0	0	0	0	0	0	245
05:15 PM	0	0	0	0	0	0	200	68	0	268	0	0	0	0	0	0	0	0	0	0	268
05:30 PM	0	0	0	0	0	0	162	73	0	235	0	0	0	0	0	0	0	0	0	0	235
05:45 PM	0	0	0	0	0	0	168	49	0	217	0	0	0	0	0	0	0	0	0	0	217
Total	0	0	0	0	0	0	665	300	0	965	0	0	0	0	0	0	0	0	0	0	965
Grand Total	0	0	0	0	0	0	1482	1121	0	2603	0	0	0	0	0	0	0	0	0	0	2603
Apprch %	0	0	0	0		0	56.9	43.1	0		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	56.9	43.1	0	100	0	0	0	0	0	0	0	0	0	0	

	WB Service Rd.I-40/85 exit Eastbound					WB Service Rd. @ I-40/85 WB exit Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	From I-40/85	From #5	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	37	58	0	95	0	0	0	0	0	0	0	0	0	0	95
07:30 AM	0	0	0	0	0	0	44	**87**	0	**131**	0	0	0	0	0	0	0	0	0	0	**131**
07:45 AM	0	0	0	0	0	0	43	83	0	126	0	0	0	0	0	0	0	0	0	0	126
08:00 AM	0	0	0	0	0	0	**56**	73	0	129	0	0	0	0	0	0	0	0	0	0	129
Total Volume	0	0	0	0	0	0	180	301	0	481	0	0	0	0	0	0	0	0	0	0	481
% App. Total	0	0	0	0		0	37.4	62.6	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.804	.865	.000	.918	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.918
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	0	147	73	0	220	0	0	0	0	0	0	0	0	0	0	220
05:00 PM	0	0	0	0	0	0	135	**110**	0	245	0	0	0	0	0	0	0	0	0	0	245
05:15 PM	0	0	0	0	0	0	**200**	68	0	**268**	0	0	0	0	0	0	0	0	0	0	**268**
05:30 PM	0	0	0	0	0	0	162	73	0	235	0	0	0	0	0	0	0	0	0	0	235
Total Volume	0	0	0	0	0	0	644	324	0	968	0	0	0	0	0	0	0	0	0	0	968
% App. Total	0	0	0	0		0	66.5	33.5	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.805	.736	.000	.903	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.903

Your Company Name Here

I-40 EB Collector From Mt. Willing Rd.
Efland, NC
Counter:Calculated
October 26, 2019

File Name : 6wbi-40colfromI-85Connector
Site Code : 00019393
Start Date : 10/26/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound				I-40 WB Collector from I-85 Connector Westbound				Northbound				Southbound				
Start Time	Left	Thru	Right	App. Total	From I-40 WB	Thru	From I-85 Connector	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	0	0	0	50	0	52	102	0	0	0	0	0	0	0	0	102
11:15 AM	0	0	0	0	54	0	47	101	0	0	0	0	0	0	0	0	101
11:30 AM	0	0	0	0	51	0	48	99	0	0	0	0	0	0	0	0	99
11:45 AM	0	0	0	0	52	0	52	104	0	0	0	0	0	0	0	0	104
Total	0	0	0	0	207	0	199	406	0	0	0	0	0	0	0	0	406
12:00 PM	0	0	0	0	46	0	49	95	0	0	0	0	0	0	0	0	95
12:15 PM	0	0	0	0	46	0	39	85	0	0	0	0	0	0	0	0	85
12:30 PM	0	0	0	0	64	0	55	119	0	0	0	0	0	0	0	0	119
12:45 PM	0	0	0	0	44	0	54	98	0	0	0	0	0	0	0	0	98
Total	0	0	0	0	200	0	197	397	0	0	0	0	0	0	0	0	397
Grand Total	0	0	0	0	407	0	396	803	0	0	0	0	0	0	0	0	803
Apprch %	0	0	0		50.7	0	49.3		0	0	0		0	0	0		
Total %	0	0	0	0	50.7	0	49.3	100	0	0	0	0	0	0	0	0	

	Eastbound				I-40 WB Collector from I-85 Connector Westbound				Northbound				Southbound				
Start Time	Left	Thru	Right	App. Total	From I-40 WB	Thru	From I-85 Connector	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	0	0	50	0	**52**	102	0	0	0	0	0	0	0	0	102
11:15 AM	0	0	0	0	**54**	0	47	101	0	0	0	0	0	0	0	0	101
11:30 AM	0	0	0	0	51	0	48	99	0	0	0	0	0	0	0	0	99
11:45 AM	0	0	0	0	52	0	52	**104**	0	0	0	0	0	0	0	0	**104**
Total Volume	0	0	0	0	207	0	199	406	0	0	0	0	0	0	0	0	406
% App. Total	0	0	0		51	0	49		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.958	.000	.957	.976	.000	.000	.000	.000	.000	.000	.000	.000	.976

Your Company Name Here

I-40/I-85 WB Service Rd. @ WB Ent. Ramp
Efland, NC
Counter: JF
May 22, 2019

File Name : 7 I40-85WBServiceEntRamp
Site Code : 00019217
Start Date : 5/22/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound				I-40/85 WB Service Rd/ WB Ent. Ramp Westbound				Northbound				Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	53	24	0	77	0	0	0	0	0	0	0	0	77
07:15 AM	0	0	0	0	47	48	0	95	0	0	0	0	0	0	0	0	95
07:30 AM	0	0	0	0	77	54	0	131	0	0	0	0	0	0	0	0	131
07:45 AM	0	0	0	0	83	43	0	126	0	0	0	0	0	0	0	0	126
Total	0	0	0	0	260	169	0	429	0	0	0	0	0	0	0	0	429
08:00 AM	0	0	0	0	74	55	0	129	0	0	0	0	0	0	0	0	129
08:15 AM	0	0	0	0	55	40	0	95	0	0	0	0	0	0	0	0	95
08:30 AM	0	0	0	0	42	41	0	83	0	0	0	0	0	0	0	0	83
08:45 AM	0	0	0	0	41	37	0	78	0	0	0	0	0	0	0	0	78
Total	0	0	0	0	212	173	0	385	0	0	0	0	0	0	0	0	385
*** BREAK ***																	
04:00 PM	0	0	0	0	62	111	0	173	0	0	0	0	0	0	0	0	173
04:15 PM	0	0	0	0	64	151	0	215	0	0	0	0	0	0	0	0	215
04:30 PM	0	0	0	0	72	144	0	216	0	0	0	0	0	0	0	0	216
04:45 PM	0	0	0	0	63	157	0	220	0	0	0	0	0	0	0	0	220
Total	0	0	0	0	261	563	0	824	0	0	0	0	0	0	0	0	824
05:00 PM	0	0	0	0	72	173	0	245	0	0	0	0	0	0	0	0	245
05:15 PM	0	0	0	0	72	196	0	268	0	0	0	0	0	0	0	0	268
05:30 PM	0	0	0	0	55	180	0	235	0	0	0	0	0	0	0	0	235
05:45 PM	0	0	0	0	47	170	0	217	0	0	0	0	0	0	0	0	217
Total	0	0	0	0	246	719	0	965	0	0	0	0	0	0	0	0	965
Grand Total	0	0	0	0	979	1624	0	2603	0	0	0	0	0	0	0	0	2603
Apprch %	0	0	0		37.6	62.4	0		0	0	0		0	0	0		
Total %	0	0	0	0	37.6	62.4	0	100	0	0	0	0	0	0	0	0	

	Eastbound				I-40/85 WB Service Rd/ WB Ent. Ramp Westbound				Northbound				Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	47	48	0	95	0	0	0	0	0	0	0	0	95
07:30 AM	0	0	0	0	77	54	0	**131**	0	0	0	0	0	0	0	0	**131**
07:45 AM	0	0	0	0	**83**	43	0	126	0	0	0	0	0	0	0	0	126
08:00 AM	0	0	0	0	74	**55**	0	129	0	0	0	0	0	0	0	0	129
Total Volume	0	0	0	0	281	200	0	481	0	0	0	0	0	0	0	0	481
% App. Total	0	0	0		58.4	41.6	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.846	.909	.000	.918	.000	.000	.000	.000	.000	.000	.000	.000	.918
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	63	157	0	220	0	0	0	0	0	0	0	0	220
05:00 PM	0	0	0	0	**72**	173	0	245	0	0	0	0	0	0	0	0	245
05:15 PM	0	0	0	0	72	**196**	0	**268**	0	0	0	0	0	0	0	0	**268**
05:30 PM	0	0	0	0	55	180	0	235	0	0	0	0	0	0	0	0	235
Total Volume	0	0	0	0	262	706	0	968	0	0	0	0	0	0	0	0	968
% App. Total	0	0	0		27.1	72.9	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.910	.901	.000	.903	.000	.000	.000	.000	.000	.000	.000	.000	.903

Your Company Name Here

I-40 WB Collector to Mt. Willing Rd.
Efland, NC
Counter:BW
October 26, 2019

File Name : 7WBI-40ColSplit
Site Code : 00019397
Start Date : 10/26/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound	I-40 Collector WB to Mt Willing Rd Westbound				Northbound			Southbound	
Start Time	App. Total	To I-40 WB	Thru	To Mt. Willing Rd	App. Total	Thru	Right	App. Total	App. Total	Int. Total
11:00 AM	0	47	0	55	102	0	0	0	0	102
11:15 AM	0	44	0	57	101	0	0	0	0	101
11:30 AM	0	42	0	57	99	0	0	0	0	99
11:45 AM	0	49	0	55	104	0	0	0	0	104
Total	0	182	0	224	406	0	0	0	0	406
12:00 PM	0	43	0	52	95	0	0	0	0	95
12:15 PM	0	29	0	66	95	0	0	0	0	95
12:30 PM	0	56	0	63	119	0	0	0	0	119
12:45 PM	0	45	0	53	98	0	0	0	0	98
Total	0	173	0	234	407	0	0	0	0	407
Grand Total	0	355	0	458	813	0	0	0	0	813
Apprch %		43.7	0	56.3		0	0			
Total %	0	43.7	0	56.3	100	0	0	0	0	

	Eastbound	I-40 Collector WB to Mt Willing Rd Westbound				Northbound			Southbound	
Start Time	App. Total	To I-40 WB	Thru	To Mt. Willing Rd	App. Total	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:45 AM										
11:45 AM	0	49	0	55	104	0	0	0	0	104
12:00 PM	0	43	0	52	95	0	0	0	0	95
12:15 PM	0	29	0	**66**	95	0	0	0	0	95
12:30 PM	0	**56**	0	63	**119**	0	0	0	0	**119**
Total Volume	0	177	0	236	413	0	0	0	0	413
% App. Total		42.9	0	57.1		0	0			
PHF	.000	.790	.000	.894	.868	.000	.000	.000	.000	.868

Your Company Name Here

I40-85 Service Rd. @ Mt. Willing Rd.
Efland, NC
Counter: LV
May 22, 2019

File Name : 8 i40-85servicewilling
Site Code : 00019218
Start Date : 5/22/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound				I-40/85 Service Rd. Westbound				Mt. Willing Rd. Northbound				Mt. Willing Rd. Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	3	0	20	23	4	18	0	22	0	160	8	168	213
07:15 AM	0	0	0	0	9	0	37	46	5	22	0	27	0	171	12	183	256
07:30 AM	0	0	0	0	5	0	49	54	3	27	0	30	0	195	15	210	294
07:45 AM	0	0	0	0	13	0	31	44	3	20	0	23	0	180	10	190	257
Total	0	0	0	0	30	0	137	167	15	87	0	102	0	706	45	751	1020
08:00 AM	0	0	0	0	16	0	36	52	4	23	0	27	0	146	8	154	233
08:15 AM	0	0	0	0	8	0	37	45	2	19	0	21	0	137	8	145	211
08:30 AM	0	0	0	0	7	0	33	40	3	25	0	28	0	104	8	112	180
08:45 AM	0	0	0	0	8	0	27	35	3	18	0	21	0	90	10	100	156
Total	0	0	0	0	39	0	133	172	12	85	0	97	0	477	34	511	780
*** BREAK ***																	
04:00 PM	0	0	0	0	24	0	87	111	8	21	0	29	0	45	7	52	192
04:15 PM	0	0	0	0	22	0	130	152	2	34	0	36	0	56	11	67	255
04:30 PM	0	0	0	0	19	0	124	143	3	16	0	19	0	63	13	76	238
04:45 PM	0	0	0	0	28	0	129	157	6	10	0	16	0	49	7	56	229
Total	0	0	0	0	93	0	470	563	19	81	0	100	0	213	38	251	914
05:00 PM	0	0	0	0	29	0	143	172	4	13	0	17	0	53	9	62	251
05:15 PM	0	0	0	0	39	0	157	196	1	31	0	32	0	59	9	68	296
05:30 PM	0	0	0	0	46	0	136	182	4	23	0	27	0	55	11	66	275
05:45 PM	0	0	0	0	47	0	124	171	6	19	0	25	0	49	19	68	264
Total	0	0	0	0	161	0	560	721	15	86	0	101	0	216	48	264	1086
Grand Total	0	0	0	0	323	0	1300	1623	61	339	0	400	0	1612	165	1777	3800
Apprch %	0	0	0		19.9	0	80.1		15.2	84.8	0		0	90.7	9.3		
Total %	0	0	0	0	8.5	0	34.2	42.7	1.6	8.9	0	10.5	0	42.4	4.3	46.8	

	Eastbound				I-40/85 Service Rd. Westbound				Mt. Willing Rd. Northbound				Mt. Willing Rd. Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	9	0	37	46	**5**	22	0	27	0	171	12	183	256
07:30 AM	0	0	0	0	5	0	**49**	**54**	3	**27**	0	**30**	0	**195**	**15**	**210**	**294**
07:45 AM	0	0	0	0	13	0	31	44	3	20	0	23	0	180	10	190	257
08:00 AM	0	0	0	0	**16**	0	36	52	4	23	0	27	0	146	8	154	233
Total Volume	0	0	0	0	43	0	153	196	15	92	0	107	0	692	45	737	1040
% App. Total	0	0	0		21.9	0	78.1		14	86	0		0	93.9	6.1		
PHF	.000	.000	.000	.000	.672	.000	.781	.907	.750	.852	.000	.892	.000	.887	.750	.877	.884
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	29	0	143	172	4	13	0	17	0	53	9	62	251
05:15 PM	0	0	0	0	39	0	**157**	**196**	1	**31**	0	**32**	0	**59**	9	**68**	**296**
05:30 PM	0	0	0	0	46	0	136	182	4	23	0	27	0	55	11	66	275
05:45 PM	0	0	0	0	**47**	0	124	171	**6**	19	0	25	0	49	**19**	68	264
Total Volume	0	0	0	0	161	0	560	721	15	86	0	101	0	216	48	264	1086
% App. Total	0	0	0		22.3	0	77.7		14.9	85.1	0		0	81.8	18.2		
PHF	.000	.000	.000	.000	.856	.000	.892	.920	.625	.694	.000	.789	.000	.915	.632	.971	.917

Your Company Name Here

I-40 WB Collector to Mt Willing Rd.
Efland, NC
Counter:BW
October 26, 2019

File Name : 8MtWillingWBRamp
Site Code : 00019398
Start Date : 10/26/2019
Page No : 1

Groups Printed- Unshifted

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	13	0	40	0	53	5	15	0	0	20	1	40	9	0	50	123
11:15 AM	0	0	0	0	0	7	0	47	0	54	2	18	0	0	20	2	75	21	0	98	172
11:30 AM	0	0	0	0	0	12	0	46	0	58	2	11	0	0	13	0	65	13	0	78	149
11:45 AM	0	0	0	0	0	8	0	49	0	57	3	22	0	0	25	0	64	12	0	76	158
Total	0	0	0	0	0	40	0	182	0	222	12	66	0	0	78	3	244	55	0	302	602
12:00 PM	0	0	0	0	0	6	0	48	0	54	2	13	0	0	15	0	74	9	0	83	152
12:15 PM	0	0	0	0	0	10	1	57	0	68	5	25	0	0	30	0	60	13	0	73	171
12:30 PM	0	0	0	0	0	12	0	50	0	62	3	23	0	0	26	0	51	6	0	57	145
12:45 PM	0	0	0	0	0	12	0	42	0	54	1	19	0	0	20	0	53	11	0	64	138
Total	0	0	0	0	0	40	1	197	0	238	11	80	0	0	91	0	238	39	0	277	606
Grand Total	0	0	0	0	0	80	1	379	0	460	23	146	0	0	169	3	482	94	0	579	1208
Apprch %	0	0	0	0		17.4	0.2	82.4	0		13.6	86.4	0	0		0.5	83.2	16.2	0		
Total %	0	0	0	0	0	6.6	0.1	31.4	0	38.1	1.9	12.1	0	0	14	0.2	39.9	7.8	0	47.9	

	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	0	0	0	0	7	0	47	0	54	2	18	0	0	20	**2**	**75**	**21**	0	**98**	**172**
11:30 AM	0	0	0	0	0	**12**	0	46	0	**58**	2	11	0	0	13	0	65	13	0	78	149
11:45 AM	0	0	0	0	0	8	0	**49**	0	57	**3**	**22**	0	0	**25**	0	64	12	0	76	158
12:00 PM	0	0	0	0	0	6	0	48	0	54	2	13	0	0	15	0	74	9	0	83	152
Total Volume	0	0	0	0	0	33	0	190	0	223	9	64	0	0	73	2	278	55	0	335	631
% App. Total	0	0	0	0		14.8	0	85.2	0		12.3	87.7	0	0		0.6	83	16.4	0		
PHF	.000	.000	.000	.000	.000	.688	.000	.969	.000	.961	.750	.727	.000	.000	.730	.250	.927	.655	.000	.855	.917

Your Company Name Here

US 70/I-85 Connector @ Ben Johnston Rd.
Efland, NC
Counter: JF
May 22, 2019

File Name : 9 70-85BenJohnston
Site Code : 00019219
Start Date : 5/22/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound					Ben Johnston Rd. Westbound					US 70/I-85 Connector Northbound					US 70/I-85 Connector Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	6	0	0	0	6	0	58	22	0	80	0	65	0	0	65	151
07:15 AM	0	0	0	0	0	10	0	1	0	11	0	86	27	0	113	0	58	0	0	58	182
07:30 AM	0	0	0	0	0	18	0	1	0	19	0	114	56	0	170	0	93	0	0	93	282
07:45 AM	0	0	0	0	0	37	0	0	0	37	0	90	56	0	146	0	85	0	0	85	268
Total	0	0	0	0	0	71	0	2	0	73	0	348	161	0	509	0	301	0	0	301	883
08:00 AM	0	0	0	0	0	25	0	1	0	26	0	54	39	0	93	1	94	0	0	95	214
08:15 AM	0	0	0	0	0	13	0	3	0	16	0	50	45	0	95	0	77	0	0	77	188
08:30 AM	0	0	0	0	0	17	0	1	0	18	0	34	24	0	58	0	44	0	0	44	120
08:45 AM	0	0	0	0	0	18	0	0	0	18	0	43	17	0	60	2	40	0	0	42	120
Total	0	0	0	0	0	73	0	5	0	78	0	181	125	0	306	3	255	0	0	258	642
*** BREAK ***																					
04:00 PM	0	0	0	0	0	46	0	0	0	46	0	56	17	0	73	0	51	0	0	51	170
04:15 PM	0	0	0	0	0	42	0	2	0	44	0	58	16	0	74	0	59	0	0	59	177
04:30 PM	0	0	0	0	0	30	0	1	0	31	0	51	14	0	65	0	79	0	0	79	175
04:45 PM	0	0	0	0	0	26	0	0	0	26	0	61	13	0	74	0	63	0	0	63	163
Total	0	0	0	0	0	144	0	3	0	147	0	226	60	0	286	0	252	0	0	252	685
05:00 PM	0	0	0	0	0	52	0	0	0	52	0	69	13	0	82	0	84	0	0	84	218
05:15 PM	0	0	0	0	0	42	0	0	0	42	0	89	13	0	102	1	52	0	0	53	197
05:30 PM	0	0	0	0	0	31	0	0	0	31	0	100	18	0	118	2	95	0	0	97	246
05:45 PM	0	0	0	0	0	26	0	0	0	26	0	73	12	0	85	0	68	0	0	68	179
Total	0	0	0	0	0	151	0	0	0	151	0	331	56	0	387	3	299	0	0	302	840
Grand Total	0	0	0	0	0	439	0	10	0	449	0	1086	402	0	1488	6	1107	0	0	1113	3050
Apprch %	0	0	0	0		97.8	0	2.2	0		0	73	27	0		0.5	99.5	0	0		
Total %	0	0	0	0	0	14.4	0	0.3	0	14.7	0	35.6	13.2	0	48.8	0.2	36.3	0	0	36.5	

	Eastbound					Ben Johnston Rd. Westbound					US 70/I-85 Connector Northbound					US 70/I-85 Connector Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	18	0	1	0	19	0	**114**	**56**	0	**170**	0	93	0	0	93	**282**
07:45 AM	0	0	0	0	0	**37**	0	0	0	**37**	0	90	56	0	146	0	85	0	0	85	268
08:00 AM	0	0	0	0	0	25	0	1	0	26	0	54	39	0	93	**1**	**94**	0	0	**95**	214
08:15 AM	0	0	0	0	0	13	0	**3**	0	16	0	50	45	0	95	0	77	0	0	77	188
Total Volume	0	0	0	0	0	93	0	5	0	98	0	308	196	0	504	1	349	0	0	350	952
% App. Total	0	0	0	0		94.9	0	5.1	0		0	61.1	38.9	0		0.3	99.7	0	0		
PHF	.000	.000	.000	.000	.000	.628	.000	.417	.000	.662	.000	.675	.875	.000	.741	.250	.928	.000	.000	.921	.844
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	**52**	0	0	0	**52**	0	69	13	0	82	0	84	0	0	84	218
05:15 PM	0	0	0	0	0	42	0	0	0	42	0	89	13	0	102	1	52	0	0	53	197
05:30 PM	0	0	0	0	0	31	0	0	0	31	0	**100**	**18**	0	**118**	**2**	**95**	0	0	**97**	**246**
05:45 PM	0	0	0	0	0	26	0	0	0	26	0	73	12	0	85	0	68	0	0	68	179
Total Volume	0	0	0	0	0	151	0	0	0	151	0	331	56	0	387	3	299	0	0	302	840
% App. Total	0	0	0	0		100	0	0	0		0	85.5	14.5	0		1	99	0	0		
PHF	.000	.000	.000	.000	.000	.726	.000	.000	.000	.726	.000	.828	.778	.000	.820	.375	.787	.000	.000	.778	.854

Your Company Name Here

I-85 Collector Rd. @ Ben Johnston Rd.
Efland, NC
Counter:JCG
October 26, 2019

File Name : 9I-85ConBenJohnston
Site Code : 00019399
Start Date : 10/26/2019
Page No : 1

Groups Printed- Vehicles

	Eastbound				Ben Johnston Rd. Westbound				I-85 Connector Northbound				I-85 Connector Southbound						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	13	0	1	14	0	37	12	49	0	46	0	46	0	109	109
11:15 AM	0	0	0	0	11	0	0	11	1	49	8	57	0	44	0	44	1	112	113
11:30 AM	0	0	0	0	21	0	0	21	0	34	12	46	0	40	0	40	0	107	107
11:45 AM	0	0	0	0	12	0	0	12	0	50	7	57	1	42	0	43	0	112	112
Total	0	0	0	0	57	0	1	58	1	170	39	209	1	172	0	173	1	440	441
12:00 PM	0	0	0	0	8	0	0	8	0	38	10	48	0	46	0	46	0	102	102
12:15 PM	0	0	0	0	12	0	0	12	0	37	11	48	2	31	0	33	0	93	93
12:30 PM	0	0	0	0	10	0	0	10	0	45	5	50	0	54	0	54	0	114	114
12:45 PM	0	0	0	0	18	0	0	18	0	36	12	48	0	52	0	52	0	118	118
Total	0	0	0	0	48	0	0	48	0	156	38	194	2	183	0	185	0	427	427
Grand Total	0	0	0	0	105	0	1	106	1	326	77	403	3	355	0	358	1	867	868
Apprch %					99.1		0.9			80.9	19.1		0.8	99.2					
Total %				0	12.1		0.1	12.2		37.6	8.9	46.5	0.3	40.9		41.3	0.1	99.9	

	Eastbound	Ben Johnston Rd. Westbound			I-85 Connector Northbound			I-85 Connector Southbound			
Start Time	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 11:00 AM											
11:00 AM	0	13	**1**	14	37	**12**	49	0	**46**	**46**	109
11:15 AM	0	11	0	11	49	8	**57**	0	44	44	**112**
11:30 AM	0	**21**	0	**21**	34	12	46	0	40	40	107
11:45 AM	0	12	0	12	**50**	7	57	**1**	42	43	112
Total Volume	0	57	1	58	170	39	209	1	172	173	440
% App. Total		98.3	1.7		81.3	18.7		0.6	99.4		
PHF	.000	.679	.250	.690	.850	.813	.917	.250	.935	.940	.982

Your Company Name Here

Mt. Willing Rd. @ Forest Ave.
Efland, NC
Counter: JF
May 23, 2019

File Name : 10 MtWIllingForest
Site Code : 00192110
Start Date : 5/23/2019
Page No : 1

Groups Printed- Vehicles

	Forest Ave. Eastbound					Forest Ave. Westbound					Mt. Willing Rd. Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	1	127	0	128	13	0	0	0	13	25	0	13	0	38	0	0	0	0	0	179
07:15 AM	0	0	160	0	160	34	0	0	0	34	41	0	17	0	58	0	0	0	0	0	252
07:30 AM	0	0	158	0	158	21	1	0	0	22	60	0	7	0	67	0	0	0	0	0	247
07:45 AM	0	0	152	0	152	22	0	0	0	22	46	0	17	0	63	0	0	0	0	0	237
Total	0	1	597	0	598	90	1	0	0	91	172	0	54	0	226	0	0	0	0	0	915
08:00 AM	0	0	110	0	110	9	0	0	0	9	35	0	16	0	51	0	0	0	0	0	170
08:15 AM	0	1	105	0	106	15	0	0	0	15	39	0	14	0	53	0	0	0	0	0	174
08:30 AM	0	1	61	0	62	11	0	0	0	11	41	0	20	0	61	0	0	0	0	0	134
08:45 AM	0	1	65	0	66	17	0	0	0	17	31	0	9	0	40	0	0	0	0	0	123
Total	0	3	341	0	344	52	0	0	0	52	146	0	59	0	205	0	0	0	0	0	601
*** BREAK ***																					
04:00 PM	0	2	54	0	56	8	1	0	0	9	105	0	23	0	128	0	0	0	0	0	193
04:15 PM	0	1	66	0	67	13	0	0	0	13	97	0	21	0	118	0	0	0	0	0	198
04:30 PM	0	0	68	0	68	15	3	0	0	18	83	0	24	0	107	0	0	0	0	0	193
04:45 PM	0	0	43	0	43	9	1	0	0	10	109	0	15	0	124	0	0	0	0	0	177
Total	0	3	231	0	234	45	5	0	0	50	394	0	83	0	477	0	0	0	0	0	761
05:00 PM	0	0	55	0	55	12	0	0	0	12	94	0	18	0	112	0	0	0	0	0	179
05:15 PM	0	2	50	0	52	10	0	0	0	10	140	0	25	0	165	0	0	0	0	0	227
05:30 PM	0	0	53	0	53	16	0	0	0	16	123	0	30	0	153	0	0	0	0	0	222
05:45 PM	0	1	44	0	45	13	4	0	0	17	118	0	23	0	141	0	0	0	0	0	203
Total	0	3	202	0	205	51	4	0	0	55	475	0	96	0	571	0	0	0	0	0	831
Grand Total	0	10	1371	0	1381	238	10	0	0	248	1187	0	292	0	1479	0	0	0	0	0	3108
Apprch %	0	0.7	99.3	0		96	4	0	0		80.3	0	19.7	0		0	0	0	0		
Total %	0	0.3	44.1	0	44.4	7.7	0.3	0	0	8	38.2	0	9.4	0	47.6	0	0	0	0	0	

	Forest Ave. Eastbound					Forest Ave. Westbound					Mt. Willing Rd. Northbound					Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**1**	127	0	128	13	0	0	0	13	25	0	13	0	38	0	0	0	0	0	179
07:15 AM	0	0	**160**	0	**160**	**34**	0	0	0	**34**	41	0	**17**	0	58	0	0	0	0	0	**252**
07:30 AM	0	0	158	0	158	21	**1**	0	0	22	**60**	0	7	0	**67**	0	0	0	0	0	247
07:45 AM	0	0	152	0	152	22	0	0	0	22	46	0	17	0	63	0	0	0	0	0	237
Total Volume	0	1	597	0	598	90	1	0	0	91	172	0	54	0	226	0	0	0	0	0	915
% App. Total	0	0.2	99.8	0		98.9	1.1	0	0		76.1	0	23.9	0		0	0	0	0		
PHF	.000	.250	.933	.000	.934	.662	.250	.000	.000	.669	.717	.000	.794	.000	.843	.000	.000	.000	.000	.000	.908
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	**55**	0	**55**	12	0	0	0	12	94	0	18	0	112	0	0	0	0	0	179
05:15 PM	0	**2**	50	0	52	10	0	0	0	10	**140**	0	25	0	**165**	0	0	0	0	0	**227**
05:30 PM	0	0	53	0	53	**16**	0	0	0	16	123	0	**30**	0	153	0	0	0	0	0	222
05:45 PM	0	1	44	0	45	13	**4**	0	0	**17**	118	0	23	0	141	0	0	0	0	0	203
Total Volume	0	3	202	0	205	51	4	0	0	55	475	0	96	0	571	0	0	0	0	0	831
% App. Total	0	1.5	98.5	0		92.7	7.3	0	0		83.2	0	16.8	0		0	0	0	0		
PHF	.000	.375	.918	.000	.932	.797	.250	.000	.000	.809	.848	.000	.800	.000	.865	.000	.000	.000	.000	.000	.915

Your Company Name Here

Mt. Willing Rd. @ E. Forest Ave.
Efland, NC
Counter:LV
November 2, 2019

File Name : 10 WillingForest
Site Code : 00193910
Start Date : 11/2/2019
Page No : 1

Groups Printed- Vehicles

	E. Forest Ave. Eastbound				E. Forest Ave. Westbound				Mt. Willing Rd. Northbound				Southbound						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	39	39	8	1	0	9	47	0	12	59	0	0	0	0	0	107	107
11:15 AM	0	1	46	47	7	0	0	7	46	0	11	57	0	0	0	0	0	111	111
11:30 AM	0	0	60	60	9	1	0	10	38	0	10	48	0	0	0	0	0	118	118
11:45 AM	0	4	52	56	10	0	0	10	42	0	18	60	0	0	0	0	0	126	126
Total	0	5	197	202	34	2	0	36	173	0	51	224	0	0	0	0	0	462	462
12:00 PM	0	0	58	58	14	1	0	15	45	0	9	54	0	0	0	0	0	127	127
12:15 PM	0	0	51	51	7	1	0	8	37	0	7	44	0	0	0	0	0	103	103
12:30 PM	0	1	56	57	15	2	0	17	43	0	16	59	0	0	0	0	0	133	133
12:45 PM	0	0	48	48	12	1	0	13	45	0	19	64	0	0	0	0	0	125	125
Total	0	1	213	214	48	5	0	53	170	0	51	221	0	0	0	0	0	488	488
Grand Total	0	6	410	416	82	7	0	89	343	0	102	445	0	0	0	0	0	950	950
Apprch %	0	1.4	98.6		92.1	7.9	0		77.1	0	22.9								
Total %	0	0.6	43.2	43.8	8.6	0.7	0	9.4	36.1	0	10.7	46.8				0	0	100	

	E. Forest Ave. Eastbound				E. Forest Ave. Westbound				Mt. Willing Rd. Northbound				Southbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 11:45 AM														
11:45 AM	0	**4**	52	56	10	0	0	10	42	0	**18**	**60**	0	126
12:00 PM	0	0	**58**	**58**	14	1	0	15	**45**	0	9	54	0	127
12:15 PM	0	0	51	51	7	1	0	8	37	0	7	44	0	103
12:30 PM	0	1	56	57	**15**	**2**	0	**17**	43	0	16	59	0	**133**
Total Volume	0	5	217	222	46	4	0	50	167	0	50	217	0	489
% App. Total	0	2.3	97.7		92	8	0		77	0	23			
PHF	.000	.313	.935	.957	.767	.500	.000	.735	.928	.000	.694	.904	.000	.919

Your Company Name Here

US 70 @ Efland Cedar Grove Rd.
Efland, NC
Counter: JCG
May 23, 2019

File Name : 11 us70eflandcedar
Site Code : 00192111
Start Date : 5/23/2019
Page No : 1

Groups Printed- Vehicles

	US 70 Eastbound					US 70 Westbound					Efland Cedar Grove Rd. Northbound					Efland Cedar Grove Rd. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	34	28	0	62	0	12	6	0	18	10	11	1	0	22	18	102	12	0	132	234
07:15 AM	0	68	22	0	90	2	19	2	0	23	22	17	2	0	41	42	139	9	0	190	344
07:30 AM	2	84	58	0	144	0	30	17	0	47	17	40	0	0	57	40	104	4	0	148	396
07:45 AM	6	68	48	0	122	1	26	12	0	39	11	38	0	0	49	39	98	3	0	140	350
Total	8	254	156	0	418	3	87	37	0	127	60	106	3	0	169	139	443	28	0	610	1324
08:00 AM	2	41	23	0	66	2	23	10	0	35	7	19	5	0	31	20	87	1	0	108	240
08:15 AM	1	57	32	0	90	3	25	10	0	38	10	30	1	0	41	23	68	2	0	93	262
08:30 AM	2	40	9	0	51	1	31	4	0	36	12	24	1	0	37	9	56	3	0	68	192
08:45 AM	2	35	11	0	48	0	19	4	0	23	12	24	1	0	37	14	49	1	0	64	172
Total	7	173	75	0	255	6	98	28	0	132	41	97	8	0	146	66	260	7	0	333	866
*** BREAK ***																					
04:00 PM	2	35	16	0	53	2	44	23	0	69	19	76	1	0	96	14	42	2	0	58	276
04:15 PM	4	26	16	0	46	1	58	23	0	82	26	80	1	0	107	9	43	3	0	55	290
04:30 PM	5	31	18	0	54	1	64	31	0	96	21	68	2	0	91	7	47	10	0	64	305
04:45 PM	1	29	9	0	39	2	48	24	1	75	23	78	0	0	101	8	38	2	0	48	263
Total	12	121	59	0	192	6	214	101	1	322	89	302	4	0	395	38	170	17	0	225	1134
05:00 PM	6	36	10	0	52	1	61	27	0	89	20	77	3	0	100	14	43	5	0	62	303
05:15 PM	3	30	8	0	41	2	58	24	0	84	39	97	3	0	139	11	43	2	0	56	320
05:30 PM	1	38	12	0	51	0	73	22	0	95	27	90	0	0	117	12	39	6	0	57	320
05:45 PM	1	25	8	0	34	2	42	20	0	64	31	87	6	0	124	6	36	2	0	44	266
Total	11	129	38	0	178	5	234	93	0	332	117	351	12	0	480	43	161	15	0	219	1209
Grand Total	38	677	328	0	1043	20	633	259	1	913	307	856	27	0	1190	286	1034	67	0	1387	4533
Apprch %	3.6	64.9	31.4	0		2.2	69.3	28.4	0.1		25.8	71.9	2.3	0		20.6	74.5	4.8	0		
Total %	0.8	14.9	7.2	0	23	0.4	14	5.7	0	20.1	6.8	18.9	0.6	0	26.3	6.3	22.8	1.5	0	30.6	

	US 70 Eastbound					US 70 Westbound					Efland Cedar Grove Rd. Northbound					Efland Cedar Grove Rd. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	68	22	0	90	**2**	19	2	0	23	**22**	17	2	0	41	**42**	**139**	**9**	0	**190**	344
07:30 AM	2	**84**	**58**	0	**144**	0	**30**	**17**	0	**47**	17	**40**	0	0	**57**	40	104	4	0	148	**396**
07:45 AM	**6**	68	48	0	122	1	26	12	0	39	11	38	0	0	49	39	98	3	0	140	350
08:00 AM	2	41	23	0	66	2	23	10	0	35	7	19	**5**	0	31	20	87	1	0	108	240
Total Volume	10	261	151	0	422	5	98	41	0	144	57	114	7	0	178	141	428	17	0	586	1330
% App. Total	2.4	61.8	35.8	0		3.5	68.1	28.5	0		32	64	3.9	0		24.1	73	2.9	0		
PHF	.417	.777	.651	.000	.733	.625	.817	.603	.000	.766	.648	.713	.350	.000	.781	.839	.770	.472	.000	.771	.840
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**6**	36	10	0	**52**	1	61	**27**	0	89	20	77	3	0	100	**14**	**43**	5	0	**62**	303
05:15 PM	3	30	8	0	41	**2**	58	24	0	84	**39**	**97**	3	0	**139**	11	43	2	0	56	**320**
05:30 PM	1	**38**	**12**	0	51	0	**73**	22	0	**95**	27	90	0	0	117	12	39	**6**	0	57	320
05:45 PM	1	25	8	0	34	2	42	20	0	64	31	87	**6**	0	124	6	36	2	0	44	266
Total Volume	11	129	38	0	178	5	234	93	0	332	117	351	12	0	480	43	161	15	0	219	1209
% App. Total	6.2	72.5	21.3	0		1.5	70.5	28	0		24.4	73.1	2.5	0		19.6	73.5	6.8	0		
PHF	.458	.849	.792	.000	.856	.625	.801	.861	.000	.874	.750	.905	.500	.000	.863	.768	.936	.625	.000	.883	.945

Your Company Name Here

Efland Cedar Grove Rd. @ US 70
Efland, NC
Counter:JCG
November 2, 2019

File Name : 11 US70Efland
Site Code : 00193911
Start Date : 11/2/2019
Page No : 1

Groups Printed- Vehicles

	US 70 Eastbound				US 70 Westbound				Efland Cedar Grove Rde. Northbound				Efland Cedar Grove Rde. Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	1	28	10	39	3	35	5	43	10	34	0	44	6	28	3	37	163
11:15 AM	2	25	8	35	1	28	6	35	11	41	1	53	9	38	2	49	172
11:30 AM	3	23	9	35	0	19	8	27	5	29	0	34	9	51	2	62	158
11:45 AM	1	27	10	38	1	26	12	39	8	38	0	46	7	44	2	53	176
Total	7	103	37	147	5	108	31	144	34	142	1	177	31	161	9	201	669
12:00 PM	4	43	13	60	1	26	11	38	8	29	2	39	16	43	0	59	196
12:15 PM	1	31	9	41	0	26	12	38	9	29	1	39	13	42	2	57	175
12:30 PM	1	35	15	51	0	32	9	41	6	39	0	45	8	42	4	54	191
12:45 PM	5	27	7	39	1	35	7	43	9	33	1	43	8	38	0	46	171
Total	11	136	44	191	2	119	39	160	32	130	4	166	45	165	6	216	733
Grand Total	18	239	81	338	7	227	70	304	66	272	5	343	76	326	15	417	1402
Apprch %	5.3	70.7	24		2.3	74.7	23		19.2	79.3	1.5		18.2	78.2	3.6		
Total %	1.3	17	5.8	24.1	0.5	16.2	5	21.7	4.7	19.4	0.4	24.5	5.4	23.3	1.1	29.7	

	US 70 Eastbound				US 70 Westbound				Efland Cedar Grove Rde. Northbound				Efland Cedar Grove Rde. Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	1	27	10	38	**1**	26	**12**	39	8	38	0	**46**	7	**44**	2	53	176
12:00 PM	**4**	**43**	13	**60**	1	26	11	38	8	29	**2**	39	**16**	43	0	**59**	**196**
12:15 PM	1	31	9	41	0	26	12	38	**9**	29	1	39	13	42	2	57	175
12:30 PM	1	35	**15**	51	0	**32**	9	**41**	6	**39**	0	45	8	42	**4**	54	191
Total Volume	7	136	47	190	2	110	44	156	31	135	3	169	44	171	8	223	738
% App. Total	3.7	71.6	24.7		1.3	70.5	28.2		18.3	79.9	1.8		19.7	76.7	3.6		
PHF	.438	.791	.783	.792	.500	.859	.917	.951	.861	.865	.375	.918	.688	.972	.500	.945	.941

Appendix C:

Intersection Spreadsheets

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:15 - 8:15 AM; 5:00 - 6:00 PM**
Ct. Date	**5/23/2019**
N/S Street:	**Efland-Cedar Grove Road**
E/W Street:	**US-70**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.84

	US-70 Eastbound			US-70 Westbound			Efland-Cedar Grove Road Northbound			Efland-Cedar Grove Road Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	10	261	151	5	98	41	57	114	7	141	428	17
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	10	261	151	5	98	41	57	114	7	141	428	17
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	1	16	9	0	6	3	3	7	0	9	26	1
2022 Background Traffic	11	277	160	5	104	44	60	121	7	150	454	18
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	13	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	11	0	0	0	0
Total External Site Traffic	0	0	0	0	0	0	0	11	0	0	13	0
Total Project Traffic	0	0	0	0	0	0	0	11	0	0	13	0
2022 Buildout Total	11	277	160	5	104	44	60	132	7	150	467	18
Percent Impact (Approach)		0.0%			0.0%			5.5%			2.0%	

Overall Percent Impact 1.7%

PM PEAK HOUR
PM PHF = 0.95

	US-70 Eastbound			US-70 Westbound			Efland-Cedar Grove Road Northbound			Efland-Cedar Grove Road Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	11	129	38	5	234	93	117	351	12	43	161	15
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	11	129	38	5	234	93	117	351	12	43	161	15
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	1	8	2	0	14	6	7	21	1	3	10	1
2022 Background Traffic	12	137	40	5	248	99	124	372	13	46	171	16
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	18	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	16	0	0	0	0
Total External Site Traffic	0	0	0	0	0	0	0	16	0	0	18	0
Total Project Traffic	0	0	0	0	0	0	0	16	0	0	18	0
2022 Buildout Total	12	137	40	5	248	99	124	388	13	46	189	16
Percent Impact (Approach)		0.0%			0.0%			3.0%			7.2%	

Overall Percent Impact 2.6%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:00 - 8:00 AM; 5:00 - 6:00 PM**
Ct. Date	**5/23/2019**
N/S Street:	**Mt. Willing Road**
E/W Street:	**Forrest Avenue**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.91

	Forrest Avenue			Forrest Avenue			Mt. Willing Road					
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	1	597	90	1	0	172	0	54	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	1	597	90	1	0	172	0	54	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	37	6	0	0	11	0	3	0	0	0
2022 Background Traffic	0	1	634	96	1	0	183	0	57	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	13	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	11	0	0	0	0	0
Total External Site Traffic	0	0	13	0	0	0	11	0	0	0	0	0
Total Project Traffic	0	0	13	0	0	0	11	0	0	0	0	0
2022 Buildout Total	0	1	647	96	1	0	194	0	57	0	0	0
Percent Impact (Approach)		2.0%			0.0%			4.4%			-	

Overall Percent Impact 2.4%

PM PEAK HOUR
PM PHF = 0.92

	Forrest Avenue			Forrest Avenue			Mt. Willing Road					
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	3	202	51	4	0	475	0	96	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	3	202	51	4	0	475	0	96	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	12	3	0	0	29	0	6	0	0	0
2022 Background Traffic	0	3	214	54	4	0	504	0	102	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	18	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	16	0	0	0	0	0
Total External Site Traffic	0	0	18	0	0	0	16	0	0	0	0	0
Total Project Traffic	0	0	18	0	0	0	16	0	0	0	0	0
2022 Buildout Total	0	3	232	54	4	0	520	0	102	0	0	0
Percent Impact (Approach)		7.7%			0.0%			2.6%			-	

Overall Percent Impact 3.7%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:15 - 8:15 AM; 5:00 - 6:00 PM**
Ct. Date	**5/22/2019**
N/S Street:	**Mt. Willing Road**
E/W Street:	**I-40 WB Service Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.88

				I-40 WB Service Road			Mt. Willing Road			Mt. Willing Road		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	43	0	153	15	92	0	0	692	45
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	43	0	153	15	92	0	0	692	45
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	3	0	9	1	6	0	0	42	3
2022 Background Traffic	0	0	0	46	0	162	16	98	0	0	734	48
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	13	0
Percent Assignment Outbound	0%	0%	0%	0%	32%	2%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	183	11	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	183	11	0	0	0	0	13	0
Total Project Traffic	0	0	0	0	183	11	0	0	0	0	13	0
2022 Buildout Total	0	0	0	46	183	173	16	98	0	0	747	48
Percent Impact (Approach)		-			48.3%			0.0%			1.6%	

Overall Percent Impact 15.8%

PM PEAK HOUR
PM PHF = 0.92

				I-40 WB Service Road			Mt. Willing Road			Mt. Willing Road		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	161	0	560	15	86	0	0	216	48
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	161	0	560	15	86	0	0	216	48
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	10	0	34	1	5	0	0	13	3
2022 Background Traffic	0	0	0	171	0	594	16	91	0	0	229	51
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	18	0
Percent Assignment Outbound	0%	0%	0%	0%	32%	2%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	260	16	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	260	16	0	0	0	0	18	0
Total Project Traffic	0	0	0	0	260	16	0	0	0	0	18	0
2022 Buildout Total	0	0	0	171	260	610	16	91	0	0	247	51
Percent Impact (Approach)		-			26.5%			0.0%			6.0%	

Overall Percent Impact 20.3%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:15 - 8:15 AM; 5:00 - 6:00 PM**
Ct. Date	**5/21/2019**
N/S Street:	**Mt. Willing Road**
E/W Street:	**I-40 EB Exit Ramp**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.91

	I-40 EB Exit Ramp						Mt. Willing Road			Mt. Willing Road		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	50	3	12	0	0	0	0	82	128	595	137	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	50	3	12	0	0	0	0	82	128	595	137	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	3	0	1	0	0	0	0	5	8	36	8	0
2022 Background Traffic	53	3	13	0	0	0	0	87	136	631	145	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	13	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	0	0	0	0	0	13	0	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	13	0	0
2022 Buildout Total	53	3	13	0	0	0	0	87	136	644	145	0
Percent Impact (Approach)		0.0%			-			0.0%			1.6%	

Overall Percent Impact 1.2%

PM PEAK HOUR
PM PHF = 0.90

	I-40 EB Exit Ramp						Mt. Willing Road			Mt. Willing Road		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	66	1	20	0	0	0	0	62	46	191	214	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	66	1	20	0	0	0	0	62	46	191	214	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	4	0	1	0	0	0	0	4	3	12	13	0
2022 Background Traffic	70	1	21	0	0	0	0	66	49	203	227	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	18	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	0	0	0	0	0	18	0	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	18	0	0
2022 Buildout Total	70	1	21	0	0	0	0	66	49	221	227	0
Percent Impact (Approach)		0.0%			-			0.0%			4.0%	

Overall Percent Impact 2.7%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:30 - 8:30 AM; 5:00 - 6:00 PM**
Ct. Date	**5/21/2019**
N/S Street:	**US-70/I-40 Connector Road**
E/W Street:	**I-40 EB Service Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.82

Description	I-40 EB Service Road Eastbound Left	Through	Right	Westbound Left	Through	Right	US-70/I-40 Connector Road Northbound Left	Through	Right	US-70/I-40 Connector Road Southbound Left	Through	Right
2019 Traffic Count	346	1	2	0	0	0	0	142	13	74	77	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	346	1	2	0	0	0	0	142	13	74	77	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	21	0	0	0	0	0	0	9	1	5	5	0
2022 Background Traffic	367	1	2	0	0	0	0	151	14	79	82	0
Project Traffic												
Percent Assignment Inbound	49%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Inbound Project Traffic	317	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	1%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	269	6	0
Total External Site Traffic	317	0	0	0	0	0	0	6	0	269	6	0
Total Project Traffic	317	0	0	0	0	0	0	6	0	269	6	0
2022 Buildout Total	684	1	2	0	0	0	0	157	14	348	88	0
Percent Impact (Approach)		46.1%			-			3.5%			63.1%	

Overall Percent Impact 46.2%

PM PEAK HOUR
PM PHF = 0.80

Description	I-40 EB Service Road Eastbound Left	Through	Right	Westbound Left	Through	Right	US-70/I-40 Connector Road Northbound Left	Through	Right	US-70/I-40 Connector Road Southbound Left	Through	Right
2019 Traffic Count	269	0	0	0	0	0	0	52	4	26	156	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	269	0	0	0	0	0	0	52	4	26	156	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	16	0	0	0	0	0	0	3	0	2	10	0
2022 Background Traffic	285	0	0	0	0	0	0	55	4	28	166	0
Project Traffic												
Percent Assignment Inbound	49%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Inbound Project Traffic	431	0	0	0	0	0	0	9	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	1%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	382	8	0
Total External Site Traffic	431	0	0	0	0	0	0	9	0	382	8	0
Total Project Traffic	431	0	0	0	0	0	0	9	0	382	8	0
2022 Buildout Total	716	0	0	0	0	0	0	64	4	410	174	0
Percent Impact (Approach)		60.2%			-			13.2%			66.8%	

Overall Percent Impact 60.7%

INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**West Orange Site**	**Net New Trips:**	646	573	880	812
Location:	**Efland, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Weekday Peak Hours**					
Peak Hour:	**7:30 - 8:30 AM; 5:00 - 6:00 PM**					
Ct. Date	**5/22/2019**					
N/S Street:	**US-70/I-40 Connector Road**	**Annual Growth Rate:**	2.0%	**Existing Year:**	2019	
E/W Street:	**I-40 WB Exit Ramp**	**Growth Factor:**	0.061208	**Buildout Year:**	2022	

AM PEAK HOUR
AM PHF = 0.85

				I-40 WB Exit Ramp			US-70/I-40 Connector Road			US-70/I-40 Connector Road		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	7	1	26	3	489	0	0	145	299
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	7	1	26	3	489	0	0	145	299
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	0	2	0	30	0	0	9	18
2022 Background Traffic	0	0	0	7	1	28	3	519	0	0	154	317
I-40 WB Off-Ramp Closure Diversion	**0**	**0**	**0**	**0**	**191**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	25%	22%	20%	30%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	162	142	129	194	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	275	0
Total External Site Traffic	0	0	0	0	162	142	129	194	0	0	275	0
Total Project Traffic	0	0	0	0	162	142	129	194	0	0	275	0
2022 Buildout Total	0	0	0	7	354	170	132	713	0	0	429	317
Percent Impact (Approach)		-			57.3%			38.2%			36.9%	

Overall Percent Impact 42.5%

PM PEAK HOUR
PM PHF = 0.85

				I-40 WB Exit Ramp			US-70/I-40 Connector Road			US-70/I-40 Connector Road		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	29	1	65	0	327	0	0	154	299
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	29	1	65	0	327	0	0	154	299
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	2	0	4	0	20	0	0	9	18
2022 Background Traffic	0	0	0	31	1	69	0	347	0	0	163	317
I-40 WB Off-Ramp Closure Diversion	**0**	**0**	**0**	**0**	**683**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	25%	22%	20%	30%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	220	194	176	264	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	390	0
Total External Site Traffic	0	0	0	0	220	194	176	264	0	0	390	0
Total Project Traffic	0	0	0	0	220	194	176	264	0	0	390	0
2022 Buildout Total	0	0	0	31	904	263	176	611	0	0	553	317
Percent Impact (Approach)		-			34.6%			55.9%			44.8%	

Overall Percent Impact 43.6%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:30 - 8:30 AM; 5:00 - 6:00 PM**
Ct. Date	**5/22/2019**
N/S Street:	**US-70/I-40 Connector Road**
E/W Street:	**Ben Johnston Road/Site Driveway**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.84

	Site Driveway			Ben Johnston Road			US-70/I-40 Connector Road			US-70/I-40 Connector Road		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	93	0	5	0	308	196	1	349	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	93	0	5	0	308	196	1	349	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	6	0	0	0	19	12	0	21	0
2022 Background Traffic	0	0	0	99	0	5	0	327	208	1	370	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	1%	0%	52%	0%	0%	0%	0%	2%
Inbound Project Traffic	0	0	0	0	6	0	336	0	0	0	0	13
Percent Assignment Outbound	2%	1%	48%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	11	6	275	0	0	0	0	0	0	0	0	0
Total External Site Traffic	11	6	275	0	6	0	336	0	0	0	0	13
Total Project Traffic	11	6	275	0	6	0	336	0	0	0	0	13
2022 Buildout Total	11	6	275	99	6	5	336	327	208	1	370	13
Percent Impact (Approach)		100.0%			5.5%			38.6%			3.4%	

Overall Percent Impact 39.0%

PM PEAK HOUR
PM PHF = 0.85

	Site Driveway			Ben Johnston Road			US-70/I-40 Connector Road			US-70/I-40 Connector Road		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	151	0	0	0	331	56	3	299	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	151	0	0	0	331	56	3	299	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	9	0	0	0	20	3	0	18	0
2022 Background Traffic	0	0	0	160	0	0	0	351	59	3	317	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	1%	0%	52%	0%	0%	0%	0%	2%
Inbound Project Traffic	0	0	0	0	8	0	458	0	0	0	0	18
Percent Assignment Outbound	2%	1%	48%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	16	8	390	0	0	0	0	0	0	0	0	0
Total External Site Traffic	16	8	390	0	8	0	458	0	0	0	0	18
Total Project Traffic	16	8	390	0	8	0	458	0	0	0	0	18
2022 Buildout Total	16	8	390	160	8	0	458	351	59	3	317	18
Percent Impact (Approach)		100.0%			4.8%			52.8%			5.3%	

Overall Percent Impact 50.2%

INTERSECTION ANALYSIS SHEET

			AM In	AM Out	PM In	PM Out
Project:	**West Orange Site**	**Net New Trips:**	646	573	880	812
Location:	**Efland, NC**	**Pass-By Trips:**	0	0	0	0
Scenario:	**Weekday Peak Hours**					
Peak Hour:						
Ct. Date	**Balanced with I-40 WB Service Road (Int. #6)**					
N/S Street:	**East RI/RO Site Driveway**	**Annual Growth Rate:**	2.0%	**Existing Year:**	2019	
E/W Street:	**I-40 WB Service Road**	**Growth Factor:**	0.061208	**Buildout Year:**	2022	

AM PEAK HOUR
AM PHF = 0.90

				I-40 WB Service Road						East RI/RO Site Driveway		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	301	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	301	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	18	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	319	0	0	0	0	0	0	0
I-40 WB Off-Ramp Closure Diversion	**0**	**0**	**0**	**0**	**191**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	40%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	32	258	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	86
Total External Site Traffic	0	0	0	0	32	258	0	0	0	0	0	86
Total Project Traffic	0	0	0	0	32	258	0	0	0	0	0	86
2022 Buildout Total	0	0	0	0	542	258	0	0	0	0	0	86
Percent Impact (Approach)		-			36.3%			-			100.0%	

Overall Percent Impact 42.4%

PM PEAK HOUR
PM PHF = 0.90

				I-40 WB Service Road						East RI/RO Site Driveway		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	324	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	324	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	20	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	344	0	0	0	0	0	0	0
I-40 WB Off-Ramp Closure Diversion	**0**	**0**	**0**	**0**	**683**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	40%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	44	352	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	122
Total External Site Traffic	0	0	0	0	44	352	0	0	0	0	0	122
Total Project Traffic	0	0	0	0	44	352	0	0	0	0	0	122
2022 Buildout Total	0	0	0	0	1071	352	0	0	0	0	0	122
Percent Impact (Approach)		-			27.8%			-			100.0%	

Overall Percent Impact 33.5%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	
Ct. Date	**Balanced with I-40 WB Service Road (Int. #7)**
N/S Street:	**West RI/RO Site Driveway**
E/W Street:	**I-40 WB Service Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.90

				I-40 WB Service Road						West RI/RO Site Driveway		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	200	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	200	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	12	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	212	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	32	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	34%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	195
Total External Site Traffic	0	0	0	0	0	32	0	0	0	0	0	195
Total Project Traffic	0	0	0	0	0	32	0	0	0	0	0	195
2022 Buildout Total	0	0	0	0	212	32	0	0	0	0	0	195
Percent Impact (Approach)		-			13.1%			-			100.0%	

Overall Percent Impact 51.7%

PM PEAK HOUR
PM PHF = 0.90

				I-40 WB Service Road						West RI/RO Site Driveway		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	706	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	706	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	43	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	749	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	44	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	34%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	276
Total External Site Traffic	0	0	0	0	0	44	0	0	0	0	0	276
Total Project Traffic	0	0	0	0	0	44	0	0	0	0	0	276
2022 Buildout Total	0	0	0	0	749	44	0	0	0	0	0	276
Percent Impact (Approach)		-			5.5%			-			100.0%	

Overall Percent Impact 29.9%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:00 - 8:00 AM; 5:00 - 6:00 PM**
Ct. Date	**5/21/2019**
N/S Street:	**I-40 EB Exit Ramp**
E/W Street:	**I-40 EB Service Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.89

Description	I-40 EB Service Road Eastbound Left	Through	Right	Westbound Left	Through	Right	Northbound Left	Through	Right	I-40 EB Exit Ramp Southbound Left	Through	Right
2019 Traffic Count	0	740	0	0	0	0	0	0	0	0	397	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	740	0	0	0	0	0	0	0	0	397	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	45	0	0	0	0	0	0	0	0	24	0
2022 Background Traffic	0	785	0	0	0	0	0	0	0	0	421	0
Project Traffic												
Percent Assignment Inbound	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	47%	0%
Inbound Project Traffic	0	13	0	0	0	0	0	0	0	0	304	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	13	0	0	0	0	0	0	0	0	304	0
Total Project Traffic	0	13	0	0	0	0	0	0	0	0	304	0
2022 Buildout Total	0	798	0	0	0	0	0	0	0	0	725	0
Percent Impact (Approach)		1.6%			-			-			41.9%	

Overall Percent Impact 20.8%

PM PEAK HOUR
PM PHF = 0.96

Description	I-40 EB Service Road Eastbound Left	Through	Right	Westbound Left	Through	Right	Northbound Left	Through	Right	I-40 EB Exit Ramp Southbound Left	Through	Right
2019 Traffic Count	0	237	0	0	0	0	0	0	0	0	221	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	237	0	0	0	0	0	0	0	0	221	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	15	0	0	0	0	0	0	0	0	14	0
2022 Background Traffic	0	252	0	0	0	0	0	0	0	0	235	0
Project Traffic												
Percent Assignment Inbound	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	47%	0%
Inbound Project Traffic	0	18	0	0	0	0	0	0	0	0	414	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	18	0	0	0	0	0	0	0	0	414	0
Total Project Traffic	0	18	0	0	0	0	0	0	0	0	414	0
2022 Buildout Total	0	270	0	0	0	0	0	0	0	0	649	0
Percent Impact (Approach)		6.7%			-			-			63.8%	

Overall Percent Impact 47.0%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:00 - 8:00 AM; 5:00 - 6:00 PM**
Ct. Date	**5/21/2019**
N/S Street:	**I-40 EB Entrance Ramp**
E/W Street:	**I-40 EB Service Road**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.89

	I-40 EB Service Road											
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	745	0	374	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	745	0	374	0	0	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	46	0	23	0	0	0	0	0	0	0	0	0
2022 Background Traffic	791	0	397	0	0	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	49%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	317	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	317	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	317	0	0	0	0	0	0	0	0	0
2022 Buildout Total	791	0	714	0	0	0	0	0	0	0	0	0
Percent Impact (Approach)		21.1%			-			-			-	

Overall Percent Impact 21.1%

PM PEAK HOUR
PM PHF = 0.96

	I-40 EB Service Road											
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	208	0	250	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	208	0	250	0	0	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	13	0	15	0	0	0	0	0	0	0	0	0
2022 Background Traffic	221	0	265	0	0	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	49%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	431	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	431	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	431	0	0	0	0	0	0	0	0	0
2022 Buildout Total	221	0	696	0	0	0	0	0	0	0	0	0
Percent Impact (Approach)		47.0%			-			-			-	

Overall Percent Impact 47.0%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:15 - 8:15 AM; 4:45 - 5:45 PM**
Ct. Date	**5/22/2019**
N/S Street:	**I-40 WB Exit Ramp**
E/W Street:	**I-40 WB Service Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.92

				I-40 WB Service Road			I-40 WB Exit Ramp					
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	301	0	0	180	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	301	0	0	180	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	18	0	0	11	0	0	0	0
2022 Background Traffic	0	0	0	0	319	0	0	191	0	0	0	0
I-40 WB Off-Ramp Closure Diversion	0	0	0	0	191	0	0	-191	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	32	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	86	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	118	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	118	0	0	0	0	0	0	0
2022 Buildout Total	0	0	0	0	628	0	0	0	0	0	0	0
Percent Impact (Approach)		-			18.8%			-			-	

Overall Percent Impact 18.8%

PM PEAK HOUR
PM PHF = 0.90

				I-40 WB Service Road			I-40 WB Exit Ramp					
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	324	0	0	644	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	324	0	0	644	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	20	0	0	39	0	0	0	0
2022 Background Traffic	0	0	0	0	344	0	0	683	0	0	0	0
I-40 WB Off-Ramp Closure Diversion	0	0	0	0	683	0	0	-683	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	44	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	122	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	166	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	166	0	0	0	0	0	0	0
2022 Buildout Total	0	0	0	0	1193	0	0	0	0	0	0	0
Percent Impact (Approach)		-			13.9%			-			-	

Overall Percent Impact 13.9%

INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Weekday Peak Hours**
Peak Hour:	**7:15 - 8:15 AM; 4:45 - 5:45 PM**
Ct. Date	**5/22/2019**
N/S Street:	**I-40 WB Entrance Ramp**
E/W Street:	**I-40 WB Service Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	646	573	880	812
Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.92

	I-40 WB Service Road											
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	281	0	200	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	281	0	200	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	17	0	12	0	0	0	0	0	0
2022 Background Traffic	0	0	0	298	0	212	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	32	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	86	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	86	0	32	0	0	0	0	0	0
Total Project Traffic	0	0	0	86	0	32	0	0	0	0	0	0
2022 Buildout Total	0	0	0	384	0	244	0	0	0	0	0	0
Percent Impact (Approach)		-			18.8%			-			-	

Overall Percent Impact 18.8%

PM PEAK HOUR
PM PHF = 0.90

	I-40 WB Service Road											
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	262	0	706	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	262	0	706	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	16	0	43	0	0	0	0	0	0
2022 Background Traffic	0	0	0	278	0	749	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	44	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	122	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	122	0	44	0	0	0	0	0	0
Total Project Traffic	0	0	0	122	0	44	0	0	0	0	0	0
2022 Buildout Total	0	0	0	400	0	793	0	0	0	0	0	0
Percent Impact (Approach)		-			13.9%			-			-	

Overall Percent Impact 13.9%

INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:	**11:45 AM - 12:45 PM**					
Ct. Date	**11/2/2019**					
N/S Street:	**Efland-Cedar Grove Road**	**Annual Growth Rate:**	2.0%		**Existing Year:**	2019
E/W Street:	**US-70**	**Growth Factor:**	0.061208		**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.94

	US-70 **Eastbound**			US-70 **Westbound**			Efland-Cedar Grove Road **Northbound**			Efland-Cedar Grove Road **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	7	136	47	2	110	44	31	135	3	44	171	8
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	7	136	47	2	110	44	31	135	3	44	171	8
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	8	3	0	7	3	2	8	0	3	10	0
2022 Background Traffic	7	144	50	2	117	47	33	143	3	47	181	8
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	25	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	24	0	0	0	0
Total External Site Traffic	0	0	0	0	0	0	0	24	0	0	25	0
Total Project Traffic	0	0	0	0	0	0	0	24	0	0	25	0
2022 Buildout Total	7	144	50	2	117	47	33	167	3	47	206	8
Percent Impact (Approach)		0.0%			0.0%			11.8%			9.6%	

Overall Percent Impact 5.9%

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INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:	**11:45 AM - 12:45 PM**					
Ct. Date	**11/2/2019**					
N/S Street:	**Mt. Willing Road**	**Annual Growth Rate:**	2.0%		**Existing Year:**	2019
E/W Street:	**Forrest Avenue**	**Growth Factor:**	0.061208		**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.92

	Forrest Avenue			Forrest Avenue			Mt. Willing Road					
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	5	217	46	4	0	167	0	50	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	5	217	46	4	0	167	0	50	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	13	3	0	0	10	0	3	0	0	0
2022 Background Traffic	0	5	230	49	4	0	177	0	53	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	25	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	24	0	0	0	0	0
Total External Site Traffic	0	0	25	0	0	0	24	0	0	0	0	0
Total Project Traffic	0	0	25	0	0	0	24	0	0	0	0	0
2022 Buildout Total	0	5	255	49	4	0	201	0	53	0	0	0
Percent Impact (Approach)		9.6%			0.0%			9.4%			-	

Overall Percent Impact 8.6%

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INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:	**11:15 AM - 12:15 PM**					
Ct. Date	**10/26/2019**					
N/S Street:	**Mt. Willing Road**	**Annual Growth Rate:**	2.0%		**Existing Year:**	2019
E/W Street:	**I-40 WB Service Road**	**Growth Factor:**	0.061208		**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.92

				I-40 WB Service Road			Mt. Willing Road			Mt. Willing Road		
		Eastbound			**Westbound**			**Northbound**			**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	33	0	190	9	64	0	0	278	55
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	33	0	190	9	64	0	0	278	55
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	2	0	12	1	4	0	0	17	3
2022 Background Traffic	0	0	0	35	0	202	10	68	0	0	295	58
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	25	0
Percent Assignment Outbound	0%	0%	0%	0%	32%	2%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	384	24	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	384	24	0	0	0	0	25	0
Total Project Traffic	0	0	0	0	384	24	0	0	0	0	25	0
2022 Buildout Total	0	0	0	35	384	226	10	68	0	0	320	58
Percent Impact (Approach)		-			63.3%			0.0%			6.6%	

Overall Percent Impact 39.3%

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INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Saturday Peak Hour**
Peak Hour:	**1:15 AM - 12:15 PM**
Ct. Date	**10/26/2019**
N/S Street:	**Mt. Willing Road**
E/W Street:	**I-40 EB Exit Ramp**

	Sat In	**Sat Out**		
Net New Trips:	1,251	1,201		
Pass-By Trips:	0	0		

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.94

	I-40 EB Exit Ramp						Mt. Willing Road			Mt. Willing Road		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	39	0	12	0	0	0	0	36	50	238	74	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	39	0	12	0	0	0	0	36	50	238	74	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	2	0	1	0	0	0	0	2	3	15	5	0
2022 Background Traffic	41	0	13	0	0	0	0	38	53	253	79	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	25	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	0	0	0	0	0	25	0	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	25	0	0
2022 Buildout Total	41	0	13	0	0	0	0	38	53	278	79	0
Percent Impact (Approach)		0.0%			-			0.0%			7.0%	

Overall Percent Impact 5.0%

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INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:	**11:00 AM - 12:00 PM**					
Ct. Date	**10/26/2019**					
N/S Street:	**US-70/I-40 Connector Road**	**Annual Growth Rate:**	2.0%		**Existing Year:**	2019
E/W Street:	**I-40 EB Service Road**	**Growth Factor:**	0.061208		**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.95

	I-40 EB Service Road						US-70/I-40 Connector Road			US-70/I-40 Connector Road		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	162	0	0	0	0	0	0	28	4	16	25	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	162	0	0	0	0	0	0	28	4	16	25	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	10	0	0	0	0	0	0	2	0	1	2	0
2022 Background Traffic	172	0	0	0	0	0	0	30	4	17	27	0
Project Traffic												
Percent Assignment Inbound	49%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Inbound Project Traffic	613	0	0	0	0	0	0	13	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%	1%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	564	12	0
Total External Site Traffic	613	0	0	0	0	0	0	13	0	564	12	0
Total Project Traffic	613	0	0	0	0	0	0	13	0	564	12	0
2022 Buildout Total	785	0	0	0	0	0	0	43	4	581	39	0
Percent Impact (Approach)		78.1%			-			27.7%			92.9%	

Overall Percent Impact 82.8%

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INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:	**11:00 AM - 12:00 PM**					
Ct. Date	**10/26/2019**					
N/S Street:	**US-70/I-40 Connector Road**	**Annual Growth Rate:**	2.0%		**Existing Year:**	2019
E/W Street:	**I-40 WB Exit Ramp**	**Growth Factor:**	0.061208		**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.96

		Eastbound		I-40 WB Exit Ramp **Westbound**			US-70/I-40 Connector Road **Northbound**			US-70/I-40 Connector Road **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	7	4	18	2	190	0	0	33	197
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	7	4	18	2	190	0	0	33	197
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	0	1	0	12	0	0	2	12
2022 Background Traffic	0	0	0	7	4	19	2	202	0	0	35	209
I-40 WB Off-Ramp Closure Diversion	**0**	**0**	**0**	**0**	**220**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	25%	22%	20%	30%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	313	275	250	375	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	48%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	576	0
Total External Site Traffic	0	0	0	0	313	275	250	375	0	0	576	0
Total Project Traffic	0	0	0	0	313	275	250	375	0	0	576	0
2022 Buildout Total	0	0	0	7	537	294	252	577	0	0	611	209
Percent Impact (Approach)		-			70.2%			75.4%			70.2%	

Overall Percent Impact 71.9%

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INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:	**11:00 AM - 12:00 PM**					
Ct. Date	**10/26/2019**					
N/S Street:	**US-70/I-40 Connector Road**	**Annual Growth Rate:**	2.0%	**Existing Year:**	2019	
E/W Street:	**Ben Johnston Road/Site Driveway**	**Growth Factor:**	0.061208	**Buildout Year:**	2022	

AM PEAK HOUR
AM PHF = 0.98

	Site Driveway			Ben Johnston Road			US-70/I-40 Connector Road			US-70/I-40 Connector Road		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	57	0	1	0	170	39	1	172	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	57	0	1	0	170	39	1	172	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	3	0	0	0	10	2	0	11	0
2022 Background Traffic	0	0	0	60	0	1	0	180	41	1	183	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	1%	0%	52%	0%	0%	0%	0%	2%
Inbound Project Traffic	0	0	0	0	13	0	651	0	0	0	0	24
Percent Assignment Outbound	2%	1%	48%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	24	13	576	0	0	0	0	0	0	0	0	0
Total External Site Traffic	24	13	576	0	13	0	651	0	0	0	0	24
Total Project Traffic	24	13	576	0	13	0	651	0	0	0	0	24
2022 Buildout Total	24	13	576	60	13	1	651	180	41	1	183	24
Percent Impact (Approach)		100.0%			17.6%			74.7%			11.5%	

Overall Percent Impact 73.6%

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INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:						
Ct. Date	**Balanced with I-40 WB Service Road (Int. #6)**					
N/S Street:	**East RI/RO Site Driveway**	**Annual Growth Rate:**	2.0%		**Existing Year:**	2019
E/W Street:	**I-40 WB Service Road**	**Growth Factor:**	0.061208		**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.90

				I-40 WB Service Road						East RI/RO Site Driveway		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	199	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	199	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	12	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	211	0	0	0	0	0	0	0
I-40 WB Off-Ramp Closure Diversion	**0**	**0**	**0**	**0**	**220**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	40%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	63	500	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	180
Total External Site Traffic	0	0	0	0	63	500	0	0	0	0	0	180
Total Project Traffic	0	0	0	0	63	500	0	0	0	0	0	180
2022 Buildout Total	0	0	0	0	494	500	0	0	0	0	0	180
Percent Impact (Approach)		-			56.6%			-			100.0%	

Overall Percent Impact 63.3%

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INTERSECTION ANALYSIS SHEET

			Sat In	Sat Out		
Project:	**West Orange Site**	**Net New Trips:**	1,251	1,201		
Location:	**Efland, NC**	**Pass-By Trips:**	0	0		
Scenario:	**Saturday Peak Hour**					
Peak Hour:						
Ct. Date	**Balanced with I-40 WB Service Road (Int. #7)**					
N/S Street:	**West RI/RO Site Driveway**	**Annual Growth Rate:**	2.0%		**Existing Year:**	2019
E/W Street:	**I-40 WB Service Road**	**Growth Factor:**	0.061208		**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.90

				I-40 WB Service Road						West RI/RO Site Driveway		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	236	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	236	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	14	0	0	0	0	0	0	0
2022 Background Traffic	0	0	0	0	250	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	63	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	34%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	408
Total External Site Traffic	0	0	0	0	0	63	0	0	0	0	0	408
Total Project Traffic	0	0	0	0	0	63	0	0	0	0	0	408
2022 Buildout Total	0	0	0	0	250	63	0	0	0	0	0	408
Percent Impact (Approach)		-			20.1%			-			100.0%	

Overall Percent Impact 65.3%

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INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Saturday Peak Hour**
Peak Hour:	**11:15 AM - 12:15 PM**
Ct. Date	**10/26/2019**
N/S Street:	**I-40 EB Exit Ramp**
E/W Street:	**I-40 EB Service Road**

	Sat In	**Sat Out**		
Net New Trips:	1,251	1,201		
Pass-By Trips:	0	0		

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.90

	I-40 EB Service Road									I-40 EB Exit Ramp		
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	288	0	0	0	0	0	0	0	0	156	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	288	0	0	0	0	0	0	0	0	156	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	18	0	0	0	0	0	0	0	0	10	0
2022 Background Traffic	0	306	0	0	0	0	0	0	0	0	166	0
Project Traffic												
Percent Assignment Inbound	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	47%	0%
Inbound Project Traffic	0	25	0	0	0	0	0	0	0	0	588	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	25	0	0	0	0	0	0	0	0	588	0
Total Project Traffic	0	25	0	0	0	0	0	0	0	0	588	0
2022 Buildout Total	0	331	0	0	0	0	0	0	0	0	754	0
Percent Impact (Approach)		7.6%			-			-			78.0%	

Overall Percent Impact 56.5%

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INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Saturday Peak Hour**
Peak Hour:	**11:15 AM - 12:15 PM**
Ct. Date	**10/26/2019**
N/S Street:	**I-40 EB Entrance Ramp**
E/W Street:	**I-40 EB Service Road**

	Sat In	**Sat Out**		
Net New Trips:	1,251	1,201		
Pass-By Trips:	0	0		

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.90

	I-40 EB Service Road											
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	275	0	169	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	275	0	169	0	0	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	17	0	10	0	0	0	0	0	0	0	0	0
2022 Background Traffic	292	0	179	0	0	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	49%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	613	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	613	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	613	0	0	0	0	0	0	0	0	0
2022 Buildout Total	292	0	792	0	0	0	0	0	0	0	0	0
Percent Impact (Approach)		56.5%			-			-			-	

Overall Percent Impact 56.5%

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INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Saturday Peak Hour**
Peak Hour:	**11:00 AM - 12:00 PM**
Ct. Date	**10/26/2019**
N/S Street:	**I-40 WB Exit Ramp**
E/W Street:	**I-40 WB Service Road**

	Sat In	**Sat Out**		
Net New Trips:	1,251	1,201		
Pass-By Trips:	0	0		

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.98

		Eastbound		I-40 WB Service Road **Westbound**			I-40 WB Exit Ramp **Northbound**				**Southbound**	
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	199	0	0	207	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	0	199	0	0	207	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	0	12	0	0	13	0	0	0	0
2022 Background Traffic	0	0	0	0	211	0	0	220	0	0	0	0
I-40 WB Off-Ramp Closure Diversion	**0**	**0**	**0**	**0**	**220**	**0**	**0**	**-220**	**0**	**0**	**0**	**0**
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	63	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	180	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	0	243	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	243	0	0	0	0	0	0	0
2022 Buildout Total	0	0	0	0	674	0	0	0	0	0	0	0
Percent Impact (Approach)		-			36.1%			-			-	

Overall Percent Impact 36.1%

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INTERSECTION ANALYSIS SHEET

Project:	**West Orange Site**
Location:	**Efland, NC**
Scenario:	**Saturday Peak Hour**
Peak Hour:	**11:45 AM - 12:45 PM**
Ct. Date	**10/26/2019**
N/S Street:	**I-40 WB Entrance Ramp**
E/W Street:	**I-40 WB Service Road**

	Sat In	**Sat Out**		
Net New Trips:	1,251	1,201		
Pass-By Trips:	0	0		

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.061208	**Buildout Year:**	2022

AM PEAK HOUR
AM PHF = 0.87

	I-40 WB Service Road											
	Eastbound			**Westbound**			**Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	177	0	236	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	177	0	236	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
2022 Background Growth	0	0	0	11	0	14	0	0	0	0	0	0
2022 Background Traffic	0	0	0	188	0	250	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	63	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	180	0	0	0	0	0	0	0	0
Total External Site Traffic	0	0	0	180	0	63	0	0	0	0	0	0
Total Project Traffic	0	0	0	180	0	63	0	0	0	0	0	0
2022 Buildout Total	0	0	0	368	0	313	0	0	0	0	0	0
Percent Impact (Approach)		-			35.7%			-			-	

Overall Percent Impact 35.7%

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Appendix D:

Synchro Output:

Existing (2019)

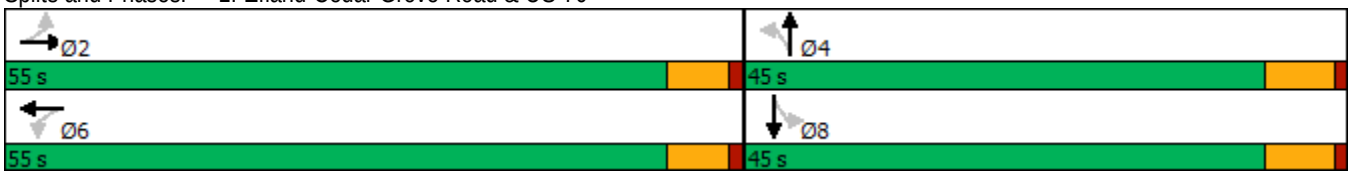
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	261	151	5	98	41	57	114	7	141	428	17
Future Volume (vph)	10	261	151	5	98	41	57	114	7	141	428	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1789	0	0	1769	0	0	1833	0	0	1815	0
Flt Permitted		0.992			0.984			0.741			0.863	
Satd. Flow (perm)	0	1777	0	0	1744	0	0	1380	0	0	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			29			3			2	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	469	0	0	161	0	0	198	0	0	652	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		22.2			22.2			40.4			40.4	
Actuated g/C Ratio		0.31			0.31			0.56			0.56	
v/c Ratio		0.82			0.29			0.26			0.74	
Control Delay		33.7			16.2			11.1			21.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		33.7			16.2			11.1			21.1	
LOS		C			B			B			C	
Approach Delay		33.7			16.2			11.1			21.1	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		176			44			42			202	
Queue Length 95th (ft)		279			85			106			#505	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1246			1220			768			881	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.38			0.13			0.26			0.74	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 72.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 23.2 Intersection LOS: C
Intersection Capacity Utilization 73.4% ICU Level of Service D
Analysis Period (min) 15
Description: 07-1686
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	597	90	4	172	54
Future Volume (vph)	4	597	90	4	172	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1613	0	0	1777	1736	0
Flt Permitted				0.954	0.963	
Satd. Flow (perm)	1613	0	0	1777	1736	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	660	0	0	103	248	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Sign Control	Stop			Stop	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	597	90	4	172	54
Future Volume (Veh/h)	4	597	90	4	172	54
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	656	99	4	189	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	437	0	1066	408	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	437	0	1066	408	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	99	40	0	99	88	
cM capacity (veh/h)	453	1085	72	471	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	660	103	248
Volume Left	0	99	189
Volume Right	656	0	59
cSH	1076	74	1623
Volume to Capacity	0.61	1.39	0.12
Queue Length 95th (ft)	110	207	10
Control Delay (s)	13.5	336.9	5.9
Lane LOS	B	F	A
Approach Delay (s)	13.5	336.9	5.9
Approach LOS	B	F	

Intersection Summary			
Average Delay	44.6		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	43	4	153	15	92	0	0	692	45
Future Volume (vph)	0	0	0	43	4	153	15	92	0	0	692	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		130	225		0	0		200
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			75			25		
Satd. Flow (prot)	0	0	0	0	1781	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.956		0.950					
Satd. Flow (perm)	0	0	0	0	1781	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			448			655			1860	
Travel Time (s)		8.9			6.1			9.9			28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	52	170	17	102	0	0	769	50
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		20	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	43	4	153	15	92	0	0	692	45
Future Vol, veh/h	0	0	0	43	4	153	15	92	0	0	692	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	130	225	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	48	4	170	17	102	0	0	769	50

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	905	905	102	769	0	-	-	-	0
Stage 1	136	136	-	-	-	-	-	-	-
Stage 2	769	769	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	307	276	953	845	-	0	0	-	-
Stage 1	890	784	-	-	-	0	0	-	-
Stage 2	457	411	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	301	0	953	845	-	-	-	-	-
Mov Cap-2 Maneuver	301	0	-	-	-	-	-	-	-
Stage 1	872	0	-	-	-	-	-	-	-
Stage 2	457	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	845	-	301	953	-	-
HCM Lane V/C Ratio	0.02	-	0.173	0.178	-	-
HCM Control Delay (s)	9.3	-	19.5	9.6	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	0.6	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	4	12	0	0	0	0	82	128	595	137	0
Future Volume (vph)	50	4	12	0	0	0	0	82	128	595	137	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.955								0.950		
Satd. Flow (perm)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	13	0	0	0	0	90	141	654	151	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		15	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	19.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	4	12	0	0	0	0	82	128	595	137	0
Future Vol, veh/h	50	4	12	0	0	0	0	82	128	595	137	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	4	13	0	0	0	0	90	141	654	151	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1620	1690	151	-	0	0	231	0	0
Stage 1	1459	1459	-	-	-	-	-	-	-
Stage 2	161	231	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	113	93	895	0	-	-	1337	-	0
Stage 1	214	194	-	0	-	-	-	-	0
Stage 2	868	713	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	58	0	895	-	-	-	1337	-	-
Mov Cap-2 Maneuver	58	0	-	-	-	-	-	-	-
Stage 1	214	0	-	-	-	-	-	-	-
Stage 2	444	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	199.2	0	8.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	58	895	1337	-
HCM Lane V/C Ratio	-	-	1.023	0.015	0.489	-
HCM Control Delay (s)	-	-	241.4	9.1	10.2	-
HCM Lane LOS	-	-	F	A	B	-
HCM 95th %tile Q(veh)	-	-	4.8	0	2.8	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	346	4	4	0	0	0	0	142	13	74	77	0
Future Volume (vph)	346	4	4	0	0	0	0	142	13	74	77	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		125	0		0	0		40	250		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	388	4	0	0	0	0	158	14	82	86	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 41.0%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	13.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	346	4	4	0	0	0	0	142	13	74	77	0
Future Vol, veh/h	346	4	4	0	0	0	0	142	13	74	77	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	125	-	-	-	-	-	40	250	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	384	4	4	0	0	0	0	158	14	82	86	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	408	408	86	-	0	0	158	0	0
Stage 1	250	250	-	-	-	-	-	-	-
Stage 2	158	158	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	599	533	973	0	-	-	1422	-	0
Stage 1	792	700	-	0	-	-	-	-	0
Stage 2	871	767	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	564	0	973	-	-	-	1422	-	-
Mov Cap-2 Maneuver	564	0	-	-	-	-	-	-	-
Stage 1	792	0	-	-	-	-	-	-	-
Stage 2	820	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.2	0	3.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	564	973	1422	-
HCM Lane V/C Ratio	-	-	0.69	0.005	0.058	-
HCM Control Delay (s)	-	-	24.4	8.7	7.7	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	5.4	0	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	4	26	4	489	0	0	145	299
Future Volume (vph)	0	0	0	7	4	26	4	489	0	0	145	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	250		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1803	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.968		0.950					
Satd. Flow (perm)	0	0	0	0	1803	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		443			738			714			455	
Travel Time (s)		6.0			10.1			10.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	12	29	4	543	0	0	161	332
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 41.0%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	4	26	4	489	0	0	145	299
Future Vol, veh/h	0	0	0	7	4	26	4	489	0	0	145	299
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	75	250	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	8	4	29	4	543	0	0	161	332

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	712	712	543	161	0	-	-	-	0
Stage 1	551	551	-	-	-	-	-	-	-
Stage 2	161	161	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	399	358	540	1418	-	0	0	-	-
Stage 1	577	515	-	-	-	0	0	-	-
Stage 2	868	765	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	398	0	540	1418	-	-	-	-	-
Mov Cap-2 Maneuver	398	0	-	-	-	-	-	-	-
Stage 1	575	0	-	-	-	-	-	-	-
Stage 2	868	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1418	-	398	540	-	-
HCM Lane V/C Ratio	0.003	-	0.031	0.053	-	-
HCM Control Delay (s)	7.5	-	14.3	12	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	93	5	308	196	4	349
Future Volume (vph)	93	5	308	196	4	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	140	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				300	
Satd. Flow (prot)	1766	0	3334	0	1770	3539
Flt Permitted	0.955				0.950	
Satd. Flow (perm)	1766	0	3334	0	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	839		455			816
Travel Time (s)	12.7		6.9			12.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	560	0	4	388
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		18			18
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		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 26.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	93	5	308	196	4	349
Future Vol, veh/h	93	5	308	196	4	349
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	6	342	218	4	388

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	653	280	0	0	560	0
Stage 1	451	-	-	-	-	-
Stage 2	202	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	400	717	-	-	1007	-
Stage 1	609	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	398	717	-	-	1007	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	809	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	1007	-
HCM Lane V/C Ratio	-	-	0.268	0.004	-
HCM Control Delay (s)	-	-	17	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0	-

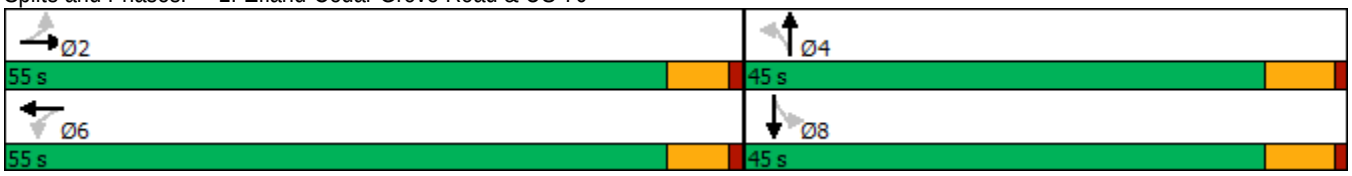
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	129	38	5	234	93	117	351	12	43	161	15
Future Volume (vph)	11	129	38	5	234	93	117	351	12	43	161	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1821	0	0	1772	0	0	1844	0	0	1809	0
Flt Permitted		0.966			0.995			0.855			0.854	
Satd. Flow (perm)	0	1765	0	0	1765	0	0	1596	0	0	1561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			28			2			4	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	188	0	0	349	0	0	505	0	0	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		16.6			16.6			22.2			22.2	
Actuated g/C Ratio		0.34			0.34			0.45			0.45	
v/c Ratio		0.31			0.57			0.70			0.33	
Control Delay		14.0			17.9			17.2			10.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.0			17.9			17.2			10.3	
LOS		B			B			B			B	
Approach Delay		14.0			17.9			17.2			10.3	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		33			69			99			35	
Queue Length 95th (ft)		97			184			241			94	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1638			1638			1331			1302	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.11			0.21			0.38			0.18	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 49.4
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.7 — Intersection LOS: B
Intersection Capacity Utilization 65.0% — ICU Level of Service C
Analysis Period (min) 15
Description: 07-1686

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	202	51	4	475	96
Future Volume (vph)	4	202	51	4	475	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1615	0	0	1779	1747	0
Flt Permitted				0.955	0.960	
Satd. Flow (perm)	1615	0	0	1779	1747	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	224	0	0	59	620	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	202	51	4	475	96
Future Volume (Veh/h)	4	202	51	4	475	96
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	220	55	4	516	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1136	0	1306	1084	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1136	0	1306	1084	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	97	80	32	97	68	
cM capacity (veh/h)	138	1085	81	148	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	224	59	620
Volume Left	0	55	516
Volume Right	220	0	104
cSH	966	83	1623
Volume to Capacity	0.23	0.71	0.32
Queue Length 95th (ft)	22	86	35
Control Delay (s)	9.8	117.6	7.3
Lane LOS	A	F	A
Approach Delay (s)	9.8	117.6	7.3
Approach LOS	A	F	

Intersection Summary			
Average Delay	15.2		
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	161	4	560	15	86	0	0	216	48
Future Volume (vph)	0	0	0	161	4	560	15	86	0	0	216	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		130	225		0	0		200
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			75			25		
Satd. Flow (prot)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.953		0.950					
Satd. Flow (perm)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			448			655			1860	
Travel Time (s)		8.9			6.1			9.9			28.2	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	179	609	16	93	0	0	235	52
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		20	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 45.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	161	4	560	15	86	0	0	216	48
Future Vol, veh/h	0	0	0	161	4	560	15	86	0	0	216	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	130	225	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	175	4	609	16	93	0	0	235	52

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	360	360	93	235	0	-	-	-	0
Stage 1	125	125	-	-	-	-	-	-	-
Stage 2	235	235	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	639	567	964	1332	-	0	0	-	-
Stage 1	901	792	-	-	-	0	0	-	-
Stage 2	804	710	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	631	0	964	1332	-	-	-	-	-
Mov Cap-2 Maneuver	631	0	-	-	-	-	-	-	-
Stage 1	890	0	-	-	-	-	-	-	-
Stage 2	804	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1332	-	631	964	-	-
HCM Lane V/C Ratio	0.012	-	0.284	0.631	-	-
HCM Control Delay (s)	7.7	-	13	14.9	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	1.2	4.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	4	20	0	0	0	0	62	46	191	214	0
Future Volume (vph)	66	4	20	0	0	0	0	62	46	191	214	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.955								0.950		
Satd. Flow (perm)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	22	0	0	0	0	69	51	212	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		15	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 45.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	4	20	0	0	0	0	62	46	191	214	0
Future Vol, veh/h	66	4	20	0	0	0	0	62	46	191	214	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	4	22	0	0	0	0	69	51	212	238	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	757	782	238	-	0	0	120	0	0
Stage 1	662	662	-	-	-	-	-	-	-
Stage 2	95	120	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	375	326	801	0	-	-	1468	-	0
Stage 1	513	459	-	0	-	-	-	-	0
Stage 2	929	796	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	321	0	801	-	-	-	1468	-	-
Mov Cap-2 Maneuver	321	0	-	-	-	-	-	-	-
Stage 1	513	0	-	-	-	-	-	-	-
Stage 2	795	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	0	3.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	321	801	1468	-
HCM Lane V/C Ratio	-	-	0.242	0.028	0.145	-
HCM Control Delay (s)	-	-	19.8	9.6	7.9	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	0.5	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	269	4	4	0	0	0	0	52	4	26	156	0
Future Volume (vph)	269	4	4	0	0	0	0	52	4	26	156	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		125	0		0	0		40	250		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	4	0	0	0	0	58	4	29	173	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 35.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	269	4	4	0	0	0	0	52	4	26	156	0
Future Vol, veh/h	269	4	4	0	0	0	0	52	4	26	156	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	125	-	-	-	-	-	40	250	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	299	4	4	0	0	0	0	58	4	29	173	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	289	289	173	-	0	0	58	0	0
Stage 1	231	231	-	-	-	-	-	-	-
Stage 2	58	58	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	702	621	871	0	-	-	1546	-	0
Stage 1	807	713	-	0	-	-	-	-	0
Stage 2	965	847	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	689	0	871	-	-	-	1546	-	-
Mov Cap-2 Maneuver	689	0	-	-	-	-	-	-	-
Stage 1	807	0	-	-	-	-	-	-	-
Stage 2	947	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	689	871	1546	-
HCM Lane V/C Ratio	-	-	0.44	0.005	0.019	-
HCM Control Delay (s)	-	-	14.3	9.2	7.4	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	29	4	65	4	327	0	0	154	299
Future Volume (vph)	0	0	0	29	4	65	4	327	0	0	154	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	250		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.957		0.950					
Satd. Flow (perm)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		443			738			714			455	
Travel Time (s)		6.0			10.1			10.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	36	72	4	363	0	0	171	332
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 35.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	29	4	65	4	327	0	0	154	299
Future Vol, veh/h	0	0	0	29	4	65	4	327	0	0	154	299
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	75	250	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	32	4	72	4	363	0	0	171	332

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	542	542	363	171	0	-	-	-	0
Stage 1	371	371	-	-	-	-	-	-	-
Stage 2	171	171	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	501	447	682	1406	-	0	0	-	-
Stage 1	698	620	-	-	-	0	0	-	-
Stage 2	859	757	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	499	0	682	1406	-	-	-	-	-
Mov Cap-2 Maneuver	499	0	-	-	-	-	-	-	-
Stage 1	696	0	-	-	-	-	-	-	-
Stage 2	859	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1406	-	499	682	-	-
HCM Lane V/C Ratio	0.003	-	0.073	0.106	-	-
HCM Control Delay (s)	7.6	-	12.8	10.9	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0.4	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	151	4	331	56	4	299
Future Volume (vph)	151	4	331	56	4	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	140	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				300	
Satd. Flow (prot)	1770	0	3461	0	1770	3539
Flt Permitted	0.953				0.950	
Satd. Flow (perm)	1770	0	3461	0	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	839		455			816
Travel Time (s)	12.7		6.9			12.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	172	0	430	0	4	332
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		18			18
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		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 26.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	151	4	331	56	4	299
Future Vol, veh/h	151	4	331	56	4	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	4	368	62	4	332

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	573	215	0	0	430	0
Stage 1	399	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	450	790	-	-	1126	-
Stage 1	647	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	448	790	-	-	1126	-
Mov Cap-2 Maneuver	448	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	453	1126	-
HCM Lane V/C Ratio	-	-	0.38	0.004	-
HCM Control Delay (s)	-	-	17.7	8.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.8	0	-

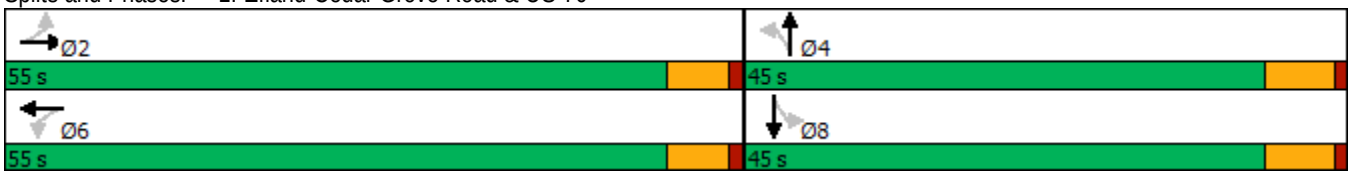
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	136	47	4	110	44	31	135	4	44	171	8
Future Volume (vph)	7	136	47	4	110	44	31	135	4	44	171	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1816	0	0	1772	0	0	1850	0	0	1817	0
Flt Permitted		0.987			0.991			0.890			0.889	
Satd. Flow (perm)	0	1796	0	0	1758	0	0	1661	0	0	1631	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			28			1			2	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	168	0	0	181	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		12.7			12.7			10.2			10.2	
Actuated g/C Ratio		0.38			0.38			0.31			0.31	
v/c Ratio		0.29			0.24			0.35			0.47	
Control Delay		8.0			7.5			10.7			12.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.0			7.5			10.7			12.4	
LOS		A			A			B			B	
Approach Delay		8.0			7.5			10.7			12.4	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		19			15			24			32	
Queue Length 95th (ft)		54			44			52			68	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1796			1758			1661			1631	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.11			0.10			0.11			0.15	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 33
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 9.8 — Intersection LOS: A
Intersection Capacity Utilization 38.1% — ICU Level of Service A
Analysis Period (min) 15
Description: 07-1686

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	5	217	46	4	167	50
Future Volume (vph)	5	217	46	4	167	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1617	0	0	1781	1738	0
Flt Permitted				0.956	0.963	
Satd. Flow (perm)	1617	0	0	1781	1738	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	241	0	0	54	236	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	5	217	46	4	167	50
Future Volume (Veh/h)	5	217	46	4	167	50
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	236	50	4	182	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	418	0	630	391	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	418	0	630	391	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	99	78	82	99	89	
cM capacity (veh/h)	467	1085	280	484	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	241	54	236
Volume Left	0	50	182
Volume Right	236	0	54
cSH	1056	289	1623
Volume to Capacity	0.23	0.19	0.11
Queue Length 95th (ft)	22	17	9
Control Delay (s)	9.4	20.3	6.0
Lane LOS	A	C	A
Approach Delay (s)	9.4	20.3	6.0
Approach LOS	A	C	

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	33	4	190	9	64	0	0	278	55
Future Volume (vph)	0	0	0	33	4	190	9	64	0	0	278	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		130	225		0	0		200
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			75			25		
Satd. Flow (prot)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.957		0.950					
Satd. Flow (perm)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			448			655			1860	
Travel Time (s)		8.9			6.1			9.9			28.2	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	40	207	10	70	0	0	302	60
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		20	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 31.3%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	33	4	190	9	64	0	0	278	55
Future Vol, veh/h	0	0	0	33	4	190	9	64	0	0	278	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	130	225	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	36	4	207	10	70	0	0	302	60

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	392	392	70	302	0	-	-	-	0
Stage 1	90	90	-	-	-	-	-	-	-
Stage 2	302	302	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	612	544	993	1259	-	0	0	-	-
Stage 1	934	820	-	-	-	0	0	-	-
Stage 2	750	664	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	607	0	993	1259	-	-	-	-	-
Mov Cap-2 Maneuver	607	0	-	-	-	-	-	-	-
Stage 1	927	0	-	-	-	-	-	-	-
Stage 2	750	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1259	-	607	993	-	-
HCM Lane V/C Ratio	0.008	-	0.066	0.208	-	-
HCM Control Delay (s)	7.9	-	11.4	9.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	4	12	0	0	0	0	36	50	238	74	0
Future Volume (vph)	39	4	12	0	0	0	0	36	50	238	74	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1781	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.956								0.950		
Satd. Flow (perm)	0	1781	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	13	0	0	0	0	38	53	253	79	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		15	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 31.3%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	4	12	0	0	0	0	36	50	238	74	0
Future Vol, veh/h	39	4	12	0	0	0	0	36	50	238	74	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	4	13	0	0	0	0	38	53	253	79	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	650	676	79	-	0	0	91	0	0
Stage 1	585	585	-	-	-	-	-	-	-
Stage 2	65	91	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	434	375	981	0	-	-	1504	-	0
Stage 1	557	498	-	0	-	-	-	-	0
Stage 2	958	820	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	361	0	981	-	-	-	1504	-	-
Mov Cap-2 Maneuver	361	0	-	-	-	-	-	-	-
Stage 1	557	0	-	-	-	-	-	-	-
Stage 2	797	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0	6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	361	981	1504	-
HCM Lane V/C Ratio	-	-	0.127	0.013	0.168	-
HCM Control Delay (s)	-	-	16.4	8.7	7.9	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	0.6	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	4	4	0	0	0	0	28	4	16	25	0
Future Volume (vph)	162	4	4	0	0	0	0	28	4	16	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		125	0		0	0		40	250		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	4	0	0	0	0	29	4	17	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 28.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	162	4	4	0	0	0	0	28	4	16	25	0
Future Vol, veh/h	162	4	4	0	0	0	0	28	4	16	25	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	125	-	-	-	-	-	40	250	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	171	4	4	0	0	0	0	29	4	17	26	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	89	89	26	-	0	0	29	0	0
Stage 1	60	60	-	-	-	-	-	-	-
Stage 2	29	29	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	912	801	1050	0	-	-	1584	-	0
Stage 1	963	845	-	0	-	-	-	-	0
Stage 2	994	871	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	902	0	1050	-	-	-	1584	-	-
Mov Cap-2 Maneuver	902	0	-	-	-	-	-	-	-
Stage 1	963	0	-	-	-	-	-	-	-
Stage 2	983	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	902	1050	1584	-
HCM Lane V/C Ratio	-	-	0.194	0.004	0.011	-
HCM Control Delay (s)	-	-	9.9	8.4	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	4	18	4	190	0	0	33	197
Future Volume (vph)	0	0	0	7	4	18	4	190	0	0	33	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	250		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1805	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.969		0.950					
Satd. Flow (perm)	0	0	0	0	1805	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		443			738			714			455	
Travel Time (s)		6.0			10.1			10.8			6.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	11	19	4	198	0	0	34	205
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 28.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	4	18	4	190	0	0	33	197
Future Vol, veh/h	0	0	0	7	4	18	4	190	0	0	33	197
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	75	250	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	4	19	4	198	0	0	34	205

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	240	240	198	34	0	-	-	-	0
Stage 1	206	206	-	-	-	-	-	-	-
Stage 2	34	34	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	748	661	843	1578	-	0	0	-	-
Stage 1	829	731	-	-	-	0	0	-	-
Stage 2	988	867	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	746	0	843	1578	-	-	-	-	-
Mov Cap-2 Maneuver	746	0	-	-	-	-	-	-	-
Stage 1	827	0	-	-	-	-	-	-	-
Stage 2	988	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1578	-	746	843	-	-
HCM Lane V/C Ratio	0.003	-	0.015	0.022	-	-
HCM Control Delay (s)	7.3	-	9.9	9.4	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	4	170	39	4	172
Future Volume (vph)	57	4	170	39	4	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	140	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				300	
Satd. Flow (prot)	1765	0	3433	0	1770	3539
Flt Permitted	0.955				0.950	
Satd. Flow (perm)	1765	0	3433	0	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	839		455			816
Travel Time (s)	12.7		6.9			12.4
Peak Hour Factor	0.90	0.98	0.98	0.90	0.98	0.98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	216	0	4	176
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		18			18
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		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 16.0%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	4	170	39	4	172
Future Vol, veh/h	57	4	170	39	4	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	98	98	90	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	4	173	43	4	176

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	291	108	0	0	216	0
Stage 1	195	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	676	925	-	-	1351	-
Stage 1	819	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	674	925	-	-	1351	-
Mov Cap-2 Maneuver	674	-	-	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	685	1351	-
HCM Lane V/C Ratio	-	-	0.098	0.003	-
HCM Control Delay (s)	-	-	10.8	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Appendix E:

Synchro Output:

Background (2022)

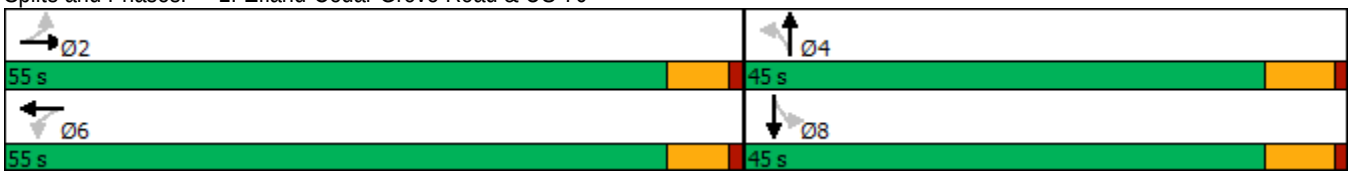
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	277	160	5	104	44	60	121	7	150	454	18
Future Volume (vph)	11	277	160	5	104	44	60	121	7	150	454	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1789	0	0	1769	0	0	1833	0	0	1815	0
Flt Permitted		0.992			0.983			0.734			0.861	
Satd. Flow (perm)	0	1777	0	0	1742	0	0	1367	0	0	1581	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			29			2			2	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	498	0	0	171	0	0	209	0	0	691	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		23.8			23.8			40.4			40.4	
Actuated g/C Ratio		0.32			0.32			0.54			0.54	
v/c Ratio		0.84			0.30			0.28			0.80	
Control Delay		34.2			16.1			12.2			25.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		34.2			16.1			12.2			25.3	
LOS		C			B			B			C	
Approach Delay		34.2			16.1			12.2			25.3	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		192			47			47			237	
Queue Length 95th (ft)		300			90			119			#581	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1220			1193			744			860	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.41			0.14			0.28			0.80	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 74.3
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 25.4 Intersection LOS: C
Intersection Capacity Utilization 77.7% ICU Level of Service D
Analysis Period (min) 15
Description: 07-1686
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	634	96	4	183	57
Future Volume (vph)	4	634	96	4	183	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1613	0	0	1777	1736	0
Flt Permitted				0.954	0.963	
Satd. Flow (perm)	1613	0	0	1777	1736	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	701	0	0	109	264	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.6%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	634	96	4	183	57
Future Volume (Veh/h)	4	634	96	4	183	57
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	697	105	4	201	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	465	0	1132	434	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	465	0	1132	434	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	99	36	0	99	88	
cM capacity (veh/h)	433	1085	58	452	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	701	109	264
Volume Left	0	105	201
Volume Right	697	0	63
cSH	1076	60	1623
Volume to Capacity	0.65	1.82	0.12
Queue Length 95th (ft)	127	254	11
Control Delay (s)	14.4	539.2	6.0
Lane LOS	B	F	A
Approach Delay (s)	14.4	539.2	6.0
Approach LOS	B	F	

Intersection Summary			
Average Delay	65.6		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	46	4	162	16	98	0	0	734	48
Future Volume (vph)	0	0	0	46	4	162	16	98	0	0	734	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		130	225		0	0		200
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			75			25		
Satd. Flow (prot)	0	0	0	0	1781	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.956		0.950					
Satd. Flow (perm)	0	0	0	0	1781	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			448			655			1860	
Travel Time (s)		8.9			6.1			9.9			28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	55	180	18	109	0	0	816	53
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		20	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	46	4	162	16	98	0	0	734	48
Future Vol, veh/h	0	0	0	46	4	162	16	98	0	0	734	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	130	225	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	51	4	180	18	109	0	0	816	53

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	961	961	109	816	0	-	-	-	0
Stage 1	145	145	-	-	-	-	-	-	-
Stage 2	816	816	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	284	256	945	812	-	0	0	-	-
Stage 1	882	777	-	-	-	0	0	-	-
Stage 2	435	391	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	278	0	945	812	-	-	-	-	-
Mov Cap-2 Maneuver	278	0	-	-	-	-	-	-	-
Stage 1	863	0	-	-	-	-	-	-	-
Stage 2	435	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	812	-	278	945	-	-
HCM Lane V/C Ratio	0.022	-	0.2	0.19	-	-
HCM Control Delay (s)	9.5	-	21.2	9.7	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	4	13	0	0	0	0	87	136	631	145	0
Future Volume (vph)	53	4	13	0	0	0	0	87	136	631	145	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.955								0.950		
Satd. Flow (perm)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	62	14	0	0	0	0	96	149	693	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		15	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	26.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	4	13	0	0	0	0	87	136	631	145	0
Future Vol, veh/h	53	4	13	0	0	0	0	87	136	631	145	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	4	14	0	0	0	0	96	149	693	159	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1716	1790	159	-	0	0	245	0	0
Stage 1	1545	1545	-	-	-	-	-	-	-
Stage 2	171	245	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	99	81	886	0	-	-	1321	-	0
Stage 1	194	176	-	0	-	-	-	-	0
Stage 2	859	703	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 47	0	886	-	-	-	1321	-	-
Mov Cap-2 Maneuver	~ 47	0	-	-	-	-	-	-	-
Stage 1	194	0	-	-	-	-	-	-	-
Stage 2	408	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 314	0	8.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	47	886	1321	-
HCM Lane V/C Ratio	-	-	1.333	0.016	0.525	-
HCM Control Delay (s)	-	-	$ 383.5	9.1	10.7	-
HCM Lane LOS	-	-	F	A	B	-
HCM 95th %tile Q(veh)	-	-	5.9	0	3.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	367	4	4	0	0	0	0	151	14	79	82	0
Future Volume (vph)	367	4	4	0	0	0	0	151	14	79	82	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		125	0		0	0		40	250		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	412	4	0	0	0	0	168	16	88	91	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 42.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	16.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	367	4	4	0	0	0	0	151	14	79	82	0
Future Vol, veh/h	367	4	4	0	0	0	0	151	14	79	82	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	125	-	-	-	-	-	40	250	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	408	4	4	0	0	0	0	168	16	88	91	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	435	435	91	-	0	0	168	0	0
Stage 1	267	267	-	-	-	-	-	-	-
Stage 2	168	168	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	578	514	967	0	-	-	1410	-	0
Stage 1	778	688	-	0	-	-	-	-	0
Stage 2	862	759	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	542	0	967	-	-	-	1410	-	-
Mov Cap-2 Maneuver	542	0	-	-	-	-	-	-	-
Stage 1	778	0	-	-	-	-	-	-	-
Stage 2	809	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.5	0	3.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	542	967	1410	-
HCM Lane V/C Ratio	-	-	0.761	0.005	0.062	-
HCM Control Delay (s)	-	-	29.7	8.7	7.7	-
HCM Lane LOS	-	-	D	A	A	-
HCM 95th %tile Q(veh)	-	-	6.7	0	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	4	28	4	519	0	0	154	317
Future Volume (vph)	0	0	0	7	4	28	4	519	0	0	154	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	250		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1803	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.968		0.950					
Satd. Flow (perm)	0	0	0	0	1803	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		443			738			714			455	
Travel Time (s)		6.0			10.1			10.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	12	31	4	577	0	0	171	352
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 42.9%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	4	28	4	519	0	0	154	317
Future Vol, veh/h	0	0	0	7	4	28	4	519	0	0	154	317
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	75	250	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	8	4	31	4	577	0	0	171	352

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	756	756	577	171	0	-	-	-	0
Stage 1	585	585	-	-	-	-	-	-	-
Stage 2	171	171	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	376	337	516	1406	-	0	0	-	-
Stage 1	557	498	-	-	-	0	0	-	-
Stage 2	859	757	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	375	0	516	1406	-	-	-	-	-
Mov Cap-2 Maneuver	375	0	-	-	-	-	-	-	-
Stage 1	555	0	-	-	-	-	-	-	-
Stage 2	859	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1406	-	375	516	-	-
HCM Lane V/C Ratio	0.003	-	0.033	0.06	-	-
HCM Control Delay (s)	7.6	-	14.9	12.4	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	99	5	327	208	4	370
Future Volume (vph)	99	5	327	208	4	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	140	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				300	
Satd. Flow (prot)	1766	0	3334	0	1770	3539
Flt Permitted	0.955				0.950	
Satd. Flow (perm)	1766	0	3334	0	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	839		455			816
Travel Time (s)	12.7		6.9			12.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	594	0	4	411
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		18			18
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		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 28.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	99	5	327	208	4	370
Future Vol, veh/h	99	5	327	208	4	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	6	363	231	4	411

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	693	297	0	0	594	0
Stage 1	479	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	377	699	-	-	978	-
Stage 1	589	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	375	699	-	-	978	-
Mov Cap-2 Maneuver	375	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	798	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	384	978	-
HCM Lane V/C Ratio	-	-	0.301	0.005	-
HCM Control Delay (s)	-	-	18.4	8.7	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0	-

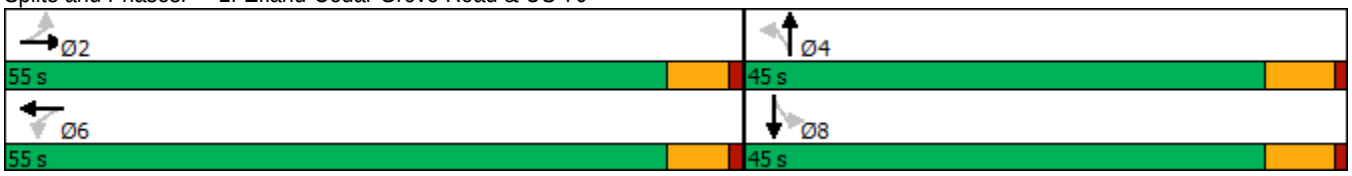
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	137	40	5	248	99	124	372	13	46	171	16
Future Volume (vph)	12	137	40	5	248	99	124	372	13	46	171	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1823	0	0	1772	0	0	1842	0	0	1809	0
Flt Permitted		0.964			0.996			0.851			0.847	
Satd. Flow (perm)	0	1763	0	0	1767	0	0	1587	0	0	1548	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			28			2			4	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	199	0	0	370	0	0	537	0	0	245	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		17.6			17.6			26.4			26.4	
Actuated g/C Ratio		0.32			0.32			0.48			0.48	
v/c Ratio		0.34			0.63			0.70			0.33	
Control Delay		16.2			21.3			17.0			10.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.2			21.3			17.0			10.2	
LOS		B			C			B			B	
Approach Delay		16.2			21.3			17.0			10.2	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)		41			88			117			41	
Queue Length 95th (ft)		113			217			271			103	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1566			1571			1222			1192	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.13			0.24			0.44			0.21	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 54.5
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 68.2% ICU Level of Service C
Analysis Period (min) 15
Description: 07-1686

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	214	54	4	504	102
Future Volume (vph)	4	214	54	4	504	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1615	0	0	1779	1747	0
Flt Permitted				0.955	0.960	
Satd. Flow (perm)	1615	0	0	1779	1747	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	237	0	0	63	659	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.9%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	214	54	4	504	102
Future Volume (Veh/h)	4	214	54	4	504	102
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	233	59	4	548	111
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1207	0	1386	1152	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1207	0	1386	1152	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	97	79	13	97	66	
cM capacity (veh/h)	121	1085	68	131	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	237	63	659
Volume Left	0	59	548
Volume Right	233	0	111
cSH	957	70	1623
Volume to Capacity	0.25	0.90	0.34
Queue Length 95th (ft)	24	111	38
Control Delay (s)	10.0	178.6	7.4
Lane LOS	A	F	A
Approach Delay (s)	10.0	178.6	7.4
Approach LOS	A	F	

Intersection Summary			
Average Delay	19.3		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	171	4	594	16	91	0	0	229	51
Future Volume (vph)	0	0	0	171	4	594	16	91	0	0	229	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		130	225		0	0		200
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			75			25		
Satd. Flow (prot)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.953		0.950					
Satd. Flow (perm)	0	0	0	0	1775	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			448			655			1860	
Travel Time (s)		8.9			6.1			9.9			28.2	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	190	646	17	99	0	0	249	55
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		20	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	10.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	171	4	594	16	91	0	0	229	51
Future Vol, veh/h	0	0	0	171	4	594	16	91	0	0	229	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	130	225	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	186	4	646	17	99	0	0	249	55

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	382	382	99	249	0	-	-	-	0
Stage 1	133	133	-	-	-	-	-	-	-
Stage 2	249	249	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	620	551	957	1317	-	0	0	-	-
Stage 1	893	786	-	-	-	0	0	-	-
Stage 2	792	701	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	612	0	957	1317	-	-	-	-	-
Mov Cap-2 Maneuver	612	0	-	-	-	-	-	-	-
Stage 1	881	0	-	-	-	-	-	-	-
Stage 2	792	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1317	-	612	957	-	-
HCM Lane V/C Ratio	0.013	-	0.311	0.675	-	-
HCM Control Delay (s)	7.8	-	13.5	16.2	-	-
HCM Lane LOS	A	-	B	C	-	-
HCM 95th %tile Q(veh)	0	-	1.3	5.5	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	4	21	0	0	0	0	66	49	203	227	0
Future Volume (vph)	70	4	21	0	0	0	0	66	49	203	227	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.955								0.950		
Satd. Flow (perm)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	23	0	0	0	0	73	54	226	252	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		15	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	4	21	0	0	0	0	66	49	203	227	0
Future Vol, veh/h	70	4	21	0	0	0	0	66	49	203	227	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	4	23	0	0	0	0	73	54	226	252	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	804	831	252	-	0	0	127	0	0
Stage 1	704	704	-	-	-	-	-	-	-
Stage 2	100	127	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	352	305	787	0	-	-	1459	-	0
Stage 1	490	440	-	0	-	-	-	-	0
Stage 2	924	791	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	297	0	787	-	-	-	1459	-	-
Mov Cap-2 Maneuver	297	0	-	-	-	-	-	-	-
Stage 1	490	0	-	-	-	-	-	-	-
Stage 2	781	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	0	3.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	297	787	1459	-
HCM Lane V/C Ratio	-	-	0.277	0.03	0.155	-
HCM Control Delay (s)	-	-	21.7	9.7	7.9	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.1	0.5	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	4	4	0	0	0	0	55	4	28	166	0
Future Volume (vph)	285	4	4	0	0	0	0	55	4	28	166	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		125	0		0	0		40	250		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	4	0	0	0	0	61	4	31	184	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 36.3%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	285	4	4	0	0	0	0	55	4	28	166	0
Future Vol, veh/h	285	4	4	0	0	0	0	55	4	28	166	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	125	-	-	-	-	-	40	250	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	317	4	4	0	0	0	0	61	4	31	184	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	307	307	184	-	0	0	61	0	0
Stage 1	246	246	-	-	-	-	-	-	-
Stage 2	61	61	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	685	607	858	0	-	-	1542	-	0
Stage 1	795	703	-	0	-	-	-	-	0
Stage 2	962	844	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	671	0	858	-	-	-	1542	-	-
Mov Cap-2 Maneuver	671	0	-	-	-	-	-	-	-
Stage 1	795	0	-	-	-	-	-	-	-
Stage 2	943	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	671	858	1542	-
HCM Lane V/C Ratio	-	-	0.479	0.005	0.02	-
HCM Control Delay (s)	-	-	15.2	9.2	7.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.6	0	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	31	4	69	4	347	0	0	163	317
Future Volume (vph)	0	0	0	31	4	69	4	347	0	0	163	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	250		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.957		0.950					
Satd. Flow (perm)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		443			738			714			455	
Travel Time (s)		6.0			10.1			10.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	38	77	4	386	0	0	181	352
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 36.3%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	31	4	69	4	347	0	0	163	317
Future Vol, veh/h	0	0	0	31	4	69	4	347	0	0	163	317
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	75	250	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	34	4	77	4	386	0	0	181	352

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	575	575	386	181	0	-	-	-	0
Stage 1	394	394	-	-	-	-	-	-	-
Stage 2	181	181	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	480	429	662	1394	-	0	0	-	-
Stage 1	681	605	-	-	-	0	0	-	-
Stage 2	850	750	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	479	0	662	1394	-	-	-	-	-
Mov Cap-2 Maneuver	479	0	-	-	-	-	-	-	-
Stage 1	679	0	-	-	-	-	-	-	-
Stage 2	850	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1394	-	479	662	-	-
HCM Lane V/C Ratio	0.003	-	0.081	0.116	-	-
HCM Control Delay (s)	7.6	-	13.2	11.1	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0.4	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	160	4	351	59	4	317
Future Volume (vph)	160	4	351	59	4	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	140	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				300	
Satd. Flow (prot)	1770	0	3461	0	1770	3539
Flt Permitted	0.953				0.950	
Satd. Flow (perm)	1770	0	3461	0	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	839		455			816
Travel Time (s)	12.7		6.9			12.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	182	0	456	0	4	352
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		18			18
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		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 27.4%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	160	4	351	59	4	317
Future Vol, veh/h	160	4	351	59	4	317
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	178	4	390	66	4	352

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	607	228	0	0	456	0
Stage 1	423	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	428	775	-	-	1101	-
Stage 1	629	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	426	775	-	-	1101	-
Mov Cap-2 Maneuver	426	-	-	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.3	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	431	1101	-
HCM Lane V/C Ratio	-	-	0.423	0.004	-
HCM Control Delay (s)	-	-	19.3	8.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	2.1	0	-

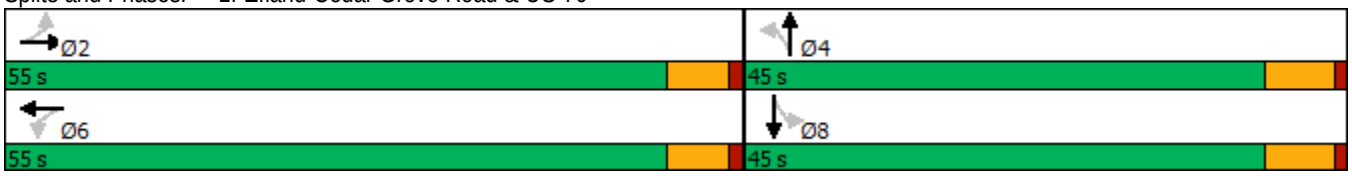
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	144	50	4	117	47	33	143	4	47	181	8
Future Volume (vph)	7	144	50	4	117	47	33	143	4	47	181	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1814	0	0	1772	0	0	1850	0	0	1817	0
Flt Permitted		0.988			0.991			0.891			0.887	
Satd. Flow (perm)	0	1796	0	0	1758	0	0	1663	0	0	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			28			1			2	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	213	0	0	178	0	0	191	0	0	252	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	55.0	55.0		55.0	55.0		45.0	45.0		45.0	45.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		12.7			12.7			10.6			10.6	
Actuated g/C Ratio		0.38			0.38			0.32			0.32	
v/c Ratio		0.30			0.26			0.36			0.49	
Control Delay		8.4			7.8			10.7			12.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.4			7.8			10.7			12.6	
LOS		A			A			B			B	
Approach Delay		8.4			7.8			10.7			12.6	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		21			16			25			34	
Queue Length 95th (ft)		58			49			54			72	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1796			1758			1663			1628	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.10			0.11			0.15	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 33.3
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 10.1 — Intersection LOS: B
Intersection Capacity Utilization 39.8% — ICU Level of Service A
Analysis Period (min) 15
Description: 07-1686

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	5	230	49	4	177	53
Future Volume (vph)	5	230	49	4	177	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1617	0	0	1781	1738	0
Flt Permitted				0.956	0.963	
Satd. Flow (perm)	1617	0	0	1781	1738	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	255	0	0	57	250	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	5	230	49	4	177	53
Future Volume (Veh/h)	5	230	49	4	177	53
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	250	53	4	192	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	442	0	666	413	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	442	0	666	413	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	99	77	80	99	88	
cM capacity (veh/h)	449	1085	259	467	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	255	57	250
Volume Left	0	53	192
Volume Right	250	0	58
cSH	1056	267	1623
Volume to Capacity	0.24	0.21	0.12
Queue Length 95th (ft)	24	20	10
Control Delay (s)	9.5	22.1	6.0
Lane LOS	A	C	A
Approach Delay (s)	9.5	22.1	6.0
Approach LOS	A	C	

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	35	4	202	10	68	0	0	295	58
Future Volume (vph)	0	0	0	35	4	202	10	68	0	0	295	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		130	225		0	0		200
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			75			25		
Satd. Flow (prot)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.957		0.950					
Satd. Flow (perm)	0	0	0	0	1783	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			448			655			1860	
Travel Time (s)		8.9			6.1			9.9			28.2	
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	42	220	11	74	0	0	321	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		20	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 32.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	35	4	202	10	68	0	0	295	58
Future Vol, veh/h	0	0	0	35	4	202	10	68	0	0	295	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	130	225	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	38	4	220	11	74	0	0	321	63

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	417	417	74	321	0	-	-	-	0
Stage 1	96	96	-	-	-	-	-	-	-
Stage 2	321	321	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	592	527	988	1239	-	0	0	-	-
Stage 1	928	815	-	-	-	0	0	-	-
Stage 2	735	652	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	587	0	988	1239	-	-	-	-	-
Mov Cap-2 Maneuver	587	0	-	-	-	-	-	-	-
Stage 1	920	0	-	-	-	-	-	-	-
Stage 2	735	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1239	-	587	988	-	-
HCM Lane V/C Ratio	0.009	-	0.072	0.222	-	-
HCM Control Delay (s)	7.9	-	11.6	9.7	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	4	13	0	0	0	0	38	53	253	79	0
Future Volume (vph)	41	4	13	0	0	0	0	38	53	253	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1781	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.956								0.950		
Satd. Flow (perm)	0	1781	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	14	0	0	0	0	40	56	269	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		15	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 32.2%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	4	13	0	0	0	0	38	53	253	79	0
Future Vol, veh/h	41	4	13	0	0	0	0	38	53	253	79	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	4	14	0	0	0	0	40	56	269	84	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	690	718	84	-	0	0	96	0	0
Stage 1	622	622	-	-	-	-	-	-	-
Stage 2	68	96	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	411	355	975	0	-	-	1498	-	0
Stage 1	535	479	-	0	-	-	-	-	0
Stage 2	955	815	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	337	0	975	-	-	-	1498	-	-
Mov Cap-2 Maneuver	337	0	-	-	-	-	-	-	-
Stage 1	535	0	-	-	-	-	-	-	-
Stage 2	783	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	0	6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	337	975	1498	-
HCM Lane V/C Ratio	-	-	0.142	0.014	0.18	-
HCM Control Delay (s)	-	-	17.4	8.7	7.9	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	0.7	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	4	4	0	0	0	0	30	4	17	27	0
Future Volume (vph)	172	4	4	0	0	0	0	30	4	17	27	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		125	0		0	0		40	250		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			100		
Satd. Flow (prot)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	185	4	0	0	0	0	32	4	18	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 29.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	172	4	4	0	0	0	0	30	4	17	27	0
Future Vol, veh/h	172	4	4	0	0	0	0	30	4	17	27	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	125	-	-	-	-	-	40	250	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	181	4	4	0	0	0	0	32	4	18	28	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	96	96	28	-	0	0	32	0	0
Stage 1	64	64	-	-	-	-	-	-	-
Stage 2	32	32	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	903	794	1047	0	-	-	1580	-	0
Stage 1	959	842	-	0	-	-	-	-	0
Stage 2	991	868	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	893	0	1047	-	-	-	1580	-	-
Mov Cap-2 Maneuver	893	0	-	-	-	-	-	-	-
Stage 1	959	0	-	-	-	-	-	-	-
Stage 2	980	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	893	1047	1580	-
HCM Lane V/C Ratio	-	-	0.207	0.004	0.011	-
HCM Control Delay (s)	-	-	10.1	8.5	7.3	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	4	19	4	202	0	0	35	209
Future Volume (vph)	0	0	0	7	4	19	4	202	0	0	35	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		75	250		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	0	0	0	1805	1583	1770	1863	0	0	1863	1583
Flt Permitted					0.969		0.950					
Satd. Flow (perm)	0	0	0	0	1805	1583	1770	1863	0	0	1863	1583
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		443			738			714			455	
Travel Time (s)		6.0			10.1			10.8			6.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	11	20	4	210	0	0	36	218
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		20
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 29.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	4	19	4	202	0	0	35	209
Future Vol, veh/h	0	0	0	7	4	19	4	202	0	0	35	209
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	Yield
Storage Length	-	-	-	-	-	75	250	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	4	20	4	210	0	0	36	218

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	254	254	210	36	0	-	-	-	0
Stage 1	218	218	-	-	-	-	-	-	-
Stage 2	36	36	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	735	650	830	1575	-	0	0	-	-
Stage 1	818	723	-	-	-	0	0	-	-
Stage 2	986	865	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	733	0	830	1575	-	-	-	-	-
Mov Cap-2 Maneuver	733	0	-	-	-	-	-	-	-
Stage 1	816	0	-	-	-	-	-	-	-
Stage 2	986	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	WBLn2	SBT	SBR
Capacity (veh/h)	1575	-	733	830	-	-
HCM Lane V/C Ratio	0.003	-	0.016	0.024	-	-
HCM Control Delay (s)	7.3	-	10	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	60	4	180	41	4	183
Future Volume (vph)	60	4	180	41	4	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	140	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				300	
Satd. Flow (prot)	1765	0	3433	0	1770	3539
Flt Permitted	0.955				0.950	
Satd. Flow (perm)	1765	0	3433	0	1770	3539
Link Speed (mph)	45		45			45
Link Distance (ft)	839		455			816
Travel Time (s)	12.7		6.9			12.4
Peak Hour Factor	0.90	0.98	0.98	0.90	0.98	0.98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	230	0	4	187
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		18			18
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		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 16.5%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	4	180	41	4	183
Future Vol, veh/h	60	4	180	41	4	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	140	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	98	98	90	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	4	184	46	4	187

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	309	115	0	0	230	0
Stage 1	207	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	659	916	-	-	1335	-
Stage 1	807	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	657	916	-	-	1335	-
Mov Cap-2 Maneuver	657	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	908	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	668	1335	-
HCM Lane V/C Ratio	-	-	0.106	0.003	-
HCM Control Delay (s)	-	-	11	7.7	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Appendix F:

Synchro Output:

Build-out (2022)

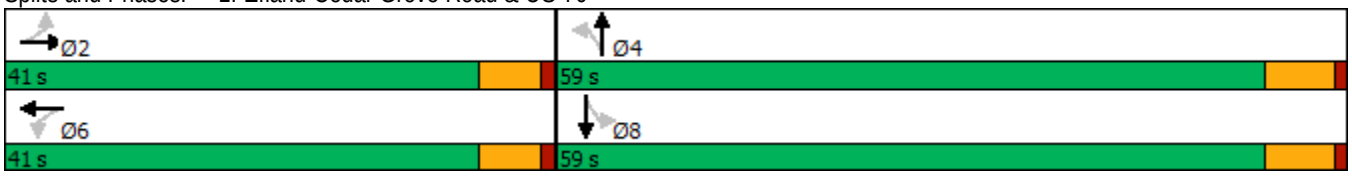
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	277	160	5	104	44	60	132	7	150	467	18
Future Volume (vph)	11	277	160	5	104	44	60	132	7	150	467	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1789	0	0	1769	0	0	1835	0	0	1815	0
Flt Permitted		0.992			0.981			0.737			0.862	
Satd. Flow (perm)	0	1777	0	0	1739	0	0	1373	0	0	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			23			3			2	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	498	0	0	171	0	0	222	0	0	706	0
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	41.0	41.0		41.0	41.0		59.0	59.0		59.0	59.0	
Total Split (%)	41.0%	41.0%		41.0%	41.0%		59.0%	59.0%		59.0%	59.0%	
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		25.6			25.6			40.3			40.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.33			0.33			0.52			0.52	
v/c Ratio		0.81			0.29			0.31			0.85	
Control Delay		35.4			19.6			12.5			28.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		35.4			19.6			12.5			28.2	
LOS		D			B			B			C	
Approach Delay		35.4			19.6			12.5			28.2	
Approach LOS		D			B			B			C	
Queue Length 50th (ft)		209			52			57			276	
Queue Length 95th (ft)		388			117			120			#561	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		928			904			1001			1153	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.54			0.19			0.22			0.61	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 76.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 27.3 Intersection LOS: C
Intersection Capacity Utilization 79.1% ICU Level of Service D
Analysis Period (min) 15
Description: 07-1686
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	647	96	4	194	57
Future Volume (vph)	4	647	96	4	194	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1613	0	0	1777	1740	0
Flt Permitted				0.954	0.963	
Satd. Flow (perm)	1613	0	0	1777	1740	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	723	0	0	111	279	0
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.0%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	647	96	4	194	57
Future Volume (Veh/h)	4	647	96	4	194	57
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	719	107	4	216	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	495	0	1184	464	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	495	0	1184	464	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	99	34	0	99	87	
cM capacity (veh/h)	412	1085	50	430	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	723	111	279
Volume Left	0	107	216
Volume Right	719	0	63
cSH	1075	52	1623
Volume to Capacity	0.67	2.15	0.13
Queue Length 95th (ft)	137	279	11
Control Delay (s)	14.9	701.9	6.1
Lane LOS	B	F	A
Approach Delay (s)	14.9	701.9	6.1
Approach LOS	B	F	

Intersection Summary			
Average Delay	81.2		
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

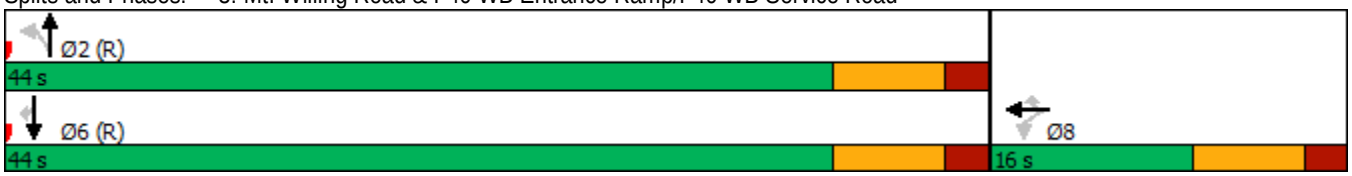
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	46	97	173	16	98	0	0	747	48
Future Volume (vph)	0	0	0	46	97	173	16	98	0	0	747	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	280		0	225		0	0		200
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			75			25		
Satd. Flow (prot)	0	0	0	1770	1863	1583	1770	1863	0	0	1863	1583
Flt Permitted				0.950			0.243					
Satd. Flow (perm)	0	0	0	1770	1863	1583	453	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						192						73
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			567			655			1860	
Travel Time (s)		8.9			7.7			9.9			28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	51	108	192	18	109	0	0	830	53
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				40	40	40	40	106			106	40
Trailing Detector (ft)				0	0	0	0	100			100	0
Detector 1 Position(ft)				0	0	0	0	100			100	0
Detector 1 Size(ft)				40	40	40	40	6			6	40
Detector 1 Type				Cl+Ex	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	0.0
Detector 1 Queue (s)				0.0	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	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	12.0	12.0			12.0	12.0
Minimum Split (s)				15.0	15.0	15.0	20.0	20.0			20.0	20.0
Total Split (s)				16.0	16.0	16.0	44.0	44.0			44.0	44.0
Total Split (%)				26.7%	26.7%	26.7%	73.3%	73.3%			73.3%	73.3%
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Act Effct Green (s)				10.3	10.3	10.3	39.7	39.7			39.7	39.7
Actuated g/C Ratio				0.17	0.17	0.17	0.66	0.66			0.66	0.66
v/c Ratio				0.17	0.34	0.45	0.06	0.09			0.67	0.05
Control Delay				22.6	25.0	10.5	4.4	4.1			9.8	0.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				22.6	25.0	10.5	4.4	4.1			9.8	0.9
LOS				C	C	B	A	A			A	A
Approach Delay					16.7			4.1			9.3	
Approach LOS					B			A			A	
Queue Length 50th (ft)				19	39	26	2	12			155	0
Queue Length 95th (ft)				m41	69	64	8	26			266	6
Internal Link Dist (ft)		572			487			575			1780	
Turn Bay Length (ft)				280			225					200
Base Capacity (vph)				324	341	447	299	1233			1233	1073
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.16	0.32	0.43	0.06	0.09			0.67	0.05

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 10.7 Intersection LOS: B
Intersection Capacity Utilization 67.6% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	4	13	0	0	0	0	87	136	644	145	0
Future Volume (vph)	53	4	13	0	0	0	0	87	136	644	145	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.955								0.950		
Satd. Flow (perm)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	14	0	0	0	0	97	151	716	161	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	31.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	4	13	0	0	0	0	87	136	644	145	0
Future Vol, veh/h	53	4	13	0	0	0	0	87	136	644	145	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	4	14	0	0	0	0	97	151	716	161	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1766	1841	161	-	0	0	248	0	0
Stage 1	1593	1593	-	-	-	-	-	-	-
Stage 2	173	248	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	92	75	884	0	-	-	1318	-	0
Stage 1	183	167	-	0	-	-	-	-	0
Stage 2	857	701	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 42	0	884	-	-	-	1318	-	-
Mov Cap-2 Maneuver	~ 42	0	-	-	-	-	-	-	-
Stage 1	183	0	-	-	-	-	-	-	-
Stage 2	392	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 386	0	8.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	42	884	1318	-
HCM Lane V/C Ratio	-	-	1.508	0.016	0.543	-
HCM Control Delay (s)	-	-	$ 471.9	9.1	10.9	-
HCM Lane LOS	-	-	F	A	B	-
HCM 95th %tile Q(veh)	-	-	6.4	0.1	3.4	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

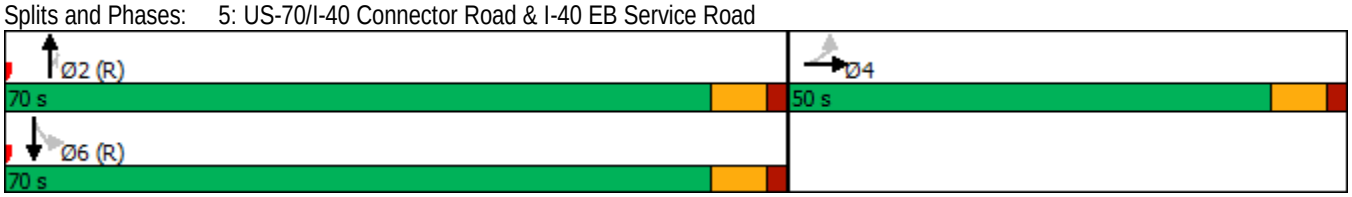
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	684	4	4	0	0	0	0	157	14	348	88	0
Future Volume (vph)	684	4	4	0	0	0	0	157	14	348	88	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		125	0		0	0		40	400		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	100			25			25			100		
Satd. Flow (prot)	1681	1683	0	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted	0.950	0.953								0.647		
Satd. Flow (perm)	1681	1683	0	0	0	0	0	1863	1583	1205	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1							36			
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)	49%											
Lane Group Flow (vph)	388	380	0	0	0	0	0	174	16	387	98	0
Number of Detectors	1	1						1	1	1	1	
Detector Template	Left											
Leading Detector (ft)	20	40						106	40	40	106	
Trailing Detector (ft)	0	0						100	0	0	100	
Detector 1 Position(ft)	0	0						100	0	0	100	
Detector 1 Size(ft)	20	40						6	40	40	6	
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	
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4								2	6		
Detector Phase	4	4						2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						12.0	12.0	12.0	12.0	
Minimum Split (s)	15.0	15.0						20.0	20.0	20.0	20.0	
Total Split (s)	50.0	50.0						70.0	70.0	70.0	70.0	
Total Split (%)	41.7%	41.7%						58.3%	58.3%	58.3%	58.3%	
Yellow Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0						-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None						C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	35.6	35.6						74.4	74.4	74.4	74.4	
Actuated g/C Ratio	0.30	0.30						0.62	0.62	0.62	0.62	
v/c Ratio	0.78	0.76						0.15	0.02	0.52	0.08	
Control Delay	46.6	45.2						11.3	1.1	15.3	8.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.2	0.2						0.0	0.0	0.0	0.0	
Total Delay	46.8	45.5						11.3	1.1	15.3	8.1	
LOS	D	D						B	A	B	A	
Approach Delay		46.2						10.5			13.8	
Approach LOS		D						B			B	
Queue Length 50th (ft)	272	263						54	0	178	32	
Queue Length 95th (ft)	346	335						105	4	257	73	
Internal Link Dist (ft)		1060			622			298			634	
Turn Bay Length (ft)	400								40	400		
Base Capacity (vph)	630	631						1155	995	747	1155	
Starvation Cap Reductn	0	0						0	0	0	0	
Spillback Cap Reductn	28	28						0	0	0	0	
Storage Cap Reductn	0	0						0	0	0	0	
Reduced v/c Ratio	0.64	0.63						0.15	0.02	0.52	0.08	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 90 (75%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 30.6 Intersection LOS: C
Intersection Capacity Utilization 64.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: US-70/I-40 Connector Road & I-40 EB Service Road



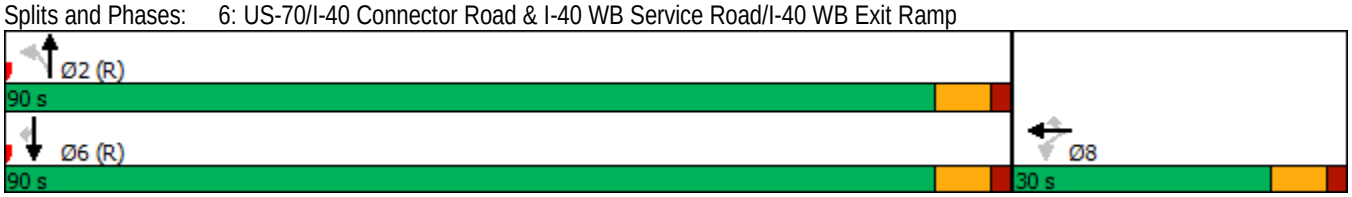
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	354	170	132	713	0	0	429	317
Future Volume (vph)	0	0	0	7	354	170	132	713	0	0	429	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	450		450	0		0	0		0
Storage Lanes	0		0	1		2	1		0	0		1
Taper Length (ft)	25			100			100			25		
Satd. Flow (prot)	0	0	0	0	3536	2787	1770	1863	0	0	1863	1583
Flt Permitted					0.999		0.457					
Satd. Flow (perm)	0	0	0	0	3536	2787	851	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						189						89
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		752			1082			714			455	
Travel Time (s)		10.3			14.8			10.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	401	189	147	792	0	0	477	352
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				40	40	40	40	106			106	40
Trailing Detector (ft)				0	0	0	0	100			100	0
Detector 1 Position(ft)				0	0	0	0	100			100	0
Detector 1 Size(ft)				40	40	40	40	6			6	40
Detector 1 Type				Cl+Ex	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	0.0
Detector 1 Queue (s)				0.0	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	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	12.0	12.0			12.0	12.0
Minimum Split (s)				15.0	15.0	15.0	20.0	20.0			20.0	20.0
Total Split (s)				30.0	30.0	30.0	90.0	90.0			90.0	90.0
Total Split (%)				25.0%	25.0%	25.0%	75.0%	75.0%			75.0%	75.0%
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)					-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)					5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Act Effct Green (s)					20.7	20.7	89.3	89.3			89.3	89.3
Actuated g/C Ratio					0.17	0.17	0.74	0.74			0.74	0.74
v/c Ratio					0.66	0.30	0.23	0.57			0.34	0.29
Control Delay					51.5	6.9	1.7	9.0			4.6	3.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.0	0.0	0.0	2.7			0.5	0.4
Total Delay					51.5	6.9	1.7	11.7			5.1	3.4
LOS					D	A	A	B			A	A
Approach Delay					37.2			10.1			4.4	
Approach LOS					D			B			A	
Queue Length 50th (ft)					154	0	5	216			77	34
Queue Length 95th (ft)					199	34	9	673			106	54
Internal Link Dist (ft)		672			1002			634			375	
Turn Bay Length (ft)						450						
Base Capacity (vph)					736	730	633	1386			1386	1200
Starvation Cap Reductn					0	0	0	458			513	448
Spillback Cap Reductn					0	0	0	0			0	0
Storage Cap Reductn					0	0	0	0			0	0
Reduced v/c Ratio					0.54	0.26	0.23	0.85			0.55	0.47

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 52 (43%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 14.9 Intersection LOS: B
Intersection Capacity Utilization 64.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

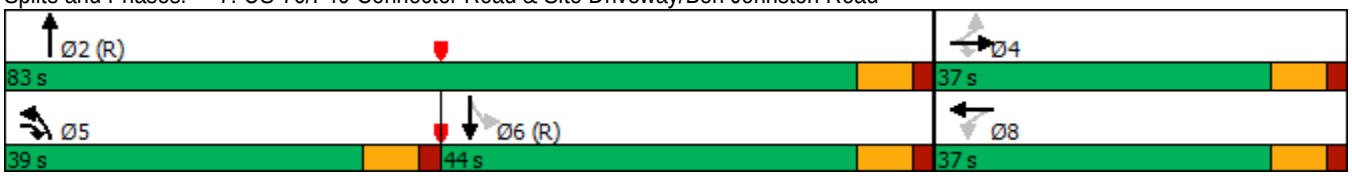


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	6	275	99	6	5	336	327	208	4	370	13
Future Volume (vph)	11	6	275	99	6	5	336	327	208	4	370	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		0	200		0	300		0	140		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	100			100			100			300		
Satd. Flow (prot)	1805	1900	1615	1770	1734	0	3433	3334	0	1770	3522	0
Flt Permitted	0.749			0.753			0.950			0.428		
Satd. Flow (perm)	1423	1900	1615	1403	1734	0	3433	3334	0	797	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209		6			231			3	
Link Speed (mph)		30			45			45			45	
Link Distance (ft)		700			839			455			816	
Travel Time (s)		15.9			12.7			6.9			12.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	7	306	110	13	0	373	594	0	4	425	0
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	40	40	40	20	40		40	106		40	106	
Trailing Detector (ft)	0	0	0	0	0		0	100		0	100	
Detector 1 Position(ft)	0	0	0	0	0		0	100		0	100	
Detector 1 Size(ft)	40	40	40	20	40		40	6		40	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	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	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4		4	8						6		
Detector Phase	4	4	5	8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0		12.0	12.0	
Minimum Split (s)	15.0	15.0	14.0	15.0	15.0		14.0	20.0		20.0	20.0	
Total Split (s)	37.0	37.0	39.0	37.0	37.0		39.0	83.0		44.0	44.0	
Total Split (%)	30.8%	30.8%	32.5%	30.8%	30.8%		32.5%	69.2%		36.7%	36.7%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag			Lead				Lead			Lag	Lag	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Act Effct Green (s)	16.7	16.7	42.8	16.7	16.7		21.0	93.3		67.2	67.2	
Actuated g/C Ratio	0.14	0.14	0.36	0.14	0.14		0.18	0.78		0.56	0.56	
v/c Ratio	0.06	0.03	0.43	0.56	0.05		0.62	0.22		0.01	0.22	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	42.5	41.5	9.9	58.5	30.5		31.7	4.9		16.0	14.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.5	41.5	9.9	58.5	30.5		31.7	4.9		16.0	14.8	
LOS	D	D	A	E	C		C	A		B	B	
Approach Delay		11.8			55.5			15.2			14.8	
Approach LOS		B			E			B			B	
Queue Length 50th (ft)	8	5	51	81	5		109	87		1	82	
Queue Length 95th (ft)	25	18	105	134	23		152	98		8	138	
Internal Link Dist (ft)		620			759			375			736	
Turn Bay Length (ft)	425			200			300			140		
Base Capacity (vph)	379	506	862	374	466		972	2642		446	1974	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.01	0.35	0.29	0.03		0.38	0.22		0.01	0.22	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 17.2	Intersection LOS: B
Intersection Capacity Utilization 50.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	542	258	0	172
Future Volume (vph)	0	0	542	258	0	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			265	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	0	3369	0	0	1644
Flt Permitted						
Satd. Flow (perm)	0	0	3369	0	0	1644
Link Speed (mph)		50	50		30	
Link Distance (ft)		273	752		411	
Travel Time (s)		3.7	10.3		9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	889	0	0	191
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 40.6%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	542	258	0	172
Future Vol, veh/h	0	0	542	258	0	172
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	0	0	602	287	0	191

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	-	301
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	0	0	701
Stage 1	-	0	0	-
Stage 2	-	0	0	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	-	-	701
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	12
HCM LOS		B

Minor Lane/Major Mvmt	WBT	SBLn1
Capacity (veh/h)	-	701
HCM Lane V/C Ratio	-	0.273
HCM Control Delay (s)	-	12
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	1.1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	212	32	0	109
Future Volume (vph)	0	0	212	32	0	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			200	0	0
Storage Lanes	0			1	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	0	1863	1583	0	1644
Flt Permitted						
Satd. Flow (perm)	0	0	1863	1583	0	1644
Link Speed (mph)		50	50		30	
Link Distance (ft)		567	557		601	
Travel Time (s)		7.7	7.6		13.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	236	36	0	121
Sign Control		Free	Free		Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	212	32	0	109
Future Volume (Veh/h)	0	0	212	32	0	109
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	236	36	0	121
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		567				
pX, platoon unblocked						
vC, conflicting volume	236				236	236
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236				236	236
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	85
cM capacity (veh/h)	1331				757	808

Direction, Lane #	WB 1	WB 2	SB 1
Volume Total	236	36	121
Volume Left	0	0	0
Volume Right	0	36	121
cSH	1700	1700	808
Volume to Capacity	0.14	0.02	0.15
Queue Length 95th (ft)	0	0	13
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0		10.2
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

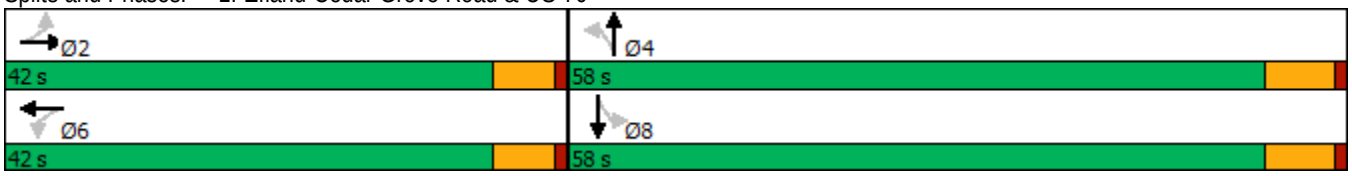
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	137	40	5	248	99	124	388	13	46	189	16
Future Volume (vph)	12	137	40	5	248	99	124	388	13	46	189	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1823	0	0	1772	0	0	1844	0	0	1811	0
Flt Permitted		0.965			0.995			0.853			0.850	
Satd. Flow (perm)	0	1765	0	0	1765	0	0	1592	0	0	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			22			2			5	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	209	0	0	392	0	0	583	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	42.0	42.0		42.0	42.0		58.0	58.0		58.0	58.0	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		58.0%	58.0%		58.0%	58.0%	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		19.4			19.4			28.5			28.5	
Actuated g/C Ratio		0.33			0.33			0.48			0.48	
v/c Ratio		0.35			0.66			0.76			0.37	
Control Delay		18.1			24.0			20.0			11.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.1			24.0			20.0			11.3	
LOS		B			C			B			B	
Approach Delay		18.1			24.0			20.0			11.3	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)		46			100			134			49	
Queue Length 95th (ft)		140			277			361			139	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1231			1233			1388			1354	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.17			0.32			0.42			0.21	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 58.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 19.1 — Intersection LOS: B
Intersection Capacity Utilization 70.1% — ICU Level of Service C
Analysis Period (min) 15
Description: 07-1686

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	232	54	4	520	102
Future Volume (vph)	4	232	54	4	520	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1615	0	0	1779	1749	0
Flt Permitted				0.955	0.960	
Satd. Flow (perm)	1615	0	0	1779	1749	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	262	0	0	64	691	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	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)		9	15		15	9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	232	54	4	520	102
Future Volume (Veh/h)	4	232	54	4	520	102
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	258	60	4	578	113
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1269	0	1472	1212	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1269	0	1472	1212	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	96	76	0	97	64	
cM capacity (veh/h)	108	1085	56	117	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	262	64	691
Volume Left	0	60	578
Volume Right	258	0	113
cSH	954	58	1623
Volume to Capacity	0.27	1.10	0.36
Queue Length 95th (ft)	28	132	41
Control Delay (s)	10.2	265.6	7.6
Lane LOS	B	F	A
Approach Delay (s)	10.2	265.6	7.6
Approach LOS	B	F	

Intersection Summary			
Average Delay	24.5		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

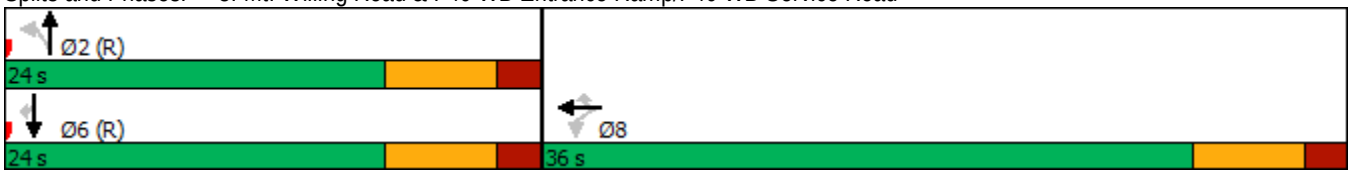
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	171	138	610	16	91	0	0	247	51
Future Volume (vph)	0	0	0	171	138	610	16	91	0	0	247	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	280		0	225		0	0		200
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			75			25		
Satd. Flow (prot)	0	0	0	1770	1863	1583	1770	1863	0	0	1863	1583
Flt Permitted				0.950			0.591					
Satd. Flow (perm)	0	0	0	1770	1863	1583	1101	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						678						73
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			567			655			1860	
Travel Time (s)		8.9			7.7			9.9			28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	190	153	678	18	101	0	0	274	57
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		20	15		9	15		20
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				40	40	40	40	106			106	40
Trailing Detector (ft)				0	0	0	0	100			100	0
Detector 1 Position(ft)				0	0	0	0	100			100	0
Detector 1 Size(ft)				40	40	40	40	6			6	40
Detector 1 Type				Cl+Ex	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	0.0
Detector 1 Queue (s)				0.0	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	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	12.0	12.0			12.0	12.0
Minimum Split (s)				15.0	15.0	15.0	20.0	20.0			20.0	20.0
Total Split (s)				36.0	36.0	36.0	24.0	24.0			24.0	24.0
Total Split (%)				60.0%	60.0%	60.0%	40.0%	40.0%			40.0%	40.0%
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Act Effct Green (s)				16.6	16.6	16.6	33.4	33.4			33.4	33.4
Actuated g/C Ratio				0.28	0.28	0.28	0.56	0.56			0.56	0.56
v/c Ratio				0.39	0.30	0.73	0.03	0.10			0.26	0.06
Control Delay				17.6	16.2	6.8	9.6	9.1			9.8	2.8
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				17.6	16.2	6.8	9.6	9.1			9.8	2.8
LOS				B	B	A	A	A			A	A
Approach Delay					10.2			9.2			8.6	
Approach LOS					B			A			A	
Queue Length 50th (ft)				63	49	31	3	15			44	0
Queue Length 95th (ft)				m61	m49	27	15	50			124	15
Internal Link Dist (ft)		572			487			575			1780	
Turn Bay Length (ft)				280			225					200
Base Capacity (vph)				914	962	1145	612	1035			1035	912
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.21	0.16	0.59	0.03	0.10			0.26	0.06

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 38 (63%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 56.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	4	21	0	0	0	0	66	49	221	227	0
Future Volume (vph)	70	4	21	0	0	0	0	66	49	221	227	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.955								0.950		
Satd. Flow (perm)	0	1779	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	23	0	0	0	0	73	54	246	252	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		15	15		9	15		20	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 56.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	4	21	0	0	0	0	66	49	221	227	0
Future Vol, veh/h	70	4	21	0	0	0	0	66	49	221	227	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	4	23	0	0	0	0	73	54	246	252	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	844	871	252	-	0	0	127	0	0
Stage 1	744	744	-	-	-	-	-	-	-
Stage 2	100	127	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	334	289	787	0	-	-	1459	-	0
Stage 1	470	421	-	0	-	-	-	-	0
Stage 2	924	791	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	278	0	787	-	-	-	1459	-	-
Mov Cap-2 Maneuver	278	0	-	-	-	-	-	-	-
Stage 1	470	0	-	-	-	-	-	-	-
Stage 2	768	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	0	3.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	278	787	1459	-
HCM Lane V/C Ratio	-	-	0.296	0.03	0.168	-
HCM Control Delay (s)	-	-	23.3	9.7	8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0.6	-

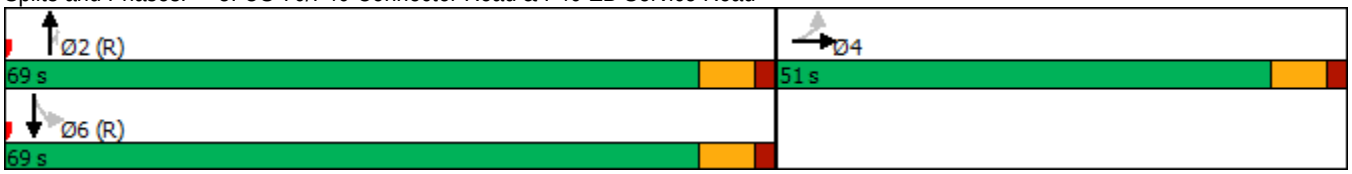
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	716	4	4	0	0	0	0	64	4	410	174	0
Future Volume (vph)	716	4	4	0	0	0	0	64	4	410	174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		125	0		0	0		40	400		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	100			25			25			100		
Satd. Flow (prot)	1681	1683	0	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted	0.950	0.953								0.711		
Satd. Flow (perm)	1681	1683	0	0	0	0	0	1863	1583	1324	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									36			
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)	49%											
Lane Group Flow (vph)	406	398	0	0	0	0	0	71	4	456	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			18			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		20	15		9
Number of Detectors	1	1						1	1	1	1	
Detector Template	Left											
Leading Detector (ft)	20	40						106	40	40	106	
Trailing Detector (ft)	0	0						100	0	0	100	
Detector 1 Position(ft)	0	0						100	0	0	100	
Detector 1 Size(ft)	20	40						6	40	40	6	
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	
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4								2	6		
Detector Phase	4	4						2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						12.0	12.0	12.0	12.0	
Minimum Split (s)	15.0	15.0						20.0	20.0	20.0	20.0	
Total Split (s)	51.0	51.0						69.0	69.0	69.0	69.0	
Total Split (%)	42.5%	42.5%						57.5%	57.5%	57.5%	57.5%	
Yellow Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0						-2.0	-2.0	-2.0	-2.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None						C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	36.8	36.8						73.2	73.2	73.2	73.2	
Actuated g/C Ratio	0.31	0.31						0.61	0.61	0.61	0.61	
v/c Ratio	0.79	0.77						0.06	0.00	0.57	0.17	
Control Delay	48.2	47.1						11.5	0.0	24.5	12.4	
Queue Delay	0.0	0.0						0.0	0.0	0.0	0.0	
Total Delay	48.2	47.1						11.5	0.0	24.5	12.4	
LOS	D	D						B	A	C	B	
Approach Delay		47.7						10.9			20.9	
Approach LOS		D						B			C	
Queue Length 50th (ft)	294	287						21	0	303	101	
Queue Length 95th (ft)	372	362						49	0	m474	m182	
Internal Link Dist (ft)		1060			622			298			634	
Turn Bay Length (ft)	400								40	400		
Base Capacity (vph)	644	645						1136	979	807	1136	
Starvation Cap Reductn	0	0						0	0	0	0	
Spillback Cap Reductn	0	0						0	0	0	0	
Storage Cap Reductn	0	0						0	0	0	0	
Reduced v/c Ratio	0.63	0.62						0.06	0.00	0.57	0.17	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 103 (86%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 83.7% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: US-70/I-40 Connector Road & I-40 EB Service Road



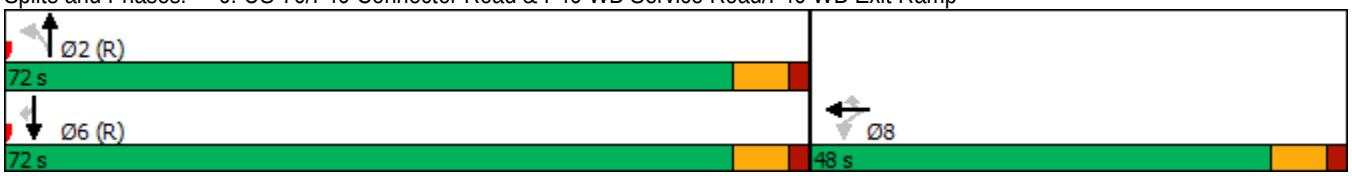
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	31	904	263	176	611	0	0	553	317
Future Volume (vph)	0	0	0	31	904	263	176	611	0	0	553	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	450		450	0		0	0		0
Storage Lanes	0		0	1		2	1		0	0		1
Taper Length (ft)	25			100			100			25		
Satd. Flow (prot)	0	0	0	0	3532	2787	1770	1863	0	0	1863	1583
Flt Permitted					0.998		0.297					
Satd. Flow (perm)	0	0	0	0	3532	2787	553	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						292						36
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		752			1082			714			455	
Travel Time (s)		10.3			14.8			10.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1038	292	196	679	0	0	614	352
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	R NA	Right	Left	Left	Right
Median Width(ft)		0			0			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		20
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				40	40	40	40	106			106	40
Trailing Detector (ft)				0	0	0	0	100			100	0
Detector 1 Position(ft)				0	0	0	0	100			100	0
Detector 1 Size(ft)				40	40	40	40	6			6	40
Detector 1 Type				Cl+Ex	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	0.0
Detector 1 Queue (s)				0.0	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	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	12.0	12.0			12.0	12.0
Minimum Split (s)				15.0	15.0	15.0	20.0	20.0			20.0	20.0
Total Split (s)				48.0	48.0	48.0	72.0	72.0			72.0	72.0
Total Split (%)				40.0%	40.0%	40.0%	60.0%	60.0%			60.0%	60.0%
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)					-2.0	-2.0	-2.0	-2.0			-2.0	-2.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)					5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Act Effct Green (s)					41.2	41.2	68.8	68.8			68.8	68.8
Actuated g/C Ratio					0.34	0.34	0.57	0.57			0.57	0.57
v/c Ratio					0.86	0.25	0.62	0.64			0.57	0.38
Control Delay					44.6	3.5	13.9	8.3			17.6	11.4
Queue Delay					0.0	0.0	0.0	2.5			1.5	0.6
Total Delay					44.6	3.5	13.9	10.9			19.1	12.0
LOS					D	A	B	B			B	B
Approach Delay					35.6			11.5			16.5	
Approach LOS					D			B			B	
Queue Length 50th (ft)					381	0	43	162			357	128
Queue Length 95th (ft)					468	31	94	158			488	157
Internal Link Dist (ft)		672			1002			634			375	
Turn Bay Length (ft)						450						
Base Capacity (vph)					1265	1186	316	1068			1068	922
Starvation Cap Reductn					0	0	0	262			268	278
Spillback Cap Reductn					0	0	0	0			0	0
Storage Cap Reductn					0	0	0	0			0	0
Reduced v/c Ratio					0.82	0.25	0.62	0.84			0.77	0.55

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 23.1 Intersection LOS: C
Intersection Capacity Utilization 83.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp



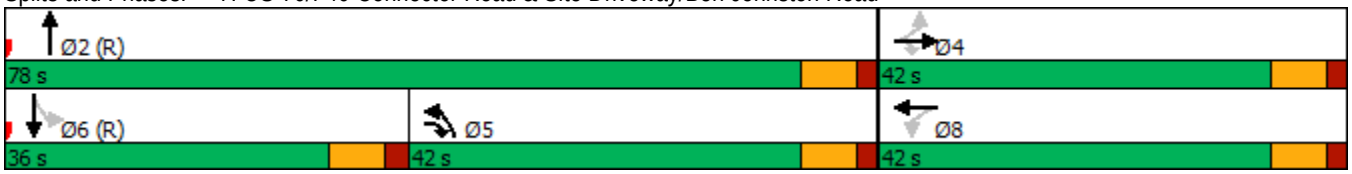
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	8	390	160	8	4	458	351	59	4	317	18
Future Volume (vph)	16	8	390	160	8	4	458	351	59	4	317	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		0	200		0	300		0	140		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	100			100			100			300		
Satd. Flow (prot)	1805	1900	1615	1770	1777	0	3433	3461	0	1770	3511	0
Flt Permitted	0.749			0.752			0.950			0.489		
Satd. Flow (perm)	1423	1900	1615	1401	1777	0	3433	3461	0	911	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			183		4			29			5	
Link Speed (mph)		30			45			45			45	
Link Distance (ft)		700			839			455			816	
Travel Time (s)		15.9			12.7			6.9			12.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	9	433	178	13	0	509	456	0	4	372	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			28			28	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	40	40	40	20	40		40	106		40	106	
Trailing Detector (ft)	0	0	0	0	0		0	100		0	100	
Detector 1 Position(ft)	0	0	0	0	0		0	100		0	100	
Detector 1 Size(ft)	40	40	40	20	40		40	6		40	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	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	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4		4	8						6		
Detector Phase	4	4	5	8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0		12.0	12.0	
Minimum Split (s)	15.0	15.0	14.0	15.0	15.0		14.0	20.0		20.0	20.0	
Total Split (s)	42.0	42.0	42.0	42.0	42.0		42.0	78.0		36.0	36.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		35.0%	65.0%		30.0%	30.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag			Lag				Lag			Lead	Lead	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Act Effct Green (s)	22.6	22.6	64.6	22.6	22.6		37.0	87.4		45.4	45.4	
Actuated g/C Ratio	0.19	0.19	0.54	0.19	0.19		0.31	0.73		0.38	0.38	
v/c Ratio	0.07	0.03	0.45	0.67	0.04		0.48	0.18		0.01	0.28	
Control Delay	37.3	36.0	10.1	57.3	29.0		28.1	1.4		27.2	27.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	37.3	36.0	10.1	57.3	29.0		28.1	1.4		27.2	27.5	
LOS	D	D	B	E	C		C	A		C	C	
Approach Delay		11.7			55.4			15.5			27.5	
Approach LOS		B			E			B			C	
Queue Length 50th (ft)	12	6	107	129	6		202	11		2	102	
Queue Length 95th (ft)	30	19	154	192	22		233	19		11	157	
Internal Link Dist (ft)		620			759			375			736	
Turn Bay Length (ft)	425			200			300			140		
Base Capacity (vph)	438	585	954	431	550		1058	2528		344	1330	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	3	0	0		0	0		0	60	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.02	0.46	0.41	0.02		0.48	0.18		0.01	0.29	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 70 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 20.7 Intersection LOS: C
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	1071	352	0	244
Future Volume (vph)	0	0	1071	352	0	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			265	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	0	3408	0	0	1644
Flt Permitted						
Satd. Flow (perm)	0	0	3408	0	0	1644
Link Speed (mph)		50	50		30	
Link Distance (ft)		273	752		411	
Travel Time (s)		3.7	10.3		9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1581	0	0	271
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	L NA
Median Width(ft)		0	0		0	
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
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	1071	352	0	244
Future Vol, veh/h	0	0	1071	352	0	244
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	0	0	1190	391	0	271

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	-	595
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	0	0	452
Stage 1	-	0	0	-
Stage 2	-	0	0	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	-	-	452
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	24.2
HCM LOS		C

Minor Lane/Major Mvmt	WBT	SBLn1
Capacity (veh/h)	-	452
HCM Lane V/C Ratio	-	0.6
HCM Control Delay (s)	-	24.2
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	3.8

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	749	44	0	154
Future Volume (vph)	0	0	749	44	0	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			200	0	0
Storage Lanes	0			1	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	0	1863	1583	0	1644
Flt Permitted						
Satd. Flow (perm)	0	0	1863	1583	0	1644
Link Speed (mph)		50	50		30	
Link Distance (ft)		567	557		601	
Travel Time (s)		7.7	7.6		13.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	832	49	0	171
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
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
Sign Control		Free	Free		Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	749	44	0	154
Future Volume (Veh/h)	0	0	749	44	0	154
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	832	49	0	171
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		567				
pX, platoon unblocked						
vC, conflicting volume	832				832	832
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	832				832	832
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	54
cM capacity (veh/h)	801				342	372

Direction, Lane #	WB 1	WB 2	SB 1
Volume Total	832	49	171
Volume Left	0	0	0
Volume Right	0	49	171
cSH	1700	1700	372
Volume to Capacity	0.49	0.03	0.46
Queue Length 95th (ft)	0	0	58
Control Delay (s)	0.0	0.0	22.6
Lane LOS			C
Approach Delay (s)	0.0		22.6
Approach LOS			C

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

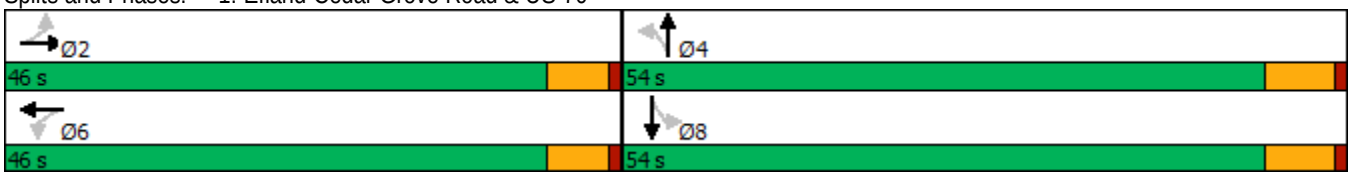
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	144	50	4	117	47	33	167	4	47	206	8
Future Volume (vph)	7	144	50	4	117	47	33	167	4	47	206	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-2%			2%			-1%			2%	
Satd. Flow (prot)	0	1814	0	0	1772	0	0	1853	0	0	1820	0
Flt Permitted		0.986			0.991			0.901			0.892	
Satd. Flow (perm)	0	1792	0	0	1758	0	0	1683	0	0	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			24			1			2	
Link Speed (mph)		45			45			35			45	
Link Distance (ft)		866			959			445			961	
Travel Time (s)		13.1			14.5			8.7			14.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	186	0	0	227	0	0	290	0
Number of Detectors	1	2		1	2		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	306		20	306		20	55		20	60	
Trailing Detector (ft)	0	90		0	90		0	-5		0	0	
Detector 1 Position(ft)	0	300		0	300		0	-5		0	0	
Detector 1 Size(ft)	20	6		20	6		20	60		20	60	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	1.8		0.0	1.8		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		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	5.0		0.0	5.0	
Detector 2 Position(ft)		90			90							
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	23.7	23.7		23.7	23.7		24.2	24.2		24.2	24.2	
Total Split (s)	46.0	46.0		46.0	46.0		54.0	54.0		54.0	54.0	
Total Split (%)	46.0%	46.0%		46.0%	46.0%		54.0%	54.0%		54.0%	54.0%	
Yellow Time (s)	4.6	4.6		4.6	4.6		5.2	5.2		5.2	5.2	
All-Red Time (s)	1.1	1.1		1.1	1.1		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-0.7			-0.7			-1.2			-1.2	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)		12.8			12.8			11.6			11.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.37			0.37			0.34			0.34	
v/c Ratio		0.33			0.28			0.40			0.53	
Control Delay		9.6			8.9			10.8			12.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.6			8.9			10.8			12.8	
LOS		A			A			B			B	
Approach Delay		9.6			8.9			10.8			12.8	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		24			19			30			41	
Queue Length 95th (ft)		70			58			64			83	
Internal Link Dist (ft)		786			879			365			881	
Turn Bay Length (ft)												
Base Capacity (vph)		1792			1758			1683			1638	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.13			0.11			0.13			0.18	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 34.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 10.7 Intersection LOS: B
Intersection Capacity Utilization 41.8% ICU Level of Service A
Analysis Period (min) 15
Description: 07-1686

Splits and Phases: 1: Efland-Cedar Grove Road & US-70



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	5	255	49	4	201	53
Future Volume (vph)	5	255	49	4	201	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1617	0	0	1781	1742	0
Flt Permitted				0.956	0.962	
Satd. Flow (perm)	1617	0	0	1781	1742	0
Link Speed (mph)	35			35	45	
Link Distance (ft)	973			901	1860	
Travel Time (s)	19.0			17.6	28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	289	0	0	58	282	0
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	5	255	49	4	201	53
Future Volume (Veh/h)	5	255	49	4	201	53
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	283	54	4	223	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	505	0	762	476	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	505	0	762	476	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	99	74	74	99	86	
cM capacity (veh/h)	405	1085	210	421	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	289	58	282
Volume Left	0	54	223
Volume Right	283	0	59
cSH	1048	218	1623
Volume to Capacity	0.28	0.27	0.14
Queue Length 95th (ft)	28	26	12
Control Delay (s)	9.7	27.4	6.2
Lane LOS	A	D	A
Approach Delay (s)	9.7	27.4	6.2
Approach LOS	A	D	

Intersection Summary			
Average Delay	9.8		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

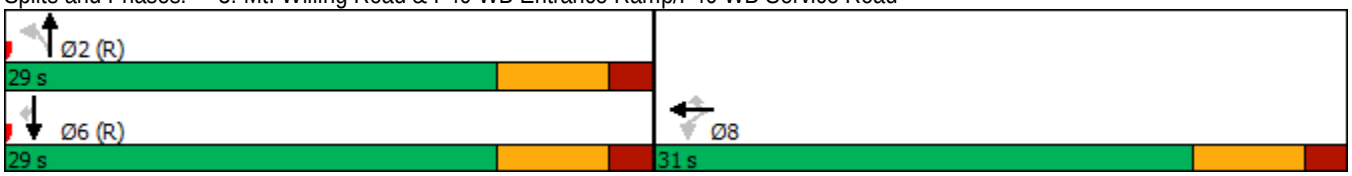
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	35	204	226	10	68	0	0	320	58
Future Volume (vph)	0	0	0	35	204	226	10	68	0	0	320	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	280		0	225		0	0		200
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			100			75			25		
Satd. Flow (prot)	0	0	0	1770	1863	1583	1770	1863	0	0	1863	1583
Flt Permitted				0.950			0.531					
Satd. Flow (perm)	0	0	0	1770	1863	1583	989	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						251						73
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		652			567			655			1860	
Travel Time (s)		8.9			7.7			9.9			28.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	39	227	251	11	76	0	0	356	64
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				40	40	40	40	106			106	40
Trailing Detector (ft)				0	0	0	0	100			100	0
Detector 1 Position(ft)				0	0	0	0	100			100	0
Detector 1 Size(ft)				40	40	40	40	6			6	40
Detector 1 Type				Cl+Ex	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	0.0
Detector 1 Queue (s)				0.0	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	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	12.0	12.0			12.0	12.0
Minimum Split (s)				15.0	15.0	15.0	20.0	20.0			20.0	20.0
Total Split (s)				31.0	31.0	31.0	29.0	29.0			29.0	29.0
Total Split (%)				51.7%	51.7%	51.7%	48.3%	48.3%			48.3%	48.3%
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				-2.0	-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Act Effct Green (s)				14.8	14.8	14.8	35.2	35.2			35.2	35.2
Actuated g/C Ratio				0.25	0.25	0.25	0.59	0.59			0.59	0.59
v/c Ratio				0.09	0.49	0.43	0.02	0.07			0.33	0.07
Control Delay				16.9	23.3	7.9	7.0	6.8			8.3	2.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				16.9	23.3	7.9	7.0	6.8			8.3	2.2
LOS				B	C	A	A	A			A	A
Approach Delay					15.4			6.9			7.4	
Approach LOS					B			A			A	
Queue Length 50th (ft)				13	78	30	1	10			57	0
Queue Length 95th (ft)				m25	m105	m53	9	31			126	13
Internal Link Dist (ft)		572			487			575			1780	
Turn Bay Length (ft)				280			225					200
Base Capacity (vph)				767	807	828	580	1093			1093	959
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.05	0.28	0.30	0.02	0.07			0.33	0.07

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 18 (30%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 11.4 Intersection LOS: B
Intersection Capacity Utilization 45.8% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	4	13	0	0	0	0	38	53	278	79	0
Future Volume (vph)	41	4	13	0	0	0	0	38	53	278	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		135	0		0	0		80	225		0
Storage Lanes	0		1	0		0	0		1	1		0
Taper Length (ft)	100			25			25			75		
Satd. Flow (prot)	0	1781	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted		0.956								0.950		
Satd. Flow (perm)	0	1781	1583	0	0	0	0	1863	1583	1770	1863	0
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		720			904			394			655	
Travel Time (s)		9.8			12.3			6.0			9.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	14	0	0	0	0	42	59	309	88	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 49.0%	ICU Level of Service A
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	4	13	0	0	0	0	38	53	278	79	0
Future Vol, veh/h	41	4	13	0	0	0	0	38	53	278	79	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	135	-	-	-	-	-	80	225	-	-
Veh in Median Storage, #	-	0	-	-	16979	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	4	14	0	0	0	0	42	59	309	88	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	778	807	88	-	0	0	101	0	0
Stage 1	706	706	-	-	-	-	-	-	-
Stage 2	72	101	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	365	315	970	0	-	-	1491	-	0
Stage 1	489	439	-	0	-	-	-	-	0
Stage 2	951	811	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	289	0	970	-	-	-	1491	-	-
Mov Cap-2 Maneuver	289	0	-	-	-	-	-	-	-
Stage 1	489	0	-	-	-	-	-	-	-
Stage 2	754	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	0	6.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	289	970	1491	-
HCM Lane V/C Ratio	-	-	0.173	0.015	0.207	-
HCM Control Delay (s)	-	-	20	8.8	8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0	0.8	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	785	4	4	0	0	0	0	43	4	581	39	0
Future Volume (vph)	785	4	4	0	0	0	0	43	4	581	39	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		125	0		0	0		40	400		0
Storage Lanes	1		0	0		0	0		1	1		0
Taper Length (ft)	100			25			25			100		
Satd. Flow (prot)	1681	1685	0	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted	0.950	0.953								0.726		
Satd. Flow (perm)	1681	1685	0	0	0	0	0	1863	1583	1352	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									36			
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1140			702			378			714	
Travel Time (s)		15.5			9.6			5.7			10.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	436	444	0	0	0	0	0	48	4	646	43	0
Number of Detectors	1	1						1	1	1	1	
Detector Template	Left											
Leading Detector (ft)	20	40						106	40	40	106	
Trailing Detector (ft)	0	0						100	0	0	100	
Detector 1 Position(ft)	0	0						100	0	0	100	
Detector 1 Size(ft)	20	40						6	40	40	6	
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	
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4								2	6		
Detector Phase	4	4						2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0						12.0	12.0	12.0	12.0	
Minimum Split (s)	15.0	15.0						20.0	20.0	20.0	20.0	
Total Split (s)	44.0	44.0						76.0	76.0	76.0	76.0	
Total Split (%)	36.7%	36.7%						63.3%	63.3%	63.3%	63.3%	
Yellow Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0						-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None						C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	36.4	36.4						73.6	73.6	73.6	73.6	
Actuated g/C Ratio	0.30	0.30						0.61	0.61	0.61	0.61	
v/c Ratio	0.85	0.87						0.04	0.00	0.78	0.04	
Control Delay	54.6	56.1						10.3	0.0	24.6	6.2	

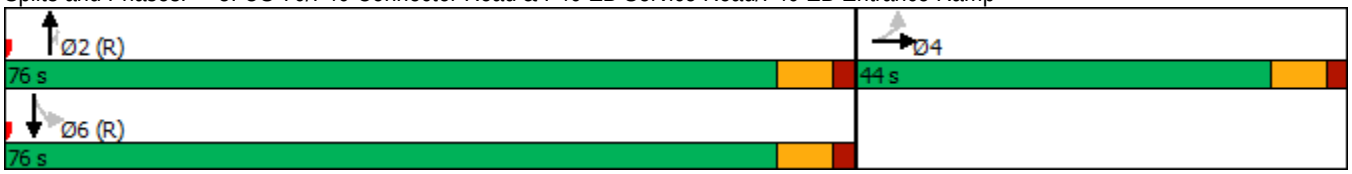
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.2	0.2						0.0	0.0	0.9	0.0	
Total Delay	54.8	56.3						10.3	0.0	25.6	6.2	
LOS	D	E						B	A	C	A	
Approach Delay		55.5						9.5			24.4	
Approach LOS		E						A			C	
Queue Length 50th (ft)	325	332						15	0	345	15	
Queue Length 95th (ft)	#490	#505						31	0	655	m24	
Internal Link Dist (ft)		1060			622			298			634	
Turn Bay Length (ft)	400								40	400		
Base Capacity (vph)	546	547						1142	984	828	1142	
Starvation Cap Reductn	0	0						0	0	48	0	
Spillback Cap Reductn	4	4						9	0	0	0	
Storage Cap Reductn	0	0						0	0	0	0	
Reduced v/c Ratio	0.80	0.82						0.04	0.00	0.83	0.04	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 86 (72%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 40.8 Intersection LOS: D
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: US-70/I-40 Connector Road & I-40 EB Service Road/I-40 EB Entrance Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	7	537	294	252	577	0	0	611	209
Future Volume (vph)	0	0	0	7	537	294	252	577	0	0	611	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	450		450	0		0	0		0
Storage Lanes	0		0	1		2	1		0	0		1
Taper Length (ft)	25			100			100			25		
Satd. Flow (prot)	0	0	0	0	3536	2787	1770	1863	0	0	1863	1583
Flt Permitted					0.999		0.324					
Satd. Flow (perm)	0	0	0	0	3536	2787	604	1863	0	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						327						36
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		752			1082			714			455	
Travel Time (s)		10.3			14.8			10.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	605	327	280	641	0	0	679	232
Number of Detectors				1	1	1	1	1			1	1
Detector Template												
Leading Detector (ft)				40	40	40	40	106			106	40
Trailing Detector (ft)				0	0	0	0	100			100	0
Detector 1 Position(ft)				0	0	0	0	100			100	0
Detector 1 Size(ft)				40	40	40	40	6			6	40
Detector 1 Type				Cl+Ex	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	0.0
Detector 1 Queue (s)				0.0	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	0.0
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Detector Phase				8	8	8	2	2			6	6
Switch Phase												
Minimum Initial (s)				7.0	7.0	7.0	12.0	12.0			12.0	12.0
Minimum Split (s)				15.0	15.0	15.0	20.0	20.0			20.0	20.0
Total Split (s)				33.0	33.0	33.0	87.0	87.0			87.0	87.0
Total Split (%)				27.5%	27.5%	27.5%	72.5%	72.5%			72.5%	72.5%
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)					-2.0	-2.0	-2.0	-2.0			-2.0	-2.0
Total Lost Time (s)					5.0	5.0	5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None	None	C-Max	C-Max			C-Max	C-Max
Act Effct Green (s)					26.4	26.4	83.6	83.6			83.6	83.6
Actuated g/C Ratio					0.22	0.22	0.70	0.70			0.70	0.70
v/c Ratio					0.78	0.38	0.67	0.49			0.52	0.21
Control Delay					51.6	5.3	17.5	5.1			10.9	5.5

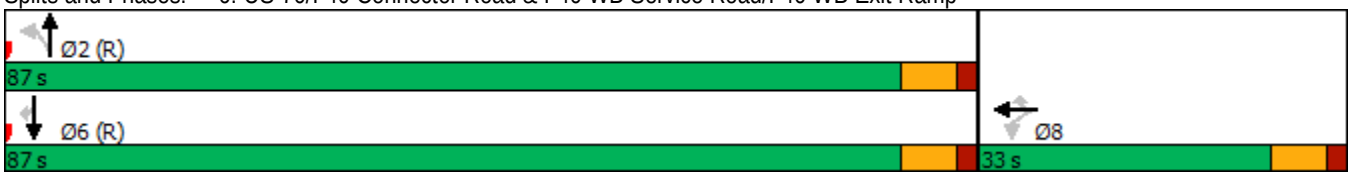
6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay					0.1	0.0	0.0	2.2			0.5	0.0
Total Delay					51.7	5.3	17.5	7.3			11.4	5.5
LOS					D	A	B	A			B	A
Approach Delay					35.4			10.4			9.9	
Approach LOS					D			B			A	
Queue Length 50th (ft)					229	0	230	103			217	40
Queue Length 95th (ft)					296	40	m289	114			382	96
Internal Link Dist (ft)		672			1002			634			375	
Turn Bay Length (ft)						450						
Base Capacity (vph)					825	901	420	1298			1298	1114
Starvation Cap Reductn					0	0	0	495			246	0
Spillback Cap Reductn					13	0	0	0			57	0
Storage Cap Reductn					0	0	0	0			0	0
Reduced v/c Ratio					0.75	0.36	0.67	0.80			0.65	0.21

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 52 (43%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

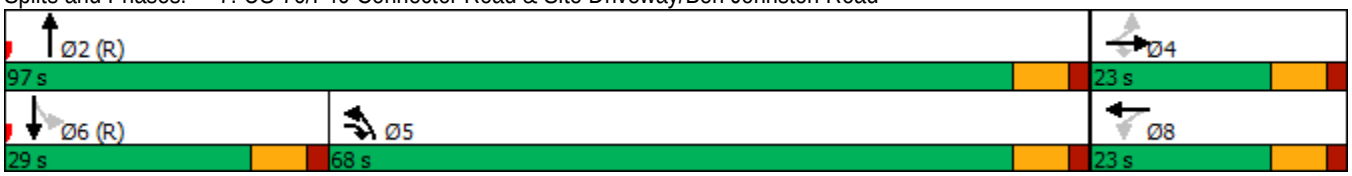


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	13	576	60	13	4	651	180	41	4	183	24
Future Volume (vph)	24	13	576	60	13	4	651	180	41	4	183	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	425		0	200		0	300		0	140		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	100			100			100			300		
Satd. Flow (prot)	1805	1900	1615	1770	1801	0	3433	3440	0	1770	3476	0
Flt Permitted	0.746			0.748			0.950			0.599		
Satd. Flow (perm)	1417	1900	1615	1393	1801	0	3433	3440	0	1116	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			292		4			46			11	
Link Speed (mph)		30			45			45			45	
Link Distance (ft)		700			839			455			816	
Travel Time (s)		15.9			12.7			6.9			12.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	14	640	67	18	0	723	246	0	4	230	0
Number of Detectors	1	1	1	1	1		1	1		1	1	
Detector Template				Left								
Leading Detector (ft)	40	40	40	20	40		40	106		40	106	
Trailing Detector (ft)	0	0	0	0	0		0	100		0	100	
Detector 1 Position(ft)	0	0	0	0	0		0	100		0	100	
Detector 1 Size(ft)	40	40	40	20	40		40	6		40	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	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	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	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	0.0		0.0	0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		Perm	NA	
Protected Phases		4	5		8		5	2			6	
Permitted Phases	4		4	8						6		
Detector Phase	4	4	5	8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0		12.0	12.0	
Minimum Split (s)	15.0	15.0	14.0	15.0	15.0		14.0	20.0		20.0	20.0	
Total Split (s)	23.0	23.0	68.0	23.0	23.0		68.0	97.0		29.0	29.0	
Total Split (%)	19.2%	19.2%	56.7%	19.2%	19.2%		56.7%	80.8%		24.2%	24.2%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag			Lag				Lag			Lead	Lead	
Lead-Lag Optimize?			Yes				Yes			Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max		C-Max	C-Max	
Act Effct Green (s)	13.2	13.2	78.4	13.2	13.2		63.0	100.6		31.6	31.6	
Actuated g/C Ratio	0.11	0.11	0.65	0.11	0.11		0.52	0.84		0.26	0.26	
v/c Ratio	0.17	0.07	0.55	0.44	0.09		0.40	0.09		0.01	0.25	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	49.3	46.4	6.8	57.9	39.5		11.0	2.5		37.8	36.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.3	0.0		0.0	0.0	
Total Delay	49.3	46.4	6.9	57.9	39.5		11.3	2.5		37.8	36.1	
LOS	D	D	A	E	D		B	A		D	D	
Approach Delay		9.4			54.0			9.0			36.1	
Approach LOS		A			D			A			D	
Queue Length 50th (ft)	19	10	112	49	10		71	8		2	72	
Queue Length 95th (ft)	47	29	161	93	32		153	32		13	115	
Internal Link Dist (ft)		620			759			375			736	
Turn Bay Length (ft)	425			200			300			140		
Base Capacity (vph)	212	285	1157	208	273		1802	2890		293	922	
Starvation Cap Reductn	0	0	0	0	0		493	0		0	0	
Spillback Cap Reductn	0	0	26	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.05	0.57	0.32	0.07		0.55	0.09		0.01	0.25	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 4 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 14.3	Intersection LOS: B
Intersection Capacity Utilization 64.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	494	500	0	360
Future Volume (vph)	0	0	494	500	0	360
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			265	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	0	3274	0	0	1644
Flt Permitted						
Satd. Flow (perm)	0	0	3274	0	0	1644
Link Speed (mph)		50	50		30	
Link Distance (ft)		273	752		411	
Travel Time (s)		3.7	10.3		9.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1105	0	0	400
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	494	500	0	360
Future Vol, veh/h	0	0	494	500	0	360
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	0	0
Mvmt Flow	0	0	549	556	0	400

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	-	275
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.3
Pot Cap-1 Maneuver	-	0	0	729
Stage 1	-	0	0	-
Stage 2	-	0	0	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	-	-	729
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	15.8
HCM LOS		C

Minor Lane/Major Mvmt	WBT	SBLn1
Capacity (veh/h)	-	729
HCM Lane V/C Ratio	-	0.549
HCM Control Delay (s)	-	15.8
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	3.4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	250	63	0	228
Future Volume (vph)	0	0	250	63	0	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			200	0	0
Storage Lanes	0			1	0	1
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	0	1863	1583	0	1644
Flt Permitted						
Satd. Flow (perm)	0	0	1863	1583	0	1644
Link Speed (mph)		50	50		30	
Link Distance (ft)		567	557		601	
Travel Time (s)		7.7	7.6		13.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	278	70	0	253
Sign Control		Free	Free		Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	250	63	0	228
Future Volume (Veh/h)	0	0	250	63	0	228
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	278	70	0	253
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		567				
pX, platoon unblocked						
vC, conflicting volume	278				278	278
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	278				278	278
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	67
cM capacity (veh/h)	1285				716	766

Direction, Lane #	WB 1	WB 2	SB 1
Volume Total	278	70	253
Volume Left	0	0	0
Volume Right	0	70	253
cSH	1700	1700	766
Volume to Capacity	0.16	0.04	0.33
Queue Length 95th (ft)	0	0	36
Control Delay (s)	0.0	0.0	12.0
Lane LOS			B
Approach Delay (s)	0.0		12.0
Approach LOS			B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G:

SimTraffic Output:

Existing (2019)

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.2	0.0	0.5	0.4
Total Del/Veh (s)	21.4	14.2	11.6	16.2	17.1

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	9.9	7.6	6.2	8.7

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.1	1.2	2.0	2.3

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.7	2.6	0.0	0.6
Total Del/Veh (s)	17.0	1.2	4.5	4.6

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.4	0.0	0.1
Total Del/Veh (s)	9.3	1.6	0.9	5.6

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.8	0.0	0.0	0.1
Total Del/Veh (s)	3.1	1.0	1.5	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	10.7	0.9	0.5	1.8

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by approach

Approach	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.5	0.8

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.5	0.5

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.1
Total Del/Veh (s)	1.5	9.1	4.1

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.6	1.6

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	19.5

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.4	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.5	0.5	0.4	0.4
Total Del/Veh (s)	22.9	24.1	16.4	31.0	16.1	7.9	14.8	10.3	6.7	13.8	17.3	10.1	17.1

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.7	9.8	7.5	9.7	6.2	6.4	6.3	8.7

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Total Del/Veh (s)	8.9	14.6	2.8	4.2	0.7	1.9	2.5	2.3

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	4.2	0.4	3.8	0.0	0.0	0.6
Total Del/Veh (s)	19.9	13.9	2.0	1.7	0.9	5.1	1.7	4.6

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	3.8	0.0	0.0	0.1
Total Del/Veh (s)	9.9	2.9	2.7	1.6	1.6	1.5	0.3	5.6

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	4.1	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.7	9.4	1.5	2.1	1.0	0.3	2.1	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	3.1	0.2	0.1
Total Del/Veh (s)	11.2	3.3	0.8	1.2	2.2	0.5	1.8

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.5	0.8

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.5	0.6	0.5

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.3	0.1
Total Del/Veh (s)	1.5	9.1	4.1

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.5	1.7	1.6

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	19.5

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	270	121	140	265
Average Queue (ft)	139	52	58	137
95th Queue (ft)	234	99	107	223
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (ft)	215	80
Average Queue (ft)	107	37
95th Queue (ft)	171	61
Link Distance (ft)	912	878
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	57	67	29
Average Queue (ft)	22	6	7
95th Queue (ft)	47	36	26
Link Distance (ft)	383		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	225
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	NB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	75	15	113
Average Queue (ft)	29	1	49
95th Queue (ft)	61	9	89
Link Distance (ft)	685		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		80	225
Storage Blk Time (%)	1		
Queuing Penalty (veh)	0		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	149	37
Average Queue (ft)	70	8
95th Queue (ft)	118	29
Link Distance (ft)	916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	25	30	5
Average Queue (ft)	7	1	0
95th Queue (ft)	24	16	4
Link Distance (ft)	689		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		75	250
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 7: US-70/I-40 Connector Road & Ben Johnston Road

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	80	9	26
Average Queue (ft)	38	0	2
95th Queue (ft)	70	4	14
Link Distance (ft)	788	394	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			140
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: I-40 WB Exit Ramp & I-40 WB Service Road

Movement	NB
Directions Served	L
Maximum Queue (ft)	34
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	506
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement	EB	SB
Directions Served	T	L
Maximum Queue (ft)	17	178
Average Queue (ft)	1	61
95th Queue (ft)	9	132
Link Distance (ft)	805	590
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.4	0.0	0.2	0.2
Total Del/Veh (s)	13.1	16.1	10.7	12.5	13.0

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.0
Total Del/Veh (s)	4.1	9.1	10.7	9.0

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1
Total Del/Veh (s)	13.0	1.2	1.6	8.7

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.8	1.9	0.2	0.6
Total Del/Veh (s)	5.4	0.7	1.5	1.9

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.1
Total Del/Veh (s)	7.5	1.3	0.5	4.5

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.5	0.0	0.0	0.3
Total Del/Veh (s)	3.7	0.9	1.5	1.5

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.2	0.1
Total Del/Veh (s)	12.6	1.5	0.5	3.2

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by approach

Approach	WB	NB	All
Denied Del/Veh (s)	0.0	0.5	0.3
Total Del/Veh (s)	0.8	3.0	2.3

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.6	1.6

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.5	1.5	1.1

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.5	0.5

Total Network Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	18.9

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.4	0.4	0.4	0.0	0.0	0.0	0.3	0.2	0.3	0.2
Total Del/Veh (s)	17.5	14.4	7.0	12.5	18.4	10.3	11.1	10.9	6.1	15.1	12.5	5.9	13.0

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.0	4.0	8.6	15.3	11.0	8.7	10.6	9.0

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.1
Total Del/Veh (s)	8.8	19.4	14.1	1.9	1.0	1.5	1.9	8.7

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	4.2	0.2	3.9	0.4	0.0	0.6
Total Del/Veh (s)	5.9	10.7	1.4	0.9	0.4	2.3	0.7	1.9

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	4.2	0.0	0.0	0.1
Total Del/Veh (s)	7.5	17.1	2.3	1.2	1.6	0.8	0.4	4.5

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	0.3	4.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	5.7	17.4	1.9	1.3	0.9	0.5	2.1	1.5

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	4.1	0.2	0.1
Total Del/Veh (s)	12.7	8.8	1.3	2.6	1.9	0.5	3.2

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.5	0.3
Total Del/Veh (s)	0.8	3.0	2.3

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.8	1.9	1.6

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.5	1.5	1.1

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.7	0.5

Total Network Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	18.9

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	153	202	133	168
Average Queue (ft)	51	94	89	63
95th Queue (ft)	105	166	123	109
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (ft)	99	73
Average Queue (ft)	48	28
95th Queue (ft)	79	53
Link Distance (ft)	912	878
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	B33	NB
Directions Served	LT	R	T	L
Maximum Queue (ft)	455	230	103	24
Average Queue (ft)	85	96	3	3
95th Queue (ft)	282	215	34	17
Link Distance (ft)	383		300	
Upstream Blk Time (%)	4			
Queuing Penalty (veh)	27			
Storage Bay Dist (ft)		130		225
Storage Blk Time (%)		13		
Queuing Penalty (veh)		21		

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	52	54
Average Queue (ft)	28	17
95th Queue (ft)	43	45
Link Distance (ft)	685	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		225
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	123	24
Average Queue (ft)	58	1
95th Queue (ft)	96	8
Link Distance (ft)	916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB
Directions Served	LT
Maximum Queue (ft)	70
Average Queue (ft)	19
95th Queue (ft)	47
Link Distance (ft)	689
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 7: US-70/I-40 Connector Road & Ben Johnston Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	108	23
Average Queue (ft)	52	1
95th Queue (ft)	89	8
Link Distance (ft)	788	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: I-40 WB Exit Ramp & I-40 WB Service Road

Movement	NB
Directions Served	L
Maximum Queue (ft)	135
Average Queue (ft)	24
95th Queue (ft)	75
Link Distance (ft)	506
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement	SB
Directions Served	L
Maximum Queue (ft)	59
Average Queue (ft)	10
95th Queue (ft)	38
Link Distance (ft)	590
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 48

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.2	0.2
Total Del/Veh (s)	7.2	6.7	9.5	11.8	9.0

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	4.2	5.8	6.8	5.6

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	3.0	0.9	1.2	1.8

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.9	2.4	0.0	0.6
Total Del/Veh (s)	4.9	0.6	1.7	1.9

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.8	0.1	0.1
Total Del/Veh (s)	3.9	0.9	0.5	3.0

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.8	0.0	0.0	0.2
Total Del/Veh (s)	2.7	0.7	1.6	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.2	0.8	0.3	1.2

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by approach

Approach	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.1	0.7

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.5	0.5

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.4	1.2	0.7

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.3	0.3

Total Network Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	10.9

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.4	0.2	0.2	0.0	0.0	0.0	0.2	0.2	0.2	0.2
Total Del/Veh (s)	6.6	8.3	3.9	10.6	8.0	3.2	10.8	9.4	3.4	10.6	12.4	4.2	9.0

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.9	4.1	5.7	6.6	6.9	6.4	6.7	5.6

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.9	0.1
Total Del/Veh (s)	3.9	3.1	2.8	2.0	0.8	1.0	2.1	1.8

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	4.2	0.3	4.0	0.0	0.0	0.6
Total Del/Veh (s)	5.3	10.8	1.2	0.8	0.4	2.2	0.5	1.9

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	3.9	0.2	0.0	0.1
Total Del/Veh (s)	3.9	8.6	0.8	0.8	1.7	0.8	0.2	3.0

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	4.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	3.5	9.6	1.4	1.0	0.7	0.2	1.8	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	3.7	0.2	0.1
Total Del/Veh (s)	5.6	1.7	0.8	0.9	1.7	0.3	1.2

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.1	0.7

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.6	0.5

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.4	1.2	0.7

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.4	0.3

Total Network Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	10.9

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	100	78	107	112
Average Queue (ft)	40	35	54	57
95th Queue (ft)	79	66	93	92
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (ft)	87	52
Average Queue (ft)	48	28
95th Queue (ft)	74	48
Link Distance (ft)	912	878
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	40	58	24
Average Queue (ft)	20	6	2
95th Queue (ft)	40	33	12
Link Distance (ft)	383		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	225
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	54	42
Average Queue (ft)	23	14
95th Queue (ft)	43	39
Link Distance (ft)	685	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		225
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	61	5
Average Queue (ft)	34	0
95th Queue (ft)	51	5
Link Distance (ft)	916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB
Directions Served	LT
Maximum Queue (ft)	26
Average Queue (ft)	7
95th Queue (ft)	24
Link Distance (ft)	689
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: US-70/I-40 Connector Road & Ben Johnston Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	53	11
Average Queue (ft)	24	1
95th Queue (ft)	45	8
Link Distance (ft)	788	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: I-40 WB Exit Ramp & I-40 WB Service Road

Movement	NB
Directions Served	L
Maximum Queue (ft)	39
Average Queue (ft)	3
95th Queue (ft)	20
Link Distance (ft)	506
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement	SB
Directions Served	L
Maximum Queue (ft)	30
Average Queue (ft)	4
95th Queue (ft)	19
Link Distance (ft)	590
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Appendix H:

SimTraffic Output:

Background (2022)

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.2	0.0	0.5	0.4
Total Del/Veh (s)	23.7	15.9	12.4	17.7	18.8

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.0	0.0
Total Del/Veh (s)	13.2	7.8	5.9	10.8

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.1	1.2	2.1	2.4

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.8	2.4	0.0	0.5
Total Del/Veh (s)	28.7	1.3	5.0	5.8

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.1
Total Del/Veh (s)	9.3	1.6	0.8	5.7

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.1	0.0	0.0	0.1
Total Del/Veh (s)	3.0	1.0	1.6	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.2	0.1
Total Del/Veh (s)	10.9	1.1	0.5	1.8

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by approach

Approach	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.6	0.8

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.6	0.6

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.4	0.1
Total Del/Veh (s)	1.7	9.9	4.6

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.6	1.6

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	21.8

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.6	0.4	0.4	0.4	0.2	0.3	0.0	0.0	0.0	0.5	0.5	0.4	0.4
Total Del/Veh (s)	22.7	26.7	18.5	31.9	18.2	7.5	15.9	10.8	9.0	15.5	18.7	11.5	18.8

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
Total Del/Veh (s)	21.7	13.2	7.7	9.9	5.8	4.4	6.8	10.8

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Total Del/Veh (s)	9.3	11.5	2.5	5.3	0.8	2.1	2.7	2.4

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	4.0	0.5	3.7	0.0	0.0	0.5
Total Del/Veh (s)	32.5	39.0	2.5	1.8	1.0	5.8	1.9	5.8

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	3.8	0.0	0.0	0.1
Total Del/Veh (s)	9.8	2.1	3.0	1.6	1.6	1.3	0.3	5.7

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	4.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	6.1	9.1	1.6	1.4	1.0	0.3	2.2	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.3	0.0	0.0	3.4	0.2	0.1
Total Del/Veh (s)	11.0	8.0	0.9	1.4	1.9	0.5	1.8

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.6	0.8

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.5	0.6	0.6

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.4	0.1
Total Del/Veh (s)	1.7	9.9	4.6

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.6	1.5	1.6

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	21.8

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	293	133	127	310
Average Queue (ft)	159	55	59	153
95th Queue (ft)	257	100	104	260
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	287	94	4
Average Queue (ft)	132	39	0
95th Queue (ft)	229	68	3
Link Distance (ft)	912	878	1808
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	53	44	31
Average Queue (ft)	23	2	6
95th Queue (ft)	47	20	24
Link Distance (ft)	383		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	225
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	NB	SB
Directions Served	LT	R	L
Maximum Queue (ft)	110	4	116
Average Queue (ft)	38	0	55
95th Queue (ft)	80	3	96
Link Distance (ft)	685		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		80	225
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	131	38
Average Queue (ft)	67	7
95th Queue (ft)	109	28
Link Distance (ft)	916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	26	10	5
Average Queue (ft)	6	0	0
95th Queue (ft)	23	7	3
Link Distance (ft)	689		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		75	250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: US-70/I-40 Connector Road & Ben Johnston Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	79	22
Average Queue (ft)	36	1
95th Queue (ft)	64	11
Link Distance (ft)	788	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: I-40 WB Exit Ramp & I-40 WB Service Road

Movement	NB
Directions Served	L
Maximum Queue (ft)	34
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	506
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement	EB	SB
Directions Served	T	L
Maximum Queue (ft)	58	171
Average Queue (ft)	3	66
95th Queue (ft)	25	141
Link Distance (ft)	805	590
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.0	0.2	0.2
Total Del/Veh (s)	13.6	16.8	11.6	11.6	13.4

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	5.0	9.9	12.5	10.6

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1
Total Del/Veh (s)	27.0	1.3	1.7	18.1

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.0	2.0	0.2	0.6
Total Del/Veh (s)	5.5	0.6	1.7	2.1

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.1
Total Del/Veh (s)	7.5	1.3	0.5	4.4

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.8	0.0	0.0	0.3
Total Del/Veh (s)	3.2	0.9	1.7	1.5

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.2	0.1
Total Del/Veh (s)	17.0	1.8	0.6	4.0

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by approach

Approach	WB	NB	All
Denied Del/Veh (s)	0.0	0.6	0.4
Total Del/Veh (s)	1.4	4.5	3.4

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	6.8	6.8

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.5	1.1	0.8

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.4	0.4

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	28.5

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.2	0.2	0.2	0.2
Total Del/Veh (s)	20.4	14.7	7.7	16.5	18.8	11.8	10.7	12.0	8.8	13.9	11.5	6.6	13.4

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	13.5	4.8	9.9	10.3	12.8	10.5	12.6	10.6

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1
Total Del/Veh (s)	15.3	20.3	30.5	2.2	1.1	1.6	2.2	18.1

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	3.9	0.4	4.0	0.3	0.0	0.6
Total Del/Veh (s)	6.3	12.2	1.8	0.9	0.4	2.6	0.9	2.1

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.7	0.1	4.1	0.0	0.0	0.1
Total Del/Veh (s)	7.4	11.9	2.8	1.2	1.7	0.8	0.4	4.4

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.4	4.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	5.3	11.5	2.0	1.8	0.9	0.4	2.3	1.5

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	3.7	0.2	0.1
Total Del/Veh (s)	17.1	10.5	1.7	1.9	5.6	0.6	4.0

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.6	0.4
Total Del/Veh (s)	1.4	4.5	3.4

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.1	9.0	6.8

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.5	1.1	0.8

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.5	0.4

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	28.5

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	119	205	180	154
Average Queue (ft)	54	102	110	61
95th Queue (ft)	102	172	156	118
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	110	59	4
Average Queue (ft)	51	30	0
95th Queue (ft)	86	53	3
Link Distance (ft)	912	878	1808
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	B33	NB
Directions Served	LT	R	T	L
Maximum Queue (ft)	439	230	221	25
Average Queue (ft)	158	160	51	3
95th Queue (ft)	454	270	229	17
Link Distance (ft)	383		300	
Upstream Blk Time (%)	18		2	
Queuing Penalty (veh)	133		15	
Storage Bay Dist (ft)		130		225
Storage Blk Time (%)	0	42		
Queuing Penalty (veh)	2	74		

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	56	57
Average Queue (ft)	28	19
95th Queue (ft)	47	48
Link Distance (ft)	685	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		225
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	104	14
Average Queue (ft)	54	0
95th Queue (ft)	87	6
Link Distance (ft)	916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB	WB	NB	SB
Directions Served	LT	R	L	R
Maximum Queue (ft)	38	20	10	11
Average Queue (ft)	17	1	1	0
95th Queue (ft)	36	10	6	8
Link Distance (ft)	689			394
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		75	250	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: US-70/I-40 Connector Road & Ben Johnston Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	157	16
Average Queue (ft)	58	1
95th Queue (ft)	112	10
Link Distance (ft)	788	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: I-40 WB Exit Ramp & I-40 WB Service Road

Movement	WB	NB
Directions Served	T	L
Maximum Queue (ft)	57	187
Average Queue (ft)	6	40
95th Queue (ft)	31	120
Link Distance (ft)	429	506
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement	WB
Directions Served	R
Maximum Queue (ft)	209
Average Queue (ft)	40
95th Queue (ft)	266
Link Distance (ft)	1412
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement	SB
Directions Served	L
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	19
Link Distance (ft)	590
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 223

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.3	0.2
Total Del/Veh (s)	7.5	7.7	9.5	13.2	9.7

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	4.5	5.9	7.1	5.9

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	3.3	1.0	1.3	2.0

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.9	2.5	0.0	0.6
Total Del/Veh (s)	4.8	0.6	1.8	2.0

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.6	0.1	0.1
Total Del/Veh (s)	4.0	0.9	0.4	3.1

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.9	0.0	0.0	0.2
Total Del/Veh (s)	2.7	0.7	1.7	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.9	0.8	0.4	1.3

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by approach

Approach	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.2	0.8

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.5	0.5

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.4	1.3	0.7

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.4	0.4

Total Network Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	11.7

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.3	0.3	0.3	0.2
Total Del/Veh (s)	10.0	8.7	4.0	9.5	9.3	3.8	9.7	9.7	3.0	12.0	13.9	5.6	9.7

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.7	4.4	5.8	7.1	7.2	6.3	7.3	5.9

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.9	0.1
Total Del/Veh (s)	4.6	2.8	3.1	2.3	0.8	1.2	2.1	2.0

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	4.3	0.2	4.0	0.0	0.0	0.6
Total Del/Veh (s)	5.3	8.8	1.3	0.9	0.4	2.3	0.7	2.0

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	3.8	0.2	0.0	0.1
Total Del/Veh (s)	4.0	6.0	0.9	0.8	1.5	0.6	0.2	3.1

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	4.2	0.3	0.0	0.0	0.0	0.2
Total Del/Veh (s)	3.0	8.9	1.5	1.5	0.7	0.2	1.9	1.3

7: US-70/I-40 Connector Road & Ben Johnston Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	4.2	0.2	0.1
Total Del/Veh (s)	5.1	2.0	0.8	1.1	1.2	0.4	1.3

8: I-40 WB Exit Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.3	1.2	0.8

9: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.4	0.6	0.5

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	0.4	1.3	0.7

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.5	0.4

Total Network Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	11.7

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	95	83	114	129
Average Queue (ft)	43	40	54	67
95th Queue (ft)	77	78	96	111
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	96	67	4
Average Queue (ft)	52	28	0
95th Queue (ft)	80	50	3
Link Distance (ft)	912	878	1808
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	NB
Directions Served	LT	R	L
Maximum Queue (ft)	40	74	25
Average Queue (ft)	20	8	2
95th Queue (ft)	39	41	12
Link Distance (ft)	383		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	225
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	55	58
Average Queue (ft)	21	15
95th Queue (ft)	43	44
Link Distance (ft)	685	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		225
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	62	4
Average Queue (ft)	33	0
95th Queue (ft)	50	3
Link Distance (ft)	916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		250
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB
Directions Served	LT
Maximum Queue (ft)	25
Average Queue (ft)	6
95th Queue (ft)	22
Link Distance (ft)	689
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: US-70/I-40 Connector Road & Ben Johnston Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	49	5
Average Queue (ft)	27	0
95th Queue (ft)	44	5
Link Distance (ft)	788	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: I-40 WB Exit Ramp & I-40 WB Service Road

Movement	NB
Directions Served	L
Maximum Queue (ft)	35
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	506
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement	SB
Directions Served	L
Maximum Queue (ft)	44
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	590
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Appendix I:

SimTraffic Output:

Build-out (2022)

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.2	0.0	0.6	0.4
Total Del/Veh (s)	28.5	16.7	12.1	17.3	20.3

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	13.3	7.4	4.8	10.6

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	15.7	3.6	7.2	9.0

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.9	2.5	0.0	0.6
Total Del/Veh (s)	21.0	1.4	7.1	6.9

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.1
Total Del/Veh (s)	41.5	11.1	14.5	28.8

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	1.6	0.0	0.0	0.4
Total Del/Veh (s)	41.6	10.8	7.6	17.4

7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	3.6	0.0	0.2	0.3
Total Del/Veh (s)	9.2	52.5	18.3	17.0	18.6

8: I-40 WB Service Road & RI/RO Site Drwy Performance by approach

Approach	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0
Total Del/Veh (s)	10.2	2.4	8.9

9: I-40 WB Service Road & RI/RO Site Drwy Performance by approach

Approach	WB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0
Total Del/Veh (s)	0.8	2.1	1.2

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.6	0.3
Total Del/Veh (s)	1.3	0.8	1.1

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.8	1.8

13: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.1	1.1

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	43.6

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.4	0.4	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.5	0.6	0.6	0.4
Total Del/Veh (s)	26.3	31.4	23.4	32.5	19.5	9.0	13.7	11.4	9.2	15.1	18.2	13.3	20.3

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.9	13.3	7.3	9.5	5.0	3.4	4.8	10.6

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Total Del/Veh (s)	29.5	31.0	1.9	11.8	2.3	7.5	3.6	9.0

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	4.0	0.5	3.8	0.0	0.0	0.6
Total Del/Veh (s)	25.6	26.1	2.2	1.8	1.1	7.8	3.9	6.9

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	4.1	0.0	0.0	0.1
Total Del/Veh (s)	42.9	11.4	36.8	11.9	2.4	16.3	7.4	28.8

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.5	0.8	3.3	0.0	0.0	0.0	0.0	0.4
Total Del/Veh (s)	41.4	51.1	21.5	9.7	11.0	9.4	5.1	17.4

7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	4.0	0.2	0.3	0.0	0.0	0.0	3.7	0.2	0.2	0.3
Total Del/Veh (s)	43.0	44.3	7.5	55.5	41.0	3.4	40.9	5.1	3.1	22.3	17.3	8.9	18.6

8: I-40 WB Service Road & RI/RO Site Drwy Performance by movement

Movement	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	9.5	11.7	2.4	8.9

9: I-40 WB Service Road & RI/RO Site Drwy Performance by movement

Movement	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.6	2.0	2.1	1.2

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.6	0.3
Total Del/Veh (s)	1.2	0.8	1.1

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.8	1.8	1.8

13: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.1	1.0	1.1

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	43.6

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	375	132	138	296
Average Queue (ft)	180	55	61	160
95th Queue (ft)	316	103	107	256
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	281	74	8
Average Queue (ft)	134	38	0
95th Queue (ft)	231	62	4
Link Distance (ft)	912	878	1801
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	NB	NB	SB
Directions Served	L	T	L	T	T
Maximum Queue (ft)	79	120	35	41	166
Average Queue (ft)	30	47	9	12	93
95th Queue (ft)	65	94	26	37	145
Link Distance (ft)		512		601	1801
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	280		225		
Storage Blk Time (%)					0
Queuing Penalty (veh)					0

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	88	132
Average Queue (ft)	34	67
95th Queue (ft)	70	118
Link Distance (ft)	685	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		225
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	LTR	T	R	L	T
Maximum Queue (ft)	355	356	113	18	301	84
Average Queue (ft)	207	229	41	1	132	24
95th Queue (ft)	302	317	91	13	248	67
Link Distance (ft)		1002	345			664
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	400			40	400	
Storage Blk Time (%)	0	0	10			
Queuing Penalty (veh)	0	0	1			

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	T	R	R	L	T	T	R
Maximum Queue (ft)	225	261	148	104	230	388	225	151
Average Queue (ft)	130	181	64	29	46	41	74	36
95th Queue (ft)	224	246	118	73	135	175	165	112
Link Distance (ft)		1038			664	664	349	349
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	450		450	450				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	TR	L	T	TR
Maximum Queue (ft)	48	35	137	146	37	200	199	105	133	28	185	157
Average Queue (ft)	11	5	66	74	9	89	111	20	38	2	81	64
95th Queue (ft)	36	24	114	126	31	173	180	65	88	13	160	130
Link Distance (ft)		618	618		782			349	349		771	771
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	425			200		300	300			140		
Storage Blk Time (%)											2	
Queuing Penalty (veh)											0	

Intersection: 8: I-40 WB Service Road & RI/RO Site Drwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	24
Average Queue (ft)	1
95th Queue (ft)	17
Link Distance (ft)	387
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-40 WB Service Road & RI/RO Site Drwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 13: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 2

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.0	0.2	0.2
Total Del/Veh (s)	16.6	18.5	12.8	11.1	14.6

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	4.8	12.8	8.8	8.1

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	13.9	4.8	5.9	11.2

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.2	1.9	0.1	0.6
Total Del/Veh (s)	5.6	0.6	2.6	2.7

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.0
Total Del/Veh (s)	42.5	9.4	16.3	30.0

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.1	0.0	0.0	0.9
Total Del/Veh (s)	40.5	15.2	11.7	25.0

7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	3.7	0.0	0.2	0.4
Total Del/Veh (s)	9.4	52.2	14.0	27.9	19.3

8: I-40 WB Service Road & RI/RO Site Drwy Performance by approach

Approach	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0
Total Del/Veh (s)	11.6	3.3	10.4

9: I-40 WB Service Road & RI/RO Site Drwy Performance by approach

Approach	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.0
Total Del/Veh (s)	1.5	6.6	2.4

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.4
Total Del/Veh (s)	0.4	0.5	0.5

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	0.8	0.8

13: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	2.0	2.0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	49.9

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.2	0.2	0.2	0.2
Total Del/Veh (s)	24.3	17.8	9.5	21.8	20.7	12.8	12.2	13.1	8.2	13.4	10.9	7.1	14.6

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.1	4.7	12.5	16.9	9.2	6.3	8.6	8.1

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Total Del/Veh (s)	37.1	31.0	3.4	7.5	4.5	6.7	2.5	11.2

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	3.9	0.3	4.0	0.3	0.0	0.6
Total Del/Veh (s)	6.8	11.7	1.5	0.8	0.3	3.4	1.7	2.7

5: US-70/I-40 Connector Road & I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	4.4	0.0	0.0	0.0
Total Del/Veh (s)	42.3	53.0	43.3	10.1	2.0	17.8	13.0	30.0

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.1	1.8	3.1	0.0	0.0	0.0	0.0	0.9
Total Del/Veh (s)	34.0	47.0	20.1	30.5	10.8	15.2	5.6	25.0

7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	3.9	0.3	0.9	0.0	0.0	0.0	3.4	0.2	0.2	0.4
Total Del/Veh (s)	42.9	36.3	7.4	53.2	48.1	9.9	23.7	4.5	1.4	15.7	28.9	10.0	19.3

8: I-40 WB Service Road & RI/RO Site Drwy Performance by movement

Movement	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	11.4	12.1	3.3	10.4

9: I-40 WB Service Road & RI/RO Site Drwy Performance by movement

Movement	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.0
Total Del/Veh (s)	1.5	2.2	6.6	2.4

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.5	0.4
Total Del/Veh (s)	0.4	0.5	0.5

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.4	1.0	0.8

13: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.7	2.2	2.0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	49.9

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	169	230	224	145
Average Queue (ft)	67	106	127	60
95th Queue (ft)	127	185	194	111
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	108	74	4
Average Queue (ft)	51	31	0
95th Queue (ft)	85	59	3
Link Distance (ft)	912	878	1801
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	WB	NB	NB	SB
Directions Served	L	T	R	L	T	T
Maximum Queue (ft)	163	116	87	21	62	107
Average Queue (ft)	90	52	5	4	19	46
95th Queue (ft)	148	95	56	17	52	89
Link Distance (ft)		512	512		601	1801
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	280			225		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	75	55
Average Queue (ft)	27	18
95th Queue (ft)	52	45
Link Distance (ft)	685	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		225
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road

Movement	EB	EB	NB	SB	SB
Directions Served	L	LTR	T	L	T
Maximum Queue (ft)	351	364	53	330	154
Average Queue (ft)	202	224	15	171	57
95th Queue (ft)	300	313	45	312	128
Link Distance (ft)		1002	346		664
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	400			400	
Storage Blk Time (%)	0	0	2	0	
Queuing Penalty (veh)	0	1	0	0	

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	T	R	R	L	T	T	R
Maximum Queue (ft)	424	477	203	148	255	272	300	169
Average Queue (ft)	274	323	100	25	104	39	141	46
95th Queue (ft)	382	429	167	79	206	162	253	127
Link Distance (ft)		1038			664	664	349	349
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	450		450	450				
Storage Blk Time (%)	0	0						
Queuing Penalty (veh)	0	4						

Intersection: 7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	TR	L	T	TR
Maximum Queue (ft)	53	44	178	195	38	202	198	137	68	24	203	159
Average Queue (ft)	16	9	76	121	9	112	129	28	18	2	94	60
95th Queue (ft)	44	32	139	187	31	186	184	78	48	11	173	119
Link Distance (ft)		618	618		782			349	349		771	771
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	425			200		300	300			140		
Storage Blk Time (%)				0							4	
Queuing Penalty (veh)				0							0	

Intersection: 8: I-40 WB Service Road & RI/RO Site Drwy

Movement	WB	WB	SB
Directions Served	T	TR	R
Maximum Queue (ft)	20	3	128
Average Queue (ft)	1	0	4
95th Queue (ft)	10	2	48
Link Distance (ft)	694	694	387
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: I-40 WB Service Road & RI/RO Site Drwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	145
Average Queue (ft)	18
95th Queue (ft)	118
Link Distance (ft)	571
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 13: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 5

1: Efland-Cedar Grove Road & US-70 Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.2	0.2
Total Del/Veh (s)	8.3	8.1	9.6	12.2	9.8

2: Mt. Willing Road & Forrest Avenue Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0
Total Del/Veh (s)	4.7	6.4	5.2	5.1

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	15.6	4.8	6.4	11.1

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.9	2.4	0.0	0.5
Total Del/Veh (s)	5.4	0.6	3.8	3.4

5: US-70/I-40 Connector Road & I-40 EB Service Road/I-40 EB Entrance Ramp Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.0
Total Del/Veh (s)	48.8	10.7	14.7	33.4

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.7
Total Del/Veh (s)	44.3	13.6	11.7	23.3

7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	3.2	0.0	0.2	0.2
Total Del/Veh (s)	9.9	60.8	17.9	37.0	19.3

8: I-40 WB Service Road & East RI/RO Site Drwy Performance by approach

Approach	WB	SB	All
Denied Del/Veh (s)	0.0	0.3	0.1
Total Del/Veh (s)	10.0	3.7	8.3

9: I-40 WB Service Road & West RI/RO Site Drwy Performance by approach

Approach	WB	SB	All
Denied Del/Veh (s)	0.0	0.2	0.1
Total Del/Veh (s)	1.3	2.5	1.8

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by approach

Approach	EB	SB	All
Denied Del/Veh (s)	0.0	0.6	0.4
Total Del/Veh (s)	0.5	0.6	0.6

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by approach

Approach	EB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.1	1.1

13: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by approach

Approach	WB	All
Denied Del/Veh (s)	0.0	0.0
Total Del/Veh (s)	1.4	1.4

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	46.8

1: Efland-Cedar Grove Road & US-70 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.2	0.2	0.3	0.0	0.0	0.0	0.3	0.2	0.2	0.2
Total Del/Veh (s)	10.0	9.8	3.9	9.6	9.5	4.3	10.4	9.6	6.0	11.6	12.5	7.3	9.8

2: Mt. Willing Road & Forrest Avenue Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.3	4.6	6.1	8.9	5.4	4.5	5.0	5.1

3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.1
Total Del/Veh (s)	31.5	27.1	2.6	5.5	4.8	7.0	2.5	11.1

4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.2	4.1	0.3	3.9	0.0	0.0	0.5
Total Del/Veh (s)	6.0	10.3	1.4	0.9	0.4	4.1	2.4	3.4

5: US-70/I-40 Connector Road & I-40 EB Service Road/I-40 EB Entrance Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	4.2	0.0	0.0	0.0
Total Del/Veh (s)	48.8	54.7	39.3	11.6	1.9	15.1	9.0	33.4

6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.0	1.4	3.2	0.0	0.0	0.0	0.0	0.7
Total Del/Veh (s)	42.5	57.2	21.4	23.2	9.2	14.6	3.3	23.3

7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	4.1	0.3	0.2	0.0	0.0	0.0	4.2	0.2	0.1	0.2
Total Del/Veh (s)	54.4	43.5	7.6	66.7	51.3	9.1	22.5	4.7	1.9	35.7	39.9	15.4	19.3

8: I-40 WB Service Road & East RI/RO Site Drwy Performance by movement

Movement	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.1
Total Del/Veh (s)	8.6	11.5	3.7	8.3

9: I-40 WB Service Road & West RI/RO Site Drwy Performance by movement

Movement	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1
Total Del/Veh (s)	1.1	2.2	2.5	1.8

10: I-40 EB Service Road & I-40 EB Exit Ramp Performance by movement

Movement	EBT	SBL	All
Denied Del/Veh (s)	0.0	0.6	0.4
Total Del/Veh (s)	0.5	0.6	0.6

11: I-40 EB Service Road & I-40 EB Entrance Ramp Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.6	1.3	1.1

13: I-40 WB Entrance Ramp & I-40 WB Service Road Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.4	1.3	1.4

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	46.8

Intersection: 1: Efland-Cedar Grove Road & US-70

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	119	99	104	134
Average Queue (ft)	45	39	59	66
95th Queue (ft)	85	75	95	109
Link Distance (ft)	835	931	388	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Mt. Willing Road & Forrest Avenue

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	109	57	4
Average Queue (ft)	53	27	0
95th Queue (ft)	83	52	3
Link Distance (ft)	912	878	1801
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Mt. Willing Road & I-40 WB Entrance Ramp/I-40 WB Service Road

Movement	WB	WB	NB	NB	SB
Directions Served	L	T	L	T	T
Maximum Queue (ft)	80	167	26	38	123
Average Queue (ft)	23	77	2	14	62
95th Queue (ft)	56	136	14	38	108
Link Distance (ft)		512		601	1801
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	280		225		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Mt. Willing Road & I-40 EB Exit Ramp/I-40 EB Service Road

Movement	EB	SB
Directions Served	LT	L
Maximum Queue (ft)	56	64
Average Queue (ft)	22	19
95th Queue (ft)	45	50
Link Distance (ft)	685	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		225
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: US-70/I-40 Connector Road & I-40 EB Service Road/I-40 EB Entrance Ramp

Movement	EB	EB	NB	SB	SB
Directions Served	L	LTR	T	L	T
Maximum Queue (ft)	360	390	70	338	60
Average Queue (ft)	248	267	14	184	11
95th Queue (ft)	339	353	46	296	42
Link Distance (ft)		1002	346		664
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	400			400	
Storage Blk Time (%)		0	2		
Queuing Penalty (veh)		1	0		

Intersection: 6: US-70/I-40 Connector Road & I-40 WB Service Road/I-40 WB Exit Ramp

Movement	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	LT	T	R	R	L	T	T	R
Maximum Queue (ft)	351	377	203	113	304	200	349	161
Average Queue (ft)	202	246	113	21	131	17	173	17
95th Queue (ft)	306	339	184	73	249	98	296	83
Link Distance (ft)		1038			664	664	349	349
Upstream Blk Time (%)							0	0
Queuing Penalty (veh)							1	0
Storage Bay Dist (ft)	450		450	450				
Storage Blk Time (%)	0	0						
Queuing Penalty (veh)	0	1						

Intersection: 7: US-70/I-40 Connector Road & Site Driveway/Ben Johnston Road

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	TR	L	T	TR
Maximum Queue (ft)	74	44	212	129	59	249	262	49	75	26	196	96
Average Queue (ft)	19	10	108	52	12	133	158	10	35	2	93	42
95th Queue (ft)	55	37	183	111	40	208	226	35	70	14	164	81
Link Distance (ft)		618	618		782			349	349		771	771
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	425			200		300	300			140		
Storage Blk Time (%)						0	0				2	
Queuing Penalty (veh)						0	0				0	

Intersection: 8: I-40 WB Service Road & East RI/RO Site Drwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	96
Average Queue (ft)	5
95th Queue (ft)	53
Link Distance (ft)	387
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: I-40 WB Service Road & West RI/RO Site Drwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	27
Average Queue (ft)	1
95th Queue (ft)	19
Link Distance (ft)	571
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: I-40 EB Service Road & I-40 EB Exit Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 11: I-40 EB Service Road & I-40 EB Entrance Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 13: I-40 WB Entrance Ramp & I-40 WB Service Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 3

Appendix J:
HCS Weaving Analysis Output:
Build-out (2022)

HCS7 Freeway Weaving Report

Project Information

Analyst	Kimley-Horn	Date	4/8/2020
Agency		Analysis Year	2022
Jurisdiction	Efland, NC	Time Period Analyzed	Build AM
Project Description	West Orange Site: I-40 Eastbound Service Road	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Highway/CD Roadway
Segment Length (L_S), ft	705	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Mostly Unfamiliar	Final Speed Adjustment Factor (SAF)	0.913
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.898
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	0	791	0	714
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.966	0.966	0.969
Flow Rate (v_i), pc/h	0	910	0	819
Weaving Flow Rate (v_W), pc/h	1729	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	0	Density-Based Capacity (c_{IWL}), pc/h/ln		1165
Total Flow Rate (v), pc/h	1729	Demand Flow-Based Capacity (c_{IW}), pc/h		2400
Volume Ratio (VR)	1.000	Weaving Segment Capacity (c_W), veh/h		2254
Minimum Lane Change Rate (LC_{MIN}), lc/h	1729	Adjusted Weaving Area Capacity, pc/h		2092
Maximum Weaving Length (L_{MAX}), ft	14232	Volume-to-Capacity Ratio (v/c)		0.83

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	0	Average Weaving Speed (S_W), mi/h	35.9
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	29.0
Weaving Lane Change Rate (LC_W), lc/h	1760	Average Speed (S), mi/h	35.9
Weaving Lane Change Rate (LC_{All}), lc/h	1760	Density (D), pc/mi/ln	24.1
Weaving Intensity Factor (W)	0.465	Level of Service (LOS)	C

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HCS7 Freeway Weaving Report

Project Information

Analyst	Kimley-Horn	Date	4/8/2020
Agency		Analysis Year	2022
Jurisdiction	Efland, NC	Time Period Analyzed	Build PM
Project Description	West Orange Site: I-40 Eastbound Service Road	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Highway/CD Roadway
Segment Length (L_S), ft	705	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Mostly Unfamiliar	Final Speed Adjustment Factor (SAF)	0.913
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.898
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	0	221	47	696
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.966	0.966	0.969
Flow Rate (v_i), pc/h	0	254	54	798
Weaving Flow Rate (v_W), pc/h	1052	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	54	Density-Based Capacity (c_{IWL}), pc/h/ln		1217
Total Flow Rate (v), pc/h	1106	Demand Flow-Based Capacity (c_{IW}), pc/h		2524
Volume Ratio (VR)	0.951	Weaving Segment Capacity (c_W), veh/h		2357
Minimum Lane Change Rate (LC_{MIN}), lc/h	1052	Adjusted Weaving Area Capacity, pc/h		2187
Maximum Weaving Length (L_{MAX}), ft	13556	Volume-to-Capacity Ratio (v/c)		0.51

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	0	Average Weaving Speed (S_W), mi/h	38.2
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	8	Average Non-Weaving Speed (S_{NW}), mi/h	35.4
Weaving Lane Change Rate (LC_W), lc/h	1083	Average Speed (S), mi/h	38.1
Weaving Lane Change Rate (LC_{All}), lc/h	1091	Density (D), pc/mi/ln	14.5
Weaving Intensity Factor (W)	0.319	Level of Service (LOS)	B

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HCS7 Freeway Weaving Report

Project Information

Analyst	Kimley-Horn	Date	4/8/2020
Agency		Analysis Year	2022
Jurisdiction	Efland, NC	Time Period Analyzed	Build Saturday
Project Description	West Orange Site: I-40 Eastbound Service Road	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Highway/CD Roadway
Segment Length (L_S), ft	705	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	Mostly Unfamiliar	Final Speed Adjustment Factor (SAF)	0.913
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.898
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	0	292	38	792
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.966	0.966	0.969
Flow Rate (v_i), pc/h	0	336	44	908
Weaving Flow Rate (v_W), pc/h	1244	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	44	Density-Based Capacity (c_{IWL}), pc/h/ln		1201
Total Flow Rate (v), pc/h	1288	Demand Flow-Based Capacity (c_{IW}), pc/h		2484
Volume Ratio (VR)	0.966	Weaving Segment Capacity (c_W), veh/h		2325
Minimum Lane Change Rate (LC_{MIN}), lc/h	1244	Adjusted Weaving Area Capacity, pc/h		2157
Maximum Weaving Length (L_{MAX}), ft	13762	Volume-to-Capacity Ratio (v/c)		0.60

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	0	Average Weaving Speed (S_W), mi/h	37.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	6	Average Non-Weaving Speed (S_{NW}), mi/h	33.6
Weaving Lane Change Rate (LC_W), lc/h	1275	Average Speed (S), mi/h	37.4
Weaving Lane Change Rate (LC_{All}), lc/h	1281	Density (D), pc/mi/ln	17.2
Weaving Intensity Factor (W)	0.362	Level of Service (LOS)	B

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HCS7 Freeway Weaving Report

Project Information

Analyst	Kimley-Horn	Date	4/8/2020
Agency		Analysis Year	2022
Jurisdiction	Efland, NC	Time Period Analyzed	Build AM
Project Description	West Orange Site: I-40 Westbound Service Road	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Highway/CD Roadway
Segment Length (L_S), ft	1075	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Unfamiliar	Final Speed Adjustment Factor (SAF)	0.863
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.852
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	298	172	0	244
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.964	0.964	0.969
Flow Rate (v_i), pc/h	338	198	0	280
Weaving Flow Rate (v_W), pc/h	478	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	338	Density-Based Capacity (c_{IWL}), pc/h/ln		1605
Total Flow Rate (v), pc/h	816	Demand Flow-Based Capacity (c_{IW}), pc/h		4096
Volume Ratio (VR)	0.586	Weaving Segment Capacity (c_W), veh/h		3121
Minimum Lane Change Rate (LC_{MIN}), lc/h	478	Adjusted Weaving Area Capacity, pc/h		2735
Maximum Weaving Length (L_{MAX}), ft	8849	Volume-to-Capacity Ratio (v/c)		0.30

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	0	Average Weaving Speed (S_W), mi/h	39.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	267	Average Non-Weaving Speed (S_{NW}), mi/h	37.8
Weaving Lane Change Rate (LC_W), lc/h	521	Average Speed (S), mi/h	38.5
Weaving Lane Change Rate (LC_{All}), lc/h	788	Density (D), pc/mi/ln	10.6
Weaving Intensity Factor (W)	0.177	Level of Service (LOS)	A

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HCS7 Freeway Weaving Report

Project Information

Analyst	Kimley-Horn	Date	4/8/2020
Agency		Analysis Year	2022
Jurisdiction	Efland, NC	Time Period Analyzed	Build PM
Project Description	West Orange Site: I-40 Westbound Service Road	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Highway/CD Roadway
Segment Length (L_S), ft	1075	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Unfamiliar	Final Speed Adjustment Factor (SAF)	0.863
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.852
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	278	244	0	793
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.964	0.964	0.969
Flow Rate (v_i), pc/h	315	281	0	909
Weaving Flow Rate (v_W), pc/h	1190	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	315	Density-Based Capacity (c_{IWL}), pc/h/ln		1409
Total Flow Rate (v), pc/h	1505	Demand Flow-Based Capacity (c_{IW}), pc/h		3034
Volume Ratio (VR)	0.791	Weaving Segment Capacity (c_W), veh/h		2734
Minimum Lane Change Rate (LC_{MIN}), lc/h	1190	Adjusted Weaving Area Capacity, pc/h		2400
Maximum Weaving Length (L_{MAX}), ft	11421	Volume-to-Capacity Ratio (v/c)		0.63

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	0	Average Weaving Speed (S_W), mi/h	36.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	262	Average Non-Weaving Speed (S_{NW}), mi/h	31.0
Weaving Lane Change Rate (LC_W), lc/h	1233	Average Speed (S), mi/h	35.4
Weaving Lane Change Rate (LC_{All}), lc/h	1495	Density (D), pc/mi/ln	21.3
Weaving Intensity Factor (W)	0.293	Level of Service (LOS)	B

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HCS7 Freeway Weaving Report

Project Information

Analyst	Kimley-Horn	Date	11/20/2019
Agency		Analysis Year	2022
Jurisdiction	Efland, NC	Time Period Analyzed	Build Saturday
Project Description	West Orange Site: I-40 Westbound Service Road	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Highway/CD Roadway
Segment Length (L_S), ft	1075	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Unfamiliar	Final Speed Adjustment Factor (SAF)	0.863
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	0.852
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	188	360	0	313
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.964	0.964	0.973
Flow Rate (v_i), pc/h	213	415	0	357
Weaving Flow Rate (v_W), pc/h	772	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	213	Density-Based Capacity (c_{IWL}), pc/h/ln		1415
Total Flow Rate (v), pc/h	985	Demand Flow-Based Capacity (c_{IW}), pc/h		3061
Volume Ratio (VR)	0.784	Weaving Segment Capacity (c_W), veh/h		2747
Minimum Lane Change Rate (LC_{MIN}), lc/h	772	Adjusted Weaving Area Capacity, pc/h		2411
Maximum Weaving Length (L_{MAX}), ft	11330	Volume-to-Capacity Ratio (v/c)		0.41

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	0	Average Weaving Speed (S_W), mi/h	38.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	241	Average Non-Weaving Speed (S_{NW}), mi/h	35.3
Weaving Lane Change Rate (LC_W), lc/h	815	Average Speed (S), mi/h	37.5
Weaving Lane Change Rate (LC_{All}), lc/h	1056	Density (D), pc/mi/ln	13.1
Weaving Intensity Factor (W)	0.223	Level of Service (LOS)	B

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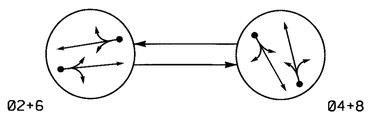
Appendix K:

Signal Plans

PROJECT REFERENCE NO.	SHEET NO.
POR	SIG.1

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

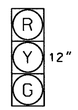
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE 02+6	PHASE 04+8	FLASH
21, 22	G	R	Y
41, 42	R	G	R
61, 62	G	R	Y
81, 82	R	G	R

SIGNAL FACE I.D.

All Heads L.E.D.



21, 22
41, 42
61, 62
81, 82

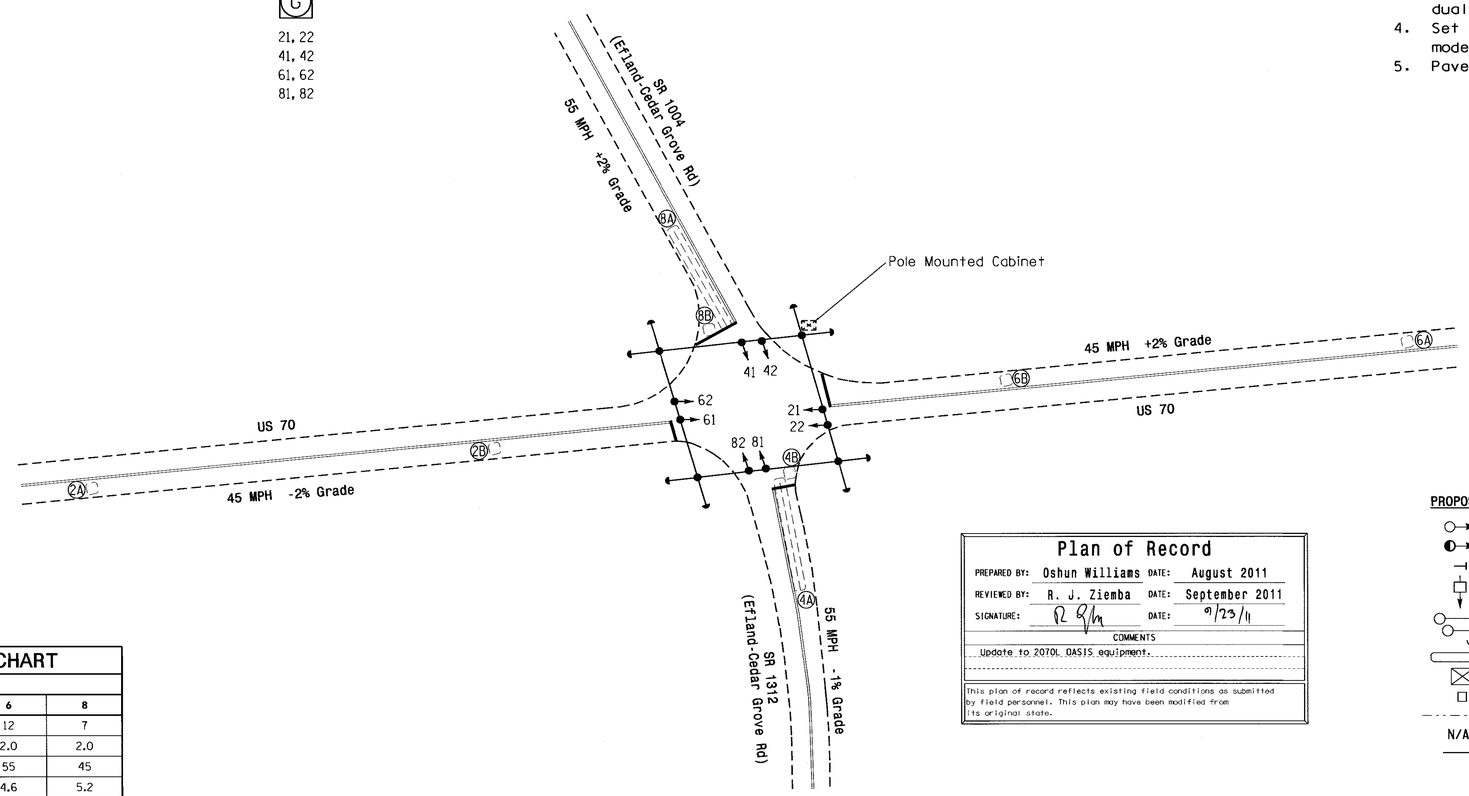
OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A	6X6	300	EXIST	-	2	Y	Y	-	1.8	-	-	-
2B	6X6	90	EXIST	-	2	Y	Y	-	-	-	-	-
4A	6X60	+5	2-4-2	-	4	Y	Y	-	-	5	-	-
4B	6X6	+10	EXIST	-	4	Y	Y	-	-	15	-	-
6A	6X6	300	EXIST	-	6	Y	Y	-	1.8	-	-	-
6B	6X6	90	EXIST	-	6	Y	Y	-	-	-	-	-
8A	6X60	0	2-4-2	-	8	Y	Y	-	-	5	-	-
8B	6X6	+5	EXIST	-	8	Y	Y	-	-	15	-	-

2 Phase
Fully Actauted
(Isolated)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Program phase 4 and phase 8 for dual entry.
4. Set all detector units to presence mode.
5. Pavement markings are existing.



Plan of Record

PREPARED BY:	Oshun Williams	DATE:	August 2011
REVIEWED BY:	R. J. Ziemba	DATE:	September 2011
SIGNATURE:	R J Z	DATE:	9/23/11

COMMENTS

Update to 2070L OASIS equipment.

This plan of record reflects existing field conditions as submitted by field personnel. This plan may have been modified from its original state.

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	

OASIS 2070L TIMING CHART

FEATURE	PHASE 2	PHASE 4	PHASE 6	PHASE 8
Min Green 1 *	12	7	12	7
Extension 1 *	2.0	2.0	2.0	2.0
Max Green 1 *	55	45	55	45
Yellow Clearance	4.6	5.2	4.6	5.2
Red Clearance	1.1	1.0	1.1	1.0
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	-	-	-
Max Variable Initial *	-	-	-	-
Time Before Reduction *	-	-	-	-
Time To Reduce *	-	-	-	-
Minimum Gap	-	-	-	-
Recall Mode	MIN RECALL	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	YELLOW	-
Dual Entry	-	ON	-	ON
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

Plan of Record

Prepared in the Offices of:
Transportation Mobility and Safety Division
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

SCALE 0 40 1'=40"

US 70 at SR 1004 (Efland-Cedar Grove Rd.) /SR 1372 (Ceder Grove Rd.)

Division 7 Orange County Hillsborough

PLAN DATE:	June 1998	REVIEWED BY:	Courtney Krause
PREPARED BY:	Larry Blount	REVIEWED BY:	W. W. Oldham

REVISIONS	INIT.	DATE

Not a certified document. This document originally issued and sealed by Richard E.Mullinax PE. #22027, on 07-20-1998. This document shall not be considered a certified document.

SIG. INVENTORY NO. 07-1686

23-SEP-2011 13:16
S:\ITS&SUPPORT\Signals\Signal Design Section\Central Region\Div 7\PORs\07-1686\07-1686_sig_por_20110923.dgn
rziemba