MARGRAVES RESIDENTIAL DEVELOPMENT

Traffic Impact Analysis

May 2017

Updated version: February 2017, April 2017

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EXECUTIVE SUMMARY

This report documents a traffic impact analysis (TIA) performed for the proposed single family Margraves Residential development. The development is located between Greens Prairie Road and Arrington Road in the City of College Station, Texas. The development is anticipated to include approximately 1,480 single family dwelling units and is anticipated to be completed by 2027. Access to the site will be provided along both Greens Prairie Road and Arrington Road.

Traffic was evaluated for six (6) scenarios in which the AM and PM peak hour level of service analyses were performed. The Interim Scenario was analyzed to determine at what point in the development is it necessary to provide a second access point if access is provided first to Arrington Road or Greens Prairie Road. Below is a Scenario Analysis Table that outlines the roadway conditions, development assumptions, and traffic volumes for each scenario.

Scenario Analysis Summary Table

Scenario	Roadway Conditions	Development Assumptions	Traffic Volumes
Existing (2017)	Existing	Existing	Existing
Background (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018)	Existing + The Ranch Development + Watermark Development - Mesa Verde Reduction	Existing + 10 years of growth at 2% per year (5% on William D. Fitch), + The Ranch Development + Watermark Development - Mesa Verde Reduction
Build-out (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018)	Existing + Background + Build-Out Site Traffic	Existing + Background + Build-Out Site Traffic
Mitigated Build-out (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) and EBR + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018) + Signal at Castlegate & Greens Prairie + Additional WB lane at S Oaks	Existing + Background + Build-Out Site Traffic	Existing + Background + Build-Out Site Traffic
Mitigated w/ Arrington Median Build-out (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) and EBR + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018) + Signal at Castlegate & Greens Prairie + Median along Arrington @ S Oaks	Existing + Background + Build-Out Site Traffic	Existing + Background + Build-Out Site Traffic + Redistributed Traffic due to Median
Interim Scenario Site Access (~2020)	Existing	Existing + Background + 628 Homes	Existing + Background + 628 Homes

TRIP GENERATION

The zoning requested for the proposed single-family development is Restricted Suburban (RS). The proposed 369.90-acre development is proposed to include a maximum of 1,480 dwelling units (4 units per acre). The requested zoning of RS is consistent with the currently adopted Future Land Use Plan of College Station. Utilizing this intensity, the analysis carried out is the most conservative approach for the site since the holding capacity of the site is anticipated to be less due to required detention, roadways, and parks. The current concept shows under 1,000 overall units.

The proposed development is expected to generate approximately 14,090 trips per day. During the AM peak hour, 278 inbound trips and 832 outbound trips are anticipated. For the PM peak hour, 932 inbound trips and 548 outbound trips are anticipated.

RECOMMENDATIONS

Based upon the findings of the TIA carried out for the area, the following recommendations have been made. **Exhibit A** provides a summary of the recommended improvements based on the findings of the TIA.

EXISTING ANALYSIS

Intersection Capacity Analysis

- ***Greens Prairie Road & Arrington Road*** – The eastbound left-turn lane currently operates at LOS F in the AM and PM peak hours. The westbound approach currently operates at LOS F during the PM peak hour.

  Recommendation – Intersection improvements are under design for the intersection of Greens Prairie Road & Arrington Road. These intersection improvements include signalization, a free southbound right-turn from Arrington Road to Greens Prairie Road, and the westbound approach being widened to a two-lane approach (dedicated WBL and shared WBTR).

  Responsible Party – City - Anticipated 2017. This is part of the 2015 Bond Election.

- ***Greens Prairie Road & Castlegate Drive*** – The southbound approach is currently operating at LOS F during the AM peak hour.

  Recommendation – Greens Prairie Road is recommended to be widened to a four-lane divided cross section.

  Responsible Party – City - Anticipated 2020. This is part of the 2015 Bond Election.

Thoroughfare Capacity Analysis

- *Greens Prairie Road:* The eastbound AM peak hour and westbound PM peak hour are currently operating with tolerable traffic conditions.

  Recommendation - Greens Prairie Road is recommended to be widened to a four-lane divided cross section.

  Responsible Party – City - Anticipated 2020. This is part of the 2015 Bond Election.

- *Arrington Road:* Arrington Road is currently operating with an acceptable traffic capacity for the AM and PM peak hours based on existing volumes. The capacity of the roadway as a major collector is not a concern. *However, the existing condition of the roadway is recommended to be improved to allow the facility to operate as intended*.

  Recommendation – Improve the condition of Arrington Road

  Responsible Party – County with Developer ROW and Utility assistance - Anticipated 2018

BACKGROUND ANALYSIS

Assumptions

For the Background Analysis, the following roadway modifications were assumed to be in place:

- Traffic signal at the intersection of Greens Prairie Road & Arrington Road;
- Southbound free right-turn lane at Greens Prairie Road & Arrington Road;
- Widening of Greens Prairie Road from two-lane to a four-lane divided section. Median Openings and left-turn lanes were assumed at median cuts at Castlegate Drive, WS Phillips Parkway, and the New Minor Collector along Greens Prairie.
- Extension of Mesa Verde to SH 6 and Extension of Cherokee to Indian Lakes

Intersection Capacity Analysis

All signalized intersections and stop controlled approaches are anticipated to operate at acceptable levels of service during the Background Analysis.

Thoroughfare Capacity Analysis

Both Greens Prairie Road and Arrington Road are projected to operate with acceptable traffic conditions when considering Background Analysis traffic volumes.

Recommendation: Arrington Road benefits from the Mesa Verde extension to SH 6. It is recommended that the extension be in place prior to the Margraves development connecting to Arrington Road.

BUILD-OUT ANALYSIS

Development Assumptions

The Build-out of the development will include 1,480 dwelling units. Two site access points are planned along Greens Prairie Road and one is planned along Arrington Road.

Intersection Capacity Analysis

- ***Greens Prairie Road & Arrington Road*** – The intersection operates at LOS E during the AM peak hour and has a projected eastbound left-turn volume of 813 vehicles during the AM peak hour.

  Recommendation – The eastbound approach is recommended to be striped with a dedicated left-turn lane and shared left/through/right turn lane.

  Responsible Party – City and Development Intersection Peak Volumes: 50% Existing; 39% Development; 11% Background)

- ***Greens Prairie Road & Castlegate Drive*** – The southbound left-turn is anticipated to operate at LOS F in both peak hours and the northbound left-turn is anticipated to operate at LOS F in the PM peak hour.

  Recommendation – The intersection should be monitored for signalization. The existing southbound left-turn traffic from Castlegate Drive to Greens Prairie Road is 218 vehicles in the AM peak and 106 vehicles in the PM peak. By the time Greens Prairie is widened (2020) the intersections of Castlegate Drive is anticipated to meet signal warrants based on 2% growth along Greens Prairie Road. It is anticipated that the northbound approach (Margraves Development) will not meet signal warrants until the development is completed with multiple phases. For the northbound approach (Margraves) the intersection is anticipated to meet peak hour signal warrants at 913 dwelling units on site. The northbound approach should be built with two lanes.

  Responsible Party – City - Anticipated 2020. This is part of the 2015 Bond Election. Development as the minor collector is built.

- ***Arrington Road & S Oaks Drive*** – The intersection is projected to operate at LOS F in the PM peak hour in the westbound approach.

  Recommendation – Construct a two-lane westbound approach (dedicated left and right-turn) or when Arrington Road is improved construct a raised median which prevents the westbound left-turn movement. This raised median will discourage traffic from exiting SH 6 and using South Oaks to turn left onto Arrington.

  Responsible Party – County and Development

- ***Arrington Rd (EB) and William D.* Fitch Pkwy** – The eastbound approach at the intersection is anticipated to operate at LOS E or worse in both peak hours. Note the intersection as a whole operates at an acceptable level of service.

  Recommendation – Consideration for the existing shoulder to be striped to provide a dedicated eastbound right-turn lane.

  Responsible Party – City and Development

Thoroughfare Capacity Analysis

- *Greens Prairie Road:* Greens Prairie Road is anticipated to operate with an acceptable overall traffic condition through Build-out of the proposed development.

- *Arrington Road:* Arrington Road is anticipated to operate with an acceptable overall traffic condition during the AM and PM peak hours.

MITIGATED BUILD-OUT ANALYSIS

Assumptions

For the Mitigated Build-out Analysis, the following roadway modifications were assumed to be in place in addition to those outlined during the Background Analysis:

- Traffic signal at the intersection of Greens Prairie Road & Castlegate Drive
- Stripe the existing shoulder on the eastbound approach of the Greens Prairie Road & Arrington Road intersection to provide a dedicated eastbound right-turn lane
- Provide an additional westbound lane at the Arrington Road & South Oaks Drive intersection

Intersection Capacity Analysis

All signalized intersections and stop controlled approaches are anticipated to operate at acceptable levels of service during the Mitigated Build-out Analysis with the exception of the Arrington Road and South Oaks Drive intersection. LOS was improved from LOS F to LOS E during the PM peak hour with the additional westbound lane. This was a 28% improvement in delay.

MITIGATED BUILD-OUT ANALYSIS – ARRINGTON MEDIAN

Assumptions

For the Mitigated with Arrington Median Build-out Analysis all recommendations were incorporated and the two-lane westbound approach at Arrington Road & South Oaks Drive was replaced with a median along Arrington Road which prohibits the westbound left-turn and southbound left-turn movements. These movements were redistributed to reflect anticipated traffic patterns.

Intersection Capacity Analysis

All intersections are anticipated to operate at an acceptable LOS with implementation of the median along Arrington Road at the South Oaks Drive intersection. The anticipated shifts in traffic are accommodated at the affected intersections while still maintaining an acceptable overall LOS at the major signalized intersections with some minor signal timing changes for anticipated traffic patterns.

AUXILIARY LANES

Right-Turn Lanes: Dedicated right-turn deceleration lanes are warranted at two of the three project access locations. A right-turn deceleration lane should be constructed at the site access drive Greens Prairie Road at Castlegate Drive/Minor Collector and along Arrington Road at the Minor Collector.

Left-Turn Lanes: At both proposed minor collectors along Greens Prairie Road, westbound left-turn lanes were assumed with the widening of Greens Prairie Road to the four-lane divided section. Both minor collector locations are recommended to have median openings. The New Collector along Arrington Road does not meet thresholds for warranting a northbound left-turn lane.

Responsible Party – Development

INTERIM SCENARIO / SITE ACCESS ANALYSIS

Assumptions

The Interim Scenario was analyzed to determine at what point in the development is it necessary to provide a second access point to a major collector. In other words, if the development provides access along Greens Prairie Road, when is access needed along Arrington Road or vice versa.

Development Starts at Greens Prairie Road:

> Recommendation – At a maximum of 787 single-family dwelling units it is recommended that an access point at Arrington Road be implemented. The additional access point at Arrington Road will help to alleviate the traffic flow at Greens Prairie Road & Castlegate Drive. Note, the second point of access on Greens Prairie would be necessary after 30 homes are constructed for the City of College Stations UDO Section 8.2.

Development Starts at Arrington Road:

> Recommendation – At a maximum of 628 single-family dwelling units it is recommended that an access point at Greens Prairie Road be implemented. The additional access point at Greens Prairie will help to distribute the traffic flow off Arrington Road. Note, the second point of access would be necessary after 30 homes are constructed for the City of College Stations UDO Section 8.2. This could be extended to 100 homes with Remote Emergency Access where development phasing is a consideration.

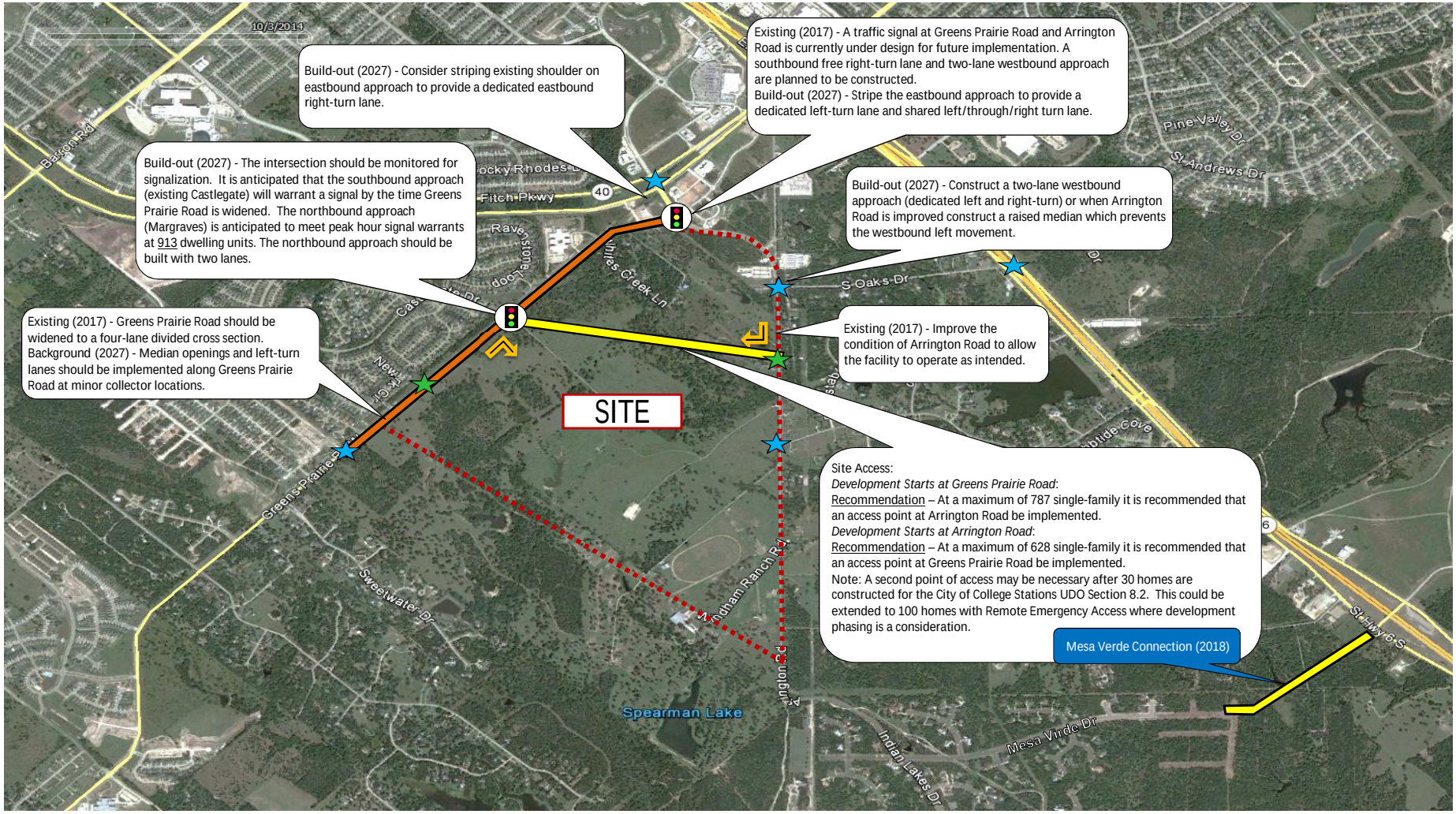

EXHIBIT A

Recommendations

Margraves Tract Family Site TIA College Station

Kimley»Horn

= Study Intersection

= Future Study Intersection

= Traffic Signal

= Site Recommendation

= Future Known Project

= Site Development

North

Not To Scale

INTRODUCTION

PURPOSE

This report documents a traffic impact analysis (TIA) performed for the proposed single family Margraves Residential development, located between Greens Prairie Road and Arrington Road in the city of College Station, Texas.

The zoning requested for the proposed single-family development is Restricted Suburban (RS). The proposed 369.90-acre development is proposed to include a maximum of 1480 single-family units (4 units per acre).

Access to the proposed development will be provided with one full-access driveway to Arrington Road, and two full-access driveways to Greens Prairie Road. This study will analyze the traffic impacts of the proposed development on Greens Prairie Road, Arrington Road, and the future connection of Mesa Verde Drive and Cherokee Drive. The connection of Mesa Verde Drive to SH 6 is expected to alleviate the traffic flow on Arrington Road by reducing the traffic volumes by approximately 60%. This road connection will provide the users currently traveling on Arrington Road the option to take Mesa Verde Drive towards the Earl Rudder Freeway (SH6).

The purpose of this study is to address the traffic impacts of the Margraves development on surrounding streets and intersections. This traffic impact study was prepared based on criteria set forth by the City of College Station. The specific objectives of this study are to determine existing, background, and build-out conditions at various study intersections and recommend any capacity or operational related improvements.

Exhibit 1 is a vicinity map which illustrates the surrounding roadway network, and the location of the proposed access points. **Exhibit 2** shows the proposed conceptual access plan. Note this concept shows under 1,000 overall units. This concept is provided for access purposes only. The analysis is based on 1,480 single-family units (4 units per acre).

METHODOLOGY

The TIA was prepared in accordance with Section 7-7.13. – Traffic Impact Analyses of the City of College Station's Unified Development Ordinance. The methodology memo submitted for the TIA is provided in the **Appendix**. In general, the traffic evaluation was comprised of six (6) scenarios, for which weekday AM peak hour and PM peak hour intersection level of service (LOS) analyses were performed.

The intersection analyses were completed using *Synchro 9™*. Based on the project's anticipated completion date, 2027 was assumed as the buildout year of the site. **Table 1** provides a summary of the assumptions used in each scenario.

Table 1: Analysis Scenario Summary

Scenario	Roadway Conditions	Development Assumptions	Traffic Volumes
Existing (2017)	Existing	Existing	Existing
Background (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018)	Existing + The Ranch Development + Watermark Development - Mesa Verde Reduction	Existing + 10 years of growth at 2% per year (5% on William D. Fitch), + The Ranch Development + Watermark Development - Mesa Verde Reduction
Build-out (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018)	Existing + Background + Build-Out Site Traffic	Existing + Background + Build-Out Site Traffic
Mitigated Build-out (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) and EBR + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018) + Signal at Castlegate & Greens Prairie + Additional WB lane at S Oaks	Existing + Background + Build-Out Site Traffic	Existing + Background + Build-Out Site Traffic
Mitigated w/ Arrington Median Build-out (2027)	Existing + Greens Prairie & Arrington Intersection Improvements (2017) and EBR + Greens Prairie Widening (2019-2020) + Cherokee Extension to Indian Lakes (2017) + Mesa Verde Extension to SH 6 (2018) + Signal at Castlegate & Greens Prairie + Median along Arrington @ S Oaks	Existing + Background + Build-Out Site Traffic	Existing + Background + Build-Out Site Traffic + Redistributed Traffic due to Median
Interim Scenario Site Access (~2020)	Existing	Existing + Background + 628 Homes	Existing + Background + 628 Homes

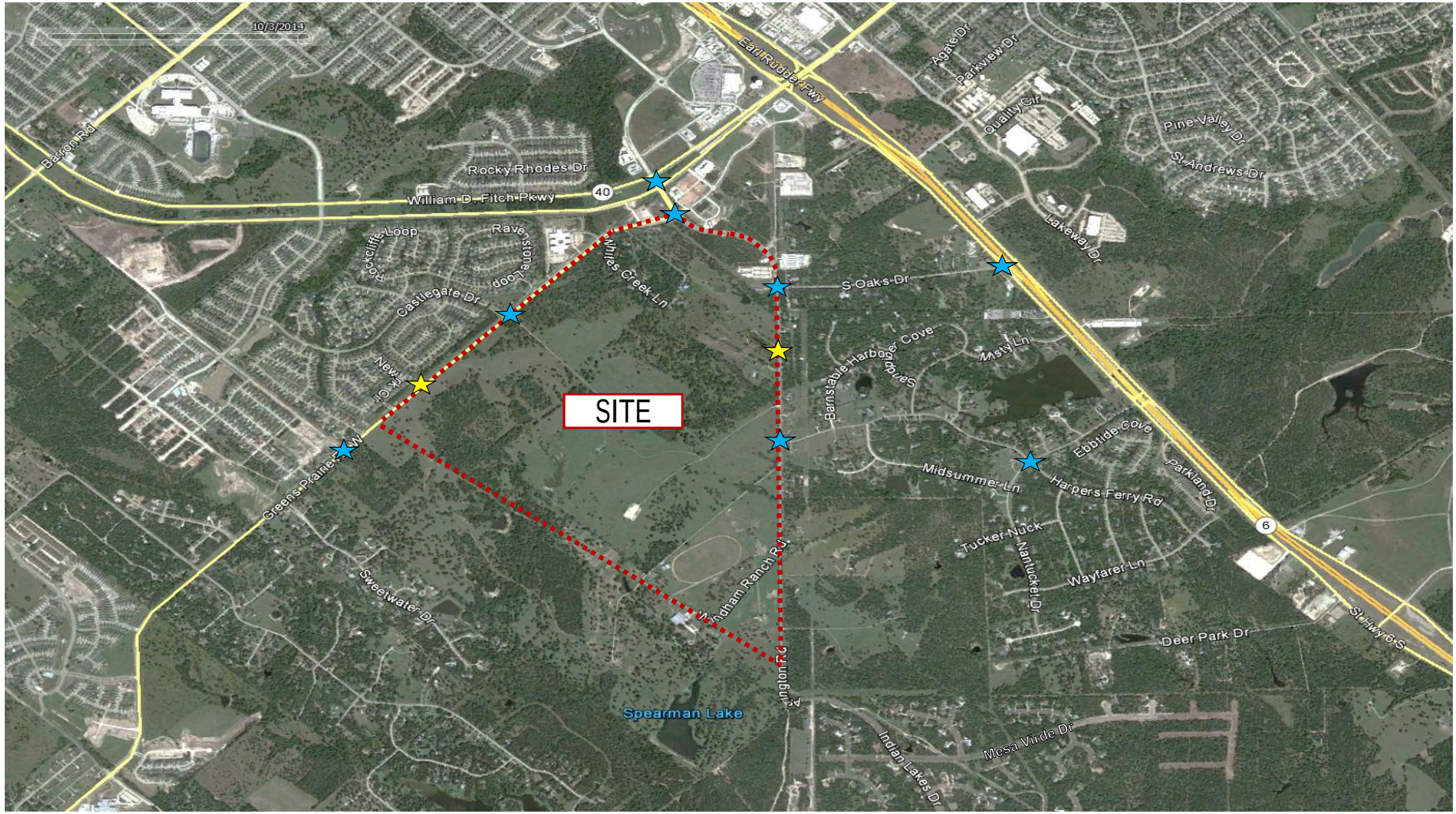

EXHIBIT 1

Vicinity Map

Margraves Tract Family Site TIA College Station

Kimley»Horn

= Study Intersection

= Future Study Intersection

North

Not To Scale

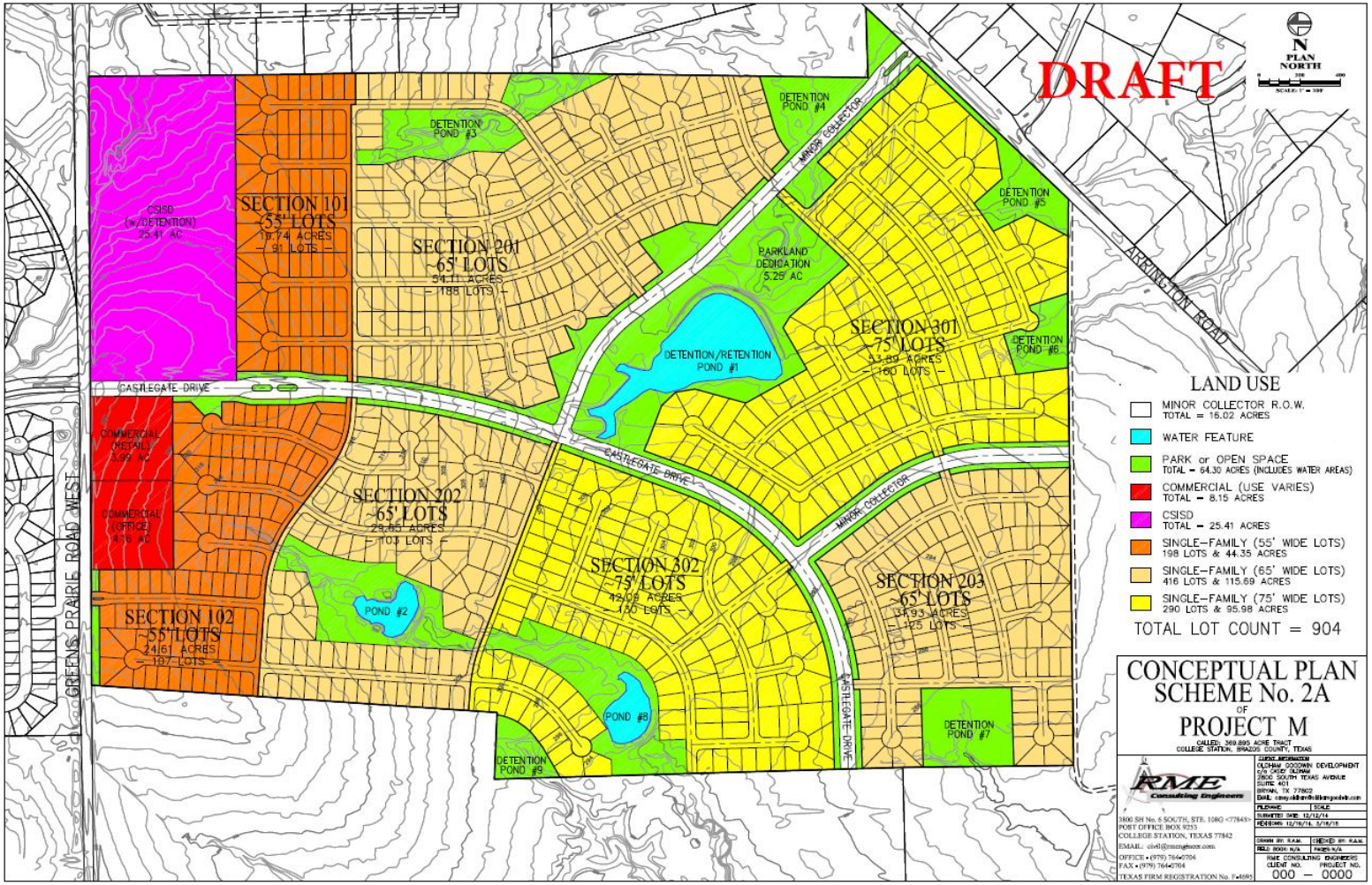

EXHIBIT 2

Conceptual Access Plan

Margraves Tract Family Site TIA College Station

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EXISTING AND FUTURE CONDITIONS

EXISTING ROADWAY IMPROVEMENTS

Based upon the proposed study methodology submitted to the City of College Station, the following intersections were evaluated as part of this study:

- William D. Fitch Parkway and Arrington Road;
- Greens Prairie Road and Arrington Road;
- Greens Prairie Road and Castlegate Drive;
- Greens Prairie Road and WS Phillips Parkway;
- Harpers Ferry Road and Nantucket Drive;
- Arrington Road and S Oaks Drive;
- Arrington Road and Harpers Ferry Road; and
- SH 6 SBFR and S Oaks Drive

Exhibit 3 displays the existing thoroughfares, lane assignments, and traffic controls within the study area. The following is a general description of the major thoroughfares within the study area corresponding to their existing conditions.

William D. Fitch Parkway (SH 40) is currently a four-lane divided highway, which runs generally east-west in the City of College Station, with a posted speed limit of 60 miles per hour (mph). The highway has two major highway junctions, Wellborn Road (FM 2154) to the west and Earl Rudder Freeway (SH 6) to the east of SH 40. William D. Fitch Parkway has a signalized intersection with Arrington Road. The City of College Station's Thoroughfare Plan identifies this roadway as freeway.

Greens Prairie Road is currently a two-lane undivided section except for the section between Arrington Road and the driveway of Forest Ridge Elementary School, which has a four-lane undivided segment. The road runs in an east-west direction with a posted speed of 40 mph. Currently, intersection improvements are under design for Greens Prairie Road and Arrington Road and are planned to include a signal. The City of College Station's Thoroughfare Plan identifies Greens Prairie Road as a four-lane minor arterial. The City of College Station identified Greens Prairie Road from W.S. Phillips to Arrington Road as a bond project. This project is anticipated to be designed and constructed in 2020.

Arrington Road is currently a two-lane undivided road except for the section between Greens Prairie Road and Old Arrington Road, which has a median. The road runs in a north-south direction with a posted speed of 40 mph. The City of College Station's Thoroughfare Plan identifies Arrington Road as a major collector. The current condition of Arrington Road is poor and Brazos County is anticipating a roadway improvement project for the 2018 Fiscal Year

Castlegate Drive is currently a two-lane undivided street, which generally runs in a north-south direction. Castlegate Drive intersects with Greens Prairie Road in a two-way stop control. The City of College Station's Thoroughfare Plan identifies Castlegate Drive as a minor collector.

Harpers Ferry Road is currently a two-lane undivided road, which runs in an east-west direction with a posted speed of 30 mph. The City of College Station's Thoroughfare Plan identifies Harpers Ferry Road as a minor collector.

Nantucket Drive is currently a two-lane undivided street that runs in a north-south direction. The street has an all-way stop controlled intersection with Harpers Ferry Road and it provides access to the Earl Rudder Freeway (SH 6). The City of College Station's Thoroughfare Plan identifies Nantucket Drive as a minor collector.

S Oaks Drive is currently a two-lane undivided street that runs in an east-west direction. The speed limit along S Oaks Drive is posted at 35 mph. The City of College Station's Thoroughfare Plan identifies S Oaks Drive as a minor collector.

Exhibit 3 illustrates the existing intersection geometry and traffic control used for the analyses.

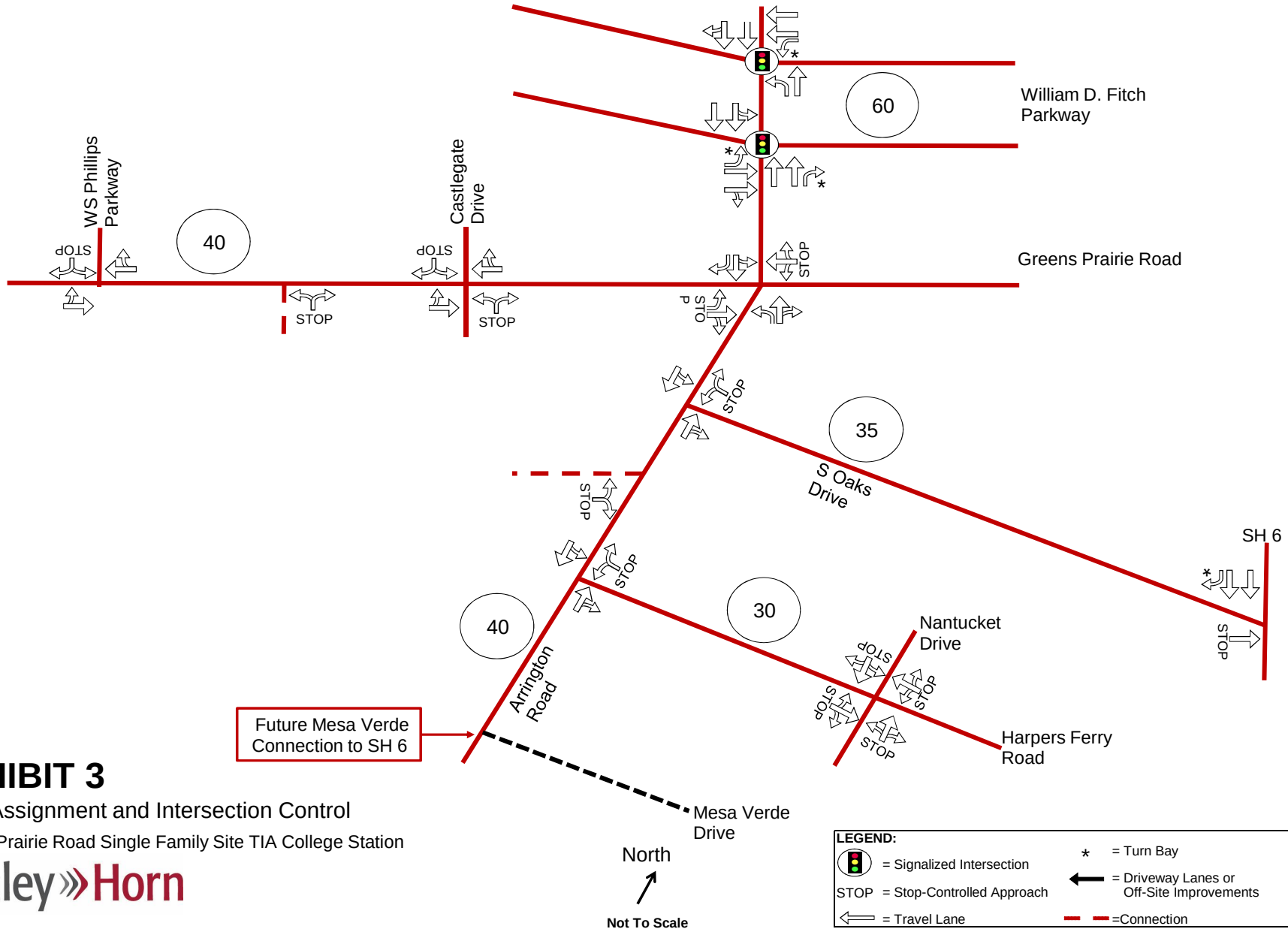

EXHIBIT 3

Lane Assignment and Intersection Control

Greens Prairie Road Single Family Site TIA College Station

Kimley»Horn

PLANNED ROADWAY IMPROVEMENTS

City

Currently, intersection improvements are under design for the intersection of Greens Prairie Road & Arrington Road. These intersection improvements include signalization, a free southbound right-turn from Arrington Road to Greens Prairie Road, and the westbound approach is being widened to a two-lane approach (dedicated WBL and shared WBTR). This project is part of the 2015 Bond Election.

Greens Prairie Road is planned to be widened to a four-lane divided facility from WS Phillips Parkway to north of Forest Ridge Elementary School. This is part of the 2015 Bond Election and is anticipated to be completed by 2020.

County

Brazos County has two anticipated projects that are projected to lower the traffic on Arrington Road. The future connections of Mesa Verde Drive and Cherokee Drive will provide a connection to SH 6.

The connection of Mesa Verde Drive to SH 6 is expected to alleviate the traffic flow on Arrington Road by reducing the traffic volumes by approximately 60%. This road connection will provide the users currently traveling on Arrington Road the option to take Mesa Verde Drive towards the Earl Rudder Freeway (SH6).

Cherokee Drive will be completed in 2017 and Mesa Verde is anticipated to be completed by 2018.

EXISTING SITE

Currently, the project site is vacant and undeveloped. The existing zoning for the property is Rural (R) Residential.

PROPOSED SITE

The zoning requested for the proposed development is Restricted Suburban (RS), and as such the proposed development is expected to include 369.90-acres with a maximum of 1,480 single-family units. The site is expected to be built-out by 2027. The requested zoning of RS is consistent with the currently adopted Future Land Use Plan of College Station.

Access to the proposed development will be provided with one full-access driveway to Arrington Road, and two full-access driveways to Greens Prairie Road. Future connections of Mesa Verde Drive and Cherokee Drive are proposed to provide access to SH 6. The connection of Mesa Verde Drive to SH 6 is expected to alleviate the traffic flow on Arrington Road by reducing the traffic volumes by 60%. This road connection will provide the users currently traveling on Arrington Road the option to take Mesa Verde Drive towards the Earl Rudder Freeway (SH6).

EXISTING TRAFFIC VOLUMES

Turning movement counts were conducted for the AM peak hour and PM peak hour on January 25, 2017 for the existing study intersections. The existing 2017 AM peak hour and PM peak hour traffic volumes can be seen in **Exhibit 4**, and the raw count sheets are provided in the **Appendix**.

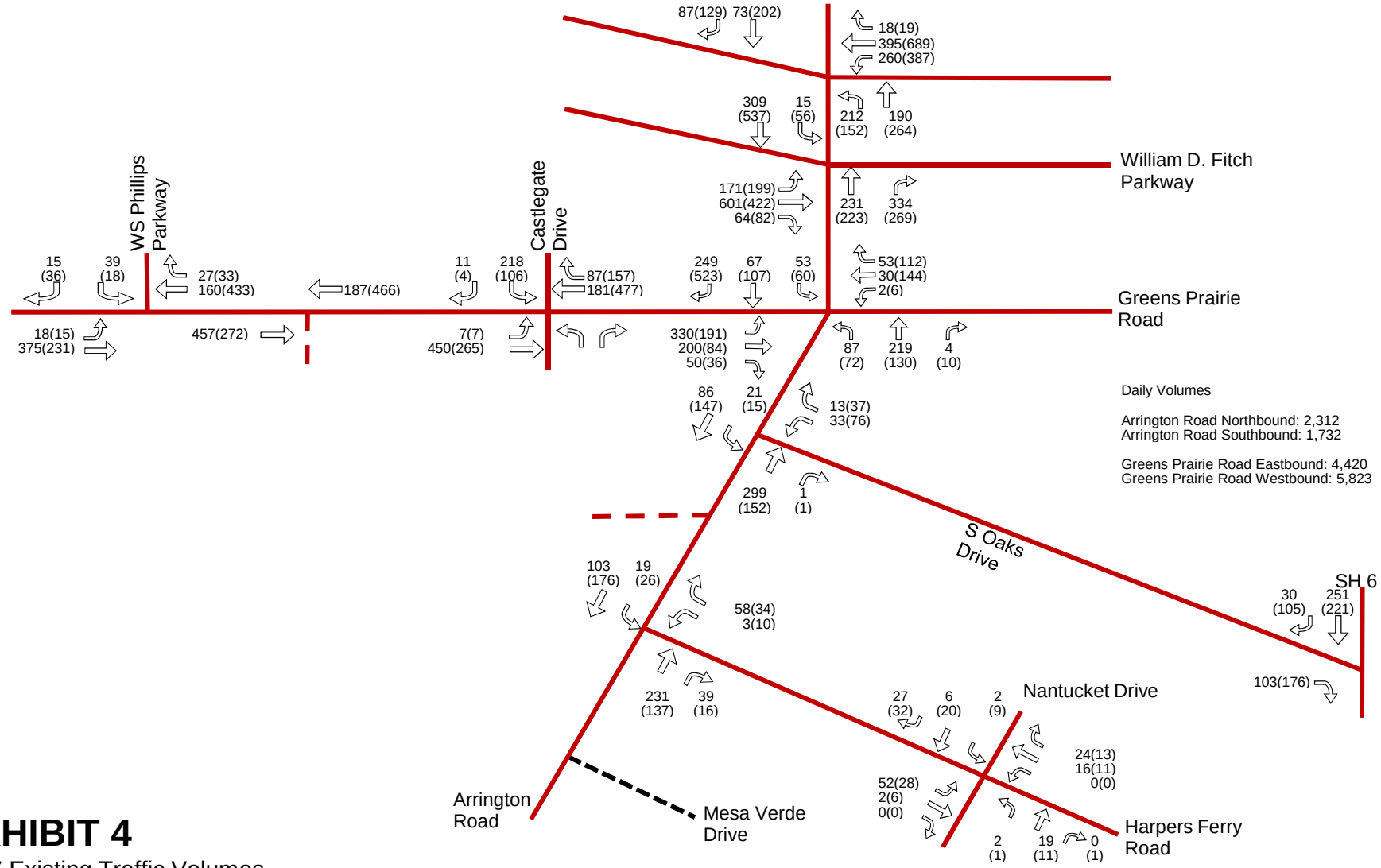

EXHIBIT 4

2017 Existing Traffic Volumes

Margraves Tract Family Site TIA College Station

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PROJECT TRAFFIC CHARACTERISTICS

SITE GENERATED TRAFFIC

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the current edition of *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. Applying these trip generation rates to the proposed site development resulted in the daily, AM peak hour, and PM peak hour trips for the development. Each trip shown is a "one-way trip" which is defined as the entry or exit of a vehicle from the site. Therefore, each vehicle visiting the site is counted as two one-way trips, one inbound and one outbound.

Table 2 provides the rates provided in the ITE *Trip Generation Manual* utilized for analysis.

Table 2: Estimated Trip Generation Equations (2027)

Land Uses	Units	ITE Code	Daily Rate	AM Peak Hour Rate	PM Peak Hour Rate
			% Distribtuion	% Distribtuion	% Distribtuion
Single Family Detached Housing	Dwelling Units	210	T = 9.52 * (X)	T = 0.75 * (X)	T = 1.00 * (X)
			50% In / 50% Out	25% In / 75% Out	63% In / 37% Out

Table 3 summarizes the total number of trips that are expected to be generated by the proposed development for the daily, and the AM and PM peak hours. The number of trips generated represents the number of vehicles entering and exiting the proposed development to and from the adjacent roadway network.

Table 3: Trip Generation Calculation

Land Uses	Amount	Units	ITE Code	Daily One-Way Trips	AM Peak Hour One-Way Trips			PM Peak Hour One-Way Trips		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Single Family Detached Housing	1,480	SF	210	14,090	278	832	1,110	932	548	1,480
Single Family Detached Housing Net New External Trips:				**14,090**	**278**	**832**	**1,110**	**932**	**548**	**1,480**

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution and assignment of the site-generated traffic to the study area roadway network was performed for the Margraves development based on examination of the existing traffic volumes, the existing roadway network, and site access driveway locations.

Exhibit 5 presents the inbound and outbound directional distribution percentages for the traffic during the AM and PM peak hours for the Margraves development. The following outlines the global distribution utilized for the analysis:

- 25% Greens Prairie Road, west of proposed development
- 4% Castlegate Drive, north of proposed development
- 5% Greens Prairie Road, east of proposed development
- 59% - Arrington Road, north of proposed development
    - 5% - Arrington Road, north of William D. Fitch Parkway Interchange
    - 35% - William D. Fitch Parkway towards Earl Rudder Freeway (SH6)
    - 19% - William D. Fitch Parkway towards Wellborn Road (FM 2154)
- 7% - Arrington Road, east of proposed development
    - 5% S Oaks Drive
    - 2% Harpers Ferry Road

Site Traffic Volumes for the AM and PM peak hours are presented in **Exhibit 6.**

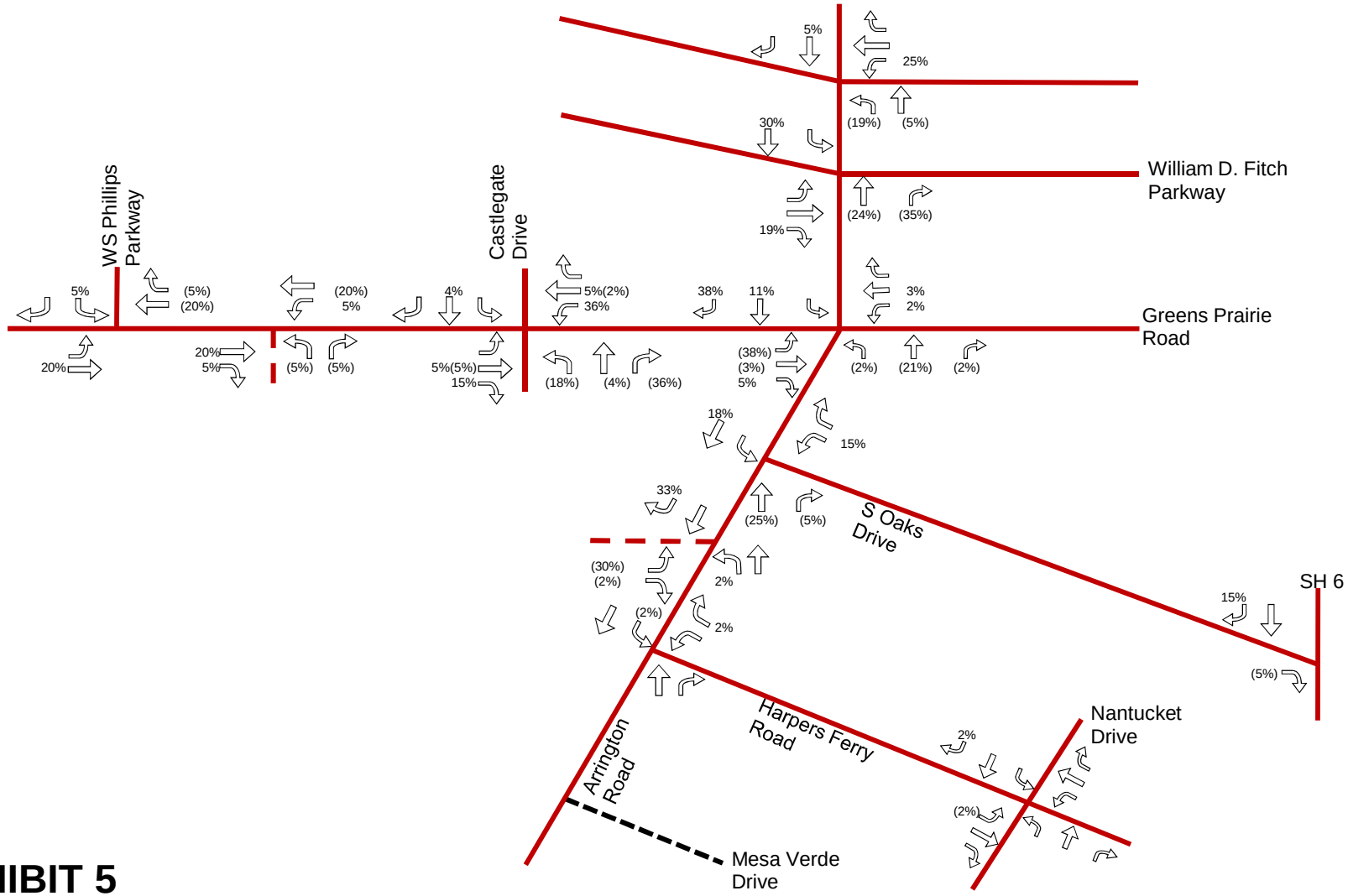

EXHIBIT 5

Trip Distribution

Margraves Tract Family Site TIA College Station

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North

Not To Scale

LEGEND:

X (Y)
X = Inbound Trip Distribution
(Y) = Outbound Trip Distribution

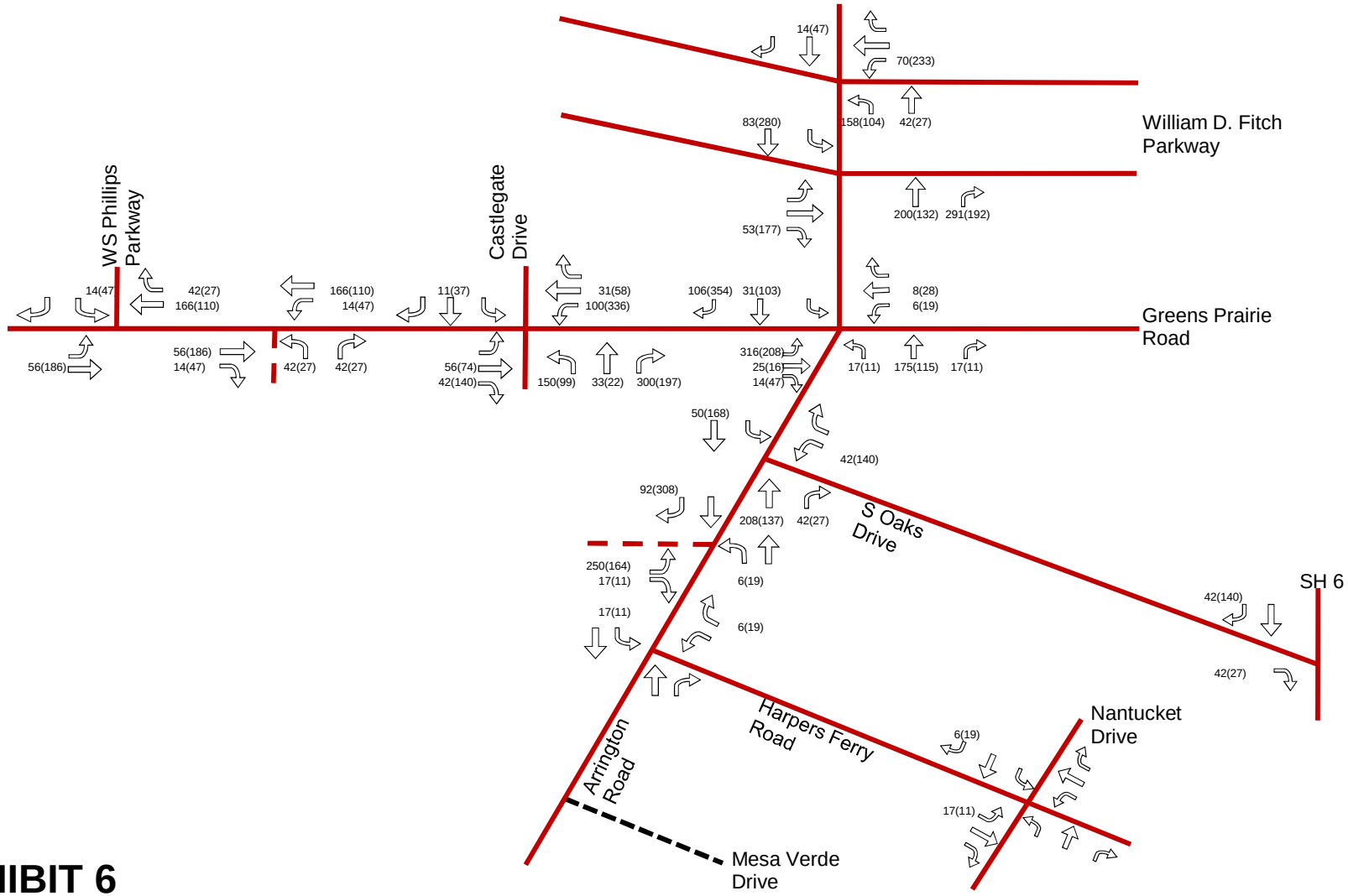


EXHIBIT 6

Site Traffic Assignment

Margraves Tract Family Site TIA College Station

Kimley»Horn

North

Not To Scale

LEGEND:
X (Y)
X = Weekday AM Peak Hour Turning Movements
(Y) = Weekday PM Peak Hour Turning Movements
Volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

DEVELOPMENT OF 2027 BACKGROUND TRAFFIC

The proposed development is anticipated to be built-out within ten (10) years so the build-out capacity analysis will be performed for year 2027. Based on existing traffic counts and recent development of the area, it was determined that a 2% annual growth rate will be used to determine the background growth. Therefore, a 2% growth rate will be applied to the existing turning movement volumes for ten (10) years. A 5% annual growth rate will be implemented only to William D. Fitch Parkway on the eastbound and westbound through movements due to high peak-hour traffic volumes.

The connection of Mesa Verde Drive to SH 6 is expected to alleviate the traffic flow on Arrington Road by reducing the traffic volumes by approximately 60%. This road connection will provide the users currently traveling on Arrington Road the option to take Mesa Verde Drive towards the Earl Rudder Freeway (SH6). The redistribution of Mesa Verde traffic volumes are provided in the **Appendix**.

In addition, projected traffic from The Ranch and Watermark developments will be included in the analysis. The Ranch and Watermark development traffic volumes are provided in the **Appendix**.

The final adjustments made to obtain Background Traffic volumes were to redistribute the existing eastbound left and through movements at the Greens Prairie Road & Arrington Road intersection. Due to the high percentage of left-turn volume, it is assumed that some drivers are currently making a through movement just to get through the intersection to William D. Fitch. The existing traffic counts were rebalanced to assume that 77% of the through/left volume would be left-turns. Therefore 78 and 21 vehicles were shifted in the AM and PM peak hours, respectively.

Background Traffic Volumes for the AM and PM peak hours are presented in **Exhibit 7.**

DEVELOPMENT OF 2027 TOTAL TRAFFIC

Site traffic (**Exhibit 6**) volumes were added to the background volumes (**Exhibit 7**) to represent the estimated total (background plus site-generated) traffic conditions for the 2027 study year after completion of the proposed development. **Exhibit 8** shows the resulting 2027 weekday AM and PM peak hour total traffic volumes.

DEVELOPMENT OF 2027 MITIGATED WITH ARRINGTON MEDIAN TRAFFIC

The final scenario tested the operation of the intersections along Arrington Road assuming implementation of a median at the Arrington Road & South Oaks Drive intersection. The anticipated westbound left-turn volume (56 AM, 174 PM) and the southbound left-turn volume (35 AM, 23 PM) at the intersection were redistributed.

The westbound left-turn volumes at S Oaks Drive & Arrington Road were re-distributed to the westbound left turn movement at William D Fitch Parkway and Arrington Road. The impact of this re-distribution resulted in a reduction of the southbound right-turn movement at S Oaks Drive and SH 6. In addition, the southbound left-turn volumes at S Oaks Drive & Arrington Road were re-distributed to the southbound right-turn movement at S Oaks Drive and the SH 6 SBFR. The impact of this re-distribution resulted in a reduction of the westbound left-turn movement at William D Fitch Pkwy and Arrington Rd. All upstream and downstream movements affected by this redistribution were updated accordingly.

The Arrington Median Total Traffic Volumes are presented in **Exhibit 9**.

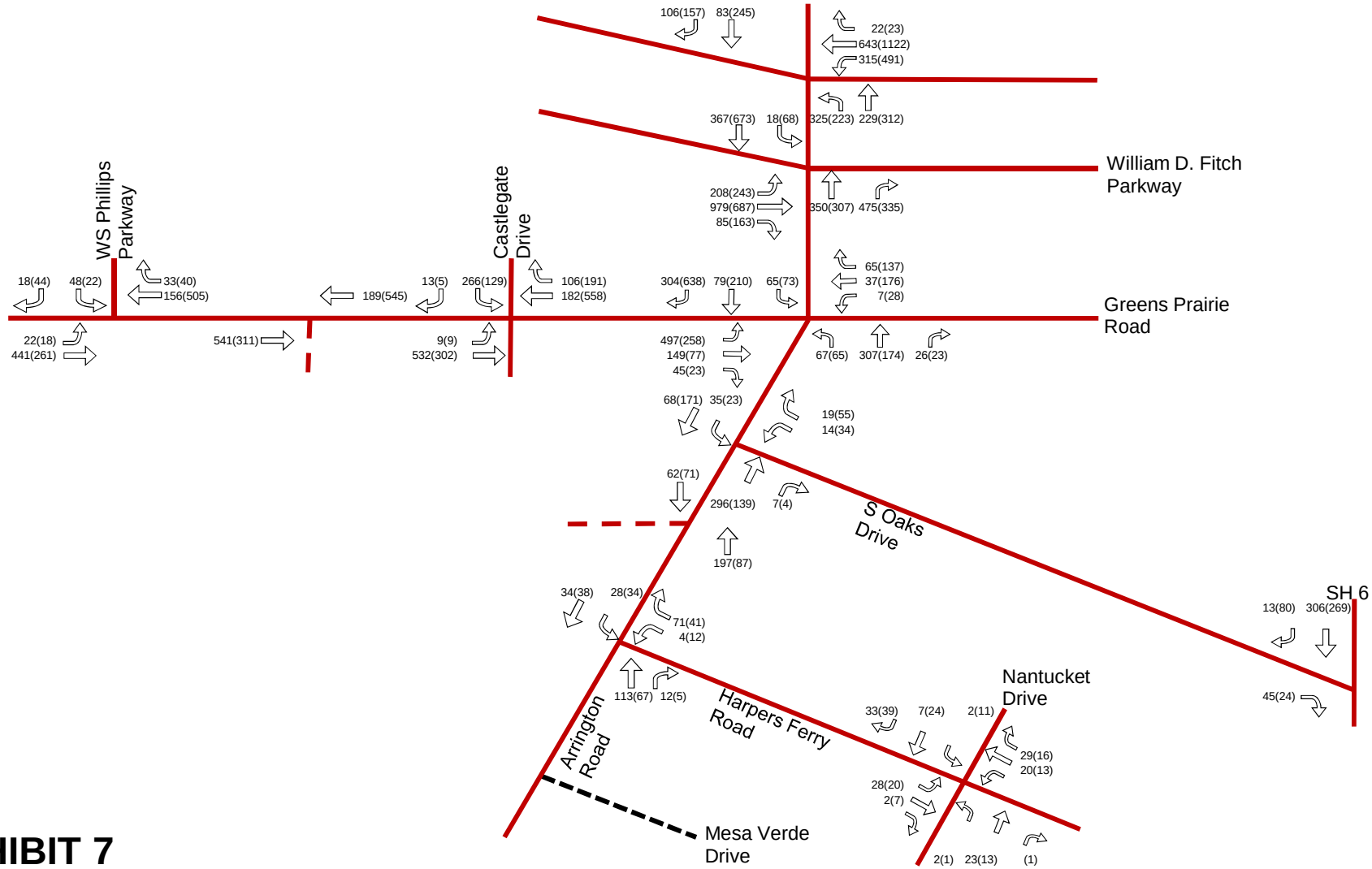


EXHIBIT 7

2027 Background Traffic Volumes

Margraves Tract Family Site TIA College Station

Kimley»Horn

North

Not To Scale

LEGEND:
X (Y)
X = Weekday AM Peak Hour Turning Movements
(Y) = Weekday PM Peak Hour Turning Movements
Volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

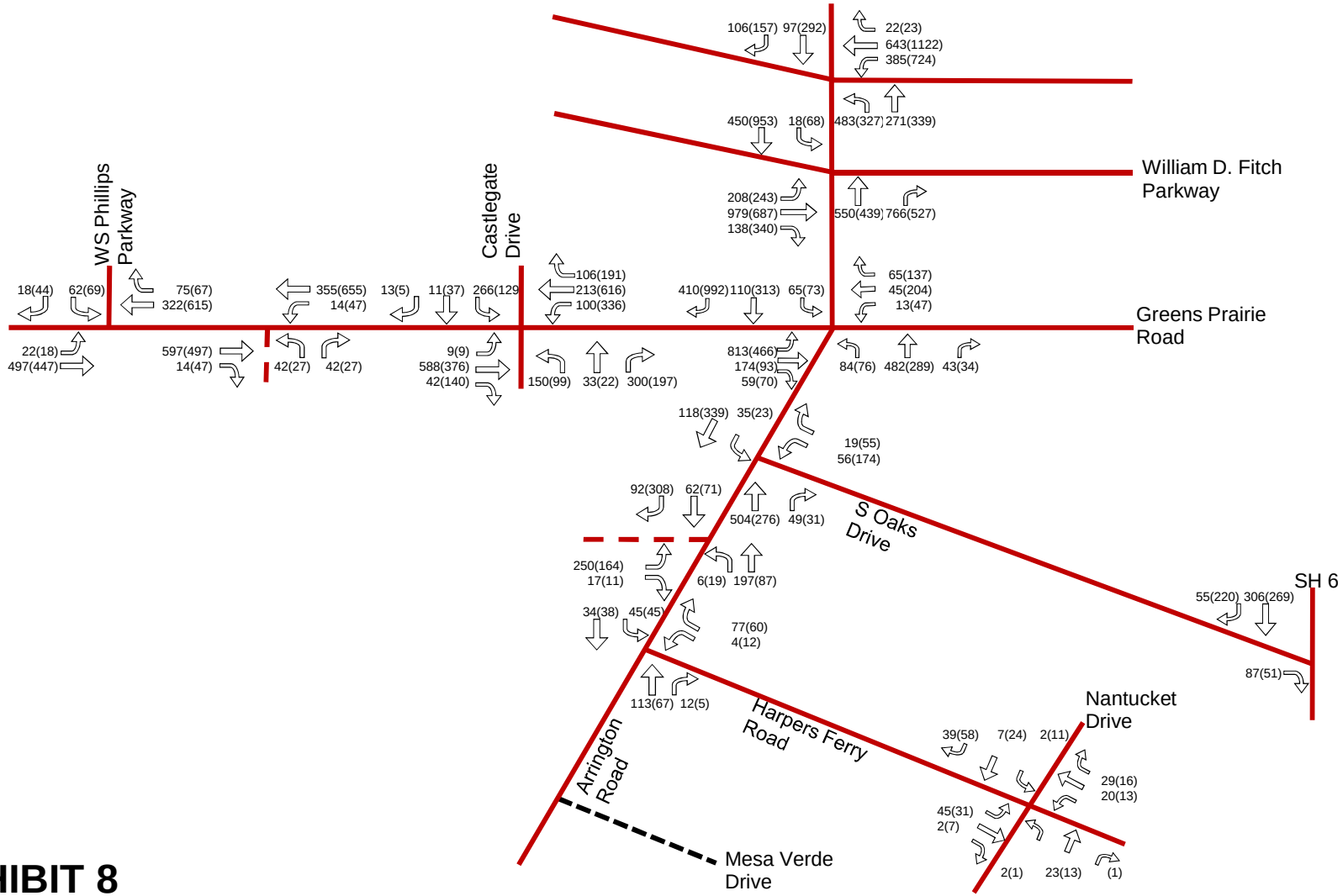


EXHIBIT 8

2027 Total Traffic Volumes

Margraves Tract Family Site TIA College Station

Kimley»Horn

North

Not To Scale

LEGEND:
X (Y)
X = Weekday AM Peak Hour Turning Movements
(Y) = Weekday PM Peak Hour Turning Movements
Volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

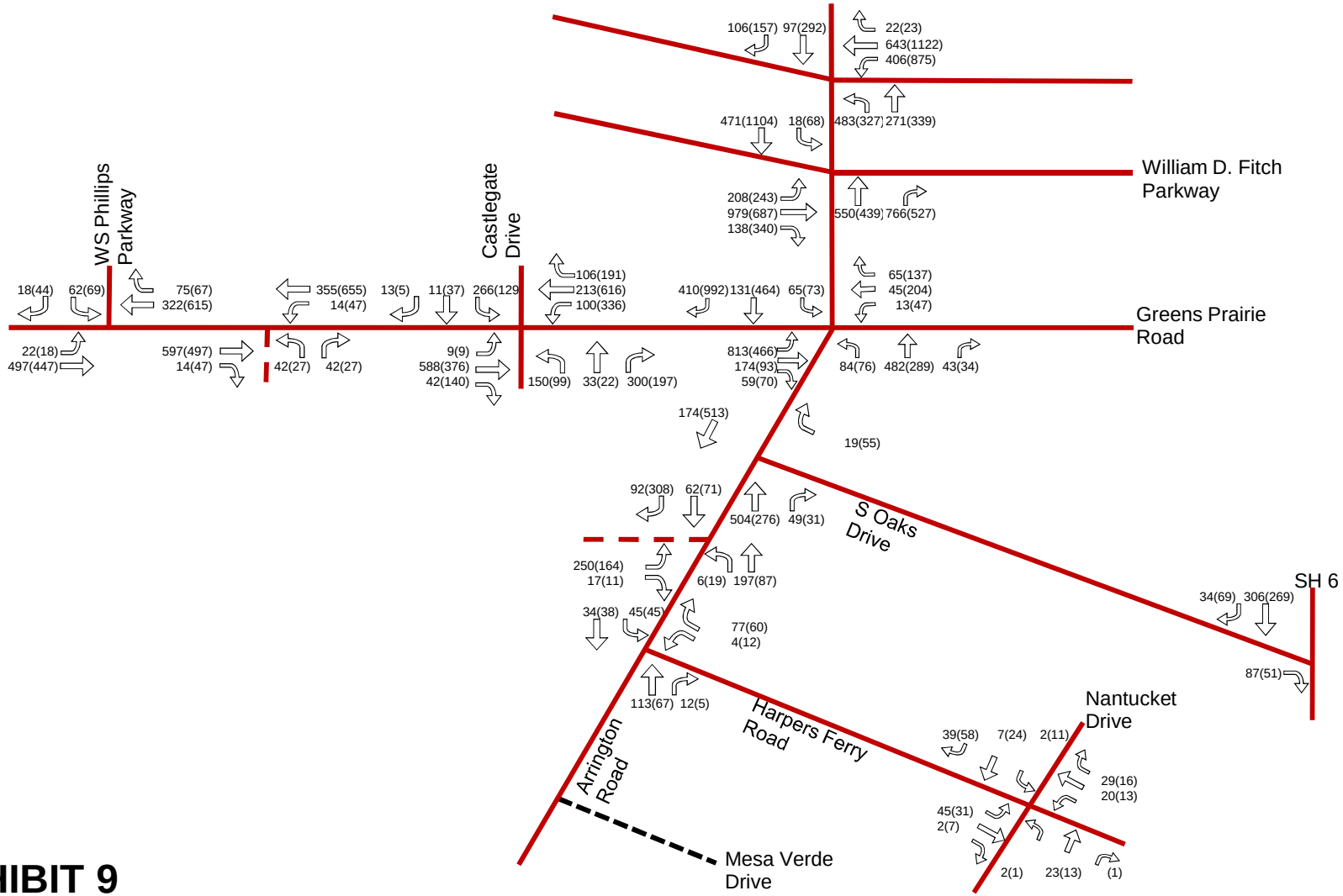


EXHIBIT 9

2027 Arrington Median Total Traffic Volumes

Margraves Tract Family Site TIA College Station

Kimley»Horn

North

Not To Scale

LEGEND:
X (Y)
X = Weekday AM Peak Hour Turning Movements
(Y) = Weekday PM Peak Hour Turning Movements
Volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn and Associates conducted a traffic operations analysis to determine potential capacity deficiencies in the 2017 and 2027 study years at the study intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual.*

INTERSECTION ANALYSIS METHODOLOGY

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a specific street or highway during a specific time interval. It ranges from A (very little delay) to F (longer delays and congestion). **Table 3** shows the definition of level of service for signalized and unsignalized intersections.

Table 4: Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Definitions provided from the Highway Capacity Manual, Special Report 209, Transportation Research Board, 2010.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. For the unsignalized analysis, the level of service (LOS) for a two-way stop controlled intersection is defined for each movement. Unlike signalized intersections, which define LOS for each approach and for the intersection as a whole, the LOS for two-way stop-controlled intersections is not defined as a whole. *Synchro 9™* uses the HCM procedure to calculate a LOS for each approach.

Calculations for the level of service at the key intersections identified for study are provided in the **Appendix**. The analyses assumed the lane geometry and intersection control shown in **Exhibit 3**.

Signal timing adjustments were made to accommodate changes in traffic volumes due to background growth and site traffic.

INTERSECTION ANALYSIS RESULTS

Tables 5 and **6** show the intersection operational results for the weekday AM and PM peak hours, respectively.

Table 5: Traffic Operational Results – Weekday AM Peak Hour

Intersection	Approach	2017 Existing Traffic		2027 Background Traffic		2027 Build-out Traffic - Not Improved		2027 Build-out Traffic - Mitigated		2027 Build-out Traffic - Mitigated Arrington Median	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
William D. Fitch Parkway @ Arrington Road (EB)	EB	35.6	D	41.8	D	81.1	F	50.5	D	50.5	D
	NB	38.0	D	51.3	D	44.8	D	43.8	D	43.8	D
	SB	2.8	A	3.5	A	3.0	A	3.0	A	3.0	A
	Overall	**30.2**	**C**	**39.0**	**D**	**54.0**	**D**	**40.5**	**D**	**40.3**	**D**
William D. Fitch Parkway @ Arrington Road (WB)	WB	25.6	C	30.2	C	47.7	D	47.7	D	50.5	D
	NB	4.2	A	4.7	A	4.9	A	4.5	A	4.5	A
	SB	55.5	E	56.3	E	54.9	D	54.9	D	54.9	D
	Overall	**22.5**	**C**	**24.8**	**C**	**32.4**	**C**	**32.2**	**C**	**33.8**	**C**
Greens Prairie Road @ Arrington Road	EB	-	-	29.7	C	83.5	F	46.2	D	46.2	D
	EBL*	100+	F	-	-	-	-	-	-	-	-
	EBTR*	29.7	D	-	-	-	-	-	-	-	-
	WB*	15.9	C	48.3	D	49.2	D	55.0	D	55.0	D
	NB	0.0	-	31.0	C	63.1	E	53.1	D	53.1	D
	NBL	8.2	A	-	-	-	-	-	-	-	-
	SB	0.0	-	11.4	B	14.5	B	15.5	B	16.9	B
	SBTL	3.7	A	-	-	-	-	-	-	-	-
	SBR	0.0	-	-	-	-	-	-	-	-	-
	Overall	**-**	**-**	**26.3**	**C**	**59.4**	**E**	**40.8**	**D**	**41.0**	**D**
Greens Prarie Road @ Castlegate Drive	EB	0.2	A	0.0	A	0.0	A	10.4	B		
	EBL	n/a	-	8.0	A	8.0	A	-	-		
	WB	0.0	-	0.0	-	0.0	-	9.5	A		
	WBLT	n/a	-	n/a	-	9.5	A	-	-		
	NBTR*	n/a	-	n/a	-	21.5	C	-	-		
	NBL*	n/a	-	n/a	-	34.6	D	-	-		
	NB	n/a	-	n/a	-	n/a	-	8.3	A		
	SBTR*	9.7	A	9.3	A	14.8	B	-	-		
	SBL*	56.8	F	24.8	C	100+	F	-	-		
	SB	n/a	-	n/a	-	n/a	-	16.4	B		
	Overall	**-**	**-**	**-**	**-**	**-**	**-**	**10.6**	**B**		
Greens Prairie Road @ New Colllector	NB*	n/a	-	n/a	-	15.1	C	15.1	C		
Greens Prairie Road @ WS Phillips Parkway	EB	0.5	A	0.0	-	0.0	-	0.0	-		
	EBL	n/a	-	7.7	A	8.3	A	8.3	A		
	WB	0.0	-	0.0	-	0.0	-	0.0	-		
	SB*	14.5	B	11.8	B	14.5	B	14.5	B		
Arrington Road @ S Oaks Drive	WB*	13.1	B	12.1	B	22.7	C	21.0	C	13.0	B
	NB	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
	SB	1.8	A	3.0	A	2.5	A	2.5	A	0.0	-
Arrington Road @ Harpers Ferry Road	WB*	10.7	B	9.6	A	9.6	A	9.6	A		
	NB	0.0	-	0.0	-	0.0	-	0.0	-		
	SB	1.4	A	3.6	A	4.5	A	4.5	A		
Arrington Road @ New Collector	EB*	n/a	-	n/a	-	15.8	C	15.8	C		
Harpers Ferry Road @ Nantucket Drive	EB*	7.7	A	7.6	A	7.7	A	7.7	A		
	WB*	7.0	A	7.1	A	7.1	A	7.1	A		
	NB*	7.4	A	7.4	A	7.4	A	7.4	A		
	SB*	7.0	A	7.0	A	6.9	A	6.9	A		
S Oaks Drive @ SH 6 SBFR	EBR*	9.2	A	9.5	A	9.8	A	9.8	A		

	Signalized	*	Stop Controlled Approach
	Unsignalized	+	Delay Exceeds 100 second

Table 6: Traffic Operational Results – Weekday PM Peak Hour

Intersection	Approach	2017 Existing Traffic		2027 Background Traffic		2027 Build-out Traffic - Not Improved		2027 Build-out Traffic - Mitigated		2027 Build-out Traffic - Mitigated Arrington Median	
		Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
William D. Fitch Parkway @ Arrington Road (EB)	EB	38.8	D	40.6	D	79.1	E	45.1	D	45.1	D
	NB	41.2	D	52.4	D	65.8	E	53.9	D	53.9	D
	SB	2.8	A	2.9	A	3.1	A	6.2	A	5.6	A
	Overall	**27.5**	**C**	**32.4**	**C**	**51.3**	**D**	**35.5**	**D**	**34.0**	**D**
William D. Fitch Parkway @ Arrington Road (WB)	WB	23.6	C	31.2	C	46.9	D	40.1	D	50.0	D
	NB	4.1	A	4.1	A	5.2	A	11.3	B	17.2	B
	SB	53.5	D	55.6	E	63.9	E	54.3	D	54.3	D
	Overall	**24.5**	**C**	**29.6**	**C**	**40.2**	**D**	**35.8**	**D**	**43.6**	**D**
Greens Prairie Road @ Arrington Road	EB	-	-	28.0	C	38.7	D	47.9	D	47.9	D
	EBL*	100+	F	-	-	-	-	-	-	-	-
	EBTR*	15.1	D	-	-	-	-	-	-	-	-
	WB*	73.1	F	48.8	D	56.7	E	52.4	D	52.4	D
	NB	0.0	-	24.4	C	39.7	D	40.0	D	40.8	D
	NBL	9.2	A	-	-	-	-	-	-	-	-
	SB		-	9.4	A	12.9	B	13.5	B	21.7	C
	SBTL	3.0	A	-	-	-	-	-	-	-	-
	SBR	0.0	-	-	-	-	-	-	-	-	-
	Overall	**-**	**-**	**22.2**	**C**	**28.6**	**C**	**30.4**	**C**	**33.9**	**C**
Greens Prarie Road @ Castlegate Drive	EB	0.3	A	0.0	A	0.0	A	5.3	A		
	EBL	n.a	-	9.3	A	9.8	A	-	-		
	WB	0.0	-	0.0	-	0.0	-	9.0	A		
	WBLT	n/a	-	n/a	-	10.6	B	-	-		
	NBTR*	n/a	-	n/a		27.0	D	-	-		
	NBL*	n/a	-	n/a	-	100+	F	-	-		
	NB	n/a	-	n/a	-	n/a	-	15.3	B		
	SBTR*	12.0	A	10.9	B	100+	F	-	-		
	SBL*	26.5	D	22.0	C	100+	F	-	-		
	SB	n/a	-	n/a	-	n/a	-	17.9	B		
	Overall	**-**	**-**	**-**	**-**	**-**	**-**	**9.7**	**A**		
Greens Prairie Road @ New Colllector	NB*	n/a	-	n/a	-	14.7	B	14.7	B		
Greens Prairie Road @ WS Phillips Parkway	EB	0.7	A	0.0	-	0.0	-	0.0	-		
	EBL	n/a	-	8.8	A	9.4	A	9.4	A		
	WB	0.0	-	0.0	-	0.0	-	0.0	-		
	SB*	14.5	B	12.7	B	17.5	C	17.5	C		
Arrington Road @ S Oaks Drive	WB*	12.4	B	11.1	B	52.9	F	37.8	E	10.8	B
	NB	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
	SB	0.8	A	1.1	A	0.8	A	0.8	A	0.0	-
Arrington Road @ Harpers Ferry Road	WB*	10.2	B	9.3	A	9.4	A	9.4	A		
	NB	0.0	-	0.0	-	0.0	-	0.0	-		
	SB	1.2	A	3.6	A	4.2	A	4.2	A		
Arrington Road @ New Collector	EB*	n/a	-	n/a	-	14.2	B	14.2	B		
Harpers Ferry Road @ Nantucket Drive	EB*	7.5	A	7.5	A	7.6	A	7.6	A		
	WB*	6.9	A	7.0	A	7.0	A	7.0	A		
	NB*	7.2	A	7.2	A	7.3	A	7.3	A		
	SB*	7.1	A	7.0	A	7.3	A	7.3	A		
S Oaks Drive @ SH 6 SBFR	EBR*	9.0	A	9.2	A	9.4	A	9.4	A		

	Signalized	*	Stop Controlled Approach
	Unsignalized	+	Delay Exceeds 100 second

2017 EXISTING INTERSECTION OPERATIONS

Based on the existing analysis the critical movements are the eastbound left-turn from Greens Prairie Road onto Arrington Road and the southbound left-turn from Castlegate Drive onto Greens Prairie Road.

- ***Greens Prairie Road & Arrington Road*** – The eastbound left-turn lane currently operates at LOS F in the AM and PM peak hours. The westbound approach currently operates at LOS F during the PM peak hour.

  Recommendation – Intersection improvements are under design for the intersection of Greens Prairie Road & Arrington Road. These intersection improvements include signalization, a free southbound right-turn from Arrington Road to Greens Prairie Road, and the westbound approach being widened to a two-lane approach (dedicated WBL and shared WBTR).

  Result – With the proposed improvements in place the intersection and eastbound left-turn are anticipated to operate at an acceptable level of service as indicated in the 2027 Background Traffic Intersection Operation Analysis.

- ***Greens Prairie Road & Castlegate Drive*** – The southbound approach is currently operating at LOS F during the AM peak hour.

  Recommendation – Greens Prairie Road is recommended to be widened to a four-lane divided cross section.

  Result – With the widening of Greens Prairie Road to four-lanes the southbound left-turn lane is anticipated to operate at an acceptable level of service as indicated in the 2027 Background Traffic Intersection Operation Analysis.

2027 BACKGROUND INTERSECTION OPERATIONS

All signalized intersections and stop controlled approaches are anticipated to operate at acceptable levels of service during the Background Analysis with the programmed improvements in place.

2027 BUILD-OUT INTERSECTION OPERATIONS

Based on the build out analysis the critical movements are the eastbound left-turn from Greens Prairie Road onto Arrington Road and the Castlegate Drive & Greens Prairie Road intersection.

- ***Greens Prairie Road & Arrington Road*** – The intersection operates at LOS E during the AM peak hour and has a projected eastbound left-turn volume of 813 vehicles during the AM peak hour.

  Recommendation – The eastbound approach is recommended to be striped with a dedicated left-turn lane and shared left/through/right turn lane.

  Result – It is anticipated that the approach can operate at an acceptable level of service with a dedicated left-turn lane and shared left/through/right turn lane. The eastbound and westbound approaches would run split phase to accommodate for the eastbound approach lane configuration and the analysis will reflect this.

- ***Greens Prairie Road & Castlegate Drive*** – The southbound left-turn is anticipated to operate at LOS F in both peak hours and the northbound left-turn is anticipated to operate at LOS F in the PM peak hour.

  Recommendation – The intersection should be monitored for signalization. The existing southbound left-turn traffic from Castlegate Drive to Greens Prairie Road is 218 vehicles in the AM peak and 106 vehicles in the PM peak. By the time Greens Prairie is widened (2020) the intersections of Castlegate Drive is anticipated to meet signal warrants based on 2% growth along Greens Prairie Road. It is anticipated that the northbound approach (Margraves Development) will not meet signal warrants until the development is completed with multiple phases. For the northbound approach (Margraves) the intersection is anticipated to meet peak hour signal warrants at 913 dwelling units on site. The northbound approach should be built with two lanes.

  Result – Signalization will result in acceptable level of service.

- ***Arrington Road & S Oaks Drive*** – The intersection is projected to operate at LOS F in the PM peak hour in the westbound approach.

  Recommendation – The westbound left-turn volume from South Oaks to Arrington is anticipated to slightly more than double from existing conditions during the PM peak period. The westbound approach volumes is approximately 38 more vehicles than can be accommodated by an acceptable level of service. Two options for consideration:
    - Construct a two-lane westbound approach (dedicated left and right-turn)
    - When Arrington Road is improved construct a raised median which prevents the westbound left-turn movement. This raised median will discourage traffic from exiting SH 6 and using South Oaks to turn left onto Arrington. The Margraves development traffic will be shifted to the William D. Fitch and Arrington Road intersection.

  Result – These options will be tested in the Mitigated Build Out and Mitigated with Arrington Median Build Out Scenarios, respectively.

- ***Arrington Rd (EB) and William D.* Fitch Pkwy** – The eastbound approach at the intersection is anticipated to operate at LOS E or worse in both peak hours. Note the intersection as a whole operates at an acceptable level of service.
-

  Recommendation – Consideration for the existing shoulder to be striped to provide a dedicated eastbound right-turn lane.

  Result – Implementation of the eastbound right-turn lane is anticipated to bring the overall intersection and all of its approaches back to acceptable LOS.

2027 MITIGATED BUILD-OUT INTERSECTION OPERATIONS

All signalized intersections and stop controlled approaches are anticipated to operate at acceptable levels of service during the Mitigated Build-out Analysis with the programmed improvements in place with the exception of the Arrington Road and South Oaks Drive intersection. LOS was improved from F to E during the PM peak hour with the additional westbound lane. This intersection will be reevaluated with the Mitigated with Arrington Median Scenario.

2027 MITIGATED WITH ARRINGTON MEDIAN BUILD-OUT INTERSECTION OPERATIONS

All intersections are anticipated to operate at an acceptable LOS with implementation of the median along Arrington Road at the South Oaks Drive intersection. The anticipated shifts in traffic are accommodated at the affected intersections while still maintaining an acceptable overall LOS at the major signalized intersections with some minor signal timing changes for anticipated traffic patterns.

INTERIM SCENARIO ANALYSIS – 2ND COLLECTOR ACCESS POINT

The Interim Scenario was analyzed to determine at what point in the development is it necessary to provide a second access point to a major collector. In other words, if the development provides access along Greens Prairie Road, when is access needed along Arrington Road or vice versa.

Development Starts at Greens Prairie Road:

The Interim Scenario was analyzed to determine at what point in the development is it necessary to provide access to a second access point Arrington Road. The scenario was evaluated assuming the widening of Greens Prairie Road to a four lane divided section. The assumptions for development and traffic volumes were based on the existing and background conditions of Greens Prairie Road only, as well as the number of homes which will generate the number of vehicles that would cause this intersection or road to operate at a less than desirable level. It was assumed that all traffic would access Greens Prairie Road (see distribution assumptions in **Appendix**).

The intersection of Greens Prairie Road and Castlegate Drive fails to meet the desirable northbound LOS D required by the City of College Station at approximately 787 single-family units. At this point it is recommended to implement a second access point at Arrington Road. Note, that a signal is recommended for this intersection by 2020 so level of service at this intersection is not anticipated to be an issue. Note, the second point of access on Greens Prairie would be necessary after 30 homes are constructed for the City of College Stations UDO Section 8.2.

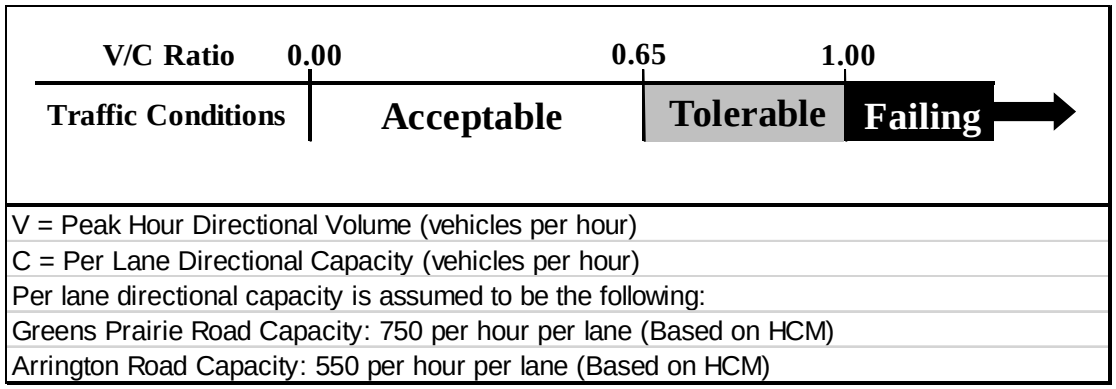
Development Starts at Arrington Road:

The Interim Scenario was analyzed to determine at what point in the development is it necessary to provide a second access point Greens Prairie Road. This scenario assumes improvements are made to the condition of Arrington Road. The limiting factor would be the amount of desired traffic on Arrington Road. Arrington Road would fail to meet the desirable LOS D required by the City of College Station at approximately 628 single-family units. At this point, it is recommended to implement a second access point to Greens Prairie Road. Note, the second point of access would be necessary after 30 homes are constructed for the City of College Stations UDO Section 8.2. This could be extended to 100 homes with Remote Emergency Access where development phasing is a consideration.

THOROUGHFARE CAPACITY ANALYSIS METHODOLOGY

The thoroughfare criteria are based on the volume-to-capacity (V/C) ratio for traffic volumes and roadway capacity. The roadway capacity values used in this analysis are shown in **Table 7**. An "Acceptable" operating condition means the facility is underutilized, while a "Failing" operating condition indicates the approximate carry capacity has been met or exceeded.

Table 7: Thoroughfare Capacity Criteria for Thoroughfare Analysis



THOROUGHFARE ANALYSIS RESULTS

Tables 8 and **9** summarizes the AM and PM peak hour volumes and V/C ratios of the links for the existing, background, and build-out scenarios.

Table 8: Thoroughfare Operation Analysis – AM Peak Hour

Roadway	Segment	Direction	EXISTING				BACKGROUND				BUILD OUT			
			Number of Lanes	Vol	V/C Ratio	Traffic Condition	Number of Lanes	Vol	V/C Ratio	Traffic Condition	Number of Lanes	Vol	V/C Ratio	Traffic Condition
Greens Prairie Road	East of Castlegate Drive	EB	1	668	0.89	Tolerable	2	798	0.53	Acceptable	2	1,154	0.77	Tolerable
		WB	1	268	0.36	Acceptable	2	288	0.19	Acceptable	2	419	0.28	Acceptable
		Total	2	936	0.62	Acceptable	4	1,086	0.36	Acceptable	4	1,573	0.52	Acceptable
Arrington Road	North of New Collector	NB	1	300	0.55	Acceptable	1	197	0.36	Acceptable	1	447	0.81	Tolerable
		SB	1	122	0.22	Acceptable	1	62	0.11	Acceptable	1	154	0.28	Acceptable
		Total	2	422	0.38	Acceptable	2	259	0.24	Acceptable	2	601	0.55	Acceptable

Table 9: Thoroughfare Operation Analysis – PM Peak Hour

Roadway	Segment	Direction	EXISTING				BACKGROUND				BUILD OUT			
			Number of Lanes	Vol	V/C Ratio	Traffic Condition	Number of Lanes	Vol	V/C Ratio	Traffic Condition	Number of Lanes	Vol	V/C Ratio	Traffic Condition
Greens Prairie Road	East of Castlegate Drive	EB	1	371	0.49	Acceptable	2	431	0.29	Acceptable	2	702	0.47	Acceptable
		WB	1	634	0.85	Tolerable	2	749	0.50	Acceptable	2	1,143	0.76	Tolerable
		Total	2	1,005	0.67	Tolerable	4	1,180	0.39	Acceptable	4	1,845	0.62	Acceptable
Arrington Road	North of New Collector	NB	1	153	0.28	Acceptable	1	87	0.16	Acceptable	1	251	0.46	Acceptable
		SB	1	202	0.37	Acceptable	1	71	0.13	Acceptable	1	379	0.69	Tolerable
		Total	2	355	0.32	Acceptable	2	158	0.14	Acceptable	2	630	0.57	Acceptable

The thoroughfare analyses show that the background and build-out scenarios for AM and PM peak hours operate at tolerable conditions or better (LOS D or better).

THOROUGHFARE ANALYSIS RECOMMENDATIONS

- *Greens Prairie Road:* The eastbound AM peak hour and westbound PM peak hour are currently operating with tolerable traffic conditions.

  Recommendation - Greens Prairie Road is recommended to be widened to a four-lane divided cross section.

  Result – Greens Prairie Road's thoroughfare capacity is an acceptable level of service.

Arrington Road: Arrington Road is currently operating with an acceptable traffic capacity for the AM and PM peak hours based on existing volumes. The capacity of the roadway as a major collector is not a concern. *However, the existing condition of the roadway is recommended to be improved to allow the facility to operate as intended*.

AUXILARY LANE ANALYSIS

Right-turn deceleration lanes

Based on Section 7.3 of the City of College Station UDO a right-turn deceleration lane with storage length plus taper may be required for any access with a projected peak hour right-turn ingress turning volume greater than 50 vehicles per hour (vph). If the posted speed is greater than 40 mph, a right-turn deceleration lane and taper may be required for any access with a projected peak hour ingress turning volume greater than 25 vph.

Dedicated right-turn deceleration lanes are warranted at two of the three project access locations. A right-turn deceleration lane should be constructed at the site access drive at Greens Prairie Road & Castlegate Drive/Minor Collector and at Arrington Road & the Minor Collector.

Left-turn deceleration lanes

At both proposed minor collectors along Greens Prairie Road, westbound left-turn lanes were assumed with the widening of Greens Prairie Road to the four-lane divided section. Both minor collector locations are recommended to have median openings. The New Collector along Arrington Road does not meet thresholds for warranting a northbound left-turn lane. Based on these values and Table 3-11, a guide for left-turn lanes on two-lane roadways provided by the TxDOT Roadway Design Manual, a left-turn deceleration lane is not warranted. The left-turn warrant analysis for the AM and PM peak hour are included in the **Appendix**.

CONCLUSIONS AND RECOMMENDATIONS

Based on the traffic impact analysis presented in this report, each of the study intersections are expected to operate at an acceptable level of service (LOS) at the build-out of the site development.

The following conclusions and recommendations are offered. **Exhibit A** provides a summary of the recommended improvements.

Existing

Intersection Capacity Analysis

- ***Greens Prairie Road & Arrington Road*** – The eastbound left-turn lane currently operates at LOS F in the AM and PM peak hours. The westbound approach currently operates at LOS F during the PM peak hour.

  Recommendation – Intersection improvements are under design for the intersection of Greens Prairie Road & Arrington Road. These intersection improvements include signalization, a free southbound right-turn from Arrington Road to Greens Prairie Road, and the westbound approach being widened to a two-lane approach (dedicated WBL and shared WBTR).

- ***Greens Prairie Road & Castlegate Drive*** – The southbound approach is currently operating at LOS F during the AM peak hour.

  Recommendation – Greens Prairie Road is recommended to be widened to a four-lane divided cross section.

Thoroughfare Capacity Analysis

- *Greens Prairie Road:* The eastbound AM peak hour and westbound PM peak hour are currently operating with tolerable traffic conditions.

  Recommendation - Greens Prairie Road is recommended to be widened to a four-lane divided cross section.

- *Arrington Road:* Arrington Road is currently operating with an acceptable traffic capacity for the AM and PM peak hours based on existing volumes. The capacity of the roadway as a major collector is not a concern. *However, the existing condition of the roadway is recommended to be improved to allow the facility to operate as intended.*

  Recommendation – Improve the condition of Arrington Road

Background

Intersection Capacity Analysis

All signalized intersections and stop controlled approaches are anticipated to operate at acceptable levels of service during the Background Analysis.

Thoroughfare Capacity Analysis

Both Greens Prairie Road and Arrington Road are projected to operate with acceptable traffic conditions when considering Background Analysis traffic volumes.

Recommendation: Arrington Road benefits from the Mesa Verde extension to SH 6. It is recommended that the extension be in place prior to the Margraves development connecting to Arrington Road.

Build-out

Intersection Capacity Analysis

- ***Greens Prairie Road & Arrington Road*** – The intersection operates at LOS E during the AM peak hour and has a projected eastbound left-turn volume of 813 vehicles during the AM peak hour.

  Recommendation – The eastbound approach is recommended to be striped with a dedicated left-turn lane and shared left/through/right turn lane.

- ***Greens Prairie Road & Castlegate Drive*** – The southbound left-turn is anticipated to operate at LOS F in both peak hours and the northbound left-turn is anticipated to operate at LOS F in the PM peak hour.

  Recommendation – The intersection should be monitored for signalization. The existing southbound left-turn traffic from Castlegate Drive to Greens Prairie Road is 218 vehicles in the AM peak and 106 vehicles in the PM peak. By the time Greens Prairie is widened (2020) the intersections of Castlegate Drive is anticipated to meet signal warrants based on 2% growth along Greens Prairie Road. It is anticipated that the northbound approach (Margraves Development) will not meet signal warrants until the development is completed with multiple phases. For the northbound approach (Margraves) the intersection is anticipated to meet peak hour signal warrants at 913 dwelling units on site. The northbound approach should be built with two lanes.

- ***Arrington Road & S Oaks Drive*** – The intersection is projected to operate at LOS F in the PM peak hour in the westbound approach.

  Recommendation – Construct a two-lane westbound approach (dedicated left and right-turn) or when Arrington Road is improved construct a raised median which prevents the westbound left-turn movement. This raised median will discourage traffic from exiting SH 6 and using South Oaks to turn left onto Arrington.

- ***Arrington Rd (EB) and William D.* Fitch Pkwy** – The eastbound approach at the intersection is anticipated to operate at LOS E or worse in both peak hours. Note the intersection as a whole operates at an acceptable level of service.

  Recommendation – Consideration for the existing shoulder to be striped to provide a dedicated eastbound right-turn lane.

Thoroughfare Capacity Analysis

- *Greens Prairie Road:* Greens Prairie Road is anticipated to operate with an acceptable overall traffic condition through Build-out of the proposed development.

- *Arrington Road:* Arrington Road is anticipated to operate with an acceptable overall traffic condition during the AM and PM peak hours.

Mitigated Build-out

Intersection Capacity Analysis

All signalized intersections and stop controlled approaches are anticipated to operate at acceptable levels of service during the Mitigated Build-out Analysis with the exception of the Arrington Road and South Oaks Drive intersection. LOS was improved from F to E during the PM peak hour with the additional westbound lane. This was a 28% improvement in delay.

Mitigated with Arrington Median Build-out

Intersection Capacity Analysis

All intersections are anticipated to operate at an acceptable LOS with implementation of the median along Arrington Road at the South Oaks Drive intersection. The anticipated shifts in traffic are accommodated at the affected intersections while still maintaining an acceptable overall LOS at the major signalized intersections with some minor signal timing changes for anticipated traffic patterns.

APPENDIX

METHODOLOGY MEMO

TRAFFIC COUNTS

BACKGROUND TRAFFIC EXHIBITS

2017 EXISTING SYNCHRO ANALYSIS

2027 BACKGROUND SYNCHRO ANALYSIS

2027 BUILDOUT SYNCHRO ANALYSIS

2027 MITIGATED BUILDOUT SYNCHRO ANALYSIS

2027 MITIGATED W/ ARRINGTON MEDIAN BUILDOUT SYNCHRO ANALYSIS

GREENS PRAIRIE ONLY DISTRIBUTION

LEFT-TURN ANALYSIS

Methodology Memo

Kimley»Horn

MEMORANDUM

To: Jason Schubert, AICP
City of College Station, Texas

From: Jeffrey Whitacre, P.E., AICP, PTP
Kimley-Horn and Associates, Inc.

Date: February 13, 2017

Subject: Traffic Impact Analysis Methodology
Margraves Tract Single Family Site
College Station, Texas

The following memorandum details the traffic impact analysis methodology for a proposed single family development located between Greens Prairie Road and Arrington Road in the city of College Station, Texas. A site vicinity map and conceptual plan are attached.

The zoning requested for the proposed single-family development is Restricted Suburban (RS). Thus, the proposed 369.90-acre developer is proposed to include a maximum of 1480 single-family units.

Access to the proposed development will be provided with one full-access driveway to Arrington Road, and two full-access driveways to Greens Prairie Road. This study will analyze the traffic impacts of the proposed development on Greens Prairie Road, Arrington Road, and the future connection of Mesa Verde Drive and Cherokee Drive. The connection of Mesa Verde Drive to SH 6 is expected to alleviate the traffic flow on Arrington Road by reducing the traffic volumes by 75%. This road connection will provide the users currently traveling on Arrington Road the option to take Mesa Verde Drive towards the Earl Rudder Freeway (SH6).

STUDY AREA

Based on conversations with the City of College Station, the following intersections will be included in the study area:

- William D Fitch Parkway and Arrington Road;
- Greens Prairie Road and Arrington Road;
- Greens Prairie Road and Castlegate Drive;
- Greens Prairie Road and WS Phillips Parkway;
- Harpers Ferry Road and Nantucket Drive;
- Arrington Road and S Oaks Drive; and
- Arrington Road and Harpers Ferry Road.

Study intersections are identified and attached in **Exhibit 1**.

Capacity analysis using Synchro 9 will be performed at these intersections during the weekday AM and PM peak hours.

DATA COLLECTION

Turning movement counts will be collected during the AM and PM peak hours at all study area intersections on a regular day between Tuesday and Thursday.

TRIP GENERATION AND DISTRIBUTION

The trip generation for the proposed development was projected using the 9th edition of the ITE *Trip Generation Manual* and the City of College Station *Unified Development Ordinance*. **Table 1** presents the equations provided in ITE *Trip Generation Manual* in addition to the entering and exiting distribution splits and AM and PM distribution percentages.

TABLE 1 - ESTIMATED TRIP GENERATION EQUATIONS (2027)					
Land Uses	**Units**	**ITE Code**	**Daily Rate**	**AM Peak Hour Rate**	**PM Peak Hour Rate**
			% Distribtuion	**% Distribtuion**	**% Distribtuion**
Single Family Detached Housing	Dwelling Units	210	T = 9.52 * (X)	T = 0.75 * (X)	T = 1.00 * (X)
			50% In / 50% Out	25% In / 75% Out	63% In / 37% Out

Table 2 summarizes the total number of trips that are expected to be generated by the proposed development for daily, and the AM and PM peak hours. The number of trips generated represents the number of vehicles entering and exiting the proposed development to and from the adjacent roadway network.

TABLE 2 - TRIP GENERATION CALCULATION (2027)										
Land Uses	**Amount**	**Units**	**ITE Code**	**Daily One-Way Trips**	**AM Peak Hour One-Way Trips**			**PM Peak Hour One-Way Trips**		
					IN	**OUT**	**TOTAL**	**IN**	**OUT**	**TOTAL**
Single Family Detached Housing	1,480	SF	210	14,086	278	832	1,110	932	548	1,480
Single Family Detached Housing Net New External Trips:				**14,086**	**278**	**832**	**1,110**	**932**	**548**	**1,480**

Based on a review of recent traffic data and an examination of the existing roadway network, reasonable assumptions for the trip distribution were made. The following percentages of trip distribution are assumed on the surrounding roadway network:

- 34% - Greens Prairie Road
  - 25% Greens Prairie Road, west of proposed development
  - 4% Castlegate Drive, north of proposed development
  - 5 % Greens Prairie Road, east of proposed development
- 59% - Arrington Road, north of proposed development
  - 5% - Arrington Road, north of William D. Fitch Parkway Interchange
  - 35% - William D. Fitch Parkway towards Earl Rudder Freeway (SH6)
  - 19% - William D. Fitch Parkway towards Wellborn Road (FM 2154)
- 7% - Arrington Road, east of proposed development
  - 5% S Oaks Drive
  - 2% Harpers Ferry Road

A detailed trip distribution is provided in the attached **Exhibit 2**.

BUILD-OUT ANALYSIS (2027)

The proposed development is anticipated to be built-out within ten (10) years so the build-out capacity analysis will be performed for year 2027. Based on existing traffic counts and recent development of the area, it was determined that a 2% annual growth rate will be used to determine the background growth. Therefore, a 2% growth rate will be applied to the existing turning movement volumes for ten (10) years. In addition, projected traffic from The Ranch and Watermark developments will be included in the analysis. A 10% annual growth will be implemented only to William D. Fitch Parkway on the eastbound and westbound thru movements due to high peak-hour traffic volumes.

INTERIM ANALYSIS (~2022)

The proposed development will have an interim analysis with the purpose of determining at which point a connection to Arrington Road would be necessary from a capacity standpoint on Greens Prairie Road.

If you have any questions or comments on the proposed TIA methodology, feel free to contact me at (817) 335-6511 or jeff.whitacre@kimley-horn.com.

ATTACHMENTS:

Exhibit 1: Site Vicinity Map

Exhibit 2: Detailed Trip Distribution

Conceptual Plan

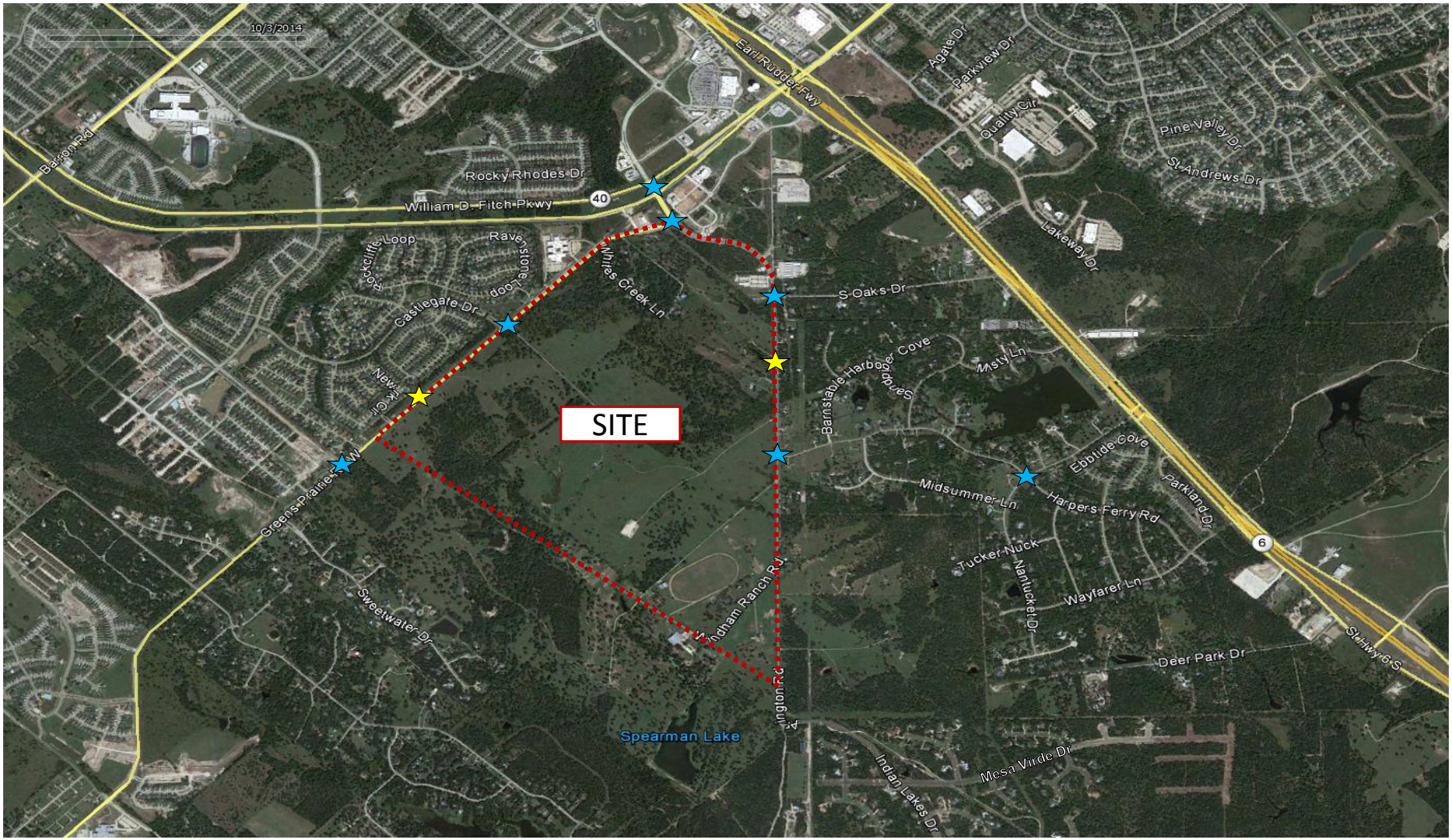


EXHIBIT 1

Vicinity Map

Margraves Tract Family Site TIA College Station

Kimley»Horn

★ = Study Intersection

★ = Future Study Intersection

North

↑

Not To Scale

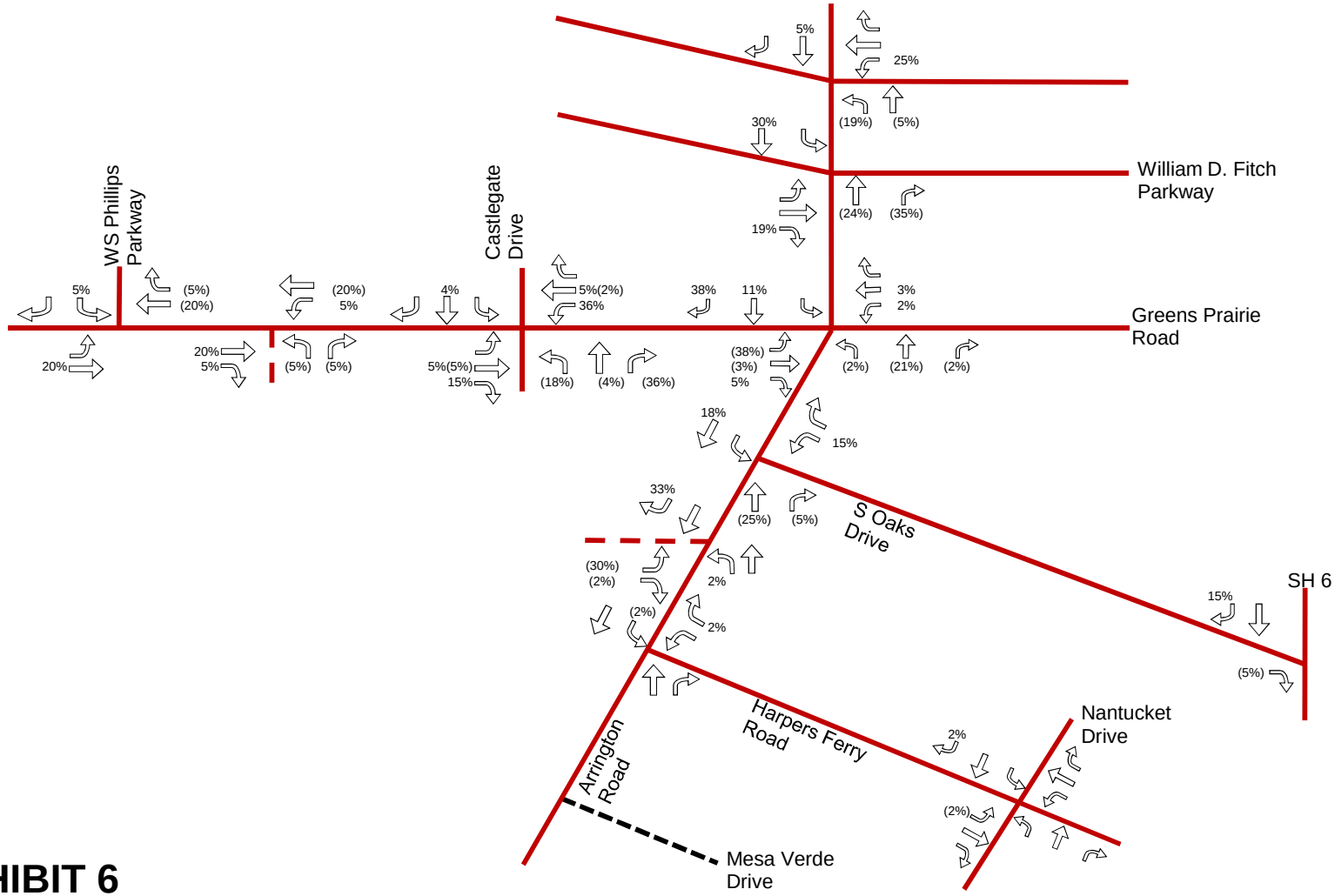


EXHIBIT 6

Trip Distribution

Margraves Tract Family Site TIA College Station

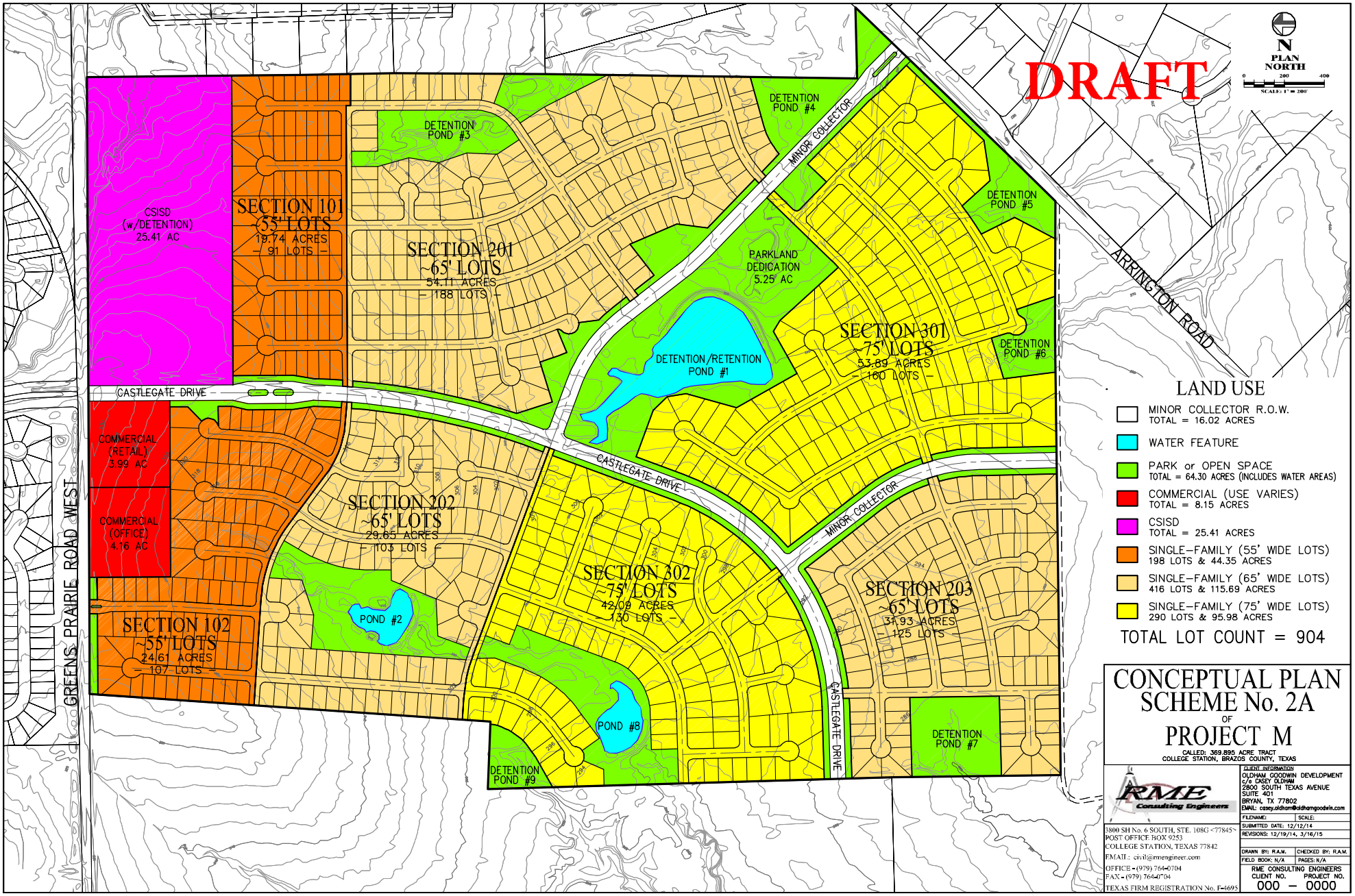
Kimley»Horn

North

Not To Scale

LEGEND:

X (Y)
X = Inbound Trip Distribution
(Y) = Outbound Trip Distribution



CONCEPTUAL PLAN SCHEME No. 2A OF PROJECT M

CALLED: 369.895 ACRE TRACT
COLLEGE STATION, BRAZOS COUNTY, TEXAS

RME Consulting Engineers
3800 SH No. 6 SOUTH, STE. 108G <77845>
POST OFFICE BOX 9253
COLLEGE STATION, TEXAS 77842
EMAIL: civil@rmengineer.com
OFFICE - (979) 764-0704
FAX - (979) 764-0704
TEXAS FIRM REGISTRATION No. F-4695

CLIENT INFORMATION
OLDHAM GOODWIN DEVELOPMENT
c/o CASEY OLDHAM
2800 SOUTH TEXAS AVENUE
SUITE 401
BRYAN, TX 77802
EMAIL: casey.oldham@oldhamgoodwin.com

FILENAME:	SCALE:
SUBMITTED DATE: 12/12/14	
REVISIONS: 12/19/14, 3/16/15	
DRAWN BY: R.A.M.	CHECKED BY: R.A.M.
FIELD BOOK: N/A	PAGES: N/A

RME CONSULTING ENGINEERS
CLIENT NO. 000 – PROJECT NO. 0000

Traffic Counts

CJ Hensch & Associates, Inc.

kh@cjhensch.com
5215 Sycamore Ave

Pasadena, Texas, United States 77503
281-487-5417 Jeff.whitacre@kimley-horn.com

Count Name: Harpers Ferry Rd at Nantucket Dr
Site Code:
Start Date: 01/25/2017
Page No: 1

Turning Movement Data

Start Time	Nantucket Dr Southbound						Harpers Ferry Rd Westbound						Nantucket Dr Northbound						Harpers Ferry Rd Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	2	1	0	0	3	0	3	4	0	0	7	0	2	0	0	0	2	7	0	0	0	0	7	19
7:15 AM	0	1	11	0	0	12	0	10	9	0	0	19	2	6	0	0	0	8	10	0	0	0	0	10	49
7:30 AM	1	2	9	0	0	12	0	3	8	0	1	11	0	4	0	0	0	4	16	0	0	0	0	16	43
7:45 AM	0	1	2	0	0	3	0	2	4	0	0	6	0	3	0	0	0	3	19	1	0	0	0	20	32
Hourly Total	1	6	23	0	0	30	0	18	25	0	1	43	2	15	0	0	0	17	52	1	0	0	0	53	143
8:00 AM	1	2	5	0	0	8	0	1	3	0	0	4	0	6	0	0	0	6	7	1	0	0	0	8	26
8:15 AM	0	3	0	0	0	3	0	0	4	0	0	4	1	5	0	0	0	6	6	1	0	0	0	7	20
8:30 AM	1	0	4	0	0	5	0	0	10	0	0	10	0	5	0	0	0	5	6	1	0	0	0	7	27
8:45 AM	1	2	2	0	0	5	1	2	6	0	0	9	0	3	0	0	0	3	5	2	0	0	0	7	24
Hourly Total	3	7	11	0	0	21	1	3	23	0	0	27	1	19	0	0	0	20	24	5	0	0	0	29	97
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	2	8	3	0	0	13	0	0	2	0	1	2	0	1	0	0	1	1	4	0	0	0	0	4	20
4:15 PM	2	7	8	0	0	17	0	2	6	0	0	8	1	3	3	0	0	7	8	2	2	2	0	14	46
4:30 PM	3	1	3	0	0	7	0	1	7	0	0	8	0	1	1	0	0	2	4	2	0	0	0	6	23
4:45 PM	4	6	5	0	0	15	0	0	1	0	0	1	0	0	0	0	0	0	4	3	0	0	0	7	23
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5:15 PM	1	5	11	0	0	17	0	2	1	0	0	3	0	2	0	0	0	2	9	4	0	0	0	13	35
5:30 PM	2	3	9	0	0	14	0	4	10	0	0	14	1	3	0	0	0	4	3	0	0	0	0	3	35
5:45 PM	3	7	5	0	0	15	0	1	1	0	0	2	0	3	0	0	0	3	6	0	0	0	0	6	26
Hourly Total	9	20	32	0	0	61	0	11	13	0	0	24	1	11	1	0	0	13	28	6	0	0	0	34	132
Grand Total	24	55	85	0	0	164	1	35	77	0	2	113	5	50	5	0	1	60	124	19	2	2	0	147	484
Approach %	14.6	33.5	51.8	0.0	-	-	0.9	31.0	68.1	0.0	-	-	8.3	83.3	8.3	0.0	-	-	84.4	12.9	1.4	1.4	-	-	-
Total %	5.0	11.4	17.6	0.0	-	33.9	0.2	7.2	15.9	0.0	-	23.3	1.0	10.3	1.0	0.0	-	12.4	25.6	3.9	0.4	0.4	-	30.4	-
All Vehicles (no classification)	24	55	85	0	-	164	1	35	77	0	-	113	5	50	5	0	-	60	124	19	2	2	-	147	484
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	100.0	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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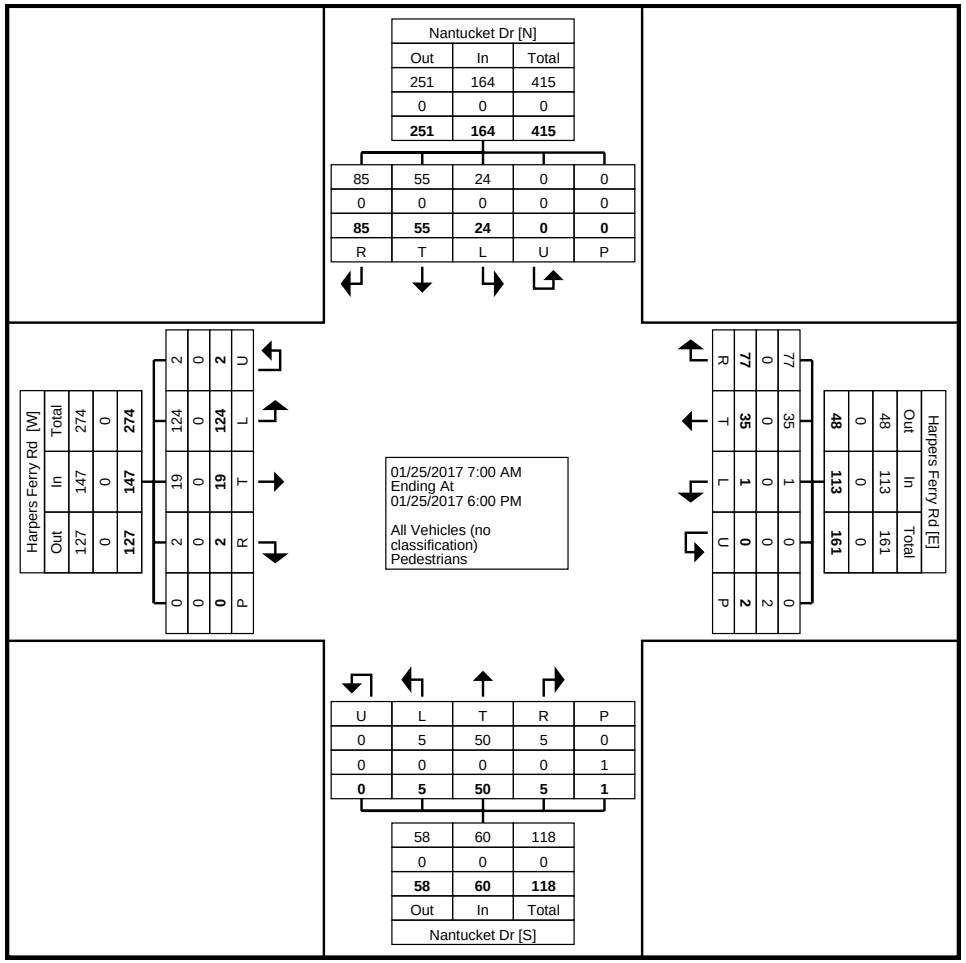

Turning Movement Data Plot

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Count Name: Harpers Ferry Rd at Nantucket Dr
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Nantucket Dr Southbound						Harpers Ferry Rd Westbound						Nantucket Dr Northbound						Harpers Ferry Rd Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	0	1	11	0	0	12	0	10	9	0	0	19	2	6	0	0	0	8	10	0	0	0	0	10	49
7:30 AM	1	2	9	0	0	12	0	3	8	0	1	11	0	4	0	0	0	4	16	0	0	0	0	16	43
7:45 AM	0	1	2	0	0	3	0	2	4	0	0	6	0	3	0	0	0	3	19	1	0	0	0	20	32
8:00 AM	1	2	5	0	0	8	0	1	3	0	0	4	0	6	0	0	0	6	7	1	0	0	0	8	26
Total	2	6	27	0	0	35	0	16	24	0	1	40	2	19	0	0	0	21	52	2	0	0	0	54	150
Approach %	5.7	17.1	77.1	0.0	-	-	0.0	40.0	60.0	0.0	-	-	9.5	90.5	0.0	0.0	-	-	96.3	3.7	0.0	0.0	-	-	-
Total %	1.3	4.0	18.0	0.0	-	23.3	0.0	10.7	16.0	0.0	-	26.7	1.3	12.7	0.0	0.0	-	14.0	34.7	1.3	0.0	0.0	-	36.0	-
PHF	0.500	0.750	0.614	0.000	-	0.729	0.000	0.400	0.667	0.000	-	0.526	0.250	0.792	0.000	0.000	-	0.656	0.684	0.500	0.000	0.000	-	0.675	0.765
All Vehicles (no classification)	2	6	27	0	-	35	0	16	24	0	-	40	2	19	0	0	-	21	52	2	0	0	-	54	150
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	-	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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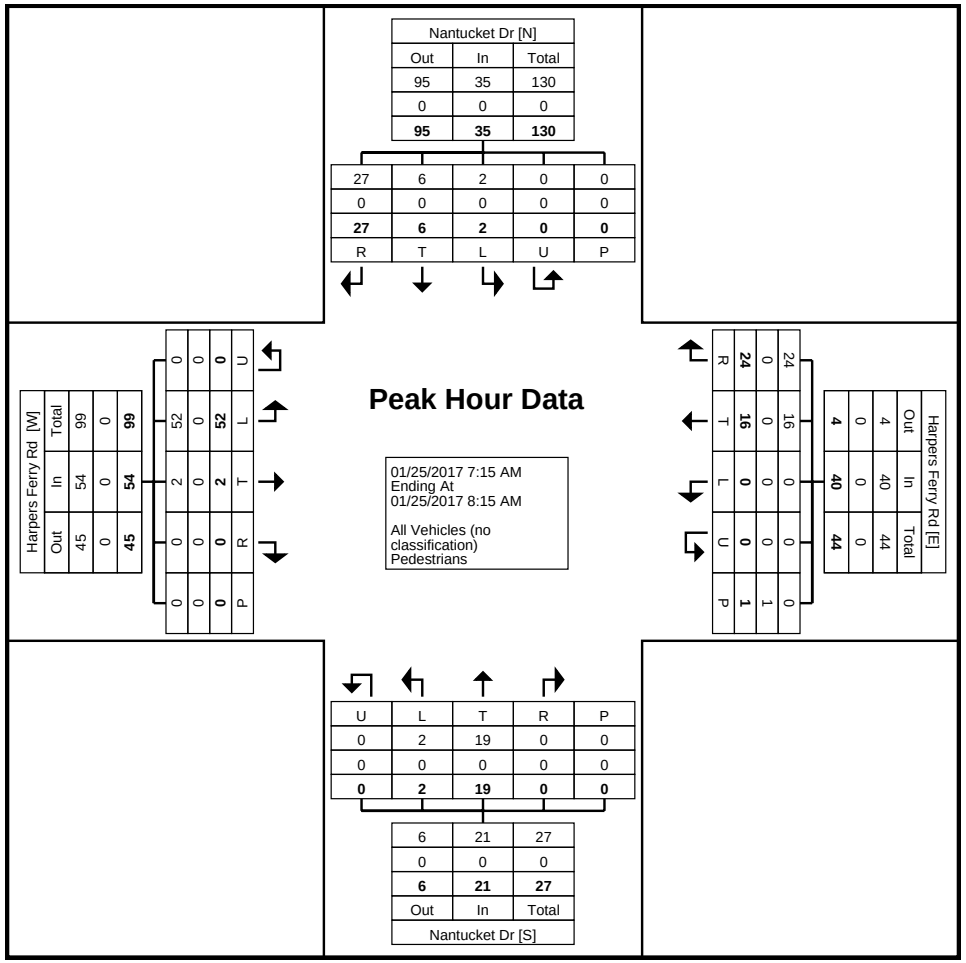

Turning Movement Peak Hour Data Plot (7:15 AM)

CJ Hensch & Associates, Inc.
kh@cjhensch.com
5215 Sycamore Ave

Pasadena, Texas, United States 77503
281-487-5417 Jeff.whitacre@kimley-horn.com

Count Name: Harpers Ferry Rd at Nantucket Dr
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Nantucket Dr Southbound						Harpers Ferry Rd Westbound						Nantucket Dr Northbound						Harpers Ferry Rd Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
5:00 PM	3	5	7	0	0	15	0	4	1	0	0	5	0	3	1	0	0	4	10	2	0	0	0	12	36
5:15 PM	1	5	11	0	0	17	0	2	1	0	0	3	0	2	0	0	0	2	9	4	0	0	0	13	35
5:30 PM	2	3	9	0	0	14	0	4	10	0	0	14	1	3	0	0	0	4	3	0	0	0	0	3	35
5:45 PM	3	7	5	0	0	15	0	1	1	0	0	2	0	3	0	0	0	3	6	0	0	0	0	6	26
Total	9	20	32	0	0	61	0	11	13	0	0	24	1	11	1	0	0	13	28	6	0	0	0	34	132
Approach %	14.8	32.8	52.5	0.0	-	-	0.0	45.8	54.2	0.0	-	-	7.7	84.6	7.7	0.0	-	-	82.4	17.6	0.0	0.0	-	-	-
Total %	6.8	15.2	24.2	0.0	-	46.2	0.0	8.3	9.8	0.0	-	18.2	0.8	8.3	0.8	0.0	-	9.8	21.2	4.5	0.0	0.0	-	25.8	-
PHF	0.750	0.714	0.727	0.000	-	0.897	0.000	0.688	0.325	0.000	-	0.429	0.250	0.917	0.250	0.000	-	0.813	0.700	0.375	0.000	0.000	-	0.654	0.917
All Vehicles (no classification)	9	20	32	0	-	61	0	11	13	0	-	24	1	11	1	0	-	13	28	6	0	0	-	34	132
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Harpers Ferry Rd at Nantucket Dr
Site Code:
Start Date: 01/25/2017
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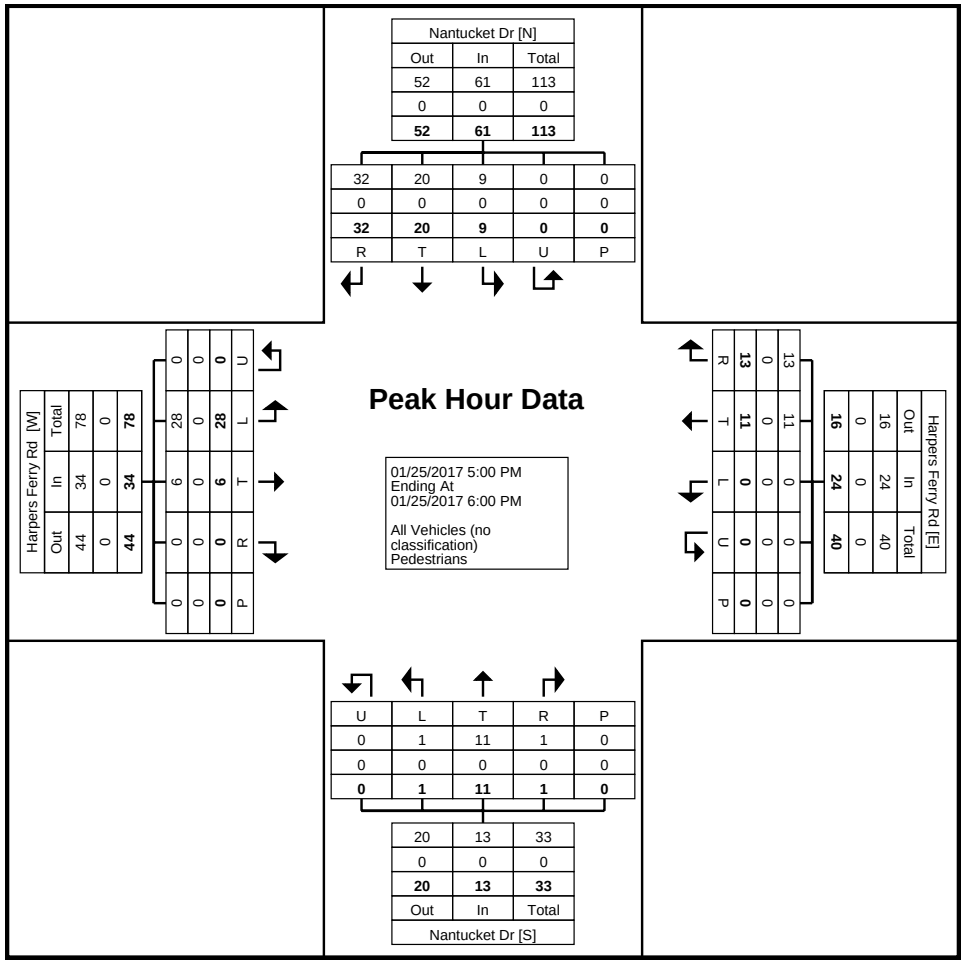

Turning Movement Peak Hour Data Plot (5:00 PM)

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Count Name: Greens Prairie Rd at WS Philips Pkwy
Site Code:
Start Date: 01/25/2017
Page No: 1

Turning Movement Data

Start Time	WS Philips Pkwy Southbound					Greens Prairie Rd Westbound					Greens Prairie Rd Eastbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	5	1	0	0	6	31	7	0	0	38	1	72	0	0	73	117
7:15 AM	16	9	0	4	25	47	8	0	0	55	7	94	0	0	101	181
7:30 AM	9	3	0	0	12	38	7	0	0	45	4	99	0	0	103	160
7:45 AM	9	2	0	0	11	44	5	0	0	49	6	110	0	0	116	176
Hourly Total	39	15	0	4	54	160	27	0	0	187	18	375	0	0	393	634
8:00 AM	2	9	0	1	11	34	3	0	0	37	6	60	0	0	66	114
8:15 AM	4	6	0	3	10	36	5	0	0	41	2	56	0	0	58	109
8:30 AM	5	2	0	1	7	45	0	0	0	45	1	63	0	0	64	116
8:45 AM	5	3	0	0	8	37	3	0	0	40	2	57	0	0	59	107
Hourly Total	16	20	0	5	36	152	11	0	0	163	11	236	0	0	247	446
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	8	14	0	1	22	57	5	0	0	62	1	40	0	0	41	125
4:15 PM	3	11	0	0	14	85	7	0	0	92	1	33	0	0	34	140
4:30 PM	1	7	0	1	8	89	10	0	0	99	0	48	0	0	48	155
4:45 PM	5	8	0	0	13	89	8	0	0	97	1	46	0	0	47	157
Hourly Total	17	40	0	2	57	320	30	0	0	350	3	167	0	0	170	577
5:00 PM	3	8	0	0	11	102	7	0	0	109	5	50	0	0	55	175
5:15 PM	4	8	0	0	12	132	6	0	0	138	3	62	0	0	65	215
5:30 PM	7	10	0	0	17	104	10	0	0	114	1	66	0	0	67	198
5:45 PM	4	10	0	0	14	95	10	0	0	105	6	53	0	0	59	178
Hourly Total	18	36	0	0	54	433	33	0	0	466	15	231	0	0	246	766
Grand Total	90	111	0	11	201	1065	101	0	0	1166	47	1009	0	0	1056	2423
Approach %	44.8	55.2	0.0	-	-	91.3	8.7	0.0	-	-	4.5	95.5	0.0	-	-	-
Total %	3.7	4.6	0.0	-	8.3	44.0	4.2	0.0	-	48.1	1.9	41.6	0.0	-	43.6	-
All Vehicles (no classification)	90	111	0	-	201	1065	101	0	-	1166	47	1009	0	-	1056	2423
% All Vehicles (no classification)	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	11	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Greens Prairie Rd at WS Philips Pkwy
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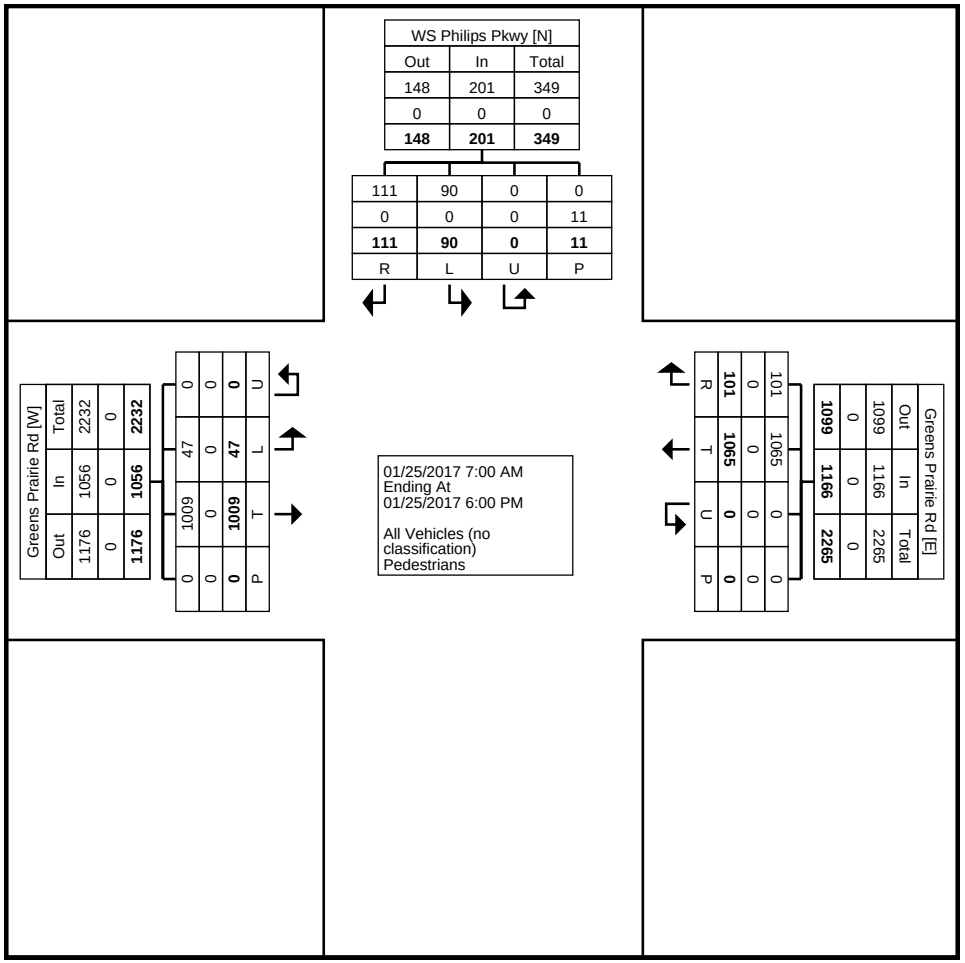

Turning Movement Data Plot

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Count Name: Greens Prairie Rd at WS Philips Pkwy
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (7:00 AM)

Start Time	WS Philips Pkwy Southbound					Greens Prairie Rd Westbound					Greens Prairie Rd Eastbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	5	1	0	0	6	31	7	0	0	38	1	72	0	0	73	117
7:15 AM	16	9	0	4	25	47	8	0	0	55	7	94	0	0	101	181
7:30 AM	9	3	0	0	12	38	7	0	0	45	4	99	0	0	103	160
7:45 AM	9	2	0	0	11	44	5	0	0	49	6	110	0	0	116	176
Total	39	15	0	4	54	160	27	0	0	187	18	375	0	0	393	634
Approach %	72.2	27.8	0.0	-	-	85.6	14.4	0.0	-	-	4.6	95.4	0.0	-	-	-
Total %	6.2	2.4	0.0	-	8.5	25.2	4.3	0.0	-	29.5	2.8	59.1	0.0	-	62.0	-
PHF	0.609	0.417	0.000	-	0.540	0.851	0.844	0.000	-	0.850	0.643	0.852	0.000	-	0.847	0.876
All Vehicles (no classification)	39	15	0	-	54	160	27	0	-	187	18	375	0	-	393	634
% All Vehicles (no classification)	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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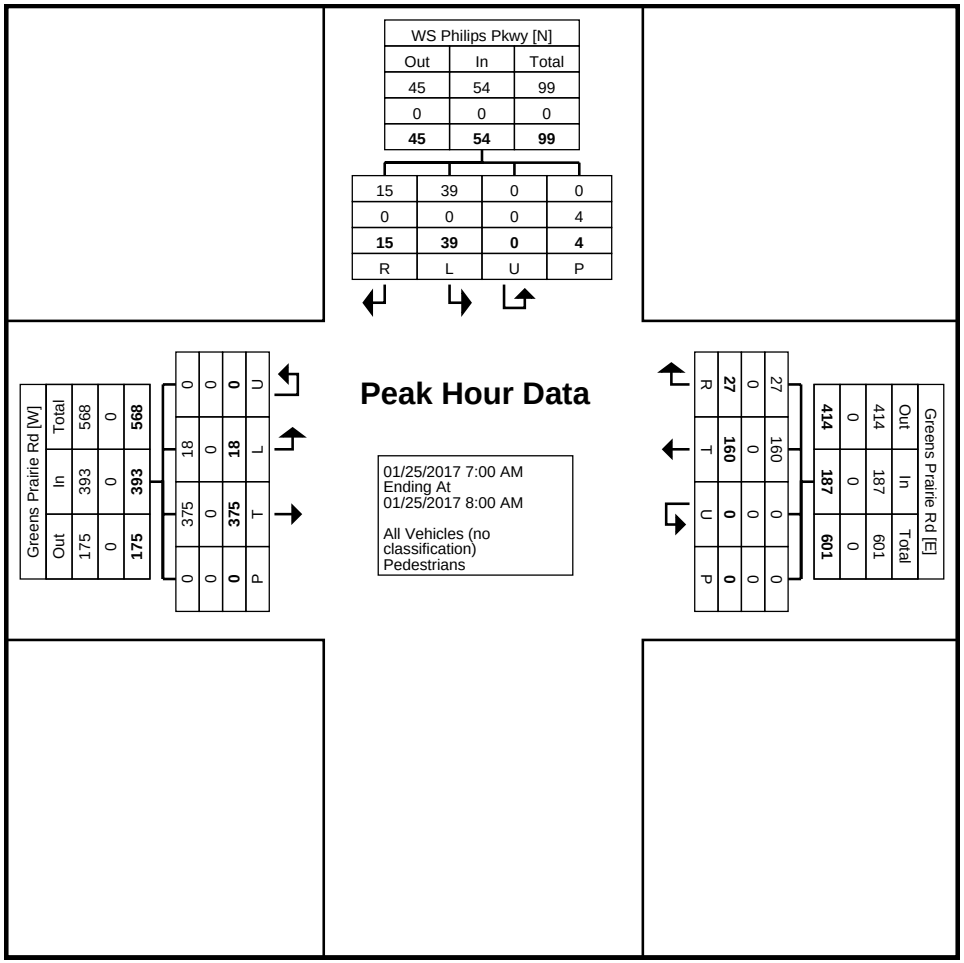

Turning Movement Peak Hour Data Plot (7:00 AM)

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Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	WS Philips Pkwy Southbound					Greens Prairie Rd Westbound					Greens Prairie Rd Eastbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
5:00 PM	3	8	0	0	11	102	7	0	0	109	5	50	0	0	55	175
5:15 PM	4	8	0	0	12	132	6	0	0	138	3	62	0	0	65	215
5:30 PM	7	10	0	0	17	104	10	0	0	114	1	66	0	0	67	198
5:45 PM	4	10	0	0	14	95	10	0	0	105	6	53	0	0	59	178
Total	18	36	0	0	54	433	33	0	0	466	15	231	0	0	246	766
Approach %	33.3	66.7	0.0	-	-	92.9	7.1	0.0	-	-	6.1	93.9	0.0	-	-	-
Total %	2.3	4.7	0.0	-	7.0	56.5	4.3	0.0	-	60.8	2.0	30.2	0.0	-	32.1	-
PHF	0.643	0.900	0.000	-	0.794	0.820	0.825	0.000	-	0.844	0.625	0.875	0.000	-	0.918	0.891
All Vehicles (no classification)	18	36	0	-	54	433	33	0	-	466	15	231	0	-	246	766
% All Vehicles (no classification)	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Greens Prairie Rd at WS Philips Pkwy
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Page No: 6

WS Philips Pkwy [N]		
Out	In	Total
48	54	102
0	0	0
48	**54**	**102**

36	18	0	0
0	0	0	0
36	**18**	**0**	**0**
R	L	U	P

Peak Hour Data

01/25/2017 5:00 PM
Ending At
01/25/2017 6:00 PM

All Vehicles (no classification)
Pedestrians

Greens Prairie Rd [W]		
Out	In	Total
469	246	715
0	0	0
469	**246**	**715**

0	15	231	0
0	0	0	0
0	**15**	**231**	**0**
P	L	T	U

33	433	0	0
0	0	0	0
33	**433**	**0**	**0**
R	T	U	P

Greens Prairie Rd [E]		
Out	In	Total
249	466	715
0	0	0
249	**466**	**715**

Turning Movement Peak Hour Data Plot (5:00 PM)

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Count Name: Greens Prairie Rd at Castlegate Dr
Site Code:
Start Date: 01/25/2017
Page No: 1

Turning Movement Data

Start Time	Castegate Dr Southbound					Green Prairie Rd Westbound					Green Prairie Rd Eastbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	25	1	0	0	26	37	4	0	0	41	1	77	0	0	78	145
7:15 AM	67	4	0	0	71	55	12	0	0	67	2	136	0	0	138	276
7:30 AM	74	6	0	0	80	35	33	0	0	68	1	126	0	0	127	275
7:45 AM	40	0	1	0	41	53	22	0	0	75	4	112	0	0	116	232
Hourly Total	206	11	1	0	218	180	71	0	0	251	8	451	0	0	459	928
8:00 AM	37	1	0	0	38	38	20	0	0	58	0	76	0	0	76	172
8:15 AM	22	3	0	0	25	40	9	0	0	49	2	62	0	0	64	138
8:30 AM	20	2	0	0	22	48	7	0	0	55	0	74	0	0	74	151
8:45 AM	31	0	0	0	31	34	10	0	0	44	1	66	0	0	67	142
Hourly Total	110	6	0	0	116	160	46	0	0	206	3	278	0	0	281	603
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	10	1	0	0	11	68	23	0	0	91	1	51	0	0	52	154
4:15 PM	13	0	1	0	14	92	26	0	0	118	0	34	0	0	34	166
4:30 PM	18	1	1	0	20	103	30	0	0	133	1	53	0	0	54	207
4:45 PM	19	2	0	0	21	105	39	0	0	144	1	49	0	0	50	215
Hourly Total	60	4	2	0	66	368	118	0	0	486	3	187	0	0	190	742
5:00 PM	20	2	1	0	23	119	34	0	0	153	2	58	0	0	60	236
5:15 PM	26	0	0	0	26	134	33	0	0	167	3	63	0	0	66	259
5:30 PM	25	0	0	0	25	117	36	0	0	153	1	82	0	0	83	261
5:45 PM	35	2	0	0	37	107	54	0	0	161	1	62	0	0	63	261
Hourly Total	106	4	1	0	111	477	157	0	0	634	7	265	0	0	272	1017
Grand Total	482	25	4	0	511	1185	392	0	0	1577	21	1181	0	0	1202	3290
Approach %	94.3	4.9	0.8	-	-	75.1	24.9	0.0	-	-	1.7	98.3	0.0	-	-	-
Total %	14.7	0.8	0.1	-	15.5	36.0	11.9	0.0	-	47.9	0.6	35.9	0.0	-	36.5	-
All Vehicles (no classification)	482	25	4	-	511	1185	392	0	-	1577	21	1181	0	-	1202	3290
% All Vehicles (no classification)	100.0	100.0	100.0	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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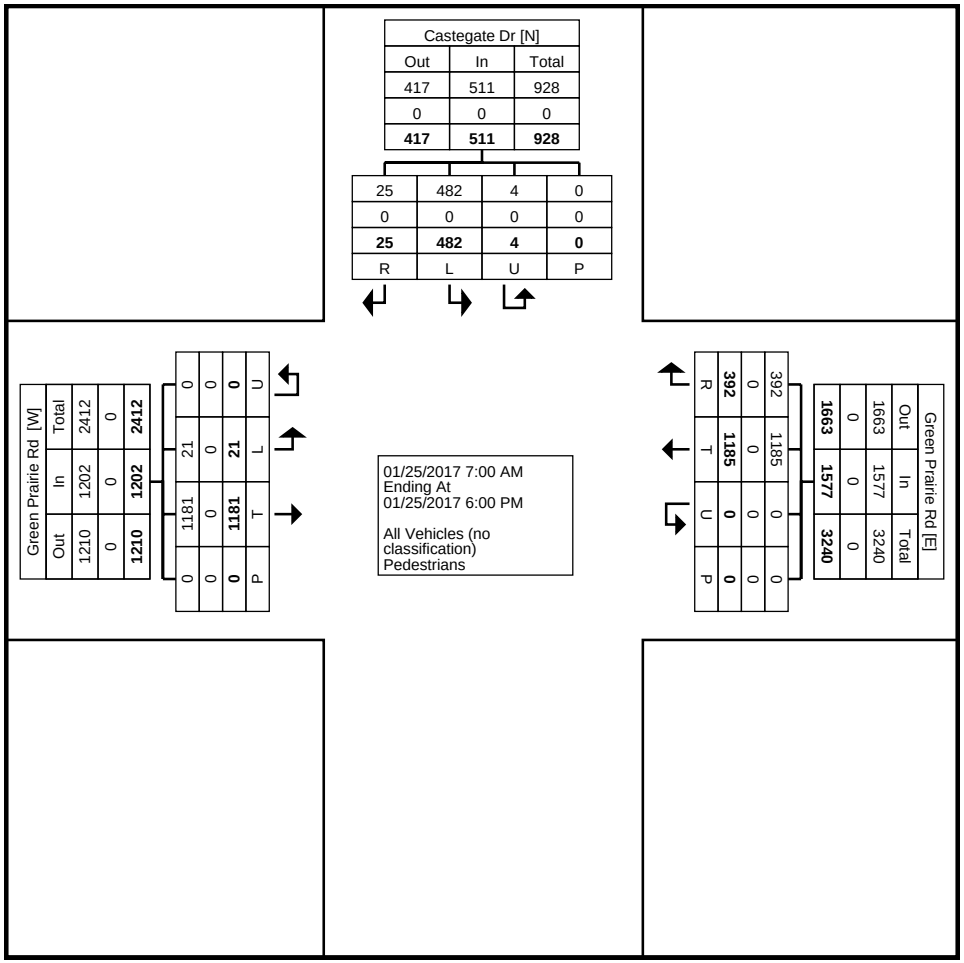

Turning Movement Data Plot

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Count Name: Greens Prairie Rd at Castlegate Dr
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Start Date: 01/25/2017

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Castegate Dr Southbound					Green Prairie Rd Westbound					Green Prairie Rd Eastbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:15 AM	67	4	0	0	71	55	12	0	0	67	2	136	0	0	138	276
7:30 AM	74	6	0	0	80	35	33	0	0	68	1	126	0	0	127	275
7:45 AM	40	0	1	0	41	53	22	0	0	75	4	112	0	0	116	232
8:00 AM	37	1	0	0	38	38	20	0	0	58	0	76	0	0	76	172
Total	218	11	1	0	230	181	87	0	0	268	7	450	0	0	457	955
Approach %	94.8	4.8	0.4	-	-	67.5	32.5	0.0	-	-	1.5	98.5	0.0	-	-	-
Total %	22.8	1.2	0.1	-	24.1	19.0	9.1	0.0	-	28.1	0.7	47.1	0.0	-	47.9	-
PHF	0.736	0.458	0.250	-	0.719	0.823	0.659	0.000	-	0.893	0.438	0.827	0.000	-	0.828	0.865
All Vehicles (no classification)	218	11	1	-	230	181	87	0	-	268	7	450	0	-	457	955
% All Vehicles (no classification)	100.0	100.0	100.0	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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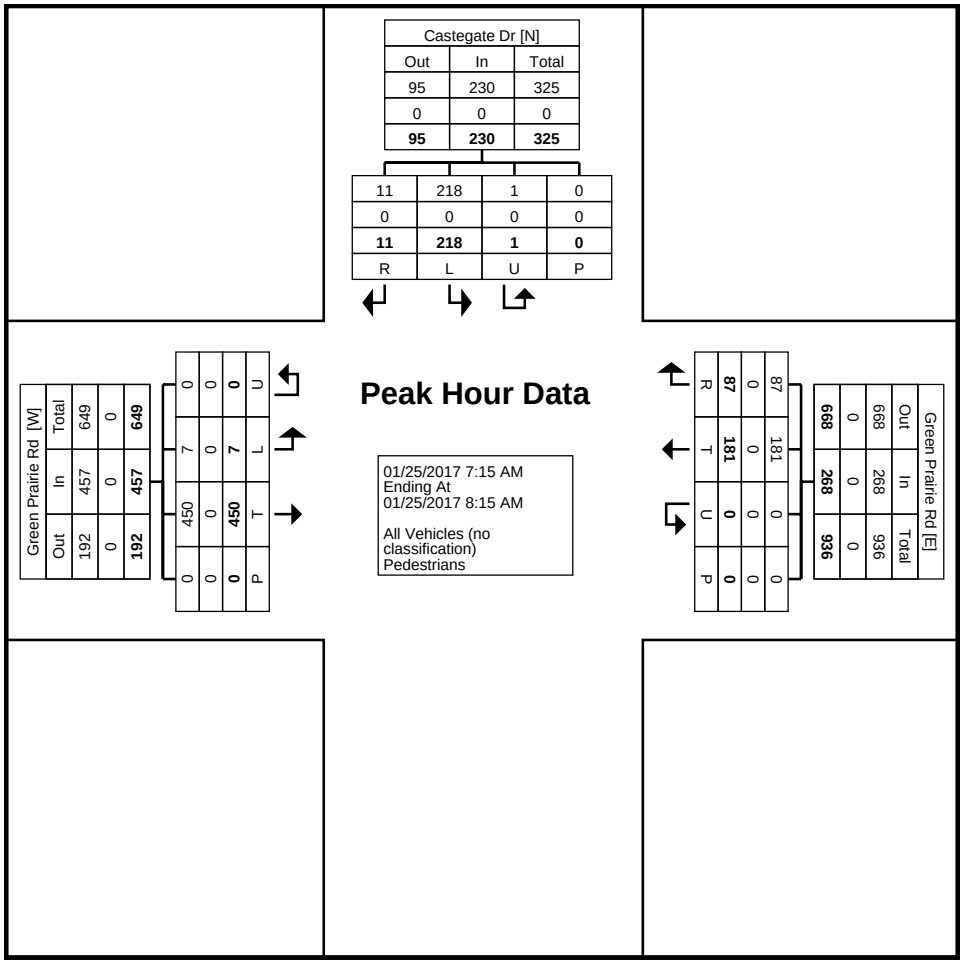

Turning Movement Peak Hour Data Plot (7:15 AM)

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Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Castegate Dr Southbound					Green Prairie Rd Westbound					Green Prairie Rd Eastbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
5:00 PM	20	2	1	0	23	119	34	0	0	153	2	58	0	0	60	236
5:15 PM	26	0	0	0	26	134	33	0	0	167	3	63	0	0	66	259
5:30 PM	25	0	0	0	25	117	36	0	0	153	1	82	0	0	83	261
5:45 PM	35	2	0	0	37	107	54	0	0	161	1	62	0	0	63	261
Total	106	4	1	0	111	477	157	0	0	634	7	265	0	0	272	1017
Approach %	95.5	3.6	0.9	-	-	75.2	24.8	0.0	-	-	2.6	97.4	0.0	-	-	-
Total %	10.4	0.4	0.1	-	10.9	46.9	15.4	0.0	-	62.3	0.7	26.1	0.0	-	26.7	-
PHF	0.757	0.500	0.250	-	0.750	0.890	0.727	0.000	-	0.949	0.583	0.808	0.000	-	0.819	0.974
All Vehicles (no classification)	106	4	1	-	111	477	157	0	-	634	7	265	0	-	272	1017
% All Vehicles (no classification)	100.0	100.0	100.0	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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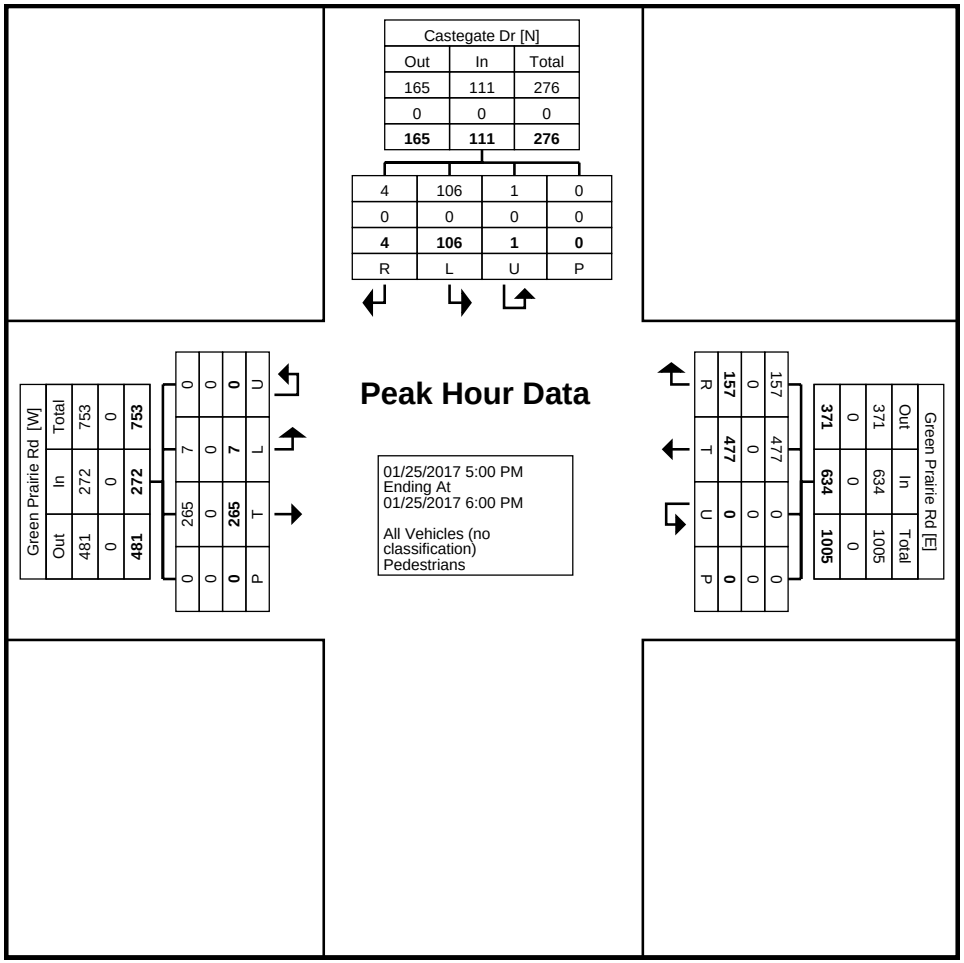
281-487-5417 Jeff.whitacre@kimley-horn.com

Count Name: Greens Prairie Rd at Castlegate Dr
Site Code:
Start Date: 01/25/2017
Page No: 6



Turning Movement Peak Hour Data Plot (5:00 PM)

CJ Hensch & Associates, Inc.
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Count Name: Greens Prairie Rd at Arrington Rd
Site Code:
Start Date: 01/25/2017
Page No: 1

Turning Movement Data

Start Time	Arrington Rd Southbound						Greens Prairie Rd Westbound						Arrington Rd Northbound						Greens Prairie Rd Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	9	14	75	0	0	98	0	7	7	0	0	14	6	30	0	0	0	36	65	17	2	0	0	84	232
7:15 AM	9	13	77	0	0	99	0	8	6	0	0	14	38	60	3	0	0	101	76	50	10	0	0	136	350
7:30 AM	15	14	59	0	0	88	0	2	16	0	0	18	33	50	1	0	0	84	86	71	17	0	0	174	364
7:45 AM	20	22	55	0	0	97	2	10	16	0	0	28	8	52	0	0	0	60	93	56	17	0	0	166	351
Hourly Total	53	63	266	0	0	382	2	27	45	0	0	74	85	192	4	0	0	281	320	194	46	0	0	560	1297
8:00 AM	9	18	58	0	0	85	0	10	15	0	0	25	8	57	0	0	0	65	75	23	6	0	0	104	279
8:15 AM	12	16	48	0	0	76	3	6	9	0	0	18	3	32	2	0	0	37	64	9	6	0	0	79	210
8:30 AM	10	24	56	0	0	90	1	8	11	0	0	20	2	23	2	0	0	27	68	18	5	0	0	91	228
8:45 AM	4	18	38	0	0	60	0	8	2	0	0	10	3	47	3	0	0	53	83	12	9	0	0	104	227
Hourly Total	35	76	200	0	0	311	4	32	37	0	0	73	16	159	7	0	0	182	290	62	26	0	0	378	944
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	9	35	76	0	0	120	5	12	16	0	0	33	7	31	2	0	0	40	45	13	10	0	0	68	261
4:15 PM	12	34	106	0	0	152	3	23	28	0	0	54	6	16	4	0	0	26	38	7	6	0	0	51	283
4:30 PM	14	28	106	0	0	148	1	29	25	0	0	55	7	24	0	0	0	31	50	17	6	0	0	73	307
4:45 PM	10	33	118	0	0	161	2	19	13	0	0	34	6	25	0	0	0	31	48	23	8	0	0	79	305
Hourly Total	45	130	406	0	0	581	11	83	82	0	0	176	26	96	6	0	0	128	181	60	30	0	0	271	1156
5:00 PM	13	27	131	0	0	171	3	39	30	0	0	72	13	36	2	0	0	51	39	19	13	0	0	71	365
5:15 PM	11	33	126	1	0	171	1	34	29	0	0	64	32	31	3	0	0	66	48	15	9	0	0	72	373
5:30 PM	21	27	152	0	0	200	0	31	22	0	0	53	20	27	3	0	0	50	50	23	8	0	0	81	384
5:45 PM	15	20	114	1	0	150	2	40	31	0	0	73	7	36	2	0	0	45	54	27	6	0	0	87	355
Hourly Total	60	107	523	2	0	692	6	144	112	0	0	262	72	130	10	0	0	212	191	84	36	0	0	311	1477
Grand Total	193	376	1395	2	0	1966	23	286	276	0	0	585	199	577	27	0	0	803	982	400	138	0	0	1520	4874
Approach %	9.8	19.1	71.0	0.1	-	-	3.9	48.9	47.2	0.0	-	-	24.8	71.9	3.4	0.0	-	-	64.6	26.3	9.1	0.0	-	-	-
Total %	4.0	7.7	28.6	0.0	-	40.3	0.5	5.9	5.7	0.0	-	12.0	4.1	11.8	0.6	0.0	-	16.5	20.1	8.2	2.8	0.0	-	31.2	-
All Vehicles (no classification)	193	376	1395	2	-	1966	23	286	276	0	-	585	199	577	27	0	-	803	982	400	138	0	-	1520	4874
% All Vehicles (no classification)	100.0	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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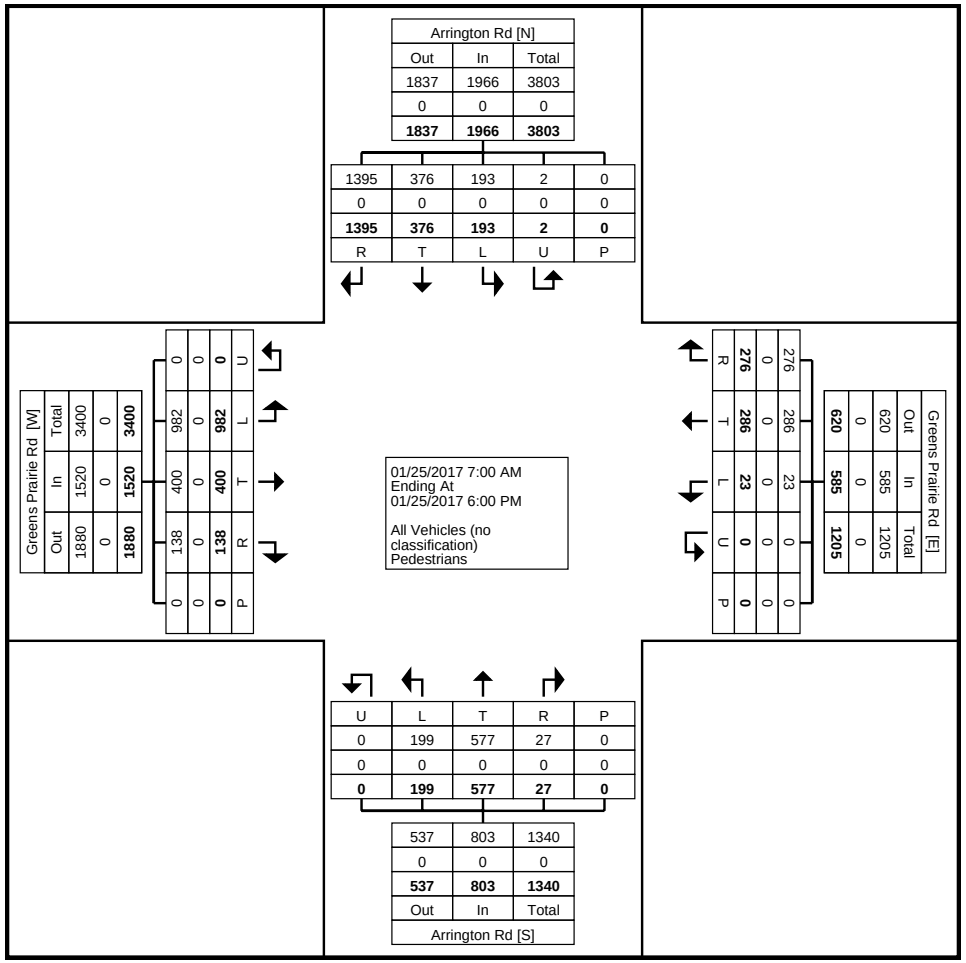
Count Name: Greens Prairie Rd at Arrington Rd
Site Code:
Start Date: 01/25/2017
Page No: 2



Turning Movement Data Plot

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Count Name: Greens Prairie Rd at Arrington Rd
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Arrington Rd Southbound						Greens Prairie Rd Westbound						Arrington Rd Northbound						Greens Prairie Rd Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	9	13	77	0	0	99	0	8	6	0	0	14	38	60	3	0	0	101	76	50	10	0	0	136	350
7:30 AM	15	14	59	0	0	88	0	2	16	0	0	18	33	50	1	0	0	84	86	71	17	0	0	174	364
7:45 AM	20	22	55	0	0	97	2	10	16	0	0	28	8	52	0	0	0	60	93	56	17	0	0	166	351
8:00 AM	9	18	58	0	0	85	0	10	15	0	0	25	8	57	0	0	0	65	75	23	6	0	0	104	279
Total	53	67	249	0	0	369	2	30	53	0	0	85	87	219	4	0	0	310	330	200	50	0	0	580	1344
Approach %	14.4	18.2	67.5	0.0	-	-	2.4	35.3	62.4	0.0	-	-	28.1	70.6	1.3	0.0	-	-	56.9	34.5	8.6	0.0	-	-	-
Total %	3.9	5.0	18.5	0.0	-	27.5	0.1	2.2	3.9	0.0	-	6.3	6.5	16.3	0.3	0.0	-	23.1	24.6	14.9	3.7	0.0	-	43.2	-
PHF	0.663	0.761	0.808	0.000	-	0.932	0.250	0.750	0.828	0.000	-	0.759	0.572	0.913	0.333	0.000	-	0.767	0.887	0.704	0.735	0.000	-	0.833	0.923
All Vehicles (no classification)	53	67	249	0	-	369	2	30	53	0	-	85	87	219	4	0	-	310	330	200	50	0	-	580	1344
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Greens Prairie Rd at Arrington Rd
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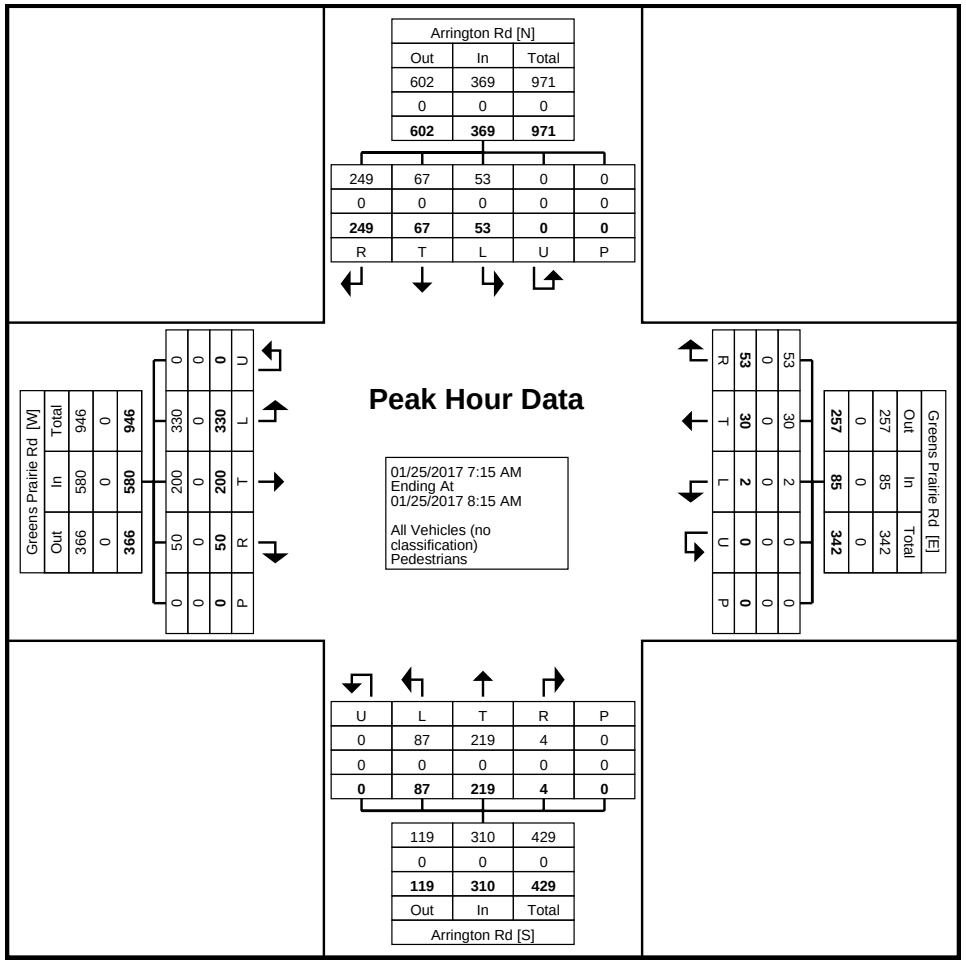
Start Date: 01/25/2017
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

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Count Name: Greens Prairie Rd at Arrington Rd
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Arrington Rd Southbound						Greens Prairie Rd Westbound						Arrington Rd Northbound						Greens Prairie Rd Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
5:00 PM	13	27	131	0	0	171	3	39	30	0	0	72	13	36	2	0	0	51	39	19	13	0	0	71	365
5:15 PM	11	33	126	1	0	171	1	34	29	0	0	64	32	31	3	0	0	66	48	15	9	0	0	72	373
5:30 PM	21	27	152	0	0	200	0	31	22	0	0	53	20	27	3	0	0	50	50	23	8	0	0	81	384
5:45 PM	15	20	114	1	0	150	2	40	31	0	0	73	7	36	2	0	0	45	54	27	6	0	0	87	355
Total	60	107	523	2	0	692	6	144	112	0	0	262	72	130	10	0	0	212	191	84	36	0	0	311	1477
Approach %	8.7	15.5	75.6	0.3	-	-	2.3	55.0	42.7	0.0	-	-	34.0	61.3	4.7	0.0	-	-	61.4	27.0	11.6	0.0	-	-	-
Total %	4.1	7.2	35.4	0.1	-	46.9	0.4	9.7	7.6	0.0	-	17.7	4.9	8.8	0.7	0.0	-	14.4	12.9	5.7	2.4	0.0	-	21.1	-
PHF	0.714	0.811	0.860	0.500	-	0.865	0.500	0.900	0.903	0.000	-	0.897	0.563	0.903	0.833	0.000	-	0.803	0.884	0.778	0.692	0.000	-	0.894	0.962
All Vehicles (no classification)	60	107	523	2	-	692	6	144	112	0	-	262	72	130	10	0	-	212	191	84	36	0	-	311	1477
% All Vehicles (no classification)	100.0	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Greens Prairie Rd at Arrington Rd
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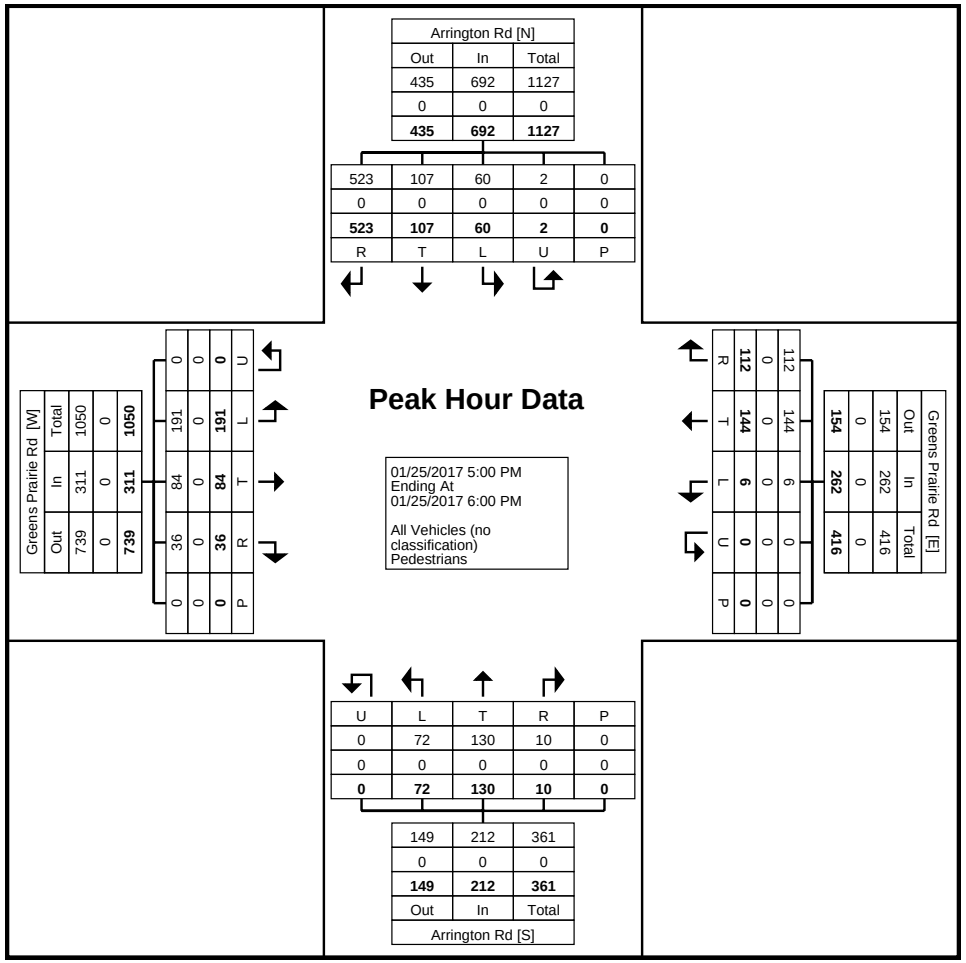

Turning Movement Peak Hour Data Plot (5:00 PM)

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Count Name: Arrington Rd at William D. Fitch Pkwy-1
Site Code:
Start Date: 04/05/2016
Page No: 1

Turning Movement Data

Start Time	Arrington Rd Southbound						William D. Fitch Pkwy Westbound						Arrington Rd Northbound						William D. Fitch Pkwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	2	55	0	0	0	57	0	0	0	0	0	0	0	22	73	0	0	95	14	92	6	0	0	112	264
7:15 AM	0	85	0	0	0	85	0	0	0	0	0	0	0	38	88	0	0	126	29	121	18	0	0	168	379
7:30 AM	3	84	0	0	0	87	0	0	0	0	0	0	0	62	80	0	0	142	42	158	9	0	0	209	438
7:45 AM	3	64	0	0	0	67	0	0	0	0	0	0	0	85	95	0	0	180	57	200	18	0	0	275	522
Hourly Total	8	288	0	0	0	296	0	0	0	0	0	0	0	207	336	0	0	543	142	571	51	0	0	764	1603
8:00 AM	9	76	0	0	0	85	0	0	0	0	0	0	0	46	71	0	0	117	43	122	19	0	0	184	386
8:15 AM	8	67	0	0	0	75	0	0	0	0	0	0	0	28	70	0	0	98	28	78	13	0	0	119	292
8:30 AM	5	72	0	0	0	77	0	0	0	0	0	0	0	23	56	0	0	79	28	120	12	0	0	160	316
8:45 AM	12	62	0	0	0	74	0	0	0	0	0	0	0	34	83	0	0	117	24	109	9	0	0	142	333
Hourly Total	34	277	0	0	0	311	0	0	0	0	0	0	0	131	280	0	0	411	123	429	53	0	0	605	1327
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	13	124	0	0	0	137	0	0	0	0	0	0	0	39	42	0	0	81	60	107	20	0	0	187	405
4:15 PM	18	116	0	0	0	134	0	0	0	0	0	0	0	34	72	0	0	106	52	93	15	0	0	160	400
4:30 PM	18	90	0	0	0	108	0	0	0	0	0	0	0	39	59	0	0	98	57	102	17	0	0	176	382
4:45 PM	15	139	0	0	0	154	0	0	0	0	0	0	0	54	72	0	0	126	46	92	19	0	0	157	437
Hourly Total	64	469	0	0	0	533	0	0	0	0	0	0	0	166	245	0	0	411	215	394	71	0	0	680	1624
5:00 PM	10	121	0	0	0	131	0	0	0	0	0	0	0	62	70	0	0	132	58	97	31	0	0	186	449
5:15 PM	19	146	0	0	0	165	0	0	0	0	0	0	0	50	59	0	0	109	40	108	14	0	0	162	436
5:30 PM	12	131	0	0	0	143	0	0	0	0	0	0	0	57	68	0	0	125	55	125	18	0	0	198	466
5:45 PM	11	148	0	0	0	159	0	0	0	0	0	0	0	46	69	0	0	115	45	94	14	0	0	153	427
Hourly Total	52	546	0	0	0	598	0	0	0	0	0	0	0	215	266	0	0	481	198	424	77	0	0	699	1778
Grand Total	158	1580	0	0	0	1738	0	0	0	0	0	0	0	719	1127	0	0	1846	678	1818	252	0	0	2748	6332
Approach %	9.1	90.9	0.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.0	38.9	61.1	0.0	-	-	24.7	66.2	9.2	0.0	-	-	-
Total %	2.5	25.0	0.0	0.0	-	27.4	0.0	0.0	0.0	0.0	-	0.0	0.0	11.4	17.8	0.0	-	29.2	10.7	28.7	4.0	0.0	-	43.4	-
All Vehicles (no classification)	158	1580	0	0	-	1738	0	0	0	0	-	0	0	719	1127	0	-	1846	678	1818	252	0	-	2748	6332
% All Vehicles (no classification)	100.0	100.0	-	-	-	100.0	-	-	-	-	-	-	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Arrington Rd at William D. Fitch Pkwy-1
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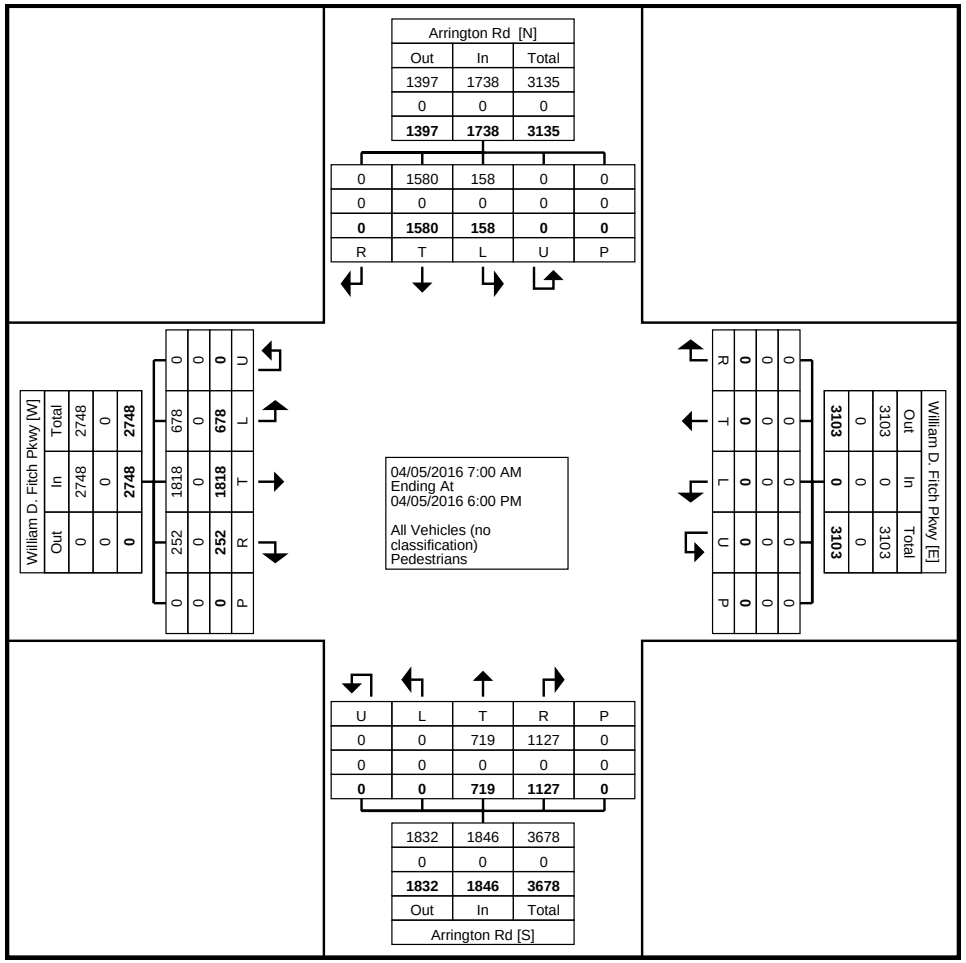

Turning Movement Data Plot

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Count Name: Arrington Rd at William D. Fitch Pkwy-1
Site Code:
Start Date: 04/05/2016

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Arrington Rd Southbound						William D. Fitch Pkwy Westbound						Arrington Rd Northbound						William D. Fitch Pkwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	0	85	0	0	0	85	0	0	0	0	0	0	0	38	88	0	0	126	29	121	18	0	0	168	379
7:30 AM	3	84	0	0	0	87	0	0	0	0	0	0	0	62	80	0	0	142	42	158	9	0	0	209	438
7:45 AM	3	64	0	0	0	67	0	0	0	0	0	0	0	85	95	0	0	180	57	200	18	0	0	275	522
8:00 AM	9	76	0	0	0	85	0	0	0	0	0	0	0	46	71	0	0	117	43	122	19	0	0	184	386
Total	15	309	0	0	0	324	0	0	0	0	0	0	0	231	334	0	0	565	171	601	64	0	0	836	1725
Approach %	4.6	95.4	0.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.0	40.9	59.1	0.0	-	-	20.5	71.9	7.7	0.0	-	-	-
Total %	0.9	17.9	0.0	0.0	-	18.8	0.0	0.0	0.0	0.0	-	0.0	0.0	13.4	19.4	0.0	-	32.8	9.9	34.8	3.7	0.0	-	48.5	-
PHF	0.417	0.909	0.000	0.000	-	0.931	0.000	0.000	0.000	0.000	-	0.000	0.000	0.679	0.879	0.000	-	0.785	0.750	0.751	0.842	0.000	-	0.760	0.826
All Vehicles (no classification)	15	309	0	0	-	324	0	0	0	0	-	0	0	231	334	0	-	565	171	601	64	0	-	836	1725
% All Vehicles (no classification)	100.0	100.0	-	-	-	100.0	-	-	-	-	-	-	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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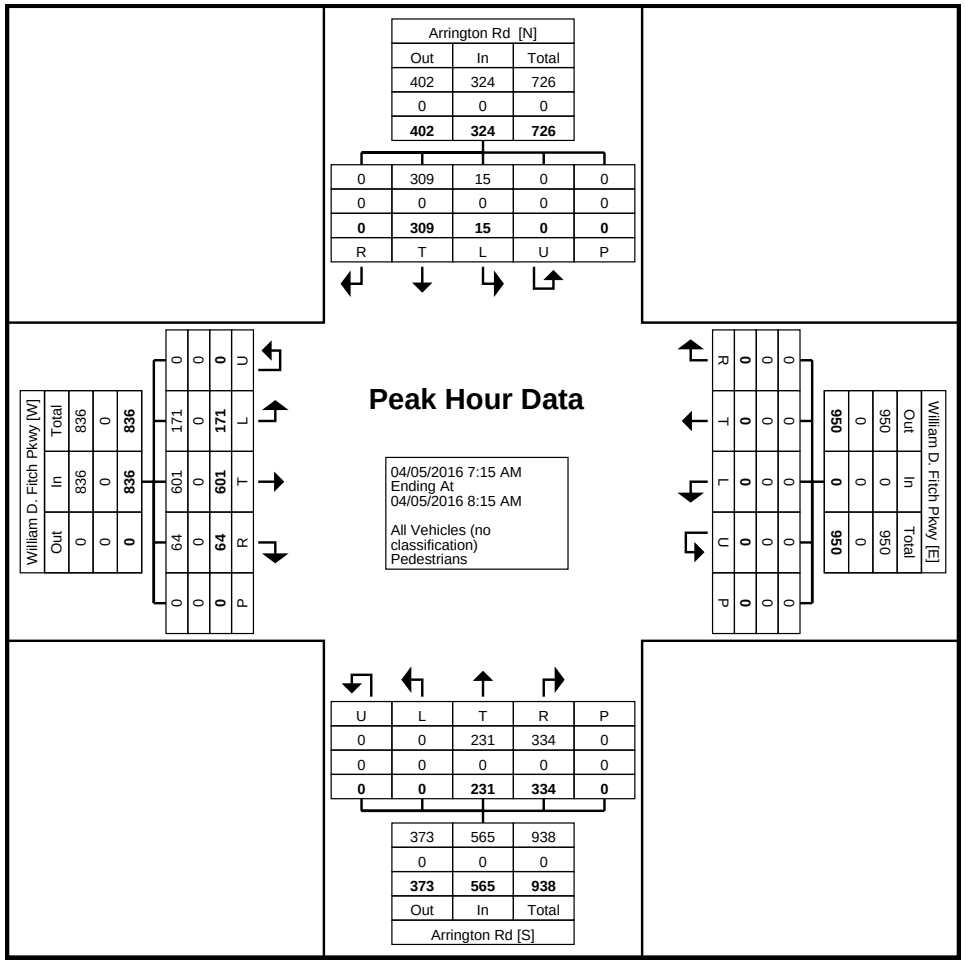
Start Date: 04/05/2016
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

CJ Hensch & Associates, Inc.

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Pasadena, Texas, United States 77503
281-487-5417 Jeff.whitacre@kimley-horn.com

Count Name: Arrington Rd at William D. Fitch Pkwy-1
Site Code:
Start Date: 04/05/2016

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Arrington Rd Southbound						William D. Fitch Pkwy Westbound						Arrington Rd Northbound						William D. Fitch Pkwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	15	139	0	0	0	154	0	0	0	0	0	0	0	54	72	0	0	126	46	92	19	0	0	157	437
5:00 PM	10	121	0	0	0	131	0	0	0	0	0	0	0	62	70	0	0	132	58	97	31	0	0	186	449
5:15 PM	19	146	0	0	0	165	0	0	0	0	0	0	0	50	59	0	0	109	40	108	14	0	0	162	436
5:30 PM	12	131	0	0	0	143	0	0	0	0	0	0	0	57	68	0	0	125	55	125	18	0	0	198	466
Total	56	537	0	0	0	593	0	0	0	0	0	0	0	223	269	0	0	492	199	422	82	0	0	703	1788
Approach %	9.4	90.6	0.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.0	45.3	54.7	0.0	-	-	28.3	60.0	11.7	0.0	-	-	-
Total %	3.1	30.0	0.0	0.0	-	33.2	0.0	0.0	0.0	0.0	-	0.0	0.0	12.5	15.0	0.0	-	27.5	11.1	23.6	4.6	0.0	-	39.3	-
PHF	0.737	0.920	0.000	0.000	-	0.898	0.000	0.000	0.000	0.000	-	0.000	0.000	0.899	0.934	0.000	-	0.932	0.858	0.844	0.661	0.000	-	0.888	0.959
All Vehicles (no classification)	56	537	0	0	-	593	0	0	0	0	-	0	0	223	269	0	-	492	199	422	82	0	-	703	1788
% All Vehicles (no classification)	100.0	100.0	-	-	-	100.0	-	-	-	-	-	-	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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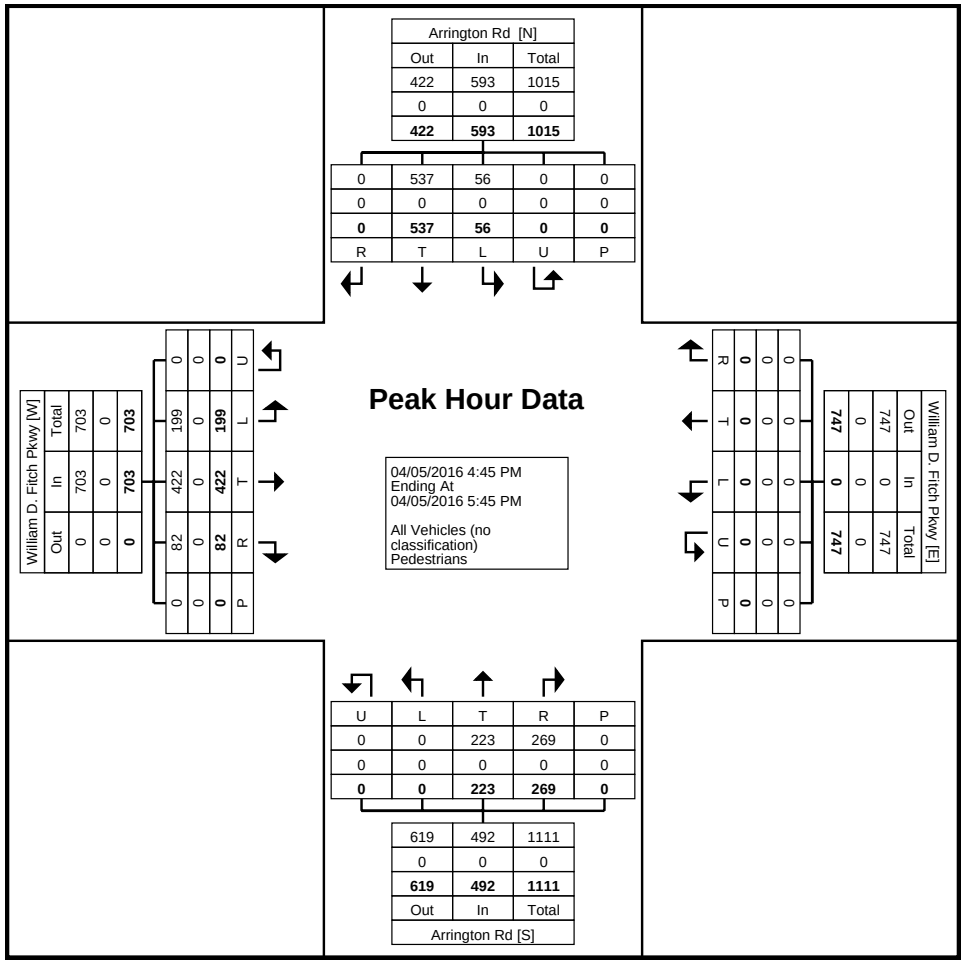
Count Name: Arrington Rd at William D. Fitch Pkwy-1
Site Code:
Start Date: 04/05/2016



Turning Movement Peak Hour Data Plot (4:45 PM)

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Count Name: Arrington Rd at William D. Fitch Pkwy- 2
Site Code:
Start Date: 04/05/2016
Page No: 1

Turning Movement Data

Start Time	Arrington Rd Southbound						William D. Fitch Pkwy Westbound						Arrington Rd Northbound						William D. Fitch Pkwy Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	13	6	0	0	19	50	71	2	0	0	123	23	15	0	0	0	38	0	0	0	0	0	0	180
7:15 AM	0	18	22	0	0	40	66	95	2	0	0	163	35	39	0	0	0	74	0	0	0	0	1	0	277
7:30 AM	0	23	26	1	0	50	65	114	4	0	0	183	54	45	0	0	0	99	0	0	0	0	0	0	332
7:45 AM	0	13	25	0	0	38	57	107	8	0	0	172	77	62	0	0	0	139	0	0	0	0	0	0	349
Hourly Total	0	67	79	1	0	147	238	387	16	0	0	641	189	161	0	0	0	350	0	0	0	0	1	0	1138
8:00 AM	0	19	14	0	0	33	72	79	4	0	0	155	46	44	0	0	0	90	0	0	0	0	0	0	278
8:15 AM	0	15	10	0	0	25	50	73	7	0	0	130	21	40	0	0	0	61	0	0	0	0	0	0	216
8:30 AM	0	9	12	0	0	21	69	81	1	0	0	151	18	29	0	0	0	47	0	0	0	0	0	0	219
8:45 AM	0	13	10	0	0	23	60	74	4	0	0	138	25	36	0	0	0	61	0	0	0	0	0	0	222
Hourly Total	0	56	46	0	0	102	251	307	16	0	0	574	110	149	0	0	0	259	0	0	0	0	0	0	935
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	48	28	0	0	76	82	110	2	0	0	194	40	58	0	0	0	98	0	0	0	0	0	0	368
4:15 PM	0	40	26	0	0	66	93	129	3	0	0	225	32	60	0	0	0	92	0	0	0	0	0	0	383
4:30 PM	0	35	21	0	0	56	95	129	5	0	0	229	31	57	0	0	0	88	0	0	0	0	0	0	373
4:45 PM	0	57	21	0	0	78	87	131	3	0	0	221	40	63	0	0	0	103	0	0	0	0	0	0	402
Hourly Total	0	180	96	0	0	276	357	499	13	0	0	869	143	238	0	0	0	381	0	0	0	0	0	0	1526
5:00 PM	0	55	28	0	0	83	83	184	6	0	0	273	42	75	0	0	0	117	0	0	0	0	0	0	473
5:15 PM	0	59	33	0	0	92	89	172	8	0	0	269	38	63	0	0	0	101	0	0	0	0	0	0	462
5:30 PM	0	55	26	0	0	81	109	196	1	0	0	306	39	63	0	0	0	102	0	0	0	0	0	0	489
5:45 PM	0	33	42	0	0	75	106	137	4	0	0	247	33	63	0	0	0	96	0	0	0	0	0	0	418
Hourly Total	0	202	129	0	0	331	387	689	19	0	0	1095	152	264	0	0	0	416	0	0	0	0	0	0	1842
Grand Total	0	505	350	1	0	856	1233	1882	64	0	0	3179	594	812	0	0	0	1406	0	0	0	0	1	0	5441
Approach %	0.0	59.0	40.9	0.1	-	-	38.8	59.2	2.0	0.0	-	-	42.2	57.8	0.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	9.3	6.4	0.0	-	15.7	22.7	34.6	1.2	0.0	-	58.4	10.9	14.9	0.0	0.0	-	25.8	0.0	0.0	0.0	0.0	-	0.0	-
All Vehicles (no classification)	0	505	350	1	-	856	1233	1882	64	0	-	3179	594	812	0	0	-	1406	0	0	0	0	-	0	5441
% All Vehicles (no classification)	-	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	-	-	-	-	-	-	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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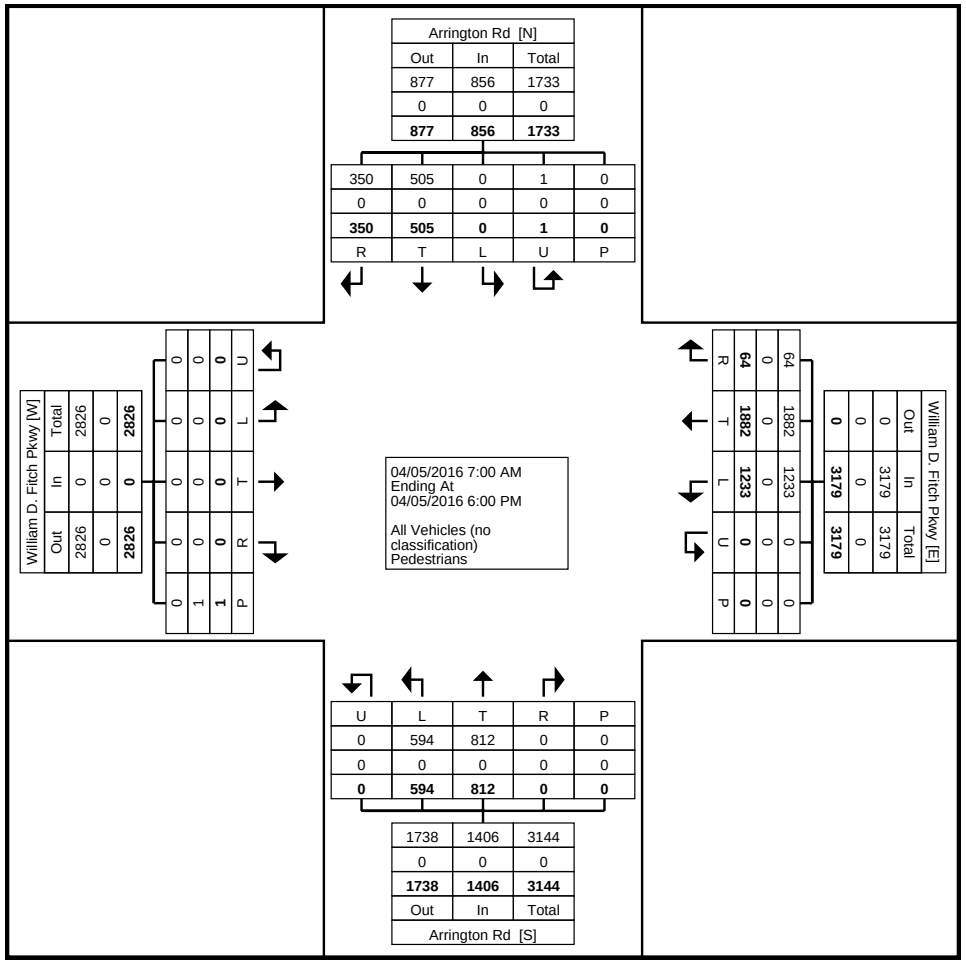
Count Name: Arrington Rd at William D. Fitch Pkwy- 2
Site Code:
Start Date: 04/05/2016
Page No: 2



Turning Movement Data Plot

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Count Name: Arrington Rd at William D. Fitch Pkwy- 2
Site Code:
Start Date: 04/05/2016

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Arrington Rd Southbound						William D. Fitch Pkwy Westbound						Arrington Rd Northbound						William D. Fitch Pkwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	0	18	22	0	0	40	66	95	2	0	0	163	35	39	0	0	0	74	0	0	0	0	1	0	277
7:30 AM	0	23	26	1	0	50	65	114	4	0	0	183	54	45	0	0	0	99	0	0	0	0	0	0	332
7:45 AM	0	13	25	0	0	38	57	107	8	0	0	172	77	62	0	0	0	139	0	0	0	0	0	0	349
8:00 AM	0	19	14	0	0	33	72	79	4	0	0	155	46	44	0	0	0	90	0	0	0	0	0	0	278
Total	0	73	87	1	0	161	260	395	18	0	0	673	212	190	0	0	0	402	0	0	0	0	1	0	1236
Approach %	0.0	45.3	54.0	0.6	-	-	38.6	58.7	2.7	0.0	-	-	52.7	47.3	0.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	5.9	7.0	0.1	-	13.0	21.0	32.0	1.5	0.0	-	54.4	17.2	15.4	0.0	0.0	-	32.5	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.793	0.837	0.250	-	0.805	0.903	0.866	0.563	0.000	-	0.919	0.688	0.766	0.000	0.000	-	0.723	0.000	0.000	0.000	0.000	-	0.000	0.885
All Vehicles (no classification)	0	73	87	1	-	161	260	395	18	0	-	673	212	190	0	0	-	402	0	0	0	0	-	0	1236
% All Vehicles (no classification)	-	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	-	-	-	-	-	-	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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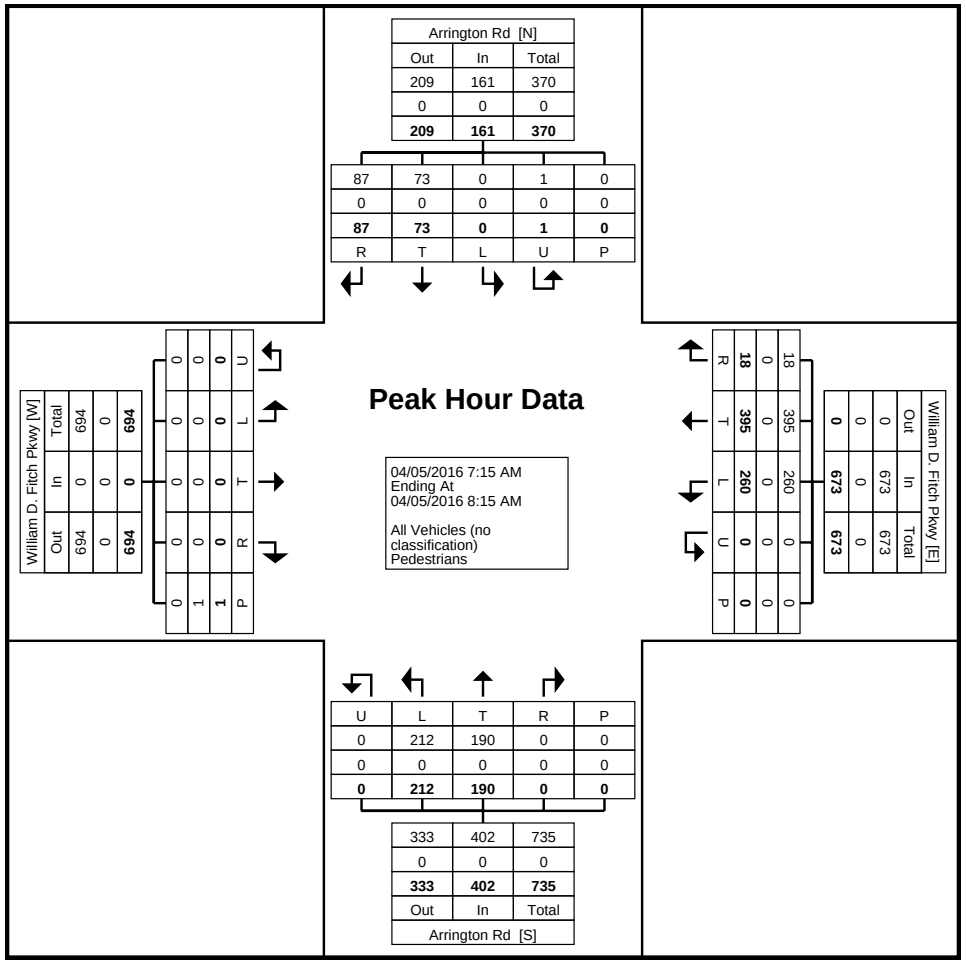
Count Name: Arrington Rd at William D. Fitch Pkwy- 2
Site Code:
Start Date: 04/05/2016
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

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Count Name: Arrington Rd at William D. Fitch Pkwy- 2
Site Code:
Start Date: 04/05/2016

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Arrington Rd Southbound						William D. Fitch Pkwy Westbound						Arrington Rd Northbound						William D. Fitch Pkwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
5:00 PM	0	55	28	0	0	83	83	184	6	0	0	273	42	75	0	0	0	117	0	0	0	0	0	0	473
5:15 PM	0	59	33	0	0	92	89	172	8	0	0	269	38	63	0	0	0	101	0	0	0	0	0	0	462
5:30 PM	0	55	26	0	0	81	109	196	1	0	0	306	39	63	0	0	0	102	0	0	0	0	0	0	489
5:45 PM	0	33	42	0	0	75	106	137	4	0	0	247	33	63	0	0	0	96	0	0	0	0	0	0	418
Total	0	202	129	0	0	331	387	689	19	0	0	1095	152	264	0	0	0	416	0	0	0	0	0	0	1842
Approach %	0.0	61.0	39.0	0.0	-	-	35.3	62.9	1.7	0.0	-	-	36.5	63.5	0.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	0.0	11.0	7.0	0.0	-	18.0	21.0	37.4	1.0	0.0	-	59.4	8.3	14.3	0.0	0.0	-	22.6	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.856	0.768	0.000	-	0.899	0.888	0.879	0.594	0.000	-	0.895	0.905	0.880	0.000	0.000	-	0.889	0.000	0.000	0.000	0.000	-	0.000	0.942
All Vehicles (no classification)	0	202	129	0	-	331	387	689	19	0	-	1095	152	264	0	0	-	416	0	0	0	0	-	0	1842
% All Vehicles (no classification)	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	-	-	-	-	-	-	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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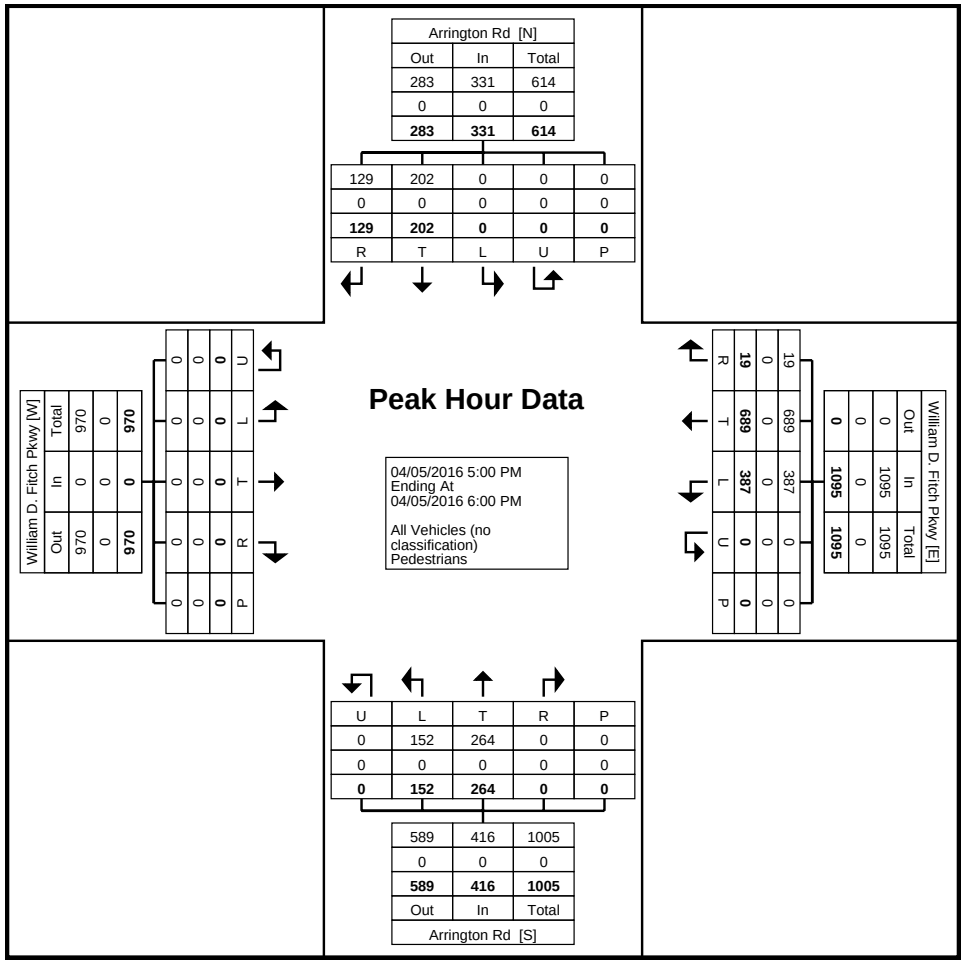
Count Name: Arrington Rd at William D. Fitch Pkwy- 2
Site Code:
Start Date: 04/05/2016
Page No: 6



Turning Movement Peak Hour Data Plot (5:00 PM)

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Count Name: Arrington Rd at S Oaks Dr
Site Code:
Start Date: 01/25/2017
Page No: 1

Turning Movement Data

Start Time	Arrington Rd Southbound						S Oaks Dr Westbound						Arrington Rd Northbound						Unknown Dwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	15	0	0	0	15	6	0	1	0	0	7	0	43	0	0	0	43	0	0	0	0	0	0	65
7:15 AM	4	15	0	0	0	19	10	0	5	0	0	15	0	105	0	0	0	105	0	0	0	0	0	0	139
7:30 AM	5	23	0	0	0	28	6	1	5	0	0	12	0	78	1	0	0	79	0	1	0	0	0	1	120
7:45 AM	10	26	0	0	0	36	5	0	2	0	0	7	0	55	0	0	0	55	0	0	0	0	0	0	98
Hourly Total	19	79	0	0	0	98	27	1	13	0	0	41	0	281	1	0	0	282	0	1	0	0	0	1	422
8:00 AM	2	22	0	0	0	24	12	0	1	0	0	13	0	61	0	0	0	61	0	0	0	0	0	0	98
8:15 AM	1	22	0	0	0	23	8	0	0	0	0	8	0	37	0	0	0	37	0	0	0	0	0	0	68
8:30 AM	0	28	0	0	0	28	6	0	2	0	0	8	0	25	0	0	0	25	0	0	0	0	0	0	61
8:45 AM	3	23	1	0	0	27	7	0	0	0	0	7	0	51	0	0	0	51	1	0	0	0	0	1	86
Hourly Total	6	95	1	0	0	102	33	0	3	0	0	36	0	174	0	0	0	174	1	0	0	0	0	1	313
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	3	44	0	0	0	47	18	0	2	0	0	20	0	37	0	0	0	37	0	0	0	0	0	0	104
4:15 PM	2	43	0	0	0	45	14	0	4	0	0	18	0	19	1	0	0	20	0	0	0	0	0	0	83
4:30 PM	1	33	0	0	0	34	16	0	2	0	0	18	0	29	0	0	0	29	0	0	0	0	0	0	81
4:45 PM	4	41	0	0	0	45	20	0	8	0	0	28	0	22	0	0	0	22	0	0	0	0	0	0	95
Hourly Total	10	161	0	0	0	171	68	0	16	0	0	84	0	107	1	0	0	108	0	0	0	0	0	0	363
5:00 PM	5	35	0	0	0	40	19	0	7	0	0	26	0	40	0	0	0	40	0	0	0	0	0	0	106
5:15 PM	5	37	0	0	0	42	24	0	13	0	0	37	0	50	1	0	0	51	0	0	0	0	0	0	130
5:30 PM	1	34	0	0	0	35	13	0	9	0	0	22	0	40	0	0	0	40	0	0	0	0	0	0	97
5:45 PM	1	26	0	0	0	27	16	0	3	0	0	19	0	42	0	0	0	42	0	0	0	0	0	0	88
Hourly Total	12	132	0	0	0	144	72	0	32	0	0	104	0	172	1	0	0	173	0	0	0	0	0	0	421
Grand Total	47	467	1	0	0	515	200	1	64	0	0	265	0	734	3	0	0	737	1	1	0	0	0	2	1519
Approach %	9.1	90.7	0.2	0.0	-	-	75.5	0.4	24.2	0.0	-	-	0.0	99.6	0.4	0.0	-	-	50.0	50.0	0.0	0.0	-	-	-
Total %	3.1	30.7	0.1	0.0	-	33.9	13.2	0.1	4.2	0.0	-	17.4	0.0	48.3	0.2	0.0	-	48.5	0.1	0.1	0.0	0.0	-	0.1	-
All Vehicles (no classification)	47	467	1	0	-	515	200	1	64	0	-	265	0	734	3	0	-	737	1	1	0	0	-	2	1519
% All Vehicles (no classification)	100.0	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	-	100.0	100.0	-	-	100.0	100.0	100.0	-	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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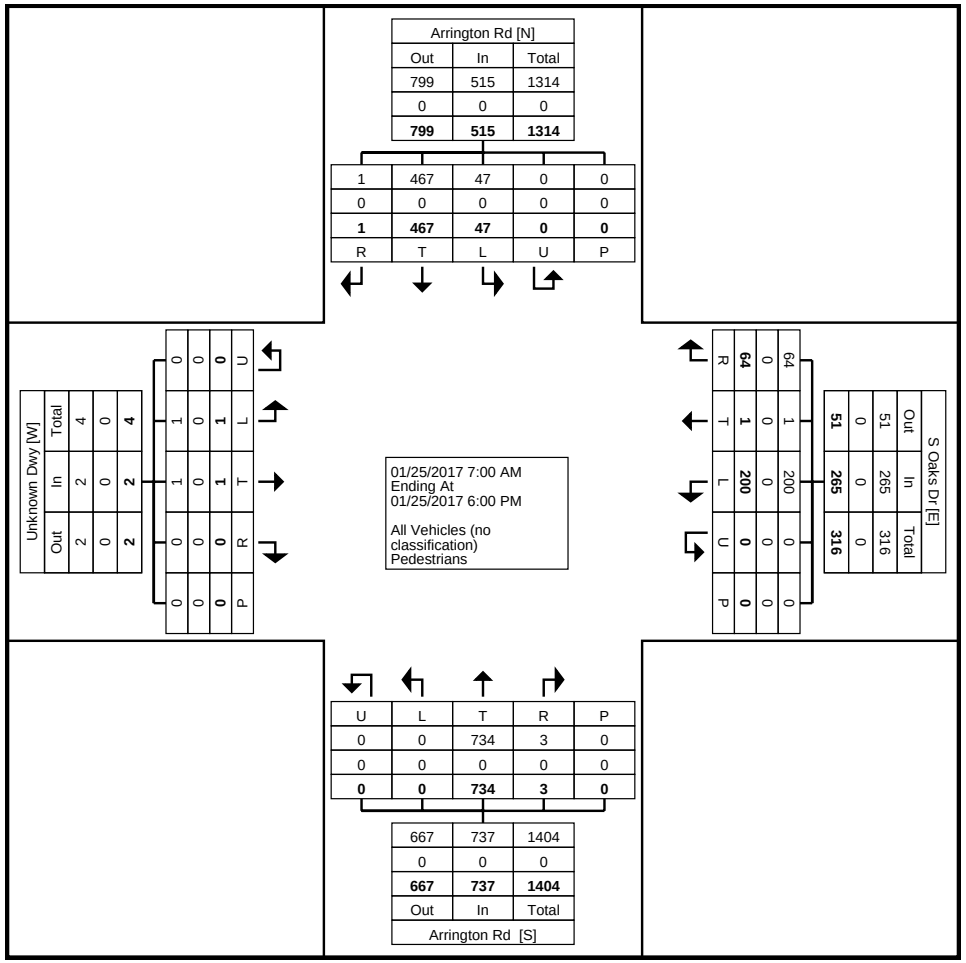
Count Name: Arrington Rd at S Oaks Dr
Site Code:
Start Date: 01/25/2017
Page No: 2



Turning Movement Data Plot

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281-487-5417 Jeff.whitacre@kimley-horn.com

Count Name: Arrington Rd at S Oaks Dr
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Arrington Rd Southbound						S Oaks Dr Westbound						Arrington Rd Northbound						Unknown Dwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	4	15	0	0	0	19	10	0	5	0	0	15	0	105	0	0	0	105	0	0	0	0	0	0	139
7:30 AM	5	23	0	0	0	28	6	1	5	0	0	12	0	78	1	0	0	79	0	1	0	0	0	1	120
7:45 AM	10	26	0	0	0	36	5	0	2	0	0	7	0	55	0	0	0	55	0	0	0	0	0	0	98
8:00 AM	2	22	0	0	0	24	12	0	1	0	0	13	0	61	0	0	0	61	0	0	0	0	0	0	98
Total	21	86	0	0	0	107	33	1	13	0	0	47	0	299	1	0	0	300	0	1	0	0	0	1	455
Approach %	19.6	80.4	0.0	0.0	-	-	70.2	2.1	27.7	0.0	-	-	0.0	99.7	0.3	0.0	-	-	0.0	100.0	0.0	0.0	-	-	-
Total %	4.6	18.9	0.0	0.0	-	23.5	7.3	0.2	2.9	0.0	-	10.3	0.0	65.7	0.2	0.0	-	65.9	0.0	0.2	0.0	0.0	-	0.2	-
PHF	0.525	0.827	0.000	0.000	-	0.743	0.688	0.250	0.650	0.000	-	0.783	0.000	0.712	0.250	0.000	-	0.714	0.000	0.250	0.000	0.000	-	0.250	0.818
All Vehicles (no classification)	21	86	0	0	-	107	33	1	13	0	-	47	0	299	1	0	-	300	0	1	0	0	-	1	455
% All Vehicles (no classification)	100.0	100.0	-	-	-	100.0	100.0	100.0	100.0	-	-	100.0	-	100.0	100.0	-	-	100.0	-	100.0	-	-	-	100.0	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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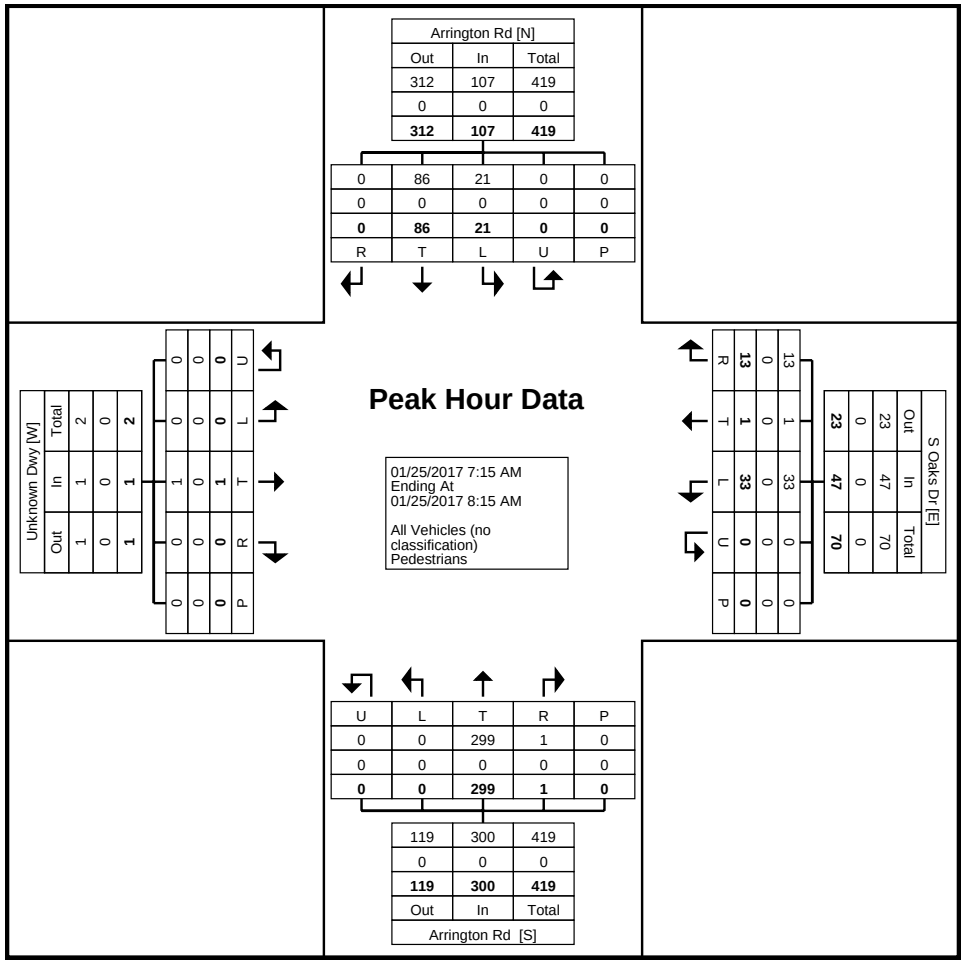

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Count Name: Arrington Rd at S Oaks Dr
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Arrington Rd Southbound						S Oaks Dr Westbound						Arrington Rd Northbound						Unknown Dwy Eastbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	4	41	0	0	0	45	20	0	8	0	0	28	0	22	0	0	0	22	0	0	0	0	0	0	95
5:00 PM	5	35	0	0	0	40	19	0	7	0	0	26	0	40	0	0	0	40	0	0	0	0	0	0	106
5:15 PM	5	37	0	0	0	42	24	0	13	0	0	37	0	50	1	0	0	51	0	0	0	0	0	0	130
5:30 PM	1	34	0	0	0	35	13	0	9	0	0	22	0	40	0	0	0	40	0	0	0	0	0	0	97
Total	15	147	0	0	0	162	76	0	37	0	0	113	0	152	1	0	0	153	0	0	0	0	0	0	428
Approach %	9.3	90.7	0.0	0.0	-	-	67.3	0.0	32.7	0.0	-	-	0.0	99.3	0.7	0.0	-	-	NaN	NaN	NaN	NaN	-	-	-
Total %	3.5	34.3	0.0	0.0	-	37.9	17.8	0.0	8.6	0.0	-	26.4	0.0	35.5	0.2	0.0	-	35.7	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.750	0.896	0.000	0.000	-	0.900	0.792	0.000	0.712	0.000	-	0.764	0.000	0.760	0.250	0.000	-	0.750	0.000	0.000	0.000	0.000	-	0.000	0.823
All Vehicles (no classification)	15	147	0	0	-	162	76	0	37	0	-	113	0	152	1	0	-	153	0	0	0	0	-	0	428
% All Vehicles (no classification)	100.0	100.0	-	-	-	100.0	100.0	-	100.0	-	-	100.0	-	100.0	100.0	-	-	100.0	-	-	-	-	-	-	100.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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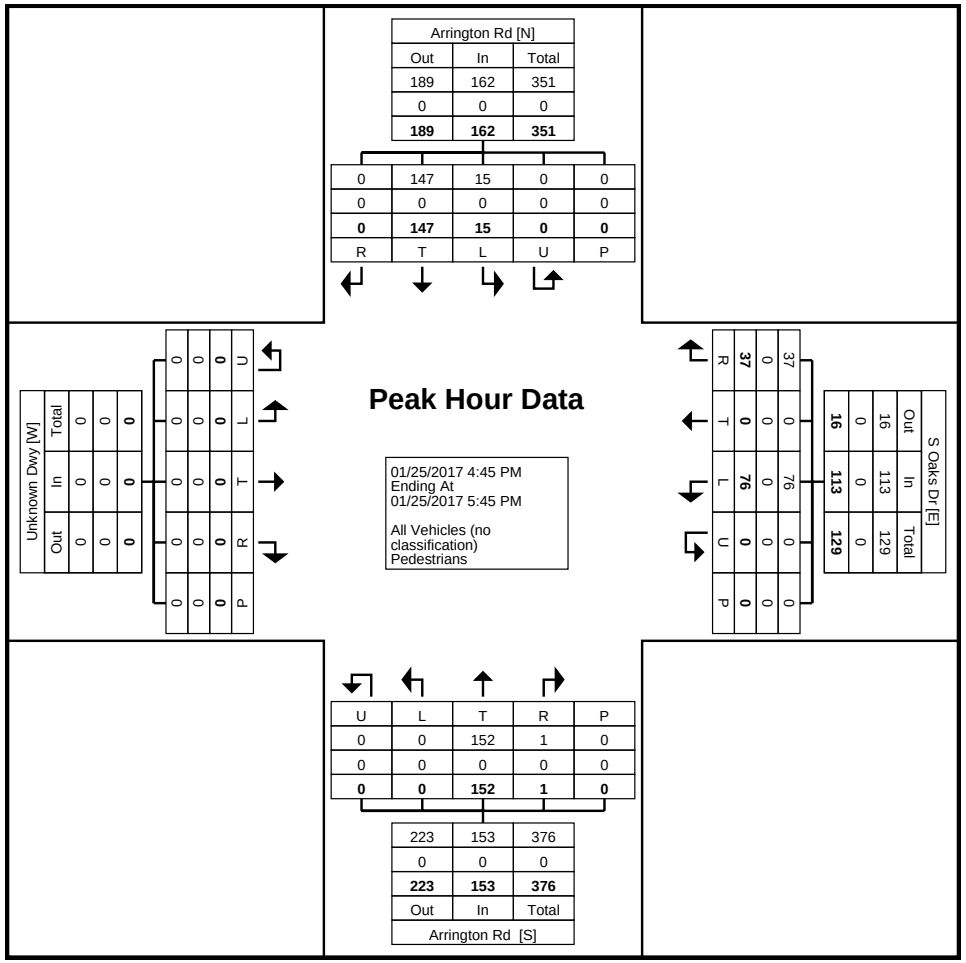

Turning Movement Peak Hour Data Plot (4:45 PM)

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Count Name: Arrington Rd at Harpers Ferry Rd
Site Code:
Start Date: 01/25/2017
Page No: 1

Turning Movement Data

Start Time	Arrington Rd Southbound					Harpers Ferry Rd Westbound					Arrington Rd Northbound					
	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	2	17	0	0	19	0	8	0	0	8	35	3	0	0	38	65
7:15 AM	3	25	0	0	28	1	25	0	0	26	76	9	0	0	85	139
7:30 AM	3	27	0	0	30	0	18	0	0	18	56	13	0	0	69	117
7:45 AM	7	21	0	0	28	1	4	0	0	5	49	13	0	0	62	95
Hourly Total	15	90	0	0	105	2	55	0	0	57	216	38	0	0	254	416
8:00 AM	6	30	0	0	36	1	11	0	0	12	50	4	0	0	54	102
8:15 AM	4	26	0	0	30	2	7	0	0	9	27	6	0	0	33	72
8:30 AM	3	30	0	0	33	3	3	0	0	6	24	4	0	0	28	67
8:45 AM	5	26	0	0	31	0	6	0	0	6	42	1	0	0	43	80
Hourly Total	18	112	0	0	130	6	27	0	0	33	143	15	0	0	158	321
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	6	48	0	0	54	4	3	0	0	7	34	2	0	0	36	97
4:15 PM	13	47	0	0	60	7	4	0	0	11	17	5	0	0	22	93
4:30 PM	6	42	0	0	48	2	2	0	0	4	27	1	0	0	28	80
4:45 PM	9	49	0	0	58	2	5	0	0	7	14	5	0	0	19	84
Hourly Total	34	186	0	0	220	15	14	0	0	29	92	13	0	0	105	354
5:00 PM	8	43	0	0	51	0	8	0	0	8	30	6	0	0	36	95
5:15 PM	9	52	0	0	61	3	12	0	0	15	42	4	0	0	46	122
5:30 PM	3	43	0	0	46	3	10	0	0	13	31	2	0	0	33	92
5:45 PM	6	38	0	0	44	4	4	0	0	8	34	4	0	0	38	90
Hourly Total	26	176	0	0	202	10	34	0	0	44	137	16	0	0	153	399
Grand Total	93	564	0	0	657	33	130	0	0	163	588	82	0	0	670	1490
Approach %	14.2	85.8	0.0	-	-	20.2	79.8	0.0	-	-	87.8	12.2	0.0	-	-	-
Total %	6.2	37.9	0.0	-	44.1	2.2	8.7	0.0	-	10.9	39.5	5.5	0.0	-	45.0	-
All Vehicles (no classification)	93	564	0	-	657	33	130	0	-	163	588	82	0	-	670	1490
% All Vehicles (no classification)	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Arrington Rd at Harpers Ferry Rd
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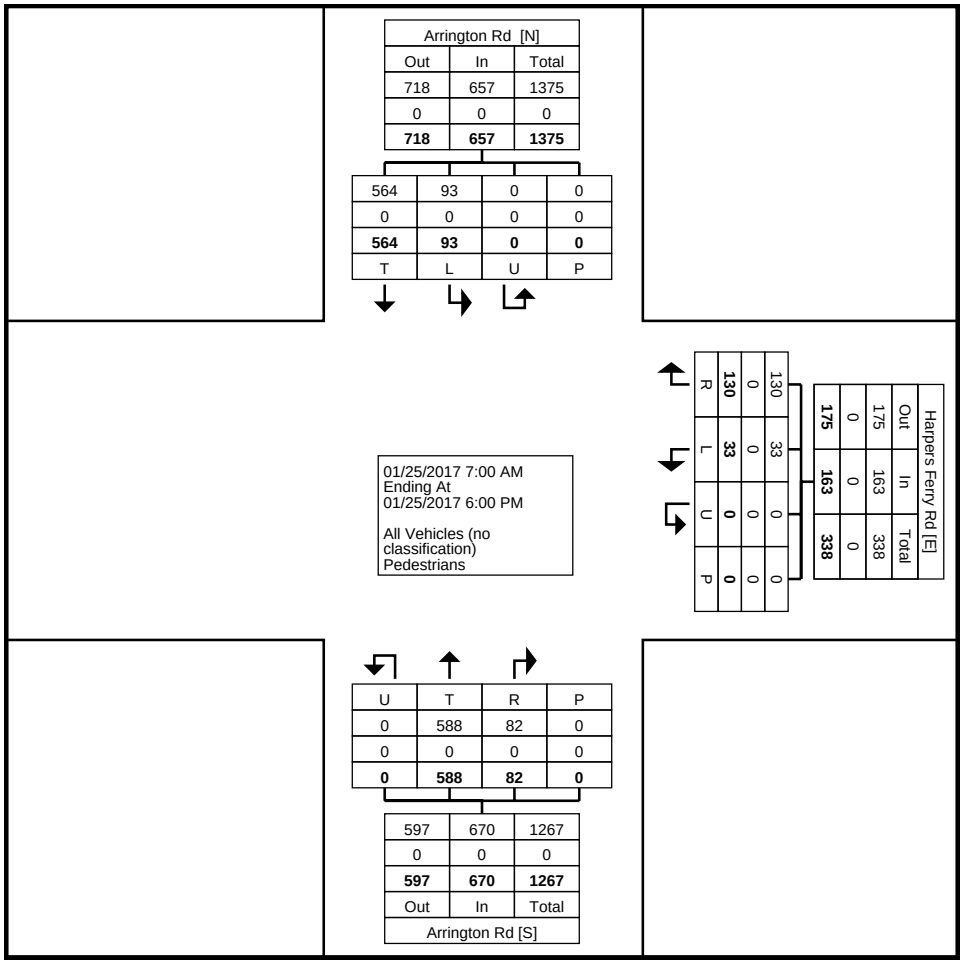
Start Date: 01/25/2017
Page No: 2



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Turning Movement Peak Hour Data (7:15 AM)

Start Time	Arrington Rd Southbound					Harpers Ferry Rd Westbound					Arrington Rd Northbound					
	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:15 AM	3	25	0	0	28	1	25	0	0	26	76	9	0	0	85	139
7:30 AM	3	27	0	0	30	0	18	0	0	18	56	13	0	0	69	117
7:45 AM	7	21	0	0	28	1	4	0	0	5	49	13	0	0	62	95
8:00 AM	6	30	0	0	36	1	11	0	0	12	50	4	0	0	54	102
Total	19	103	0	0	122	3	58	0	0	61	231	39	0	0	270	453
Approach %	15.6	84.4	0.0	-	-	4.9	95.1	0.0	-	-	85.6	14.4	0.0	-	-	-
Total %	4.2	22.7	0.0	-	26.9	0.7	12.8	0.0	-	13.5	51.0	8.6	0.0	-	59.6	-
PHF	0.679	0.858	0.000	-	0.847	0.750	0.580	0.000	-	0.587	0.760	0.750	0.000	-	0.794	0.815
All Vehicles (no classification)	19	103	0	-	122	3	58	0	-	61	231	39	0	-	270	453
% All Vehicles (no classification)	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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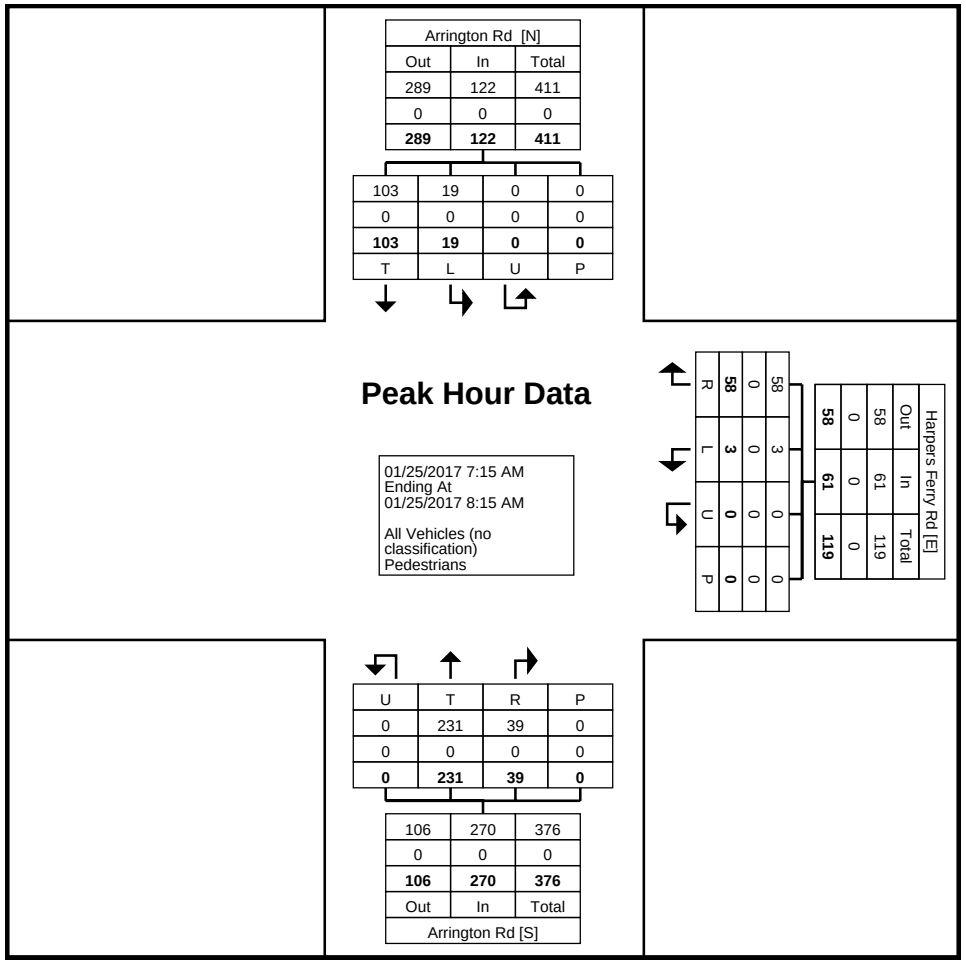

Turning Movement Peak Hour Data Plot (7:15 AM)

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Count Name: Arrington Rd at Harpers Ferry Rd
Site Code:
Start Date: 01/25/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Arrington Rd Southbound					Harpers Ferry Rd Westbound					Arrington Rd Northbound					
	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
5:00 PM	8	43	0	0	51	0	8	0	0	8	30	6	0	0	36	95
5:15 PM	9	52	0	0	61	3	12	0	0	15	42	4	0	0	46	122
5:30 PM	3	43	0	0	46	3	10	0	0	13	31	2	0	0	33	92
5:45 PM	6	38	0	0	44	4	4	0	0	8	34	4	0	0	38	90
Total	26	176	0	0	202	10	34	0	0	44	137	16	0	0	153	399
Approach %	12.9	87.1	0.0	-	-	22.7	77.3	0.0	-	-	89.5	10.5	0.0	-	-	-
Total %	6.5	44.1	0.0	-	50.6	2.5	8.5	0.0	-	11.0	34.3	4.0	0.0	-	38.3	-
PHF	0.722	0.846	0.000	-	0.828	0.625	0.708	0.000	-	0.733	0.815	0.667	0.000	-	0.832	0.818
All Vehicles (no classification)	26	176	0	-	202	10	34	0	-	44	137	16	0	-	153	399
% All Vehicles (no classification)	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	100.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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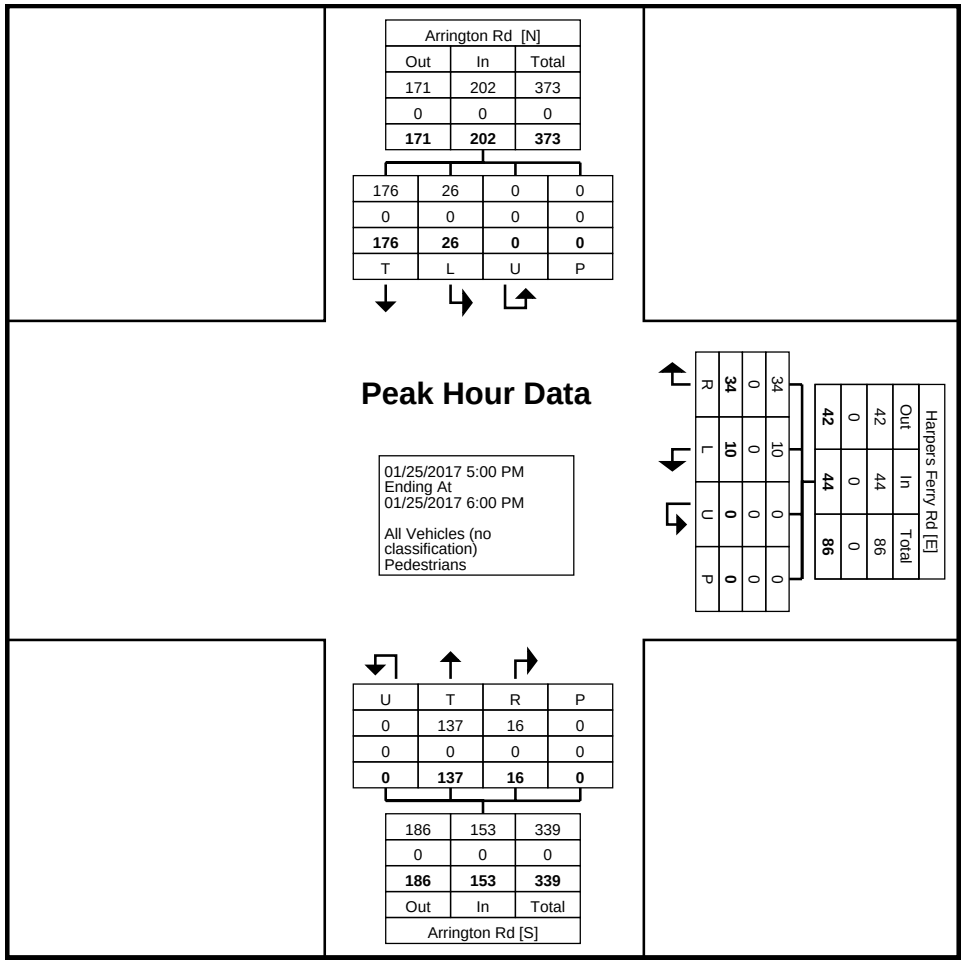


Turning Movement Peak Hour Data Plot (5:00 PM)

Background Traffic Exhibits

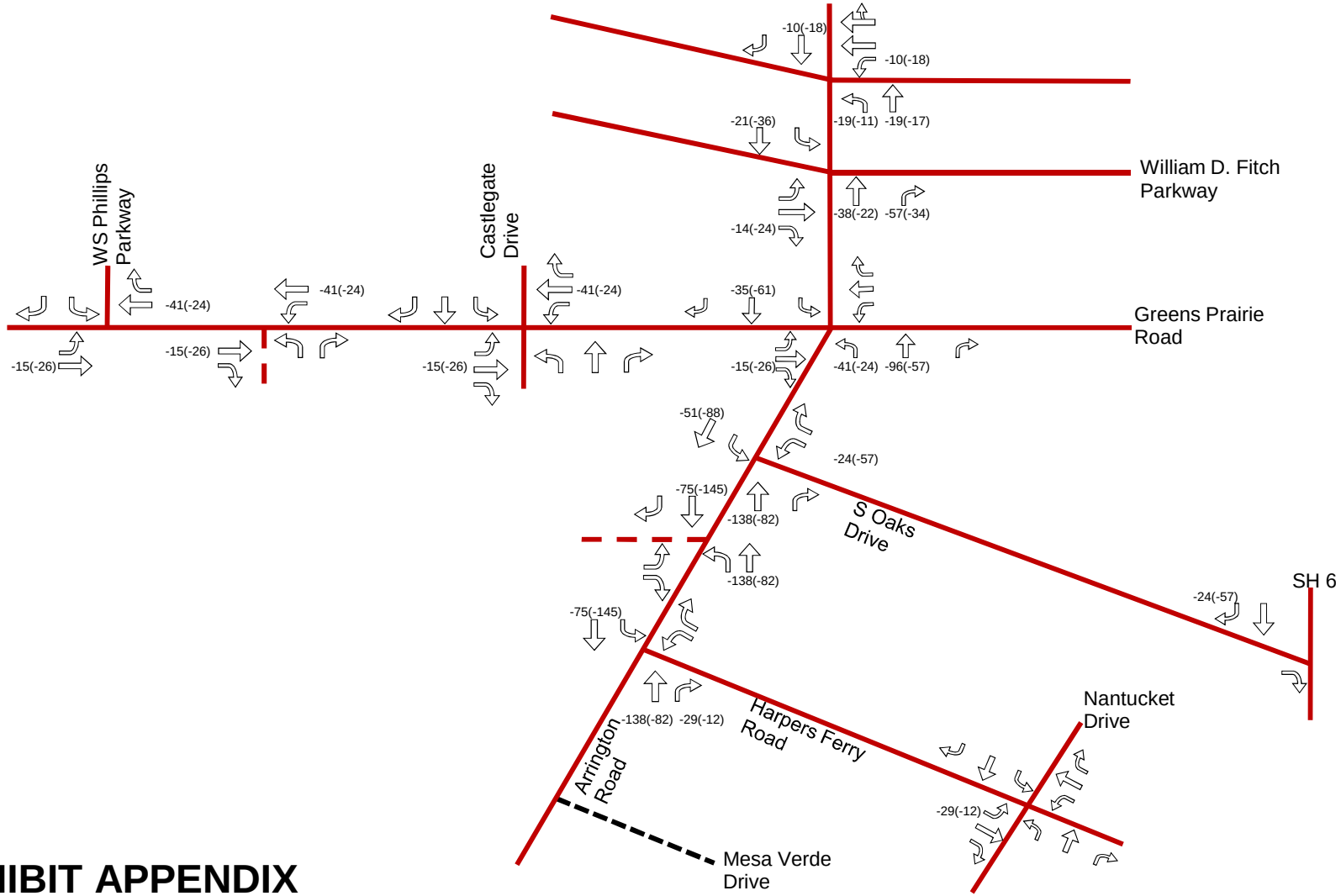


EXHIBIT APPENDIX

Mesa Verde Impact

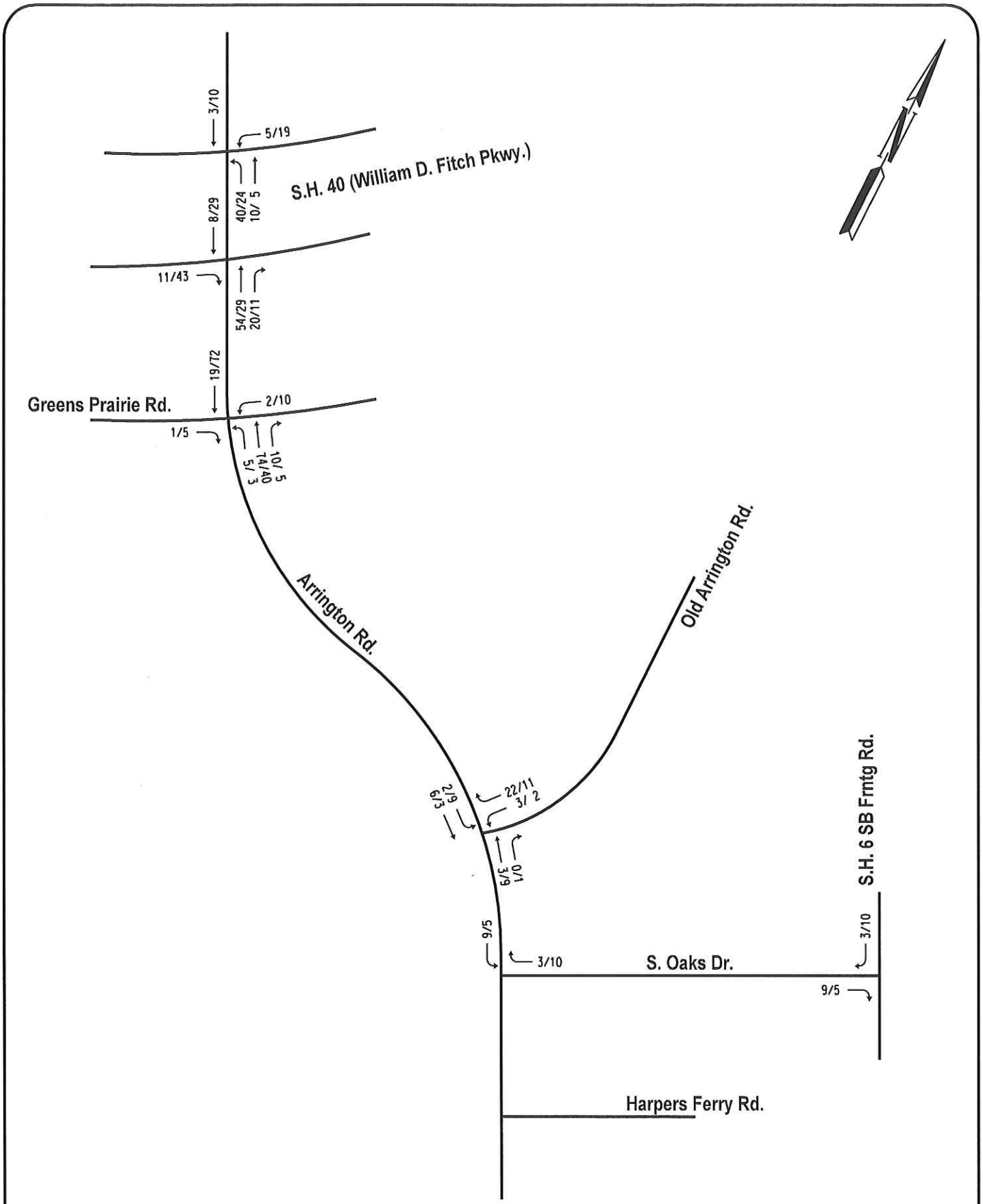
Margraves Tract Family Site TIA College Station

Kimley»Horn

North

Not To Scale

LEGEND:
X (Y)
X = Weekday AM Peak Hour Turning Movements
(Y) = Weekday PM Peak Hour Turning Movements
Volumes may not sum from point to point due to rounding and presence of smaller driveways not included in analysis.

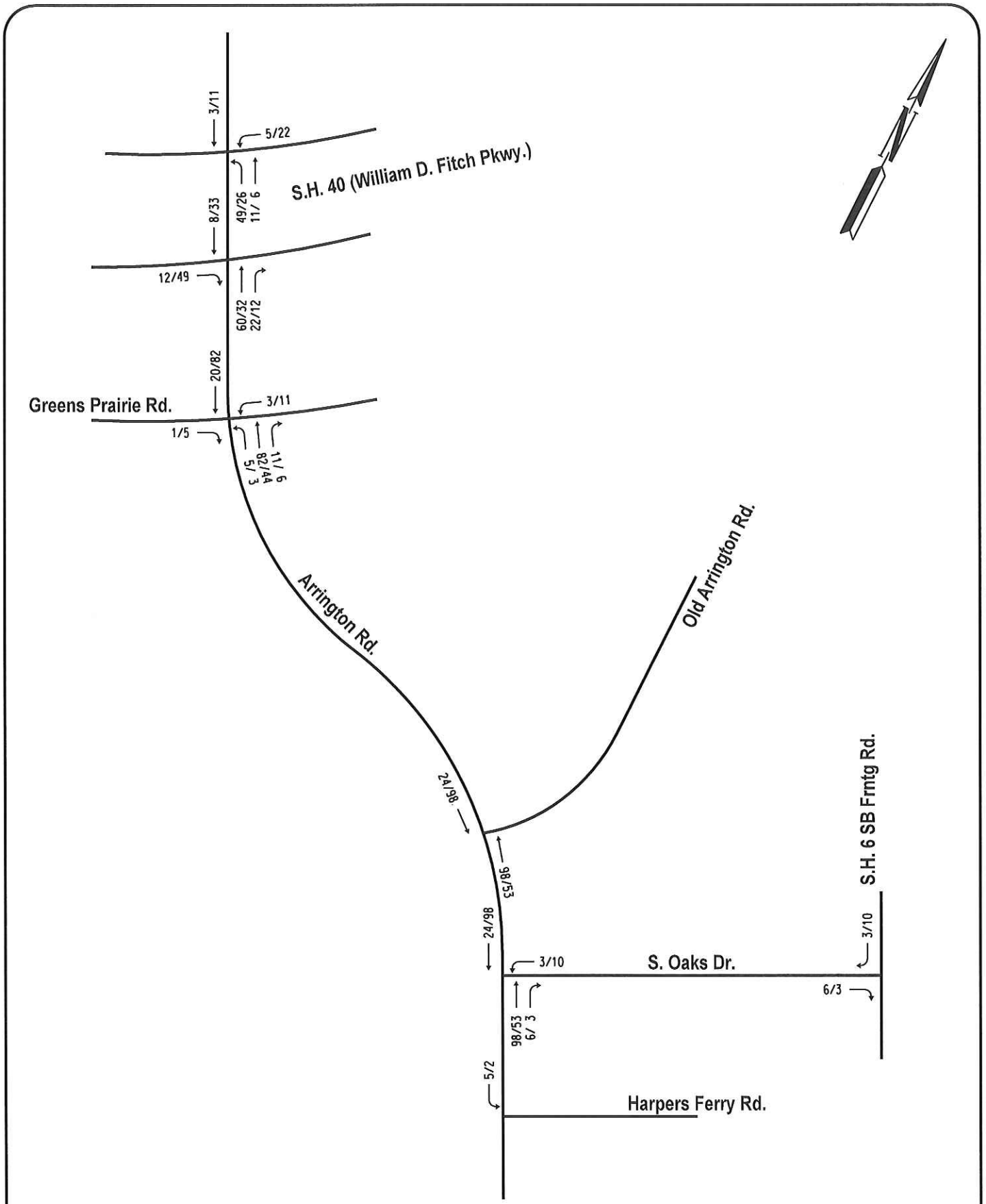


LEGEND

XXX/XXX
P.M. PEAK HOUR
A.M. PEAK HOUR

FIGURE 5. Future Development Traffic

TEC
A CLEAR DIRECTION



LEGEND
XXX/XXX P.M. PEAK HOUR A.M. PEAK HOUR

FIGURE 5. Future Development Traffic

TEC
A CLEAR DIRECTION

2017 Existing Traffic Synchro*TM* Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	601	64	0	0	0	0	231	334	15	309	0
Future Volume (vph)	171	601	64	0	0	0	0	231	334	15	309	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95						0.95	1.00		0.95	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		1.00	
Satd. Flow (prot)	1770	3488						3539	1583		3531	
Flt Permitted	0.95	1.00						1.00	1.00		0.95	
Satd. Flow (perm)	1770	3488						3539	1583		3380	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	206	724	77	0	0	0	0	278	402	18	372	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	303	0	0	0
Lane Group Flow (vph)	206	794	0	0	0	0	0	278	99	0	390	0
Turn Type	Split	NA						NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases									2	1 2	1 2	
Actuated Green, G (s)	39.5	39.5						29.5	29.5		67.0	
Effective Green, g (s)	39.5	39.5						29.5	29.5		67.0	
Actuated g/C Ratio	0.33	0.33						0.25	0.25		0.56	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	582	1148						870	389		1934	
v/s Ratio Prot	0.12	c0.23						c0.08			c0.06	
v/s Ratio Perm									0.06		0.05	
v/c Ratio	0.35	0.69						0.32	0.25		0.20	
Uniform Delay, d1	30.6	35.0						37.0	36.4		13.2	
Progression Factor	1.00	1.00						1.00	1.00		0.20	
Incremental Delay, d2	0.4	1.8						1.0	1.6		0.2	
Delay (s)	30.9	36.8						38.0	38.0		2.8	
Level of Service	C	D						D	D		A	
Approach Delay (s)		35.6			0.0			38.0			2.8	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	260	395	18	212	190	0	0	73	87
Future Volume (vph)	0	0	0	260	395	18	212	190	0	0	73	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	0.99		1.00	1.00			0.92	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3516		1770	1863			3250	
Flt Permitted				0.95	1.00		0.53	1.00			1.00	
Satd. Flow (perm)				1770	3516		992	1863			3250	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	292	444	20	238	213	0	0	82	98
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	90	0
Lane Group Flow (vph)	0	0	0	292	462	0	238	213	0	0	90	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				47.8	47.8		58.7	63.2			9.8	
Effective Green, g (s)				47.8	47.8		58.7	63.2			9.8	
Actuated g/C Ratio				0.40	0.40		0.49	0.53			0.08	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				705	1400		802	981			265	
v/s Ratio Prot				c0.17	0.13		c0.12	0.11			c0.03	
v/s Ratio Perm							0.02					
v/c Ratio				0.41	0.33		0.30	0.22			0.34	
Uniform Delay, d1				26.0	25.0		18.1	15.2			52.0	
Progression Factor				1.00	1.00		0.25	0.23			1.00	
Incremental Delay, d2				0.4	0.1		0.2	0.1			3.5	
Delay (s)				26.4	25.1		4.8	3.7			55.5	
Level of Service				C	C		A	A			E	
Approach Delay (s)		0.0			25.6			4.2			55.5	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	200	50	2	30	53	87	219	4	53	67	249
Future Volume (Veh/h)	330	200	50	2	30	53	87	219	4	53	67	249
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	359	217	54	2	33	58	95	238	4	58	73	271
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											561	
pX, platoon unblocked												
vC, conflicting volume	692	621	73	782	890	240	344			242		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	692	621	73	782	890	240	344			242		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	39	95	99	87	93	92			96		
cM capacity (veh/h)	272	356	989	139	249	799	1215			1324		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	359	271	93	95	242	131	271
Volume Left	359	0	2	95	0	58	0
Volume Right	0	54	58	0	4	0	271
cSH	272	408	423	1215	1700	1324	1700
Volume to Capacity	1.32	0.66	0.22	0.08	0.14	0.04	0.16
Queue Length 95th (ft)	456	117	21	6	0	3	0
Control Delay (s)	204.1	29.7	15.9	8.2	0.0	3.7	0.0
Lane LOS	F	D	C	A		A	
Approach Delay (s)	129.1		15.9	2.3		1.2	
Approach LOS	F		C				

Intersection Summary			
Average Delay	57.5		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	450	0	0	181	87	0	0	0	218	0	11
Future Volume (Veh/h)	7	450	0	0	181	87	0	0	0	218	0	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	8	523	0	0	210	101	0	0	0	253	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	311			523			812	850	523	800	800	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	311			523			812	850	523	800	800	260
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	16	100	98
cM capacity (veh/h)	1249			1043			291	296	554	302	316	778

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	531	311	0	253	13
Volume Left	8	0	0	253	0
Volume Right	0	101	0	0	13
cSH	1249	1700	1700	302	778
Volume to Capacity	0.01	0.18	0.00	0.84	0.02
Queue Length 95th (ft)	0	0	0	179	1
Control Delay (s)	0.2	0.0	0.0	56.8	9.7
Lane LOS	A		A	F	A
Approach Delay (s)	0.2	0.0	0.0	54.5	
Approach LOS			A	F	

Intersection Summary			
Average Delay	13.2		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	375	0	0	160	27	0	0	0	39	0	15
Future Volume (Veh/h)	18	375	0	0	160	27	0	0	0	39	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	20	426	0	0	182	31	0	0	0	44	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	213			426			680	679	426	664	664	198
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	213			426			680	679	426	664	664	198
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	88	100	98
cM capacity (veh/h)	1357			1133			353	368	628	370	376	844

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	446	213	0	61
Volume Left	20	0	0	44
Volume Right	0	31	0	17
cSH	1357	1133	1700	439
Volume to Capacity	0.01	0.00	0.00	0.14
Queue Length 95th (ft)	1	0	0	12
Control Delay (s)	0.5	0.0	0.0	14.5
Lane LOS	A		A	B
Approach Delay (s)	0.5	0.0	0.0	14.5
Approach LOS			A	B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	52	2	0	0	16	24	2	19	0	2	6	27
Future Volume (vph)	52	2	0	0	16	24	2	19	0	2	6	27
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	68	3	0	0	21	31	3	25	0	3	8	35

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	71	52	28	46
Volume Left (vph)	68	0	3	3
Volume Right (vph)	0	31	0	35
Hadj (s)	0.23	-0.32	0.06	-0.41
Departure Headway (s)	4.3	3.8	4.3	3.8
Degree Utilization, x	0.09	0.05	0.03	0.05
Capacity (veh/h)	812	921	809	917
Control Delay (s)	7.7	7.0	7.4	7.0
Approach Delay (s)	7.7	7.0	7.4	7.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.3		
Level of Service		A		
Intersection Capacity Utilization		19.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	33	1	13	0	299	1	21	86	0
Future Volume (Veh/h)	0	0	0	33	1	13	0	299	1	21	86	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	40	1	16	0	365	1	26	105	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	539	523	105	522	522	366	105			366		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	539	523	105	522	522	366	105			366		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	98	100			98		
cM capacity (veh/h)	435	449	949	457	449	680	1486			1193		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	57	366	131
Volume Left	0	40	0	26
Volume Right	0	16	1	0
cSH	1700	503	1486	1193
Volume to Capacity	0.00	0.11	0.00	0.02
Queue Length 95th (ft)	0	10	0	2
Control Delay (s)	0.0	13.1	0.0	1.8
Lane LOS	A	B		A
Approach Delay (s)	0.0	13.1	0.0	1.8
Approach LOS	A	B		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	3	0	58	0	231	39	19	103	0
Future Volume (Veh/h)	0	0	0	3	0	58	0	231	39	19	103	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	0	0	0	4	0	72	0	285	48	23	127	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	554	506	127	482	482	309	127			333		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	554	506	127	482	482	309	127			333		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	90	100			98		
cM capacity (veh/h)	394	460	923	488	475	731	1459			1226		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	76	333	150
Volume Left	4	0	23
Volume Right	72	48	0
cSH	712	1459	1226
Volume to Capacity	0.11	0.00	0.02
Queue Length 95th (ft)	9	0	1
Control Delay (s)	10.7	0.0	1.4
Lane LOS	B		A
Approach Delay (s)	10.7	0.0	1.4
Approach LOS	B		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	25	0	0	251	30
Future Volume (Veh/h)	0	25	0	0	251	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	27	0	0	273	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	273	136	306			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	273	136	306			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	694	887	1252			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	27	136	136	33
Volume Left	0	0	0	0
Volume Right	27	0	0	33
cSH	887	1700	1700	1700
Volume to Capacity	0.03	0.08	0.08	0.02
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.2	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	422	82	0	0	0	0	223	269	56	537	0
Future Volume (vph)	199	422	82	0	0	0	0	223	269	56	537	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95						0.95	1.00		0.95	
Frt	1.00	0.98						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		1.00	
Satd. Flow (prot)	1770	3453						3539	1583		3523	
Flt Permitted	0.95	1.00						1.00	1.00		0.93	
Satd. Flow (perm)	1770	3453						3539	1583		3280	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	207	440	85	0	0	0	0	232	280	58	559	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	223	0	0	0
Lane Group Flow (vph)	207	512	0	0	0	0	0	232	57	0	617	0
Turn Type	Split	NA						NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases									2	1 2	1 2	
Actuated Green, G (s)	31.4	31.4						24.5	24.5		75.1	
Effective Green, g (s)	31.4	31.4						24.5	24.5		75.1	
Actuated g/C Ratio	0.26	0.26						0.20	0.20		0.63	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	463	903						722	323		2155	
v/s Ratio Prot	0.12	c0.15						c0.07			c0.12	
v/s Ratio Perm									0.04		0.06	
v/c Ratio	0.45	0.57						0.32	0.18		0.29	
Uniform Delay, d1	37.0	38.4						40.7	39.4		10.2	
Progression Factor	1.00	1.00						1.00	1.00		0.25	
Incremental Delay, d2	0.7	0.8						1.2	1.2		0.3	
Delay (s)	37.7	39.2						41.8	40.6		2.8	
Level of Service	D	D						D	D		A	
Approach Delay (s)		38.8			0.0			41.2			2.8	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	387	689	19	152	264	0	0	202	129
Future Volume (vph)	0	0	0	387	689	19	152	264	0	0	202	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.94	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3525		1770	1863			3333	
Flt Permitted				0.95	1.00		0.30	1.00			1.00	
Satd. Flow (perm)				1770	3525		557	1863			3333	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	412	733	20	162	281	0	0	215	137
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	91	0
Lane Group Flow (vph)	0	0	0	412	751	0	162	281	0	0	261	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				54.1	54.1		52.4	56.9			16.5	
Effective Green, g (s)				54.1	54.1		52.4	56.9			16.5	
Actuated g/C Ratio				0.45	0.45		0.44	0.47			0.14	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				797	1589		606	883			458	
v/s Ratio Prot				c0.23	0.21		0.08	c0.15			c0.08	
v/s Ratio Perm							0.04					
v/c Ratio				0.52	0.47		0.27	0.32			0.57	
Uniform Delay, d1				23.6	23.0		21.2	19.5			48.4	
Progression Factor				1.00	1.00		0.18	0.20			1.00	
Incremental Delay, d2				0.6	0.2		0.2	0.2			5.1	
Delay (s)				24.2	23.2		4.0	4.1			53.5	
Level of Service				C	C		A	A			D	
Approach Delay (s)		0.0			23.6			4.1			53.5	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	84	36	6	144	112	72	130	10	60	107	523
Future Volume (Veh/h)	191	84	36	6	144	112	72	130	10	60	107	523
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	199	88	38	6	150	117	75	135	10	63	111	545
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											575	
pX, platoon unblocked												
vC, conflicting volume	714	532	111	609	1072	140	656			145		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	714	532	111	609	1072	140	656			145		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	78	96	98	23	87	92			96		
cM capacity (veh/h)	101	399	942	295	194	908	931			1437		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	199	126	273	75	145	174	545
Volume Left	199	0	6	75	0	63	0
Volume Right	0	38	117	0	10	0	545
cSH	101	483	296	931	1700	1437	1700
Volume to Capacity	1.97	0.26	0.92	0.08	0.09	0.04	0.32
Queue Length 95th (ft)	418	26	220	7	0	3	0
Control Delay (s)	541.2	15.1	73.1	9.2	0.0	3.0	0.0
Lane LOS	F	C	F	A		A	
Approach Delay (s)	337.2		73.1	3.1		0.7	
Approach LOS	F		F				

Intersection Summary			
Average Delay	85.1		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	265	0	0	477	157	0	0	0	106	0	4
Future Volume (Veh/h)	7	265	0	0	477	157	0	0	0	106	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	7	273	0	0	492	162	0	0	0	109	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	654			273			864	941	273	860	860	573
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	654			273			864	941	273	860	860	573
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	60	100	99
cM capacity (veh/h)	933			1290			271	261	766	275	291	519

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	280	654	0	109	4
Volume Left	7	0	0	109	0
Volume Right	0	162	0	0	4
cSH	933	1700	1700	275	519
Volume to Capacity	0.01	0.38	0.00	0.40	0.01
Queue Length 95th (ft)	1	0	0	45	1
Control Delay (s)	0.3	0.0	0.0	26.5	12.0
Lane LOS	A		A	D	B
Approach Delay (s)	0.3	0.0	0.0	26.0	
Approach LOS			A	D	

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	231	0	0	433	33	0	0	0	18	0	36
Future Volume (Veh/h)	15	231	0	0	433	33	0	0	0	18	0	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	17	260	0	0	487	37	0	0	0	20	0	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	524			260			840	818	260	800	800	506
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	524			260			840	818	260	800	800	506
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	93	100	93
cM capacity (veh/h)	1043			1304			262	306	779	300	313	567

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	277	524	0	60
Volume Left	17	0	0	20
Volume Right	0	37	0	40
cSH	1043	1304	1700	437
Volume to Capacity	0.02	0.00	0.00	0.14
Queue Length 95th (ft)	1	0	0	12
Control Delay (s)	0.7	0.0	0.0	14.5
Lane LOS	A		A	B
Approach Delay (s)	0.7	0.0	0.0	14.5
Approach LOS			A	B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	28	6	0	0	11	13	1	11	1	9	20	32
Future Volume (vph)	28	6	0	0	11	13	1	11	1	9	20	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	7	0	0	12	14	1	12	1	10	22	35

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	26	14	67
Volume Left (vph)	30	0	1	10
Volume Right (vph)	0	14	1	35
Hadj (s)	0.20	-0.29	0.01	-0.25
Departure Headway (s)	4.3	3.8	4.1	3.8
Degree Utilization, x	0.04	0.03	0.02	0.07
Capacity (veh/h)	819	918	850	927
Control Delay (s)	7.5	6.9	7.2	7.1
Approach Delay (s)	7.5	6.9	7.2	7.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	76	0	37	0	152	1	15	147	0
Future Volume (Veh/h)	0	0	0	76	0	37	0	152	1	15	147	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	93	0	45	0	185	1	18	179	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	446	401	179	400	400	186	179			186		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446	401	179	400	400	186	179			186		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	83	100	95	100			99		
cM capacity (veh/h)	491	531	864	555	531	857	1397			1388		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	138	186	197
Volume Left	0	93	0	18
Volume Right	0	45	1	0
cSH	1700	627	1397	1388
Volume to Capacity	0.00	0.22	0.00	0.01
Queue Length 95th (ft)	0	21	0	1
Control Delay (s)	0.0	12.4	0.0	0.8
Lane LOS	A	B		A
Approach Delay (s)	0.0	12.4	0.0	0.8
Approach LOS	A	B		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	10	0	34	0	137	16	26	176	0
Future Volume (Veh/h)	0	0	0	10	0	34	0	137	16	26	176	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	12	0	41	0	167	20	32	215	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	497	466	215	456	456	177	215			187		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	497	466	215	456	456	177	215			187		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	95	100			98		
cM capacity (veh/h)	452	483	825	506	489	866	1355			1387		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	53	187	247
Volume Left	12	0	32
Volume Right	41	20	0
cSH	746	1355	1387
Volume to Capacity	0.07	0.00	0.02
Queue Length 95th (ft)	6	0	2
Control Delay (s)	10.2	0.0	1.2
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	1.2
Approach LOS	B		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	13	0	0	221	105
Future Volume (Veh/h)	0	13	0	0	221	105
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	14	0	0	240	114
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	240	120	354			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	240	120	354			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	727	909	1201			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	14	120	120	114
Volume Left	0	0	0	0
Volume Right	14	0	0	114
cSH	909	1700	1700	1700
Volume to Capacity	0.02	0.07	0.07	0.07
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.0	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

2027 Background Traffic Synchro*TM* Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	979	85	0	0	0	0	350	475	18	367	0
Future Volume (vph)	208	979	85	0	0	0	0	350	475	18	367	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95						0.95	1.00		0.95	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		1.00	
Satd. Flow (prot)	1770	3497						3539	1583		3531	
Flt Permitted	0.95	1.00						1.00	1.00		0.95	
Satd. Flow (perm)	1770	3497						3539	1583		3380	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	251	1180	102	0	0	0	0	422	572	22	442	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	355	0	0	0
Lane Group Flow (vph)	251	1277	0	0	0	0	0	422	217	0	464	0
Turn Type	Split	NA						NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases									2	1 2	1 2	
Actuated Green, G (s)	47.5	47.5						23.5	23.5		59.0	
Effective Green, g (s)	47.5	47.5						23.5	23.5		59.0	
Actuated g/C Ratio	0.40	0.40						0.20	0.20		0.49	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	700	1384						693	310		1706	
v/s Ratio Prot	0.14	c0.37						0.12			c0.08	
v/s Ratio Perm									c0.14		0.05	
v/c Ratio	0.36	0.92						0.61	0.70		0.27	
Uniform Delay, d1	25.5	34.5						44.1	45.0		17.9	
Progression Factor	1.00	1.00						0.96	1.03		0.18	
Incremental Delay, d2	0.3	10.4						3.0	9.6		0.4	
Delay (s)	25.8	44.9						45.2	55.9		3.5	
Level of Service	C	D						D	E		A	
Approach Delay (s)		41.8			0.0			51.3			3.5	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	315	643	22	325	229	0	0	83	106
Future Volume (vph)	0	0	0	315	643	22	325	229	0	0	83	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	0.99		1.00	1.00			0.92	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3521		1770	1863			3241	
Flt Permitted				0.95	1.00		0.45	1.00			1.00	
Satd. Flow (perm)				1770	3521		830	1863			3241	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	354	722	25	365	257	0	0	93	119
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	109	0
Lane Group Flow (vph)	0	0	0	354	745	0	365	257	0	0	103	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				45.1	45.1		61.4	65.9			9.9	
Effective Green, g (s)				45.1	45.1		61.4	65.9			9.9	
Actuated g/C Ratio				0.38	0.38		0.51	0.55			0.08	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				665	1323		828	1023			267	
v/s Ratio Prot				0.20	c0.21		c0.19	0.14			0.03	
v/s Ratio Perm							c0.04					
v/c Ratio				0.53	0.56		0.44	0.25			0.39	
Uniform Delay, d1				29.2	29.7		18.1	14.1			52.2	
Progression Factor				1.00	1.00		0.30	0.22			1.00	
Incremental Delay, d2				0.8	0.6		0.3	0.1			4.2	
Delay (s)				30.0	30.2		5.8	3.2			56.3	
Level of Service				C	C		A	A			E	
Approach Delay (s)		0.0			30.2			4.7			56.3	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	497	149	45	7	37	65	67	307	26	65	79	304
Future Volume (vph)	497	149	45	7	37	65	67	307	26	65	79	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1798		1770	1684		1770	1841		1770	1863	1583
Flt Permitted	0.44	1.00		0.63	1.00		0.70	1.00		0.36	1.00	1.00
Satd. Flow (perm)	817	1798		1166	1684		1303	1841		678	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	540	162	49	8	40	71	73	334	28	71	86	330
RTOR Reduction (vph)	0	9	0	0	54	0	0	3	0	0	0	0
Lane Group Flow (vph)	540	202	0	8	57	0	73	359	0	71	86	330
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		Free
Actuated Green, G (s)	55.7	49.9		16.0	14.7		50.9	43.9		50.7	43.8	120.0
Effective Green, g (s)	55.7	49.9		16.0	14.7		50.9	43.9		50.7	43.8	120.0
Actuated g/C Ratio	0.46	0.42		0.13	0.12		0.42	0.37		0.42	0.36	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	669	747		162	206		579	673		349	679	1583
v/s Ratio Prot	c0.25	0.11		0.00	0.03		0.01	c0.20		0.01	0.05	
v/s Ratio Perm	c0.13			0.01			0.05			0.07		c0.21
v/c Ratio	0.81	0.27		0.05	0.27		0.13	0.53		0.20	0.13	0.21
Uniform Delay, d1	25.1	23.1		45.3	47.8		20.8	30.0		21.8	25.4	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.56	1.38	1.00
Incremental Delay, d2	7.1	0.2		0.1	0.7		0.1	3.0		0.3	0.4	0.3
Delay (s)	32.2	23.3		45.4	48.5		20.8	33.0		34.3	35.4	0.3
Level of Service	C	C		D	D		C	C		C	D	A
Approach Delay (s)		29.7			48.3			31.0			11.4	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	532	0	0	182	106	0	0	0	266	0	13
Future Volume (Veh/h)	9	532	0	0	182	106	0	0	0	266	0	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	10	619	0	0	212	123	0	0	0	309	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	335			619			760	974	310	603	912	168
vC1, stage 1 conf vol							639	639		274	274	
vC2, stage 2 conf vol							121	335		330	639	
vCu, unblocked vol	335			619			760	974	310	603	912	168
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	36	100	98
cM capacity (veh/h)	1221			957			365	353	686	483	367	847

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	10	413	206	0	141	194	0	0	309	15
Volume Left	10	0	0	0	0	0	0	0	309	0
Volume Right	0	0	0	0	0	123	0	0	0	15
cSH	1221	1700	1700	1700	1700	1700	1700	1700	483	847
Volume to Capacity	0.01	0.24	0.12	0.00	0.08	0.11	0.00	0.00	0.64	0.02
Queue Length 95th (ft)	1	0	0	0	0	0	0	0	111	1
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	9.3
Lane LOS	A						A	A	C	A
Approach Delay (s)	0.1			0.0			0.0		24.0	
Approach LOS							A		C	

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	441	0	0	156	33	0	0	0	48	0	18
Future Volume (Veh/h)	22	441	0	0	156	33	0	0	0	48	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	25	501	0	0	177	38	0	0	0	55	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	215			501			660	766	250	496	747	108
vC1, stage 1 conf vol							551	551		196	196	
vC2, stage 2 conf vol							108	215		300	551	
vCu, unblocked vol	215			501			660	766	250	496	747	108
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	90	100	98
cM capacity (veh/h)	1352			1059			408	407	749	533	414	926

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	25	334	167	88	126	0	75
Volume Left	25	0	0	0	0	0	55
Volume Right	0	0	0	0	38	0	20
cSH	1352	1700	1700	1059	1700	1700	601
Volume to Capacity	0.02	0.20	0.10	0.00	0.07	0.00	0.12
Queue Length 95th (ft)	1	0	0	0	0	0	11
Control Delay (s)	7.7	0.0	0.0	0.0	0.0	0.0	11.8
Lane LOS	A					A	B
Approach Delay (s)	0.4			0.0		0.0	11.8
Approach LOS						A	B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	28	2	0	0	20	29	2	23	0	2	7	33
Future Volume (vph)	28	2	0	0	20	29	2	23	0	2	7	33
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	36	3	0	0	26	38	3	30	0	3	9	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	39	64	33	55
Volume Left (vph)	36	0	3	3
Volume Right (vph)	0	38	0	43
Hadj (s)	0.22	-0.32	0.05	-0.42
Departure Headway (s)	4.4	3.8	4.2	3.7
Degree Utilization, x	0.05	0.07	0.04	0.06
Capacity (veh/h)	803	921	821	935
Control Delay (s)	7.6	7.1	7.4	7.0
Approach Delay (s)	7.6	7.1	7.4	7.0
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	14	1	19	0	296	7	35	68	0
Future Volume (Veh/h)	0	0	0	14	1	19	0	296	7	35	68	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	17	1	23	0	361	9	43	83	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	558	539	83	534	534	366	83			370		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	558	539	83	534	534	366	83			370		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	96	100	97	100			96		
cM capacity (veh/h)	413	433	976	444	436	680	1514			1189		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	41	370	126
Volume Left	0	17	0	43
Volume Right	0	23	9	0
cSH	1700	551	1514	1189
Volume to Capacity	0.00	0.07	0.00	0.04
Queue Length 95th (ft)	0	6	0	3
Control Delay (s)	0.0	12.1	0.0	3.0
Lane LOS	A	B		A
Approach Delay (s)	0.0	12.1	0.0	3.0
Approach LOS	A	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	4	0	71	0	113	12	28	34	0
Future Volume (Veh/h)	0	0	0	4	0	71	0	113	12	28	34	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	0	0	0	5	0	88	0	140	15	35	42	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	348	267	42	260	260	148	42			155		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	348	267	42	260	260	148	42			155		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	90	100			98		
cM capacity (veh/h)	537	623	1029	680	629	899	1567			1425		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	93	155	77
Volume Left	5	0	35
Volume Right	88	15	0
cSH	884	1567	1425
Volume to Capacity	0.11	0.00	0.02
Queue Length 95th (ft)	9	0	2
Control Delay (s)	9.6	0.0	3.6
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	3.6
Approach LOS	A		

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	45	0	0	306	13
Future Volume (Veh/h)	0	45	0	0	306	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	49	0	0	333	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	333	166	347			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333	166	347			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	94	100			
cM capacity (veh/h)	636	849	1209			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	49	166	166	14
Volume Left	0	0	0	0
Volume Right	49	0	0	14
cSH	849	1700	1700	1700
Volume to Capacity	0.06	0.10	0.10	0.01
Queue Length 95th (ft)	5	0	0	0
Control Delay (s)	9.5	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.5	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	687	163	0	0	0	0	307	335	68	673	0
Future Volume (vph)	243	687	163	0	0	0	0	307	335	68	673	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95						0.95	1.00		0.95	
Frt	1.00	0.97						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		1.00	
Satd. Flow (prot)	1770	3437						3539	1583		3523	
Flt Permitted	0.95	1.00						1.00	1.00		0.92	
Satd. Flow (perm)	1770	3437						3539	1583		3242	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	253	716	170	0	0	0	0	320	349	71	701	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	295	0	0	0
Lane Group Flow (vph)	253	869	0	0	0	0	0	320	54	0	772	0
Turn Type	Split	NA						NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases									2	1 2	1 2	
Actuated Green, G (s)	37.5	37.5						18.5	18.5		69.0	
Effective Green, g (s)	37.5	37.5						18.5	18.5		69.0	
Actuated g/C Ratio	0.31	0.31						0.15	0.15		0.58	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	553	1074						545	244		1982	
v/s Ratio Prot	0.14	c0.25						c0.09			c0.16	
v/s Ratio Perm									0.03		0.06	
v/c Ratio	0.46	0.81						0.59	0.22		0.39	
Uniform Delay, d1	33.1	38.0						47.2	44.4		14.0	
Progression Factor	1.00	1.00						0.88	1.27		0.18	
Incremental Delay, d2	0.6	4.6						4.2	1.9		0.4	
Delay (s)	33.7	42.5						45.7	58.5		2.9	
Level of Service	C	D						D	E		A	
Approach Delay (s)		40.6			0.0			52.4			2.9	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	491	1122	23	223	312	0	0	245	157
Future Volume (vph)	0	0	0	491	1122	23	223	312	0	0	245	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.94	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3529		1770	1863			3332	
Flt Permitted				0.95	1.00		0.22	1.00			1.00	
Satd. Flow (perm)				1770	3529		414	1863			3332	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	522	1194	24	237	332	0	0	261	167
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	88	0
Lane Group Flow (vph)	0	0	0	522	1217	0	237	332	0	0	340	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				52.0	52.0		54.5	59.0			18.0	
Effective Green, g (s)				52.0	52.0		54.5	59.0			18.0	
Actuated g/C Ratio				0.43	0.43		0.45	0.49			0.15	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				767	1529		600	915			499	
v/s Ratio Prot				0.29	c0.34		c0.12	0.18			c0.10	
v/s Ratio Perm							0.06					
v/c Ratio				0.68	0.80		0.40	0.36			0.68	
Uniform Delay, d1				27.3	29.4		21.2	18.9			48.3	
Progression Factor				1.00	1.00		0.18	0.21			1.00	
Incremental Delay, d2				2.5	3.0		0.4	0.2			7.3	
Delay (s)				29.8	32.4		4.1	4.1			55.6	
Level of Service				C	C		A	A			E	
Approach Delay (s)		0.0			31.6			4.1			55.6	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	77	23	28	176	137	65	174	23	73	210	638
Future Volume (vph)	258	77	23	28	176	137	65	174	23	73	210	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1798		1770	1740		1770	1830		1770	1863	1583
Flt Permitted	0.21	1.00		0.69	1.00		0.55	1.00		0.56	1.00	1.00
Satd. Flow (perm)	384	1798		1285	1740		1026	1830		1043	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	269	80	24	29	183	143	68	181	24	76	219	665
RTOR Reduction (vph)	0	10	0	0	27	0	0	3	0	0	0	0
Lane Group Flow (vph)	269	94	0	29	299	0	68	202	0	76	219	665
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		Free
Actuated Green, G (s)	52.5	43.7		32.0	27.7		53.7	46.8		54.3	47.1	120.0
Effective Green, g (s)	52.5	43.7		32.0	27.7		53.7	46.8		54.3	47.1	120.0
Actuated g/C Ratio	0.44	0.36		0.27	0.23		0.45	0.39		0.45	0.39	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	402	654		360	401		501	713		515	731	1583
v/s Ratio Prot	c0.11	0.05		0.00	c0.17		0.01	0.11		0.01	0.12	
v/s Ratio Perm	0.18			0.02			0.05			0.06		c0.42
v/c Ratio	0.67	0.14		0.08	0.75		0.14	0.28		0.15	0.30	0.42
Uniform Delay, d1	24.7	25.6		32.8	42.9		19.2	25.1		18.9	25.1	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.26	1.18	1.00
Incremental Delay, d2	4.2	0.1		0.1	7.4		0.1	1.0		0.1	1.0	0.8
Delay (s)	28.9	25.7		32.9	50.3		19.3	26.1		23.9	30.5	0.8
Level of Service	C	C		C	D		B	C		C	C	A
Approach Delay (s)		28.0			48.8			24.4			9.4	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	302	0	0	558	191	0	0	0	129	0	5
Future Volume (Veh/h)	9	302	0	0	558	191	0	0	0	129	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	9	311	0	0	575	197	0	0	0	133	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	772			311			622	1101	156	847	1002	386
vC1, stage 1 conf vol							329	329		674	674	
vC2, stage 2 conf vol							292	772		174	329	
vCu, unblocked vol	772			311			622	1101	156	847	1002	386
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	61	100	99
cM capacity (veh/h)	839			1246			469	310	862	343	345	612

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	9	207	104	0	383	389	0	0	133	5
Volume Left	9	0	0	0	0	0	0	0	133	0
Volume Right	0	0	0	0	0	197	0	0	0	5
cSH	839	1700	1700	1700	1700	1700	1700	1700	343	612
Volume to Capacity	0.01	0.12	0.06	0.00	0.23	0.23	0.00	0.00	0.39	0.01
Queue Length 95th (ft)	1	0	0	0	0	0	0	0	45	1
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	10.9
Lane LOS	A						A	A	C	B
Approach Delay (s)	0.3			0.0			0.0		21.6	
Approach LOS							A		C	

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	261	0	0	505	40	0	0	0	22	0	44
Future Volume (Veh/h)	18	261	0	0	505	40	0	0	0	22	0	44
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	20	293	0	0	567	45	0	0	0	25	0	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	612			293			666	945	146	776	922	306
vC1, stage 1 conf vol							333	333		590	590	
vC2, stage 2 conf vol							332	612		186	333	
vCu, unblocked vol	612			293			666	945	146	776	922	306
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	93	100	93
cM capacity (veh/h)	963			1265			423	354	874	378	369	690

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	20	195	98	284	328	0	74
Volume Left	20	0	0	0	0	0	25
Volume Right	0	0	0	0	45	0	49
cSH	963	1700	1700	1265	1700	1700	540
Volume to Capacity	0.02	0.11	0.06	0.00	0.19	0.00	0.14
Queue Length 95th (ft)	2	0	0	0	0	0	12
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	0.0	12.7
Lane LOS	A					A	B
Approach Delay (s)	0.6			0.0		0.0	12.7
Approach LOS						A	B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	7	0	0	13	16	1	13	1	11	24	39
Future Volume (vph)	20	7	0	0	13	16	1	13	1	11	24	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	8	0	0	14	17	1	14	1	12	26	42

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	30	31	16	80
Volume Left (vph)	22	0	1	12
Volume Right (vph)	0	17	1	42
Hadj (s)	0.18	-0.30	0.01	-0.25
Departure Headway (s)	4.3	3.8	4.1	3.8
Degree Utilization, x	0.04	0.03	0.02	0.08
Capacity (veh/h)	812	911	848	929
Control Delay (s)	7.5	7.0	7.2	7.1
Approach Delay (s)	7.5	7.0	7.2	7.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	34	0	55	0	139	4	23	171	0
Future Volume (Veh/h)	0	0	0	34	0	55	0	139	4	23	171	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	41	0	67	0	170	5	28	209	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	504	440	209	438	438	172	209			175		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	504	440	209	438	438	172	209			175		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	92	100	92	100			98		
cM capacity (veh/h)	434	501	831	521	503	871	1362			1401		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	108	175	237
Volume Left	0	41	0	28
Volume Right	0	67	5	0
cSH	1700	694	1362	1401
Volume to Capacity	0.00	0.16	0.00	0.02
Queue Length 95th (ft)	0	14	0	2
Control Delay (s)	0.0	11.1	0.0	1.1
Lane LOS	A	B		A
Approach Delay (s)	0.0	11.1	0.0	1.1
Approach LOS	A	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	41	0	67	5	34	38	0
Future Volume (Veh/h)	0	0	0	12	0	41	0	67	5	34	38	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	15	0	50	0	82	6	41	46	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	263	216	46	213	213	85	46			88		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	263	216	46	213	213	85	46			88		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	95	100			97		
cM capacity (veh/h)	641	663	1023	728	666	974	1562			1508		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	65	88	87
Volume Left	15	0	41
Volume Right	50	6	0
cSH	904	1562	1508
Volume to Capacity	0.07	0.00	0.03
Queue Length 95th (ft)	6	0	2
Control Delay (s)	9.3	0.0	3.6
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	3.6
Approach LOS	A		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	24	0	0	269	80
Future Volume (Veh/h)	0	24	0	0	269	80
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	26	0	0	292	87
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	292	146	379			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	292	146	379			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	675	875	1176			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	26	146	146	87
Volume Left	0	0	0	0
Volume Right	26	0	0	87
cSH	875	1700	1700	1700
Volume to Capacity	0.03	0.09	0.09	0.05
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.2	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

2027 Buildout Traffic Synchro*TM* Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	979	138	0	0	0	0	550	766	18	450	0
Future Volume (vph)	208	979	138	0	0	0	0	550	766	18	450	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95						0.95	1.00		0.95	
Frt	1.00	0.98						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		1.00	
Satd. Flow (prot)	1770	3474						3539	1583		3532	
Flt Permitted	0.95	1.00						1.00	1.00		0.94	
Satd. Flow (perm)	1770	3474						3539	1583		3312	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	231	1088	153	0	0	0	0	611	851	20	500	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	227	0	0	0
Lane Group Flow (vph)	231	1232	0	0	0	0	0	611	624	0	520	0
Turn Type	Split	NA						NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases									2	1 2	1 2	
Actuated Green, G (s)	39.5	39.5						44.5	44.5		67.0	
Effective Green, g (s)	39.5	39.5						44.5	44.5		67.0	
Actuated g/C Ratio	0.33	0.33						0.37	0.37		0.56	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	582	1143						1312	587		1890	
v/s Ratio Prot	0.13	c0.35						0.17			c0.05	
v/s Ratio Perm									c0.39		0.10	
v/c Ratio	0.40	1.08						0.47	1.06		0.28	
Uniform Delay, d1	31.1	40.2						28.7	37.8		13.8	
Progression Factor	1.00	1.00						0.85	0.71		0.20	
Incremental Delay, d2	0.4	50.1						0.1	32.3		0.2	
Delay (s)	31.5	90.4						24.6	59.2		3.0	
Level of Service	C	F						C	E		A	
Approach Delay (s)		81.1			0.0			44.8			3.0	
Approach LOS		F			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	385	643	22	483	271	0	0	97	106
Future Volume (vph)	0	0	0	385	643	22	483	271	0	0	97	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.92	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3522		1770	1863			3262	
Flt Permitted				0.95	1.00		0.45	1.00			1.00	
Satd. Flow (perm)				1770	3522		836	1863			3262	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	418	699	24	525	295	0	0	105	115
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	104	0
Lane Group Flow (vph)	0	0	0	418	722	0	525	295	0	0	116	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				32.9	32.9		73.6	78.1			11.1	
Effective Green, g (s)				32.9	32.9		73.6	78.1			11.1	
Actuated g/C Ratio				0.27	0.27		0.61	0.65			0.09	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				485	965		999	1212			301	
v/s Ratio Prot				c0.24	0.20		c0.27	0.16			0.04	
v/s Ratio Perm							c0.05					
v/c Ratio				0.86	0.75		0.53	0.24			0.38	
Uniform Delay, d1				41.4	39.8		12.8	8.7			51.2	
Progression Factor				1.00	1.00		0.45	0.27			1.00	
Incremental Delay, d2				14.6	3.2		0.5	0.1			3.7	
Delay (s)				55.9	43.0		6.3	2.5			54.9	
Level of Service				E	D		A	A			D	
Approach Delay (s)		0.0			47.7			4.9			54.9	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	813	174	59	13	45	65	84	482	43	65	110	410
Future Volume (vph)	813	174	59	13	45	65	84	482	43	65	110	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1792		1770	1698		1770	1840		1770	1863	1583
Flt Permitted	0.42	1.00		0.61	1.00		0.63	1.00		0.11	1.00	1.00
Satd. Flow (perm)	774	1792		1127	1698		1164	1840		207	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	865	185	63	14	48	69	89	513	46	69	117	436
RTOR Reduction (vph)	0	10	0	0	44	0	0	3	0	0	0	0
Lane Group Flow (vph)	865	238	0	14	73	0	89	556	0	69	117	436
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		Free
Actuated Green, G (s)	62.3	55.2		16.9	14.3		46.0	37.8		42.4	36.0	120.0
Effective Green, g (s)	62.3	55.2		16.9	14.3		46.0	37.8		42.4	36.0	120.0
Actuated g/C Ratio	0.52	0.46		0.14	0.12		0.38	0.31		0.35	0.30	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	762	824		172	202		487	579		156	558	1583
v/s Ratio Prot	c0.41	0.13		0.00	0.04		0.01	c0.30		0.02	0.06	
v/s Ratio Perm	c0.18			0.01			0.06			0.13		c0.28
v/c Ratio	1.14	0.29		0.08	0.36		0.18	0.96		0.44	0.21	0.28
Uniform Delay, d1	25.0	20.2		44.6	48.6		24.1	40.4		30.2	31.4	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.62	1.44	1.00
Incremental Delay, d2	76.6	0.2		0.2	1.1		0.2	28.9		1.8	0.8	0.4
Delay (s)	101.5	20.4		44.8	49.7		24.3	69.2		50.8	45.9	0.4
Level of Service	F	C		D	D		C	E		D	D	A
Approach Delay (s)		83.5			49.2			63.1			14.5	
Approach LOS		F			D			E			B	

Intersection Summary			
HCM 2000 Control Delay	59.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	588	42	100	213	106	150	33	300	266	11	13
Future Volume (Veh/h)	9	588	42	100	213	106	150	33	300	266	11	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	639	46	109	232	115	163	36	326	289	12	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	347			685			1036	1247	342	1191	1212	174
vC1, stage 1 conf vol							682	682		508	508	
vC2, stage 2 conf vol							354	565		684	705	
vCu, unblocked vol	347			685			1036	1247	342	1191	1212	174
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			88			42	87	50	0	95	98
cM capacity (veh/h)	1209			904			279	269	653	69	243	840

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	10	426	259	109	155	192	163	362	289	26
Volume Left	10	0	0	109	0	0	163	0	289	0
Volume Right	0	0	46	0	0	115	0	326	0	14
cSH	1209	1700	1700	904	1700	1700	279	572	69	394
Volume to Capacity	0.01	0.25	0.15	0.12	0.09	0.11	0.58	0.63	4.21	0.07
Queue Length 95th (ft)	1	0	0	10	0	0	85	111	Err	5
Control Delay (s)	8.0	0.0	0.0	9.5	0.0	0.0	34.6	21.5	Err	14.8
Lane LOS	A			A			D	C	F	B
Approach Delay (s)	0.1			2.3			25.6		9174.9	
Approach LOS							D		F	

Intersection Summary			
Average Delay	1458.9		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	497	0	0	322	75	0	0	0	62	0	18
Future Volume (Veh/h)	22	497	0	0	322	75	0	0	0	62	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	25	558	0	0	362	84	0	0	0	70	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	446			558			809	1054	279	733	1012	223
vC1, stage 1 conf vol							608	608		404	404	
vC2, stage 2 conf vol							201	446		329	608	
vCu, unblocked vol	446			558			809	1054	279	733	1012	223
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	83	100	97
cM capacity (veh/h)	1111			1009			356	331	718	420	345	780

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	25	372	186	181	265	0	90
Volume Left	25	0	0	0	0	0	70
Volume Right	0	0	0	0	84	0	20
cSH	1111	1700	1700	1009	1700	1700	468
Volume to Capacity	0.02	0.22	0.11	0.00	0.16	0.00	0.19
Queue Length 95th (ft)	2	0	0	0	0	0	18
Control Delay (s)	8.3	0.0	0.0	0.0	0.0	0.0	14.5
Lane LOS	A					A	B
Approach Delay (s)	0.4			0.0		0.0	14.5
Approach LOS						A	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	2	0	0	20	29	2	23	0	2	7	39
Future Volume (vph)	45	2	0	0	20	29	2	23	0	2	7	39
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	53	2	0	0	24	34	2	27	0	2	8	46

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	55	58	29	56
Volume Left (vph)	53	0	2	2
Volume Right (vph)	0	34	0	46
Hadj (s)	0.23	-0.32	0.05	-0.45
Departure Headway (s)	4.4	3.8	4.2	3.7
Degree Utilization, x	0.07	0.06	0.03	0.06
Capacity (veh/h)	804	917	815	935
Control Delay (s)	7.7	7.1	7.4	6.9
Approach Delay (s)	7.7	7.1	7.4	6.9
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	56	0	19	0	504	49	35	118	0
Future Volume (Veh/h)	0	0	0	56	0	19	0	504	49	35	118	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	68	0	23	0	615	60	43	144	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	905	144	875	875	645	144			675		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	898	905	144	875	875	645	144			675		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	74	100	95	100			95		
cM capacity (veh/h)	239	263	903	260	274	472	1438			916		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	91	675	187
Volume Left	0	68	0	43
Volume Right	0	23	60	0
cSH	1700	293	1438	916
Volume to Capacity	0.00	0.31	0.00	0.05
Queue Length 95th (ft)	0	32	0	4
Control Delay (s)	0.0	22.7	0.0	2.5
Lane LOS	A	C		A
Approach Delay (s)	0.0	22.7	0.0	2.5
Approach LOS	A	C		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	4	0	77	0	113	12	45	34	0
Future Volume (Veh/h)	0	0	0	4	0	77	0	113	12	45	34	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	5	0	94	0	138	15	55	41	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	390	304	41	296	296	146	41			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390	304	41	296	296	146	41			153		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	90	100			96		
cM capacity (veh/h)	494	586	1030	636	591	902	1568			1428		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	99	153	96
Volume Left	5	0	55
Volume Right	94	15	0
cSH	883	1568	1428
Volume to Capacity	0.11	0.00	0.04
Queue Length 95th (ft)	9	0	3
Control Delay (s)	9.6	0.0	4.5
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	4.5
Approach LOS	A		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	87	0	0	306	55
Future Volume (Veh/h)	0	87	0	0	306	55
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	95	0	0	333	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	333	166	393			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333	166	393			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	89	100			
cM capacity (veh/h)	636	849	1162			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	95	166	166	60
Volume Left	0	0	0	0
Volume Right	95	0	0	60
cSH	849	1700	1700	1700
Volume to Capacity	0.11	0.10	0.10	0.04
Queue Length 95th (ft)	9	0	0	0
Control Delay (s)	9.8	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.8	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	597	14	14	355	0	42	0	42	0	0	0
Future Volume (Veh/h)	0	597	14	14	355	0	42	0	42	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	649	15	15	386	0	46	0	46	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	386			664			880	1072	332	786	1080	193
vC1, stage 1 conf vol							656	656		416	416	
vC2, stage 2 conf vol							223	416		370	664	
vCu, unblocked vol	386			664			880	1072	332	786	1080	193
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			86	100	93	100	100	100
cM capacity (veh/h)	1169			921			340	330	664	378	323	816

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	433	231	15	257	129	92	0
Volume Left	0	0	0	15	0	0	46	0
Volume Right	0	0	15	0	0	0	46	0
cSH	1700	1700	1700	921	1700	1700	450	1700
Volume to Capacity	0.00	0.25	0.14	0.02	0.15	0.08	0.20	0.00
Queue Length 95th (ft)	0	0	0	1	0	0	19	0
Control Delay (s)	0.0	0.0	0.0	9.0	0.0	0.0	15.1	0.0
Lane LOS				A			C	A
Approach Delay (s)	0.0			0.3			15.1	0.0
Approach LOS							C	A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	0	17	0	0	0	6	197	0	0	62	92
Future Volume (Veh/h)	250	0	17	0	0	0	6	197	0	0	62	92
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	0	18	0	0	0	7	214	0	0	67	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	345	345	117	363	395	214	167			214		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345	345	117	363	395	214	167			214		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	100	98	100	100	100	100			100		
cM capacity (veh/h)	607	575	935	579	539	826	1411			1356		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	290	221	167
Volume Left	272	7	0
Volume Right	18	0	100
cSH	621	1411	1356
Volume to Capacity	0.47	0.00	0.00
Queue Length 95th (ft)	62	0	0
Control Delay (s)	15.8	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	15.8	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	687	340	0	0	0	0	439	527	68	953	0
Future Volume (vph)	243	687	340	0	0	0	0	439	527	68	953	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5						4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95						0.95	1.00		0.95	
Frt	1.00	0.95						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		1.00	
Satd. Flow (prot)	1770	3363						3539	1583		3527	
Flt Permitted	0.95	1.00						1.00	1.00		0.81	
Satd. Flow (perm)	1770	3363						3539	1583		2869	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	270	763	378	0	0	0	0	488	586	76	1059	0
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	474	0	0	0
Lane Group Flow (vph)	270	1090	0	0	0	0	0	488	112	0	1135	0
Turn Type	Split	NA						NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases									2	1 2	1 2	
Actuated Green, G (s)	36.5	36.5						18.5	18.5		70.0	
Effective Green, g (s)	36.5	36.5						18.5	18.5		70.0	
Actuated g/C Ratio	0.30	0.30						0.15	0.15		0.58	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	538	1022						545	244		1955	
v/s Ratio Prot	0.15	c0.32						c0.14			c0.25	
v/s Ratio Perm									0.07		0.09	
v/c Ratio	0.50	1.07						0.90	0.46		0.58	
Uniform Delay, d1	34.3	41.8						49.8	46.2		15.8	
Progression Factor	1.00	1.00						0.89	1.44		0.17	
Incremental Delay, d2	0.7	47.7						15.3	4.4		0.4	
Delay (s)	35.0	89.5						59.8	70.8		3.1	
Level of Service	D	F						E	E		A	
Approach Delay (s)		79.1			0.0			65.8			3.1	
Approach LOS		E			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	724	1122	23	327	339	0	0	292	157
Future Volume (vph)	0	0	0	724	1122	23	327	339	0	0	292	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.95	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3529		1770	1863			3353	
Flt Permitted				0.95	1.00		0.22	1.00			1.00	
Satd. Flow (perm)				1770	3529		405	1863			3353	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	787	1220	25	355	368	0	0	317	171
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	60	0
Lane Group Flow (vph)	0	0	0	787	1244	0	355	368	0	0	428	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				52.6	52.6		53.9	58.4			18.4	
Effective Green, g (s)				52.6	52.6		53.9	58.4			18.4	
Actuated g/C Ratio				0.44	0.44		0.45	0.49			0.15	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				775	1546		585	906			514	
v/s Ratio Prot				c0.44	0.35		c0.18	0.20			c0.13	
v/s Ratio Perm							0.09					
v/c Ratio				1.02	0.80		0.61	0.41			0.83	
Uniform Delay, d1				33.7	29.2		23.7	19.7			49.3	
Progression Factor				1.00	1.00		0.20	0.22			1.00	
Incremental Delay, d2				36.2	3.1		1.1	0.2			14.6	
Delay (s)				69.9	32.4		5.9	4.5			63.9	
Level of Service				E	C		A	A			E	
Approach Delay (s)		0.0			46.9			5.2			63.9	
Approach LOS		A			D			A			E	

Intersection Summary			
HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	466	93	70	47	204	137	76	289	34	73	313	992
Future Volume (vph)	466	93	70	47	204	137	76	289	34	73	313	992
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1743		1770	1750		1770	1833		1770	1863	1583
Flt Permitted	0.15	1.00		0.65	1.00		0.33	1.00		0.31	1.00	1.00
Satd. Flow (perm)	277	1743		1207	1750		606	1833		579	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	496	99	74	50	217	146	81	307	36	78	333	1055
RTOR Reduction (vph)	0	23	0	0	21	0	0	4	0	0	0	0
Lane Group Flow (vph)	496	150	0	50	342	0	81	339	0	78	333	1055
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		Free
Actuated Green, G (s)	65.2	55.0		33.3	27.6		41.3	35.2		41.3	35.2	120.0
Effective Green, g (s)	65.2	55.0		33.3	27.6		41.3	35.2		41.3	35.2	120.0
Actuated g/C Ratio	0.54	0.46		0.28	0.23		0.34	0.29		0.34	0.29	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	562	798		361	402		267	537		259	546	1583
v/s Ratio Prot	c0.24	0.09		0.01	0.20		0.02	0.19		0.02	0.18	
v/s Ratio Perm	c0.24			0.03			0.09			0.09		c0.67
v/c Ratio	0.88	0.19		0.14	0.85		0.30	0.63		0.30	0.61	0.67
Uniform Delay, d1	30.4	19.3		32.2	44.2		28.0	36.8		28.1	36.5	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.16	1.10	1.00
Incremental Delay, d2	15.1	0.1		0.2	15.8		0.6	5.6		0.5	3.6	1.6
Delay (s)	45.5	19.4		32.4	60.0		28.7	42.4		33.1	43.8	1.6
Level of Service	D	B		C	E		C	D		C	D	A
Approach Delay (s)		38.7			56.7			39.7			12.9	
Approach LOS		D			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	376	140	336	616	191	99	22	197	129	37	5
Future Volume (Veh/h)	9	376	140	336	616	191	99	22	197	129	37	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	409	152	365	670	208	108	24	214	140	40	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	878			561			1595	2113	280	1954	2085	439
vC1, stage 1 conf vol							505	505		1504	1504	
vC2, stage 2 conf vol							1090	1608		450	581	
vCu, unblocked vol	878			561			1595	2113	280	1954	2085	439
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			64			0	70	70	0	43	99
cM capacity (veh/h)	765			1006			72	79	717	15	70	566

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	10	273	288	365	447	431	108	238	140	45
Volume Left	10	0	0	365	0	0	108	0	140	0
Volume Right	0	0	152	0	0	208	0	214	0	5
cSH	765	1700	1700	1006	1700	1700	72	395	15	78
Volume to Capacity	0.01	0.16	0.17	0.36	0.26	0.25	1.49	0.60	9.41	0.58
Queue Length 95th (ft)	1	0	0	42	0	0	224	95	Err	63
Control Delay (s)	9.8	0.0	0.0	10.6	0.0	0.0	379.4	27.0	Err	101.3
Lane LOS	A			B			F	D	F	F
Approach Delay (s)	0.2			3.1			137.0		7591.5	
Approach LOS							F		F	

Intersection Summary			
Average Delay	620.8		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	447	615	67	69	44
Future Volume (Veh/h)	18	447	615	67	69	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	20	502	691	75	78	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	766				1020	383
vC1, stage 1 conf vol					728	
vC2, stage 2 conf vol					291	
vCu, unblocked vol	766				1020	383
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				77	92
cM capacity (veh/h)	843				342	615

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	20	251	251	461	305	127
Volume Left	20	0	0	0	0	78
Volume Right	0	0	0	0	75	49
cSH	843	1700	1700	1700	1700	413
Volume to Capacity	0.02	0.15	0.15	0.27	0.18	0.31
Queue Length 95th (ft)	2	0	0	0	0	32
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	17.5
Lane LOS	A					C
Approach Delay (s)	0.4			0.0		17.5
Approach LOS						C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	31	7	0	0	13	16	1	13	1	11	24	58
Future Volume (vph)	31	7	0	0	13	16	1	13	1	11	24	58
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	36	8	0	0	15	19	1	15	1	13	28	68

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	44	34	17	109
Volume Left (vph)	36	0	1	13
Volume Right (vph)	0	19	1	68
Hadj (s)	0.20	-0.30	0.01	-0.32
Departure Headway (s)	4.4	3.9	4.2	3.8
Degree Utilization, x	0.05	0.04	0.02	0.11
Capacity (veh/h)	793	889	830	931
Control Delay (s)	7.6	7.0	7.3	7.3
Approach Delay (s)	7.6	7.0	7.3	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	174	0	55	0	276	31	23	339	0
Future Volume (Veh/h)	0	0	0	174	0	55	0	276	31	23	339	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	212	0	67	0	337	38	28	413	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	892	844	413	825	825	356	413			375		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	892	844	413	825	825	356	413			375		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	26	100	90	100			98		
cM capacity (veh/h)	233	293	639	286	300	688	1146			1183		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	279	375	441
Volume Left	0	212	0	28
Volume Right	0	67	38	0
cSH	1700	333	1146	1183
Volume to Capacity	0.00	0.84	0.00	0.02
Queue Length 95th (ft)	0	185	0	2
Control Delay (s)	0.0	52.9	0.0	0.8
Lane LOS	A	F		A
Approach Delay (s)	0.0	52.9	0.0	0.8
Approach LOS	A	F		

Intersection Summary			
Average Delay	13.8		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	60	0	67	5	45	38	0
Future Volume (Veh/h)	0	0	0	12	0	60	0	67	5	45	38	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	15	0	73	0	82	6	55	46	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	314	244	46	241	241	85	46			88		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	314	244	46	241	241	85	46			88		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	93	100			96		
cM capacity (veh/h)	574	634	1023	693	636	974	1562			1508		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	88	88	101
Volume Left	15	0	55
Volume Right	73	6	0
cSH	911	1562	1508
Volume to Capacity	0.10	0.00	0.04
Queue Length 95th (ft)	8	0	3
Control Delay (s)	9.4	0.0	4.2
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	4.2
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	51	0	0	269	220
Future Volume (Veh/h)	0	51	0	0	269	220
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	0	0	292	239
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	292	146	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	292	146	531			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	94	100			
cM capacity (veh/h)	675	875	1033			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	55	146	146	239
Volume Left	0	0	0	0
Volume Right	55	0	0	239
cSH	875	1700	1700	1700
Volume to Capacity	0.06	0.09	0.09	0.14
Queue Length 95th (ft)	5	0	0	0
Control Delay (s)	9.4	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.4	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	497	47	47	655	0	27	0	27	0	0	0
Future Volume (Veh/h)	0	497	47	47	655	0	27	0	27	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	540	51	51	712	0	29	0	29	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	712			591			1024	1380	296	1113	1405	356
vC1, stage 1 conf vol							566	566		814	814	
vC2, stage 2 conf vol							458	814		299	591	
vCu, unblocked vol	712			591			1024	1380	296	1113	1405	356
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			91	100	96	100	100	100
cM capacity (veh/h)	884			981			311	255	701	250	243	640

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	360	231	51	475	237	58	0
Volume Left	0	0	0	51	0	0	29	0
Volume Right	0	0	51	0	0	0	29	0
cSH	1700	1700	1700	981	1700	1700	430	1700
Volume to Capacity	0.00	0.21	0.14	0.05	0.28	0.14	0.13	0.00
Queue Length 95th (ft)	0	0	0	4	0	0	12	0
Control Delay (s)	0.0	0.0	0.0	8.9	0.0	0.0	14.7	0.0
Lane LOS				A			B	A
Approach Delay (s)	0.0			0.6			14.7	0.0
Approach LOS							B	A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	0	11	0	0	0	19	87	0	0	71	308
Future Volume (Veh/h)	164	0	11	0	0	0	19	87	0	0	71	308
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	178	0	12	0	0	0	21	95	0	0	77	335
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	382	382	244	394	549	95	412			95		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	382	382	244	394	549	95	412			95		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	98	100	100	100	98			100		
cM capacity (veh/h)	568	541	794	550	435	962	1147			1499		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	190	116	412
Volume Left	178	21	0
Volume Right	12	0	335
cSH	579	1147	1499
Volume to Capacity	0.33	0.02	0.00
Queue Length 95th (ft)	36	1	0
Control Delay (s)	14.2	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	14.2	1.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

2027 Mitigated Buildout Traffic Synchro^{TM} Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	979	138	0	0	0	0	550	766	18	450	0
Future Volume (vph)	208	979	138	0	0	0	0	550	766	18	450	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5					4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	1.00					0.95	1.00		0.95	
Frt	1.00	1.00	0.85					1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583					3539	1583		3532	
Flt Permitted	0.95	1.00	1.00					1.00	1.00		0.94	
Satd. Flow (perm)	1770	3539	1583					3539	1583		3312	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	231	1088	153	0	0	0	0	611	851	20	500	0
RTOR Reduction (vph)	0	0	104	0	0	0	0	0	228	0	0	0
Lane Group Flow (vph)	231	1088	49	0	0	0	0	611	623	0	520	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases			4 12						2	1 2	1 2	
Actuated Green, G (s)	38.5	38.5	38.5					45.5	45.5		68.0	
Effective Green, g (s)	38.5	38.5	38.5					45.5	45.5		68.0	
Actuated g/C Ratio	0.32	0.32	0.32					0.38	0.38		0.57	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	567	1135	507					1341	600		1918	
v/s Ratio Prot	0.13	c0.31						0.17			c0.05	
v/s Ratio Perm			0.03						c0.39		0.10	
v/c Ratio	0.41	0.96	0.10					0.46	1.04		0.27	
Uniform Delay, d1	31.8	40.0	28.6					28.0	37.2		13.3	
Progression Factor	1.00	1.00	1.00					0.79	0.55		0.21	
Incremental Delay, d2	0.5	17.4	0.1					0.6	38.4		0.2	
Delay (s)	32.3	57.4	28.6					22.6	59.0		3.0	
Level of Service	C	E	C					C	E		A	
Approach Delay (s)		50.5			0.0			43.8			3.0	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	40.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	385	643	22	483	271	0	0	97	106
Future Volume (vph)	0	0	0	385	643	22	483	271	0	0	97	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.92	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3522		1770	1863			3262	
Flt Permitted				0.95	1.00		0.45	1.00			1.00	
Satd. Flow (perm)				1770	3522		836	1863			3262	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	418	699	24	525	295	0	0	105	115
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	104	0
Lane Group Flow (vph)	0	0	0	418	722	0	525	295	0	0	116	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				32.9	32.9		73.6	78.1			11.1	
Effective Green, g (s)				32.9	32.9		73.6	78.1			11.1	
Actuated g/C Ratio				0.27	0.27		0.61	0.65			0.09	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				485	965		999	1212			301	
v/s Ratio Prot				c0.24	0.20		c0.27	0.16			0.04	
v/s Ratio Perm							c0.05					
v/c Ratio				0.86	0.75		0.53	0.24			0.38	
Uniform Delay, d1				41.4	39.8		12.8	8.7			51.2	
Progression Factor				1.00	1.00		0.40	0.27			1.00	
Incremental Delay, d2				14.6	3.2		0.5	0.1			3.7	
Delay (s)				55.9	43.0		5.6	2.4			54.9	
Level of Service				E	D		A	A			D	
Approach Delay (s)		0.0			47.7			4.5			54.9	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	813	174	59	13	45	65	84	482	43	65	110	410
Future Volume (vph)	813	174	59	13	45	65	84	482	43	65	110	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	0.95	0.95		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.97		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1693		1770	1698		1770	1840		1770	1863	1583
Flt Permitted	0.95	0.97		0.95	1.00		0.64	1.00		0.10	1.00	1.00
Satd. Flow (perm)	1681	1693		1770	1698		1189	1840		193	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	865	185	63	14	48	69	89	513	46	69	117	436
RTOR Reduction (vph)	0	4	0	0	43	0	0	3	0	0	0	0
Lane Group Flow (vph)	554	555	0	14	74	0	89	556	0	69	117	436
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)	45.6	45.6		10.3	10.3		47.5	40.0		44.7	38.6	120.0
Effective Green, g (s)	45.6	45.6		10.3	10.3		47.5	40.0		44.7	38.6	120.0
Actuated g/C Ratio	0.38	0.38		0.09	0.09		0.40	0.33		0.37	0.32	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	638	643		151	145		506	613		152	599	1583
v/s Ratio Prot	c0.33	0.33		0.01	c0.04		0.01	c0.30		0.02	0.06	
v/s Ratio Perm							0.06			0.15		c0.28
v/c Ratio	0.87	0.86		0.09	0.51		0.18	0.91		0.45	0.20	0.28
Uniform Delay, d1	34.4	34.3		50.5	52.4		23.1	38.2		28.7	29.5	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.84	1.62	1.00
Incremental Delay, d2	12.0	11.6		0.3	3.0		0.2	19.6		2.1	0.7	0.4
Delay (s)	46.4	45.9		50.8	55.5		23.3	57.8		54.8	48.5	0.4
Level of Service	D	D		D	E		C	E		D	D	A
Approach Delay (s)		46.2			55.0			53.1			15.5	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	588	42	100	213	106	150	33	300	266	11	13
Future Volume (vph)	9	588	42	100	213	106	150	33	300	266	11	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.95		1.00	0.86		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3504		1770	3363		1770	1611		1770	1712	
Flt Permitted	0.54	1.00		0.34	1.00		0.74	1.00		0.50	1.00	
Satd. Flow (perm)	1012	3504		635	3363		1379	1611		938	1712	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	639	46	109	232	115	163	36	326	289	12	14
RTOR Reduction (vph)	0	12	0	0	74	0	0	78	0	0	8	0
Lane Group Flow (vph)	10	673	0	109	273	0	163	284	0	289	18	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.7	13.7		13.7	13.7		16.0	16.0		16.0	16.0	
Effective Green, g (s)	13.7	13.7		13.7	13.7		16.0	16.0		16.0	16.0	
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.41	0.41		0.41	0.41	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	358	1240		224	1190		570	666		387	707	
v/s Ratio Prot		c0.19			0.08			0.18			0.01	
v/s Ratio Perm	0.01			0.17			0.12			c0.31		
v/c Ratio	0.03	0.54		0.49	0.23		0.29	0.43		0.75	0.03	
Uniform Delay, d1	8.2	10.0		9.8	8.8		7.6	8.1		9.6	6.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.5		1.7	0.1		0.3	0.4		7.7	0.0	
Delay (s)	8.2	10.5		11.4	8.9		7.8	8.5		17.3	6.7	
Level of Service	A	B		B	A		A	A		B	A	
Approach Delay (s)		10.4			9.5			8.3			16.4	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	497	0	0	322	75	0	0	0	62	0	18
Future Volume (Veh/h)	22	497	0	0	322	75	0	0	0	62	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	25	558	0	0	362	84	0	0	0	70	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	446			558			809	1054	279	733	1012	223
vC1, stage 1 conf vol							608	608		404	404	
vC2, stage 2 conf vol							201	446		329	608	
vCu, unblocked vol	446			558			809	1054	279	733	1012	223
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	83	100	97
cM capacity (veh/h)	1111			1009			356	331	718	420	345	780

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	25	372	186	181	265	0	90
Volume Left	25	0	0	0	0	0	70
Volume Right	0	0	0	0	84	0	20
cSH	1111	1700	1700	1009	1700	1700	468
Volume to Capacity	0.02	0.22	0.11	0.00	0.16	0.00	0.19
Queue Length 95th (ft)	2	0	0	0	0	0	18
Control Delay (s)	8.3	0.0	0.0	0.0	0.0	0.0	14.5
Lane LOS	A					A	B
Approach Delay (s)	0.4			0.0		0.0	14.5
Approach LOS						A	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	2	0	0	20	29	2	23	0	2	7	39
Future Volume (vph)	45	2	0	0	20	29	2	23	0	2	7	39
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	53	2	0	0	24	34	2	27	0	2	8	46

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	55	58	29	56
Volume Left (vph)	53	0	2	2
Volume Right (vph)	0	34	0	46
Hadj (s)	0.23	-0.32	0.05	-0.45
Departure Headway (s)	4.4	3.8	4.2	3.7
Degree Utilization, x	0.07	0.06	0.03	0.06
Capacity (veh/h)	804	917	815	935
Control Delay (s)	7.7	7.1	7.4	6.9
Approach Delay (s)	7.7	7.1	7.4	6.9
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.2		
Level of Service	A		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	56	0	19	0	504	49	35	118	0
Future Volume (Veh/h)	0	0	0	56	0	19	0	504	49	35	118	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	68	0	23	0	615	60	43	144	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	905	144	875	875	645	144			675		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	898	905	144	875	875	645	144			675		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	74	100	95	100			95		
cM capacity (veh/h)	239	263	903	260	274	472	1438			916		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	0	68	23	675	187
Volume Left	0	68	0	0	43
Volume Right	0	0	23	60	0
cSH	1700	260	472	1438	916
Volume to Capacity	0.00	0.26	0.05	0.00	0.05
Queue Length 95th (ft)	0	25	4	0	4
Control Delay (s)	0.0	23.7	13.0	0.0	2.5
Lane LOS	A	C	B		A
Approach Delay (s)	0.0	21.0		0.0	2.5
Approach LOS	A	C			

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	4	0	77	0	113	12	45	34	0
Future Volume (Veh/h)	0	0	0	4	0	77	0	113	12	45	34	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	5	0	94	0	138	15	55	41	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	390	304	41	296	296	146	41			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390	304	41	296	296	146	41			153		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	90	100			96		
cM capacity (veh/h)	494	586	1030	636	591	902	1568			1428		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	99	153	96
Volume Left	5	0	55
Volume Right	94	15	0
cSH	883	1568	1428
Volume to Capacity	0.11	0.00	0.04
Queue Length 95th (ft)	9	0	3
Control Delay (s)	9.6	0.0	4.5
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	4.5
Approach LOS	A		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	87	0	0	306	55
Future Volume (Veh/h)	0	87	0	0	306	55
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	95	0	0	333	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	333	166	393			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333	166	393			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	89	100			
cM capacity (veh/h)	636	849	1162			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	95	166	166	60
Volume Left	0	0	0	0
Volume Right	95	0	0	60
cSH	849	1700	1700	1700
Volume to Capacity	0.11	0.10	0.10	0.04
Queue Length 95th (ft)	9	0	0	0
Control Delay (s)	9.8	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.8	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	597	14	14	355	0	42	0	42	0	0	0
Future Volume (Veh/h)	0	597	14	14	355	0	42	0	42	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	649	15	15	386	0	46	0	46	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	386			664			880	1072	332	786	1080	193
vC1, stage 1 conf vol							656	656		416	416	
vC2, stage 2 conf vol							223	416		370	664	
vCu, unblocked vol	386			664			880	1072	332	786	1080	193
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			86	100	93	100	100	100
cM capacity (veh/h)	1169			921			340	330	664	378	323	816

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	433	231	15	257	129	92	0
Volume Left	0	0	0	15	0	0	46	0
Volume Right	0	0	15	0	0	0	46	0
cSH	1700	1700	1700	921	1700	1700	450	1700
Volume to Capacity	0.00	0.25	0.14	0.02	0.15	0.08	0.20	0.00
Queue Length 95th (ft)	0	0	0	1	0	0	19	0
Control Delay (s)	0.0	0.0	0.0	9.0	0.0	0.0	15.1	0.0
Lane LOS				A			C	A
Approach Delay (s)	0.0			0.3			15.1	0.0
Approach LOS							C	A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	0	17	0	0	0	6	197	0	0	62	92
Future Volume (Veh/h)	250	0	17	0	0	0	6	197	0	0	62	92
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	0	18	0	0	0	7	214	0	0	67	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	345	345	117	363	395	214	167			214		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345	345	117	363	395	214	167			214		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	100	98	100	100	100	100			100		
cM capacity (veh/h)	607	575	935	579	539	826	1411			1356		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	290	221	167
Volume Left	272	7	0
Volume Right	18	0	100
cSH	621	1411	1356
Volume to Capacity	0.47	0.00	0.00
Queue Length 95th (ft)	62	0	0
Control Delay (s)	15.8	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	15.8	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	687	340	0	0	0	0	439	527	68	953	0
Future Volume (vph)	243	687	340	0	0	0	0	439	527	68	953	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5					4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	1.00					0.95	1.00		0.95	
Frt	1.00	1.00	0.85					1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583					3539	1583		3527	
Flt Permitted	0.95	1.00	1.00					1.00	1.00		0.87	
Satd. Flow (perm)	1770	3539	1583					3539	1583		3085	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	270	763	378	0	0	0	0	488	586	76	1059	0
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	428	0	0	0
Lane Group Flow (vph)	270	763	278	0	0	0	0	488	158	0	1135	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases			4 12						2	1 2	1 2	
Actuated Green, G (s)	31.5	31.5	31.5					29.5	29.5		75.0	
Effective Green, g (s)	31.5	31.5	31.5					29.5	29.5		75.0	
Actuated g/C Ratio	0.26	0.26	0.26					0.25	0.25		0.62	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	464	928	415					870	389		2095	
v/s Ratio Prot	0.15	c0.22						c0.14			c0.21	
v/s Ratio Perm			0.18						0.10		0.13	
v/c Ratio	0.58	0.82	0.67					0.56	0.41		0.54	
Uniform Delay, d1	38.5	41.6	39.6					39.6	37.9		12.8	
Progression Factor	1.00	1.00	1.00					0.84	1.76		0.45	
Incremental Delay, d2	1.9	5.9	4.1					2.2	2.6		0.5	
Delay (s)	40.4	47.6	43.7					35.3	69.4		6.2	
Level of Service	D	D	D					D	E		A	
Approach Delay (s)		45.1			0.0			53.9			6.2	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	724	1122	23	327	339	0	0	292	157
Future Volume (vph)	0	0	0	724	1122	23	327	339	0	0	292	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.95	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3529		1770	1863			3353	
Flt Permitted				0.95	1.00		0.21	1.00			1.00	
Satd. Flow (perm)				1770	3529		383	1863			3353	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	787	1220	25	355	368	0	0	317	171
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	61	0
Lane Group Flow (vph)	0	0	0	787	1244	0	355	368	0	0	427	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				54.9	54.9		51.6	56.1			21.1	
Effective Green, g (s)				54.9	54.9		51.6	56.1			21.1	
Actuated g/C Ratio				0.46	0.46		0.43	0.47			0.18	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				809	1614		517	870			589	
v/s Ratio Prot				c0.44	0.35		c0.17	0.20			c0.13	
v/s Ratio Perm							0.12					
v/c Ratio				0.97	0.77		0.69	0.42			0.72	
Uniform Delay, d1				31.8	27.3		25.4	21.2			46.7	
Progression Factor				1.00	1.00		0.60	0.20			1.00	
Incremental Delay, d2				24.9	2.3		3.1	0.3			7.6	
Delay (s)				56.8	29.6		18.4	4.4			54.3	
Level of Service				E	C		B	A			D	
Approach Delay (s)		0.0			40.1			11.3			54.3	
Approach LOS		A			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	466	93	70	47	204	137	76	289	34	73	313	992
Future Volume (vph)	466	93	70	47	204	137	76	289	34	73	313	992
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	0.95	0.95		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1670		1770	1750		1770	1833		1770	1863	1583
Flt Permitted	0.95	0.98		0.95	1.00		0.32	1.00		0.31	1.00	1.00
Satd. Flow (perm)	1681	1670		1770	1750		596	1833		575	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	496	99	74	50	217	146	81	307	36	78	333	1055
RTOR Reduction (vph)	0	10	0	0	21	0	0	3	0	0	0	0
Lane Group Flow (vph)	337	322	0	50	342	0	81	340	0	78	333	1055
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)	31.4	31.4		28.8	28.8		41.9	34.9		41.7	34.8	120.0
Effective Green, g (s)	31.4	31.4		28.8	28.8		41.9	34.9		41.7	34.8	120.0
Actuated g/C Ratio	0.26	0.26		0.24	0.24		0.35	0.29		0.35	0.29	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	439	436		424	420		276	533		268	540	1583
v/s Ratio Prot	c0.20	0.19		0.03	c0.20		0.02	0.19		0.02	0.18	
v/s Ratio Perm							0.09			0.08		c0.67
v/c Ratio	0.77	0.74		0.12	0.82		0.29	0.64		0.29	0.62	0.67
Uniform Delay, d1	40.9	40.5		35.7	43.1		27.6	37.1		27.8	36.8	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.15	1.13	1.00
Incremental Delay, d2	7.9	6.4		0.1	11.6		0.6	5.8		0.5	4.3	1.8
Delay (s)	48.8	46.9		35.8	54.7		28.2	42.8		32.6	45.8	1.8
Level of Service	D	D		D	D		C	D		C	D	A
Approach Delay (s)		47.9			52.4			40.0			13.5	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	376	140	336	616	191	99	22	197	129	37	5
Future Volume (vph)	9	376	140	336	616	191	99	22	197	129	37	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.87		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3395		1770	3413		1770	1612		1770	1832	
Flt Permitted	0.29	1.00		0.44	1.00		0.73	1.00		0.55	1.00	
Satd. Flow (perm)	543	3395		823	3413		1356	1612		1026	1832	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	409	152	365	670	208	108	24	214	140	40	5
RTOR Reduction (vph)	0	59	0	0	46	0	0	162	0	0	4	0
Lane Group Flow (vph)	10	502	0	365	832	0	108	76	0	140	41	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.3	28.3		28.3	28.3		12.1	12.1		12.1	12.1	
Effective Green, g (s)	28.3	28.3		28.3	28.3		12.1	12.1		12.1	12.1	
Actuated g/C Ratio	0.57	0.57		0.57	0.57		0.24	0.24		0.24	0.24	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	311	1944		471	1955		332	394		251	448	
v/s Ratio Prot		0.15			0.24			0.05			0.02	
v/s Ratio Perm	0.02			c0.44			0.08			c0.14		
v/c Ratio	0.03	0.26		0.77	0.43		0.33	0.19		0.56	0.09	
Uniform Delay, d1	4.6	5.3		8.1	6.0		15.3	14.8		16.3	14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1		7.8	0.2		0.6	0.2		2.7	0.1	
Delay (s)	4.6	5.4		15.9	6.1		15.9	15.0		19.0	14.5	
Level of Service	A	A		B	A		B	B		B	B	
Approach Delay (s)		5.3			9.0			15.3			17.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	447	615	67	69	44
Future Volume (Veh/h)	18	447	615	67	69	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	20	502	691	75	78	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		Raised	Raised			
Median storage veh)		1	1			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	766				1020	383
vC1, stage 1 conf vol					728	
vC2, stage 2 conf vol					291	
vCu, unblocked vol	766				1020	383
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				77	92
cM capacity (veh/h)	843				342	615

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	20	251	251	461	305	127
Volume Left	20	0	0	0	0	78
Volume Right	0	0	0	0	75	49
cSH	843	1700	1700	1700	1700	413
Volume to Capacity	0.02	0.15	0.15	0.27	0.18	0.31
Queue Length 95th (ft)	2	0	0	0	0	32
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	17.5
Lane LOS	A					C
Approach Delay (s)	0.4			0.0		17.5
Approach LOS						C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	31	7	0	0	13	16	1	13	1	11	24	58
Future Volume (vph)	31	7	0	0	13	16	1	13	1	11	24	58
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	36	8	0	0	15	19	1	15	1	13	28	68

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	44	34	17	109
Volume Left (vph)	36	0	1	13
Volume Right (vph)	0	19	1	68
Hadj (s)	0.20	-0.30	0.01	-0.32
Departure Headway (s)	4.4	3.9	4.2	3.8
Degree Utilization, x	0.05	0.04	0.02	0.11
Capacity (veh/h)	793	889	830	931
Control Delay (s)	7.6	7.0	7.3	7.3
Approach Delay (s)	7.6	7.0	7.3	7.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	174	0	55	0	276	31	23	339	0
Future Volume (Veh/h)	0	0	0	174	0	55	0	276	31	23	339	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	212	0	67	0	337	38	28	413	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	892	844	413	825	825	356	413			375		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	892	844	413	825	825	356	413			375		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	26	100	90	100			98		
cM capacity (veh/h)	233	293	639	286	300	688	1146			1183		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	0	212	67	375	441
Volume Left	0	212	0	0	28
Volume Right	0	0	67	38	0
cSH	1700	286	688	1146	1183
Volume to Capacity	0.00	0.74	0.10	0.00	0.02
Queue Length 95th (ft)	0	135	8	0	2
Control Delay (s)	0.0	46.4	10.8	0.0	0.8
Lane LOS	A	E	B		A
Approach Delay (s)	0.0	37.8		0.0	0.8
Approach LOS	A	E			

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	60	0	67	5	45	38	0
Future Volume (Veh/h)	0	0	0	12	0	60	0	67	5	45	38	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	15	0	73	0	82	6	55	46	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	314	244	46	241	241	85	46			88		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	314	244	46	241	241	85	46			88		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	98	100	93	100			96		
cM capacity (veh/h)	574	634	1023	693	636	974	1562			1508		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	88	88	101
Volume Left	15	0	55
Volume Right	73	6	0
cSH	911	1562	1508
Volume to Capacity	0.10	0.00	0.04
Queue Length 95th (ft)	8	0	3
Control Delay (s)	9.4	0.0	4.2
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	4.2
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	51	0	0	269	220
Future Volume (Veh/h)	0	51	0	0	269	220
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	55	0	0	292	239
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	292	146	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	292	146	531			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	94	100			
cM capacity (veh/h)	675	875	1033			

Direction, Lane #	EB 1	SB 1	SB 2	SB 3
Volume Total	55	146	146	239
Volume Left	0	0	0	0
Volume Right	55	0	0	239
cSH	875	1700	1700	1700
Volume to Capacity	0.06	0.09	0.09	0.14
Queue Length 95th (ft)	5	0	0	0
Control Delay (s)	9.4	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	9.4	0.0		
Approach LOS	A			

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	497	47	47	655	0	27	0	27	0	0	0
Future Volume (Veh/h)	0	497	47	47	655	0	27	0	27	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	540	51	51	712	0	29	0	29	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	712			591			1024	1380	296	1113	1405	356
vC1, stage 1 conf vol							566	566		814	814	
vC2, stage 2 conf vol							458	814		299	591	
vCu, unblocked vol	712			591			1024	1380	296	1113	1405	356
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			91	100	96	100	100	100
cM capacity (veh/h)	884			981			311	255	701	250	243	640

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	360	231	51	475	237	58	0
Volume Left	0	0	0	51	0	0	29	0
Volume Right	0	0	51	0	0	0	29	0
cSH	1700	1700	1700	981	1700	1700	430	1700
Volume to Capacity	0.00	0.21	0.14	0.05	0.28	0.14	0.13	0.00
Queue Length 95th (ft)	0	0	0	4	0	0	12	0
Control Delay (s)	0.0	0.0	0.0	8.9	0.0	0.0	14.7	0.0
Lane LOS				A			B	A
Approach Delay (s)	0.0			0.6			14.7	0.0
Approach LOS							B	A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	0	11	0	0	0	19	87	0	0	71	308
Future Volume (Veh/h)	164	0	11	0	0	0	19	87	0	0	71	308
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	178	0	12	0	0	0	21	95	0	0	77	335
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	382	382	244	394	549	95	412			95		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	382	382	244	394	549	95	412			95		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	69	100	98	100	100	100	98			100		
cM capacity (veh/h)	568	541	794	550	435	962	1147			1499		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	190	116	412
Volume Left	178	21	0
Volume Right	12	0	335
cSH	579	1147	1499
Volume to Capacity	0.33	0.02	0.00
Queue Length 95th (ft)	36	1	0
Control Delay (s)	14.2	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	14.2	1.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

2027 Mitigated w/ Arrington Median Buildout Traffic Synchro*TM* Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	979	138	0	0	0	0	550	766	18	471	0
Future Volume (vph)	208	979	138	0	0	0	0	550	766	18	471	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5					4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	1.00					0.95	1.00		0.95	
Frt	1.00	1.00	0.85					1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583					3539	1583		3533	
Flt Permitted	0.95	1.00	1.00					1.00	1.00		0.94	
Satd. Flow (perm)	1770	3539	1583					3539	1583		3314	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	231	1088	153	0	0	0	0	611	851	20	523	0
RTOR Reduction (vph)	0	0	104	0	0	0	0	0	228	0	0	0
Lane Group Flow (vph)	231	1088	49	0	0	0	0	611	623	0	543	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases			4 12						2	1 2	1 2	
Actuated Green, G (s)	38.5	38.5	38.5					45.5	45.5		68.0	
Effective Green, g (s)	38.5	38.5	38.5					45.5	45.5		68.0	
Actuated g/C Ratio	0.32	0.32	0.32					0.38	0.38		0.57	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	567	1135	507					1341	600		1918	
v/s Ratio Prot	0.13	c0.31						0.17			c0.05	
v/s Ratio Perm			0.03						c0.39		0.11	
v/c Ratio	0.41	0.96	0.10					0.46	1.04		0.28	
Uniform Delay, d1	31.8	40.0	28.6					28.0	37.2		13.4	
Progression Factor	1.00	1.00	1.00					0.79	0.55		0.20	
Incremental Delay, d2	0.5	17.4	0.1					0.6	38.4		0.2	
Delay (s)	32.3	57.4	28.6					22.6	59.0		3.0	
Level of Service	C	E	C					C	E		A	
Approach Delay (s)		50.5			0.0			43.8			3.0	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	406	643	22	483	271	0	0	97	106
Future Volume (vph)	0	0	0	406	643	22	483	271	0	0	97	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.92	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3522		1770	1863			3262	
Flt Permitted				0.95	1.00		0.45	1.00			1.00	
Satd. Flow (perm)				1770	3522		836	1863			3262	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	441	699	24	525	295	0	0	105	115
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	104	0
Lane Group Flow (vph)	0	0	0	441	722	0	525	295	0	0	116	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				32.9	32.9		73.6	78.1			11.1	
Effective Green, g (s)				32.9	32.9		73.6	78.1			11.1	
Actuated g/C Ratio				0.27	0.27		0.61	0.65			0.09	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				485	965		999	1212			301	
v/s Ratio Prot				c0.25	0.20		c0.27	0.16			0.04	
v/s Ratio Perm							c0.05					
v/c Ratio				0.91	0.75		0.53	0.24			0.38	
Uniform Delay, d1				42.1	39.8		12.8	8.7			51.2	
Progression Factor				1.00	1.00		0.40	0.27			1.00	
Incremental Delay, d2				20.7	3.2		0.5	0.1			3.7	
Delay (s)				62.8	43.0		5.6	2.4			54.9	
Level of Service				E	D		A	A			D	
Approach Delay (s)		0.0			50.5			4.5			54.9	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	813	174	59	13	45	65	84	482	43	65	131	410
Future Volume (vph)	813	174	59	13	45	65	84	482	43	65	131	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	0.95	0.95		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.97		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1693		1770	1698		1770	1840		1770	1863	1583
Flt Permitted	0.95	0.97		0.95	1.00		0.61	1.00		0.10	1.00	1.00
Satd. Flow (perm)	1681	1693		1770	1698		1129	1840		193	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	865	185	63	14	48	69	89	513	46	69	139	436
RTOR Reduction (vph)	0	4	0	0	43	0	0	3	0	0	0	0
Lane Group Flow (vph)	554	555	0	14	74	0	89	556	0	69	139	436
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)	45.6	45.6		10.3	10.3		47.5	40.0		44.7	38.6	120.0
Effective Green, g (s)	45.6	45.6		10.3	10.3		47.5	40.0		44.7	38.6	120.0
Actuated g/C Ratio	0.38	0.38		0.09	0.09		0.40	0.33		0.37	0.32	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	638	643		151	145		486	613		152	599	1583
v/s Ratio Prot	c0.33	0.33		0.01	c0.04		0.01	c0.30		0.02	0.07	
v/s Ratio Perm							0.06			0.15		c0.28
v/c Ratio	0.87	0.86		0.09	0.51		0.18	0.91		0.45	0.23	0.28
Uniform Delay, d1	34.4	34.3		50.5	52.4		23.1	38.2		28.7	29.8	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.85	1.64	1.00
Incremental Delay, d2	12.0	11.6		0.3	3.0		0.2	19.6		2.1	0.9	0.4
Delay (s)	46.4	45.9		50.8	55.5		23.3	57.8		55.3	49.7	0.4
Level of Service	D	D		D	E		C	E		E	D	A
Approach Delay (s)		46.2			55.0			53.1			16.9	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	19	0	504	49	0	174	0
Future Volume (Veh/h)	0	0	0	0	0	19	0	504	49	0	174	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	0	0	23	0	615	60	0	212	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	880	887	212	857	857	645	212			675		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	880	887	212	857	857	645	212			675		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	95	100			100		
cM capacity (veh/h)	255	283	828	277	295	472	1358			916		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	23	675	212
Volume Left	0	0	0	0
Volume Right	0	23	60	0
cSH	1700	472	1700	916
Volume to Capacity	0.00	0.05	0.40	0.00
Queue Length 95th (ft)	0	4	0	0
Control Delay (s)	0.0	13.0	0.0	0.0
Lane LOS	A	B		
Approach Delay (s)	0.0	13.0	0.0	0.0
Approach LOS	A	B		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	687	340	0	0	0	0	439	527	68	1104	0
Future Volume (vph)	243	687	340	0	0	0	0	439	527	68	1104	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5					4.5	4.5		4.5	
Lane Util. Factor	1.00	0.95	1.00					0.95	1.00		0.95	
Frt	1.00	1.00	0.85					1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1770	3539	1583					3539	1583		3529	
Flt Permitted	0.95	1.00	1.00					1.00	1.00		0.88	
Satd. Flow (perm)	1770	3539	1583					3539	1583		3107	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	270	763	378	0	0	0	0	488	586	76	1227	0
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	428	0	0	0
Lane Group Flow (vph)	270	763	278	0	0	0	0	488	158	0	1303	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4 12	4 12						2		1	1 2	
Permitted Phases			4 12						2	1 2	1 2	
Actuated Green, G (s)	31.5	31.5	31.5					29.5	29.5		75.0	
Effective Green, g (s)	31.5	31.5	31.5					29.5	29.5		75.0	
Actuated g/C Ratio	0.26	0.26	0.26					0.25	0.25		0.62	
Clearance Time (s)								4.5	4.5			
Vehicle Extension (s)								3.0	3.0			
Lane Grp Cap (vph)	464	928	415					870	389		2101	
v/s Ratio Prot	0.15	c0.22						0.14			c0.24	
v/s Ratio Perm			0.18						0.10		c0.15	
v/c Ratio	0.58	0.82	0.67					0.56	0.41		0.62	
Uniform Delay, d1	38.5	41.6	39.6					39.6	37.9		13.8	
Progression Factor	1.00	1.00	1.00					0.84	1.76		0.38	
Incremental Delay, d2	1.9	5.9	4.1					2.2	2.6		0.4	
Delay (s)	40.4	47.6	43.7					35.3	69.4		5.6	
Level of Service	D	D	D					D	E		A	
Approach Delay (s)		45.1			0.0			53.9			5.6	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	875	1122	23	327	339	0	0	292	157
Future Volume (vph)	0	0	0	875	1122	23	327	339	0	0	292	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.5	4.5		4.5	4.5			4.5	
Lane Util. Factor				1.00	0.95		1.00	1.00			0.95	
Frt				1.00	1.00		1.00	1.00			0.95	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	3529		1770	1863			3353	
Flt Permitted				0.95	1.00		0.21	1.00			1.00	
Satd. Flow (perm)				1770	3529		383	1863			3353	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	951	1220	25	355	368	0	0	317	171
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	61	0
Lane Group Flow (vph)	0	0	0	951	1244	0	355	368	0	0	427	0
Turn Type				Split	NA		pm+pt	NA			NA	
Protected Phases				8 16	8 16		5	5 6			6	
Permitted Phases							5 6	5 6				
Actuated Green, G (s)				59.9	59.9		46.6	51.1			21.1	
Effective Green, g (s)				59.9	59.9		46.6	51.1			21.1	
Actuated g/C Ratio				0.50	0.50		0.39	0.43			0.18	
Clearance Time (s)							4.5				4.5	
Vehicle Extension (s)							3.0				3.0	
Lane Grp Cap (vph)				883	1761		443	793			589	
v/s Ratio Prot				c0.54	0.35		c0.17	0.20			0.13	
v/s Ratio Perm							c0.14					
v/c Ratio				1.08	0.71		0.80	0.46			0.72	
Uniform Delay, d1				30.1	23.2		29.1	24.7			46.7	
Progression Factor				1.00	1.00		0.64	0.30			1.00	
Incremental Delay, d2				53.2	1.3		8.4	0.4			7.6	
Delay (s)				83.3	24.6		27.1	7.7			54.3	
Level of Service				F	C		C	A			D	
Approach Delay (s)		0.0			50.0			17.2			54.3	
Approach LOS		A			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	466	93	70	47	204	137	76	289	34	73	464	992
Future Volume (vph)	466	93	70	47	204	137	76	289	34	73	464	992
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	4.0
Lane Util. Factor	0.95	0.95		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.98		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1681	1670		1770	1750		1770	1833		1770	1863	1583
Flt Permitted	0.95	0.98		0.95	1.00		0.11	1.00		0.31	1.00	1.00
Satd. Flow (perm)	1681	1670		1770	1750		213	1833		575	1863	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	496	99	74	50	217	146	81	307	36	78	494	1055
RTOR Reduction (vph)	0	10	0	0	21	0	0	3	0	0	0	0
Lane Group Flow (vph)	337	322	0	50	342	0	81	340	0	78	494	1055
Turn Type	Split	NA		Split	NA		pm+pt	NA		pm+pt	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases							2			6		Free
Actuated Green, G (s)	31.4	31.4		28.8	28.8		41.9	34.9		41.7	34.8	120.0
Effective Green, g (s)	31.4	31.4		28.8	28.8		41.9	34.9		41.7	34.8	120.0
Actuated g/C Ratio	0.26	0.26		0.24	0.24		0.35	0.29		0.35	0.29	1.00
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	439	436		424	420		165	533		268	540	1583
v/s Ratio Prot	c0.20	0.19		0.03	c0.20		0.03	0.19		0.02	c0.27	
v/s Ratio Perm							0.14			0.08		c0.67
v/c Ratio	0.77	0.74		0.12	0.82		0.49	0.64		0.29	0.91	0.67
Uniform Delay, d1	40.9	40.5		35.7	43.1		30.1	37.1		27.8	41.2	0.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.09	1.08	1.00
Incremental Delay, d2	7.9	6.4		0.1	11.6		2.3	5.8		0.5	18.5	1.7
Delay (s)	48.8	46.9		35.8	54.7		32.4	42.8		30.8	63.0	1.7
Level of Service	D	D		D	D		C	D		C	E	A
Approach Delay (s)		47.9			52.4			40.8			21.7	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	55	0	276	31	0	513	0
Future Volume (Veh/h)	0	0	0	0	0	55	0	276	31	0	513	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	0	0	67	0	337	38	0	626	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1049	1001	626	982	982	356	626			375		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1049	1001	626	982	982	356	626			375		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	90	100			100		
cM capacity (veh/h)	185	243	484	228	249	688	956			1183		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	67	375	626
Volume Left	0	0	0	0
Volume Right	0	67	38	0
cSH	1700	688	1700	1183
Volume to Capacity	0.00	0.10	0.22	0.00
Queue Length 95th (ft)	0	8	0	0
Control Delay (s)	0.0	10.8	0.0	0.0
Lane LOS	A	B		
Approach Delay (s)	0.0	10.8	0.0	0.0
Approach LOS	A	B		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Greens Prairie Only Distribution

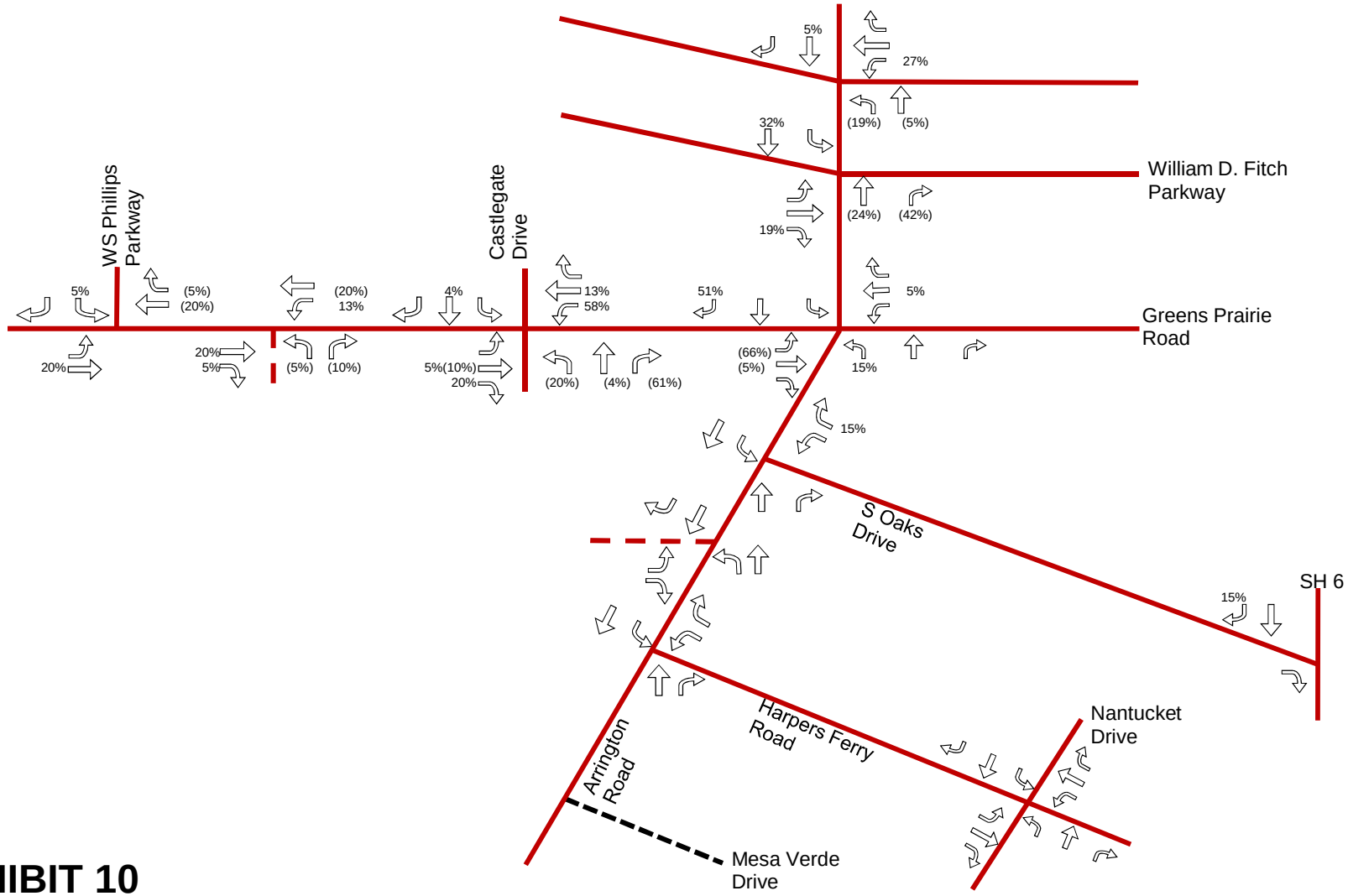


EXHIBIT 10

Arrington Road Trip Distribution

Margraves Tract Family Site TIA College Station

Kimley»Horn

North

Not To Scale

LEGEND:

X (Y)
X = Inbound Trip Distribution
(Y) = Outbound Trip Distribution

Left-Turn Analysis

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

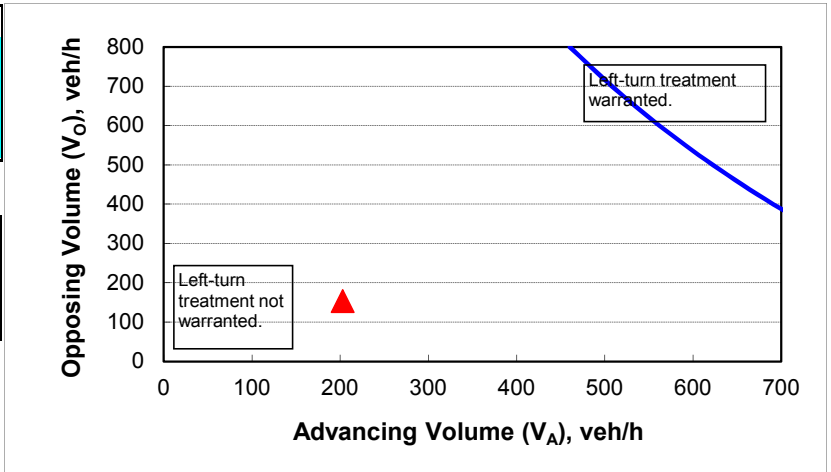
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	3%
Advancing volume (V_A), veh/h:	203
Opposing volume (V_O), veh/h:	154

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	906
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

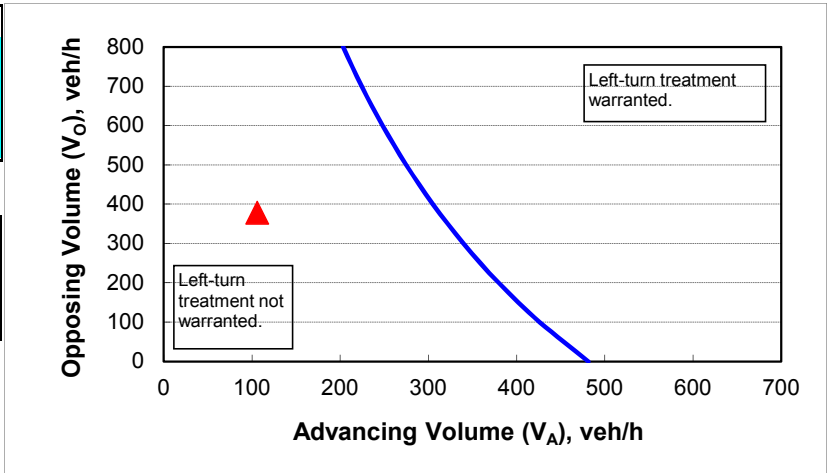
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	18%
Advancing volume (V_A), veh/h:	106
Opposing volume (V_O), veh/h:	379

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	312
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9