Creekside Towers Development

City of Smyrna, GA

PREPARED FOR

Great South Development
4030 Pineridge Rd SE
Smyrna, GA, 30080

PREPARED BY

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March 2023

Table of Contents

List of Tables

List of Figures

1

Introduction

This traffic report documents the impacts of the proposed Creekside Towers development by Great South Development in the City of Smyrna, GA. The following scenarios were analyzed to determine the impact of the proposed development:

- 2023 Existing Conditions
- 2025 (Build-Out Year) No-Build Conditions
- 2035 (Horizon Year) No-Build Conditions
- 2025 (Build-Out Year) Build Conditions
- 2035 (Horizon Year) Build Conditions

Project Description

The proposed development is a 5.4-acre site to be located off Hanson Dr, west of S Cobb Dr, south of S Cobb Industrial Blvd in the City of Smyrna, GA. A location map is provided in **Figure 1**.

Site Plan

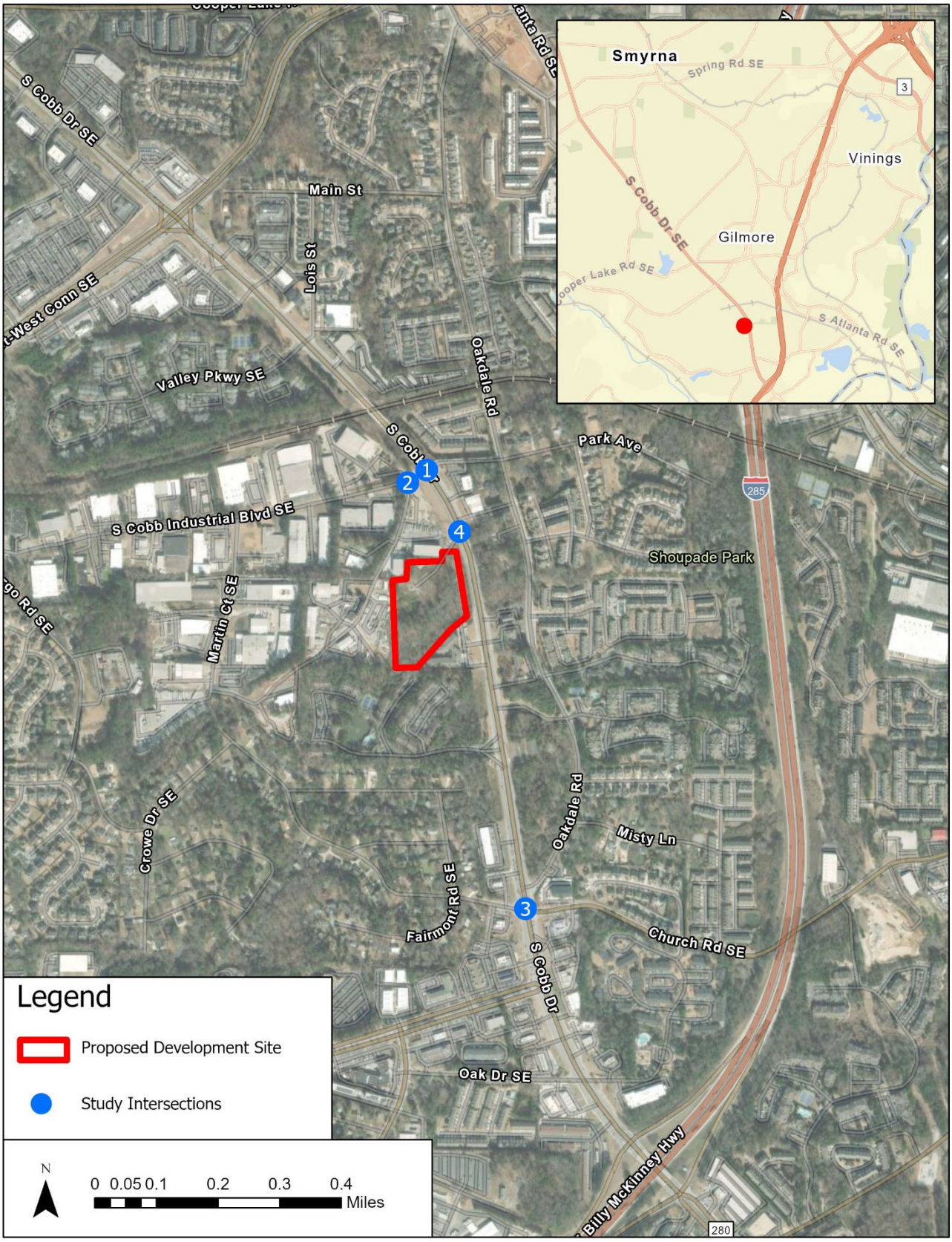
The proposed land use is mixed use. The residential land use is proposed to be a 50/50 split of units of at least 55 years old and standard multifamily units. A total of 295 residential units are proposed, along with a 5,309 SF restaurant and a 624 SF coffee shop on the west side of the property. 519 parking spots are proposed for the development. The property will be accessible from Hanson Drive to the north. A detailed site plan is included in **Appendix A**.

Study Network

The following intersections are included in the study network, which can be seen in **Figure 1**.

1. SR 280/S Cobb Dr at S Cobb Industrial Blvd
2. S Cobb Industrial Blvd at Wright Dr
3. S Cobb Dr at Church Rd/Oakdale Rd
4. S Cobb Dr at Hanson Dr/Site Access (Build only)

Figure 1 Study Network



Nearby Projects and Developments

The *CobbForward Comprehensive Transportation Plan* (CTP) was adopted in February 2022. The plan analyzed existing conditions, assessed current and projected transportation needs, and recommended projects throughout Cobb County to meet existing and future transportation needs. There are no transportation improvement projects in the short-term work program within the vicinity of the proposed development.

The Atlanta Regional Commission (ARC) *Atlanta Region's Plan* and GDOT's GeoPI were also searched for any current or future projects in the study area. ARC's Project CO-432 was identified just north of the study area, which will grade separate SR 280/S Cobb Dr and the East-West Connector. This project was not determined to influence the study area, outside of long-term background traffic growth rates. The ARC model includes this project, so the calculated growth rate will include this project's effects. No future GDOT projects were found within the study area.

A multifamily development is being developed by Core Property Capital (CPC) along S Cobb Dr, south of the site area. The traffic impact study for this development, included in **Appendix B**, estimated trip assignments on the surrounding roadway network. The volumes used in the report were included in the background traffic of the future year no-build and build scenarios for this analysis.

Bicycle and Pedestrian Facilities

There are no existing bicycle or pedestrian facilities that provide access to the proposed development. The *CobbForward CTP* and the *Cobb County Greenway & Trails Master Plan,* adopted in May 2018, were reviewed for planned pedestrian and multi-use trail projects. No future pedestrian or bicycle projects were identified in these plans within the vicinity of the proposed development.

Transit Facilities

The closest bus stop is 0.6 miles north of the proposed development site at Cumberland Blvd & S Cobb Dr, which is served by CobbLinc Route 20. There are no other existing transit routes within the vicinity of the proposed development. Based on a review of the *CobbForward CTP,* there are no planned transit projects near the proposed development site.

Trip Generation

The ITE *Trip Generation Manual, 11th Edition* was used to estimate the number of gross trip ends generated by the proposed development. Although half of the residential units are proposed to be for residents of 55 years and older, the land-used category of Multifamily House, High Rise (Lane Use Code 222) was used for the entire residential area to provide a more conservative calculation of the trips generated. In addition, Fine Dining Restaurant (Code 931) and Coffee/Donut Shop without Drive-Through Window (Code 936) were used. **Table 1** presents the daily and peak hour trips generated by the proposed development for this land use type. Relevant sheets from the trip generation manual are included in **Appendix C**.

Table 1 Trips Generated by Proposed Development

ITE Land Use Code	Description	Qty	Unit	AM Peak Hour			PM Peak Hour			Daily		
				In	Out	Total	In	Out	Total	In	Out	Total
222	Multifamily Housing (High-Rise)	295	Dwelling Units	22	62	84	62	38	100	670	669	1,339
	Internal Capture			*2*	*11*	*13*	*7*	*9*	*16*	*105*	*105*	*211*
	Pass-By Trips			-	-	-	-	-	-	-	-	-
931	Fine Dining Restaurant	5.31	1000 Sq Ft	4	-	4	28	13	41	223	222	445
936	Coffee/Donut Shop w/o Drive-Thru Window*	0.62	1000 Sq Ft	29	29	58	10	10	20	167	168	335
	Internal Capture			*11*	*2*	*13*	*9*	*7*	*16*	*92*	*92*	*184*
	Pass-By Trips			-	-	-	*12*	*6*	*18*	*98*	*98*	*196*
Grand Total				**42**	**78**	**26**	**72**	**39**	**50**	**764**	**764**	**1,528**

*Note: A proportion of the sum of the AM and PM peak hour trips vs the daily trips of Land Use 937: Coffee/Donut Shop w/ Drive-Thru was used, because daily trips are not available for Land Use 931.

Internal capture trips are trips which begin and end within a mixed-use development. This estimate reduces the total trips which are generated by the development, because no additional vehicles are affecting the surrounding roadway network. The ITE *Trip Generation Handbook, 3rd Edition* estimates internal capture, based on *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. The methodology assumes internal trip capture percentages, based on the land use types within the mixed-use development for peak hour trips. The daily internal capture rates were determined by averaging the AM and PM peak hour rates.

The *Trip Generation Manual* pass-by rates were used to estimate trips on the way to a primary destination that make an intermediary stop at the development. The average PM peak pass-by rate for the Fine Dining Restaurant land use is 44%. No pass-by trips were assumed for the AM peak hour, since the restaurant will likely not be open during the weekdays for breakfast. The daily pass-by rate for the restaurant was assumed to be equal to the PM peak pass-by rate. The other land uses in this development do not have associated pass-by rates.

2

Existing Conditions Analysis

Data Collection and Volume Development

Peak period turning movement counts were collected on Tuesday, March 14, 2023 at the following intersections:

1. SR 280/S Cobb Dr at S Cobb Industrial Blvd
2. S Cobb Industrial Blvd at Wright Dr
3. S Cobb Dr at Church Rd/Oakdale Rd

24-hour volume counts were collected on S Cobb Dr, south of S Cobb Industrial Blvd on the same day.

Volumes between adjacent intersections were balanced to have equal entering and exiting volumes along each segment. The level of service analysis for this report used the balanced peak hour volumes at each intersection. Raw data collected in the field is included in **Appendix D**. Existing conditions lane configurations and peak hour intersection volumes are shown in **Figure 2**.

Intersection Level of Service

Intersection LOS was analyzed using balanced peak hour turning movement counts and Synchro version 11.1.2.9 to calculate delay following procedures in the Highway Capacity Manual (HCM) 6th Edition. The results of this analysis are presented in **Table 2**. Synchro generated reports for each intersection are included in **Appendix E**. Delay shown for signalized intersections is the overall intersection delay, while delay shown for two-way stop-controlled (TWSC) intersections is the weighted average of the controlled movements (side street movements and mainline left turns).

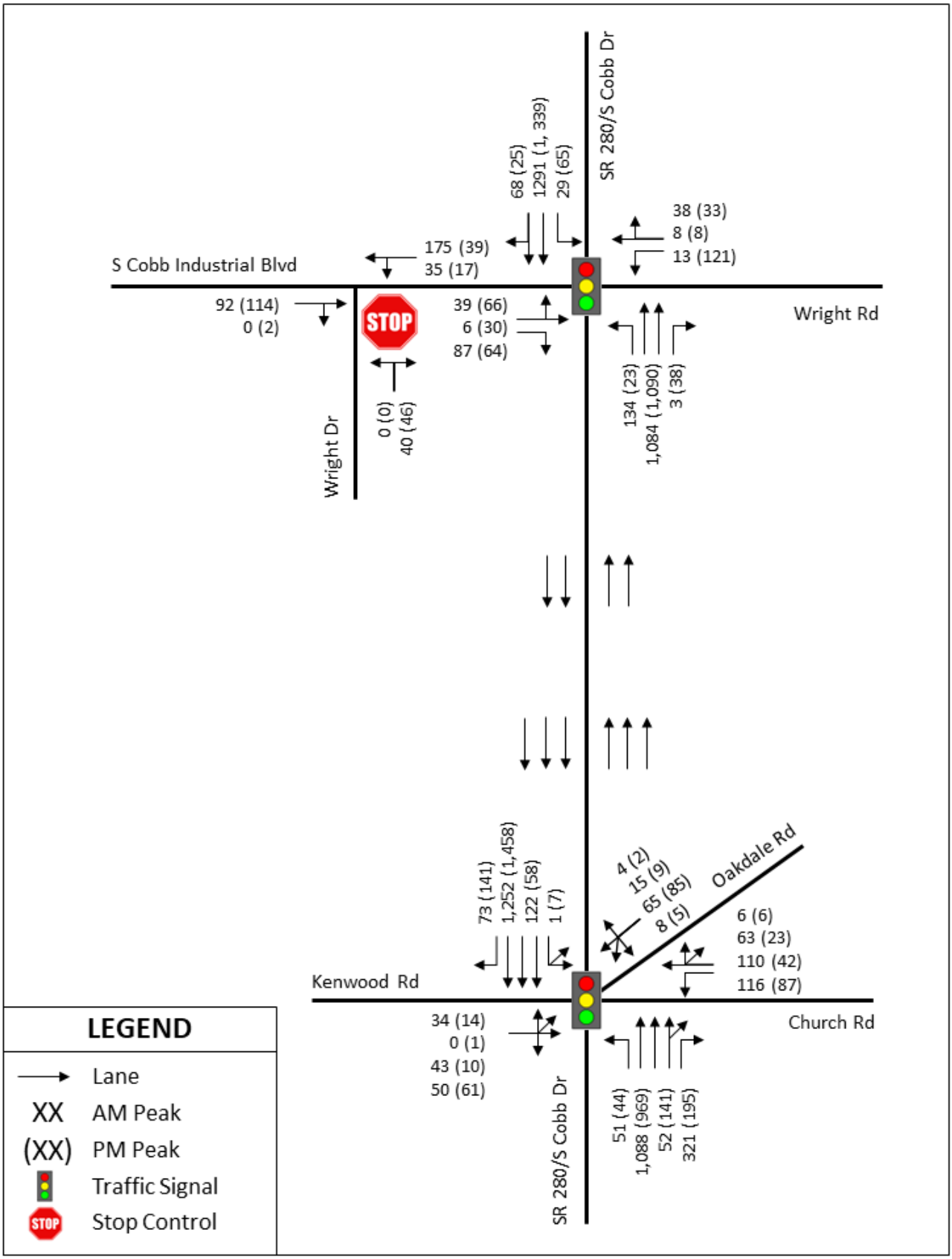
Table 2 Existing Conditions Intersection Delay and Level of Service

No.	Intersection	Control Type	AM Peak Delay (s) / LOS	PM Peak Delay (s) / LOS
1	SR 280/S Cobb Dr at S Cobb Industrial Blvd	Signalized	9.6 (A)	14.3 (B)
2	S Cobb Industrial Blvd at Wright Dr	TWSC	8.4 (A)	8.8 (A)
3	S Cobb Dr at Church Rd/Oakdale Rd*	Signalized	18.7 (B)	13.3 (B)

*HCM 2000 methodology was used. 5-leg intersections cannot be analyzed in the HCM 6th Edition.

Based on the results above, all intersections operate at an acceptable LOS in the existing conditions for both peak periods.

Figure 2 Existing Conditions Lane Configurations and Volumes



3

Future Background (No-Build) Conditions Analysis

Growth Rate

Historical traffic volumes are available at GDOT's Traffic Analysis & Data Application (TADA) website[1]. Historical data from count stations in the vicinity of the project area were analyzed to calculate an average 10-year growth rate. Rates were calculated using "actual" counts and "estimated" counts were not used in the analysis. The results of these calculations are shown in **Table 3**. The average 10-year historical growth rate for the study area is 1.9% The growth rate calculations and data from each count location included in the analysis are presented in **Appendix F**.

Table 3 Growth Rates Based on Historical Traffic Data

GDOT Count Location	Location Description	Growth Rate (10-Year)
067-2605	SR 280/S Cobb Dr N/O Cobb Industrial Blvd	3.1%
067-2603	SR 280/S Cobb Dr S/O Highlands Pkwy	1.0%
067-2323	Oakdale Rd E/O S Cobb Dr	4.7%
	Weighted Average Growth Rate	**1.9%**

A growth rate was also calculated based on projected future traffic volumes. ARC's regional travel demand model was used to collect volumes on all links within the study area from the 2020, 2030, and 2050 models. The link volumes and resulting average growth rate is presented in **Table 4**. Based on the model data, traffic around the proposed development is projected to grow at an average rate of 0.9% in the short-term and 0.8% in the long-term.

[1] https://gdottrafficdata.drakewell.com/

Table 4 Growth Rate Based on Projected Traffic Volumes

Model Link	2020	2030	2050	Growth Rate (2020-2030)	Growth Rate (2020-2050)
S Cobb Dr N/O Church Rd	36,507	40,956	46,892	1.2%	0.8%
Wright Rd E/O S Cobb Dr	4,190	4,176	5,010	0.0%	0.6%
Church Rd E/O S Cobb Dr	8,589	9,249	10,830	0.7%	0.8%
Oakdale Rd E/O S Cobb Dr	2,536	2,553	3,232	0.1%	0.8%
Weighted Average Growth Rate				**0.9%**	**0.8%**

Georgia's residential population projections for Cobb County are presented in **Table 5**. The 10, and 30-year growth rates calculated from this data are shown in **Table 6**. Based on these projections the population in Cobb County is expected to grow at an average rate of 0.9% from 2020-2030 and 0.6% from 2020-2050.

Table 5 Cobb County Population Projections

Location	2020	2030	2040	2050
Cobb County	762,944	837,332	885,009	910,415

Table 6 Growth Rate Based on Population Projections

Location	Growth Rate (2020-2030)	Growth Rate (2020-2050)
Cobb County	0.9%	0.6%
Average	**0.9%**	**0.6%**

Long-term employment projections for Cobb County were obtained from the Georgia Department of Labor (DOL) website. The data includes an assessment of existing conditions (2018) jobs and the projected number of jobs in the future (2028). The total number of jobs in Cobb County for each year and the resulting growth rate are shown in **Table 7**. Employment in Cobb County is expected to grow at an average rate of 1.1%.

Table 7 Growth Rate Based on Employment Projections

Location	2018	2028	Growth Rate
Cobb County	390,930	438,240	**1.1%**

Based on the results of this analysis, **a growth rate of 1.5% is recommended from 2023 to 2025, and a growth rate of 1.4% is recommended from 2025 to 2035 for all roadways for the future background no-build conditions**.

Volume Development

A build-out year of 2025 and a horizon year of 2035 were used for this analysis. The growth rates were applied to the balanced existing turning movement counts to calculate future background (no-build) volumes. The volumes generated by the CPC multifamily development, south of the project site, were included in the future year volumes, in addition to the background growth rate. The 2025 and 2035 no-build volume diagrams are shown in **Figure 3** and **Figure 4**, respectively.

Figure 3 2025 No-Build Conditions Lane Configurations and Volumes

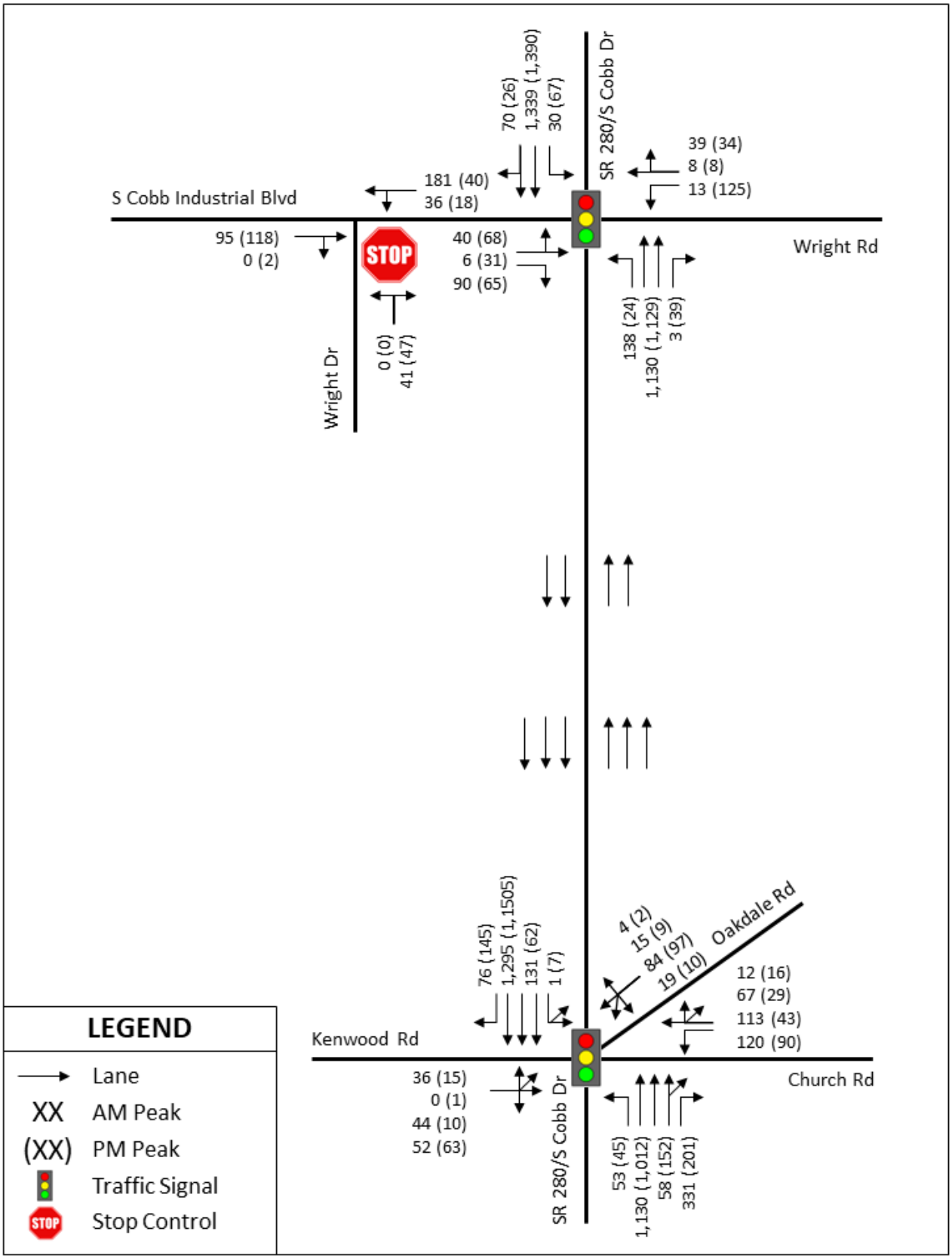
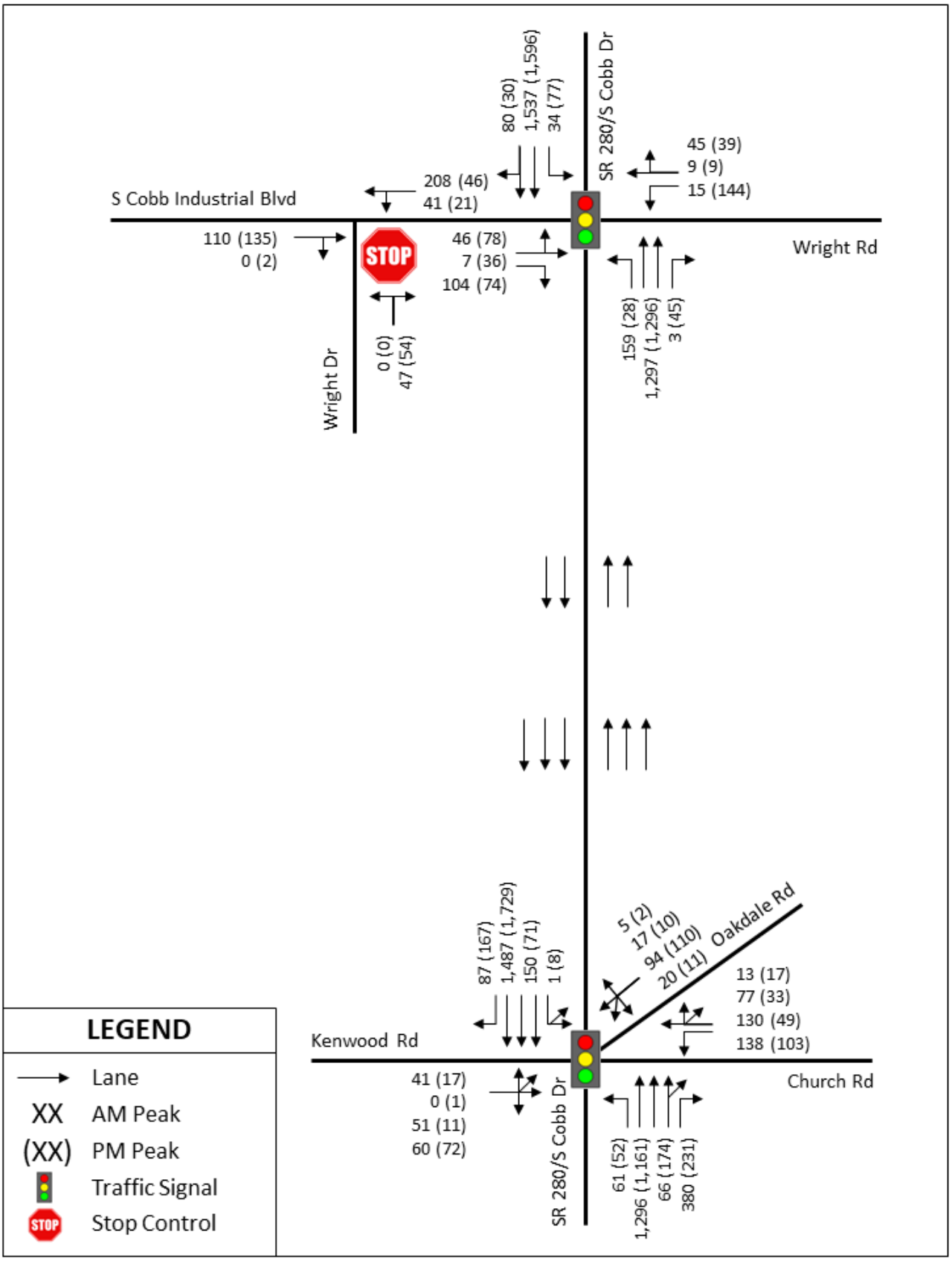


Figure 4 2035 No-Build Conditions Lane Configurations and Volumes



Intersection Level of Service

Intersection LOS was analyzed following the same methodology used for the existing conditions analysis. The results of this analysis are presented in **Table 8** and **Table 9**. Synchro generated reports for each intersection are included in **Appendix G**.

Table 8 2025 No-Build Conditions Intersection Delay and Level of Service

No.	Intersection	Control Type	AM Peak Delay (s) / LOS	PM Peak Delay (s) / LOS
1	SR 280/S Cobb Dr at S Cobb Industrial Blvd	Signalized	10.0 (A)	15.0 (B)
2	S Cobb Industrial Blvd at Wright Dr	TWSC	8.4 (A)	8.8 (A)
3	S Cobb Dr at Church Rd/Oakdale Rd*	Signalized	22.0 (C)	14.8 (B)

*HCM 2000 methodology was used. 5-leg intersections cannot be analyzed in the HCM 6th Edition.

Table 9 2035 No-Build Conditions Intersection Delay and Level of Service

No.	Intersection	Control Type	AM Peak Delay (s) / LOS	PM Peak Delay (s) / LOS
1	SR 280/S Cobb Dr at S Cobb Industrial Blvd	Signalized	11.8 (B)	18.3 (B)
2	S Cobb Industrial Blvd at Wright Dr	TWSC	8.5 (A)	9.0 (A)
3	S Cobb Dr at Church Rd/Oakdale Rd*	Signalized	24.9 (C)	16.5 (B)

*HCM 2000 methodology was used. 5-leg intersections cannot be analyzed in the HCM 6th Edition.

Based on the results above, all intersections are expected to operate at an acceptable LOS in the 2025 and 2035 no-build conditions.

4

Future Build Conditions Analysis

Volume Development

The project trip distributions presented in **Figure 5** were calculated by assigning travel paths to and from the proposed development site, based on turning movement proportions observed during data collection. Peak hour project traffic from **Table 1** was proportionally assigned to each path to calculate turning movements at each study intersection. The project trip assignment is presented in **Figure 6**. Project traffic was added directly to the future background no-build traffic volumes to calculate future build conditions volumes. The 2025 build-out volumes and 2035 horizon year volumes are shown in **Figure 7** and **Figure 8**, respectively.

Site Access

The development site is accessed via Hanson Dr. The build analysis assumes an eastbound left turn lane and right turn lane are to be provided for vehicles leaving the development. The eastbound right turn lane out of the site should have at least 50 ft of storage, based on a 95th percentile queue length of 1.6 vehicles, and a 50-ft taper. A right turn lane, with a minimum 150 ft of storage and a 50-ft taper is recommended for southbound vehicles along S Cobb Dr. Vehicles traveling northbound along S Cobb Dr can use the existing two-way left-turn lane to access the site. The recommended lane configurations can be seen in **Figure 7** and **Figure 8**.

Figure 5 Project Trip Distribution

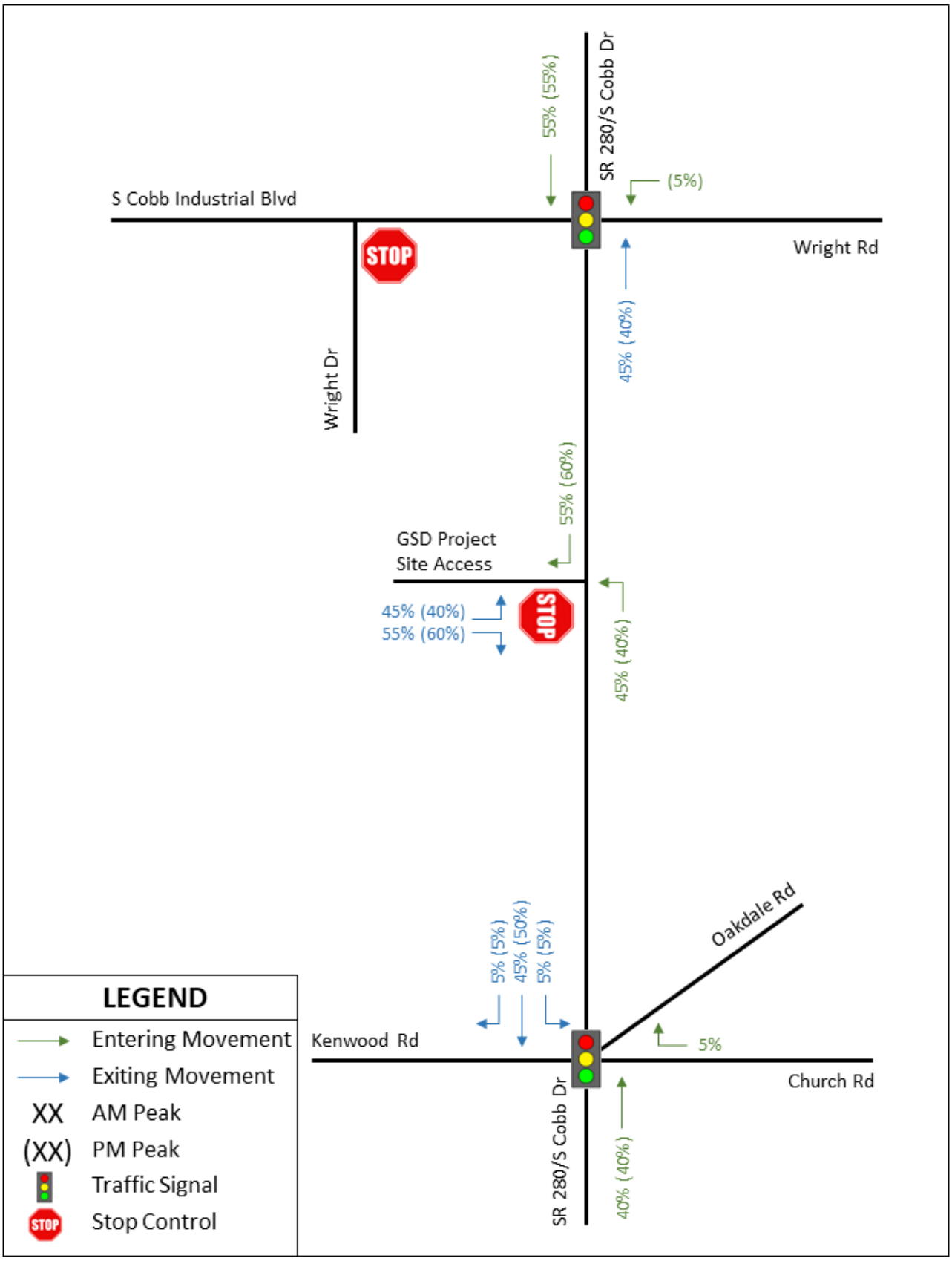


Figure 6 Project Trip Assignment

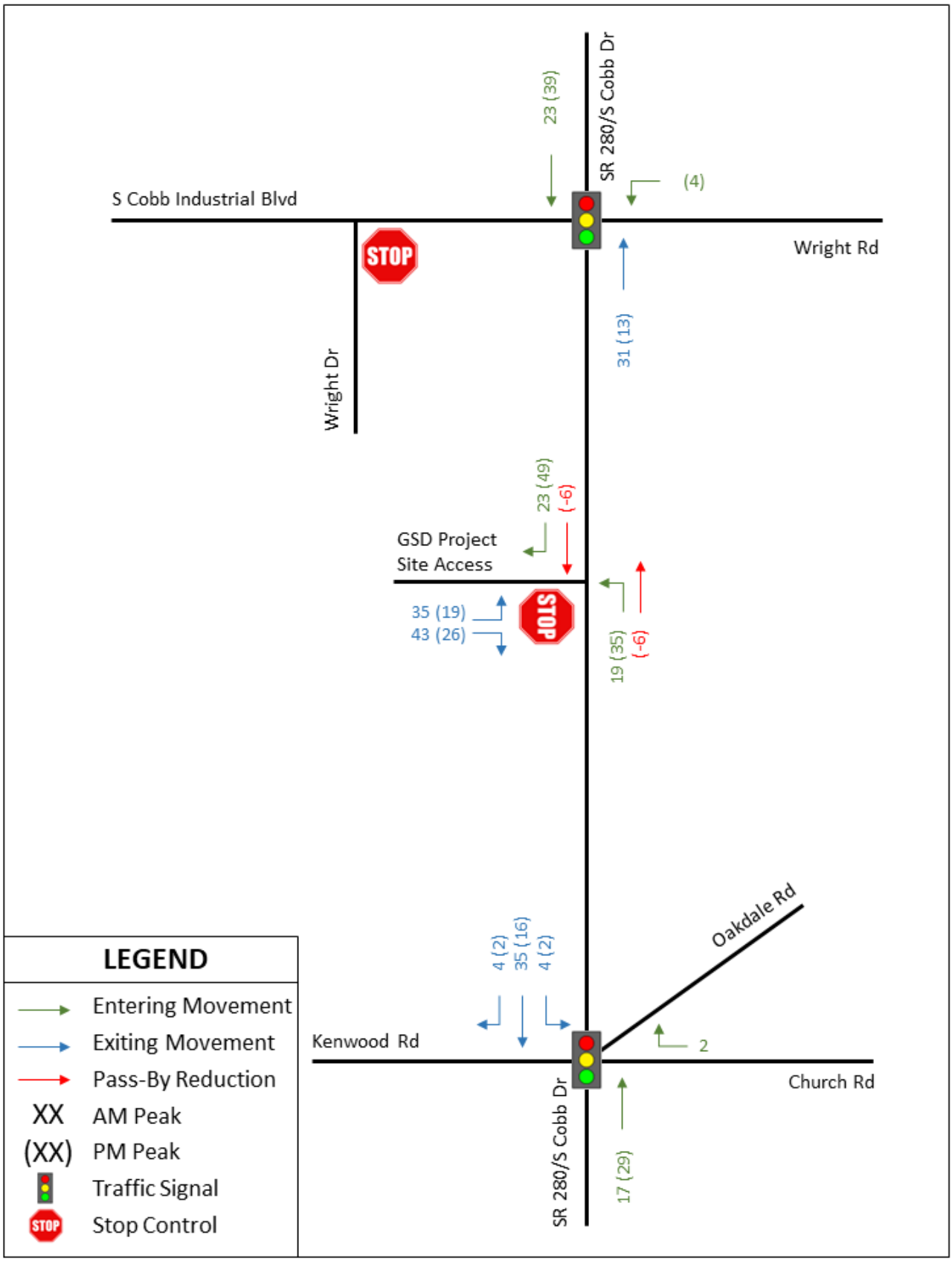


Figure 7 2025 Build Conditions Lane Configurations and Volumes

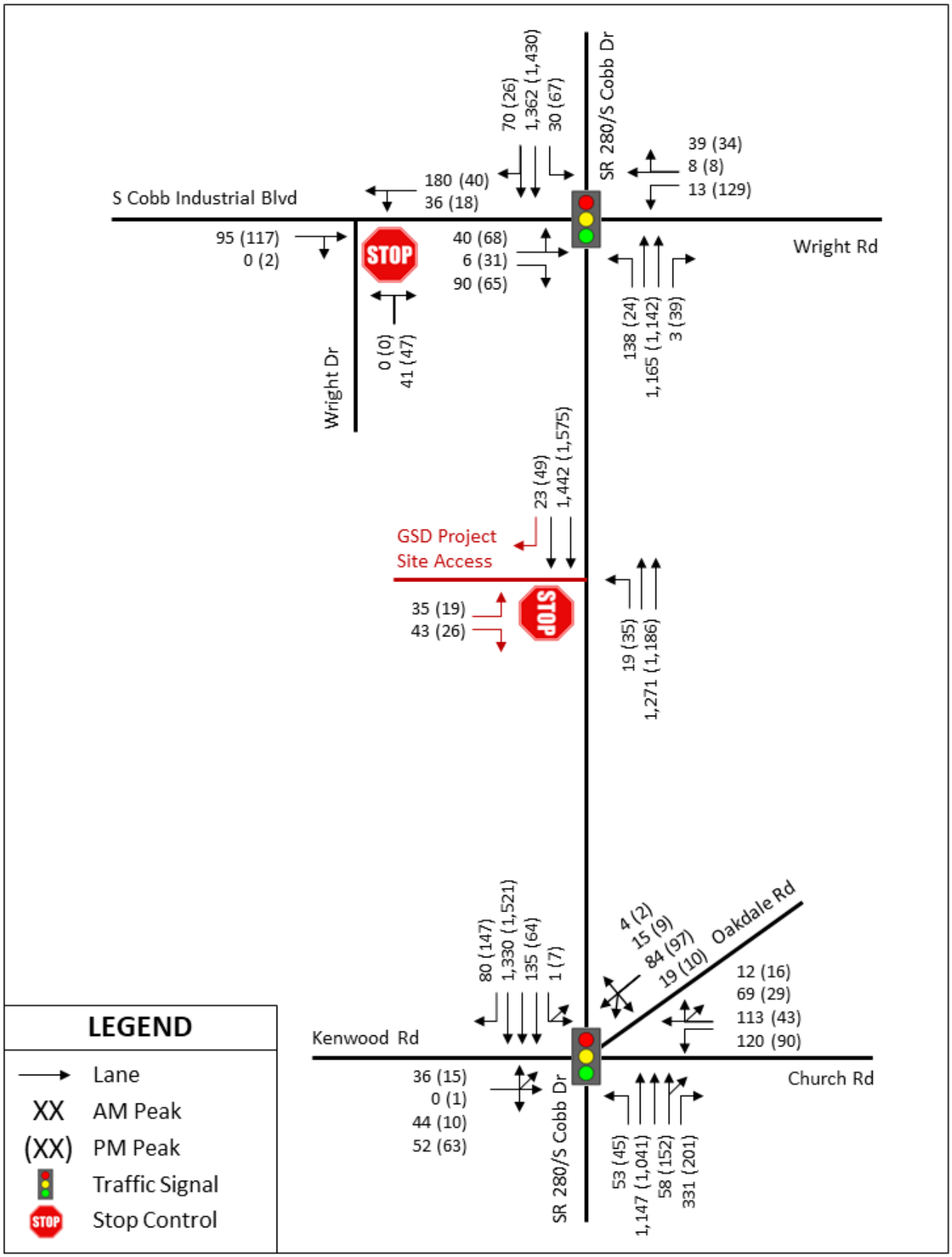
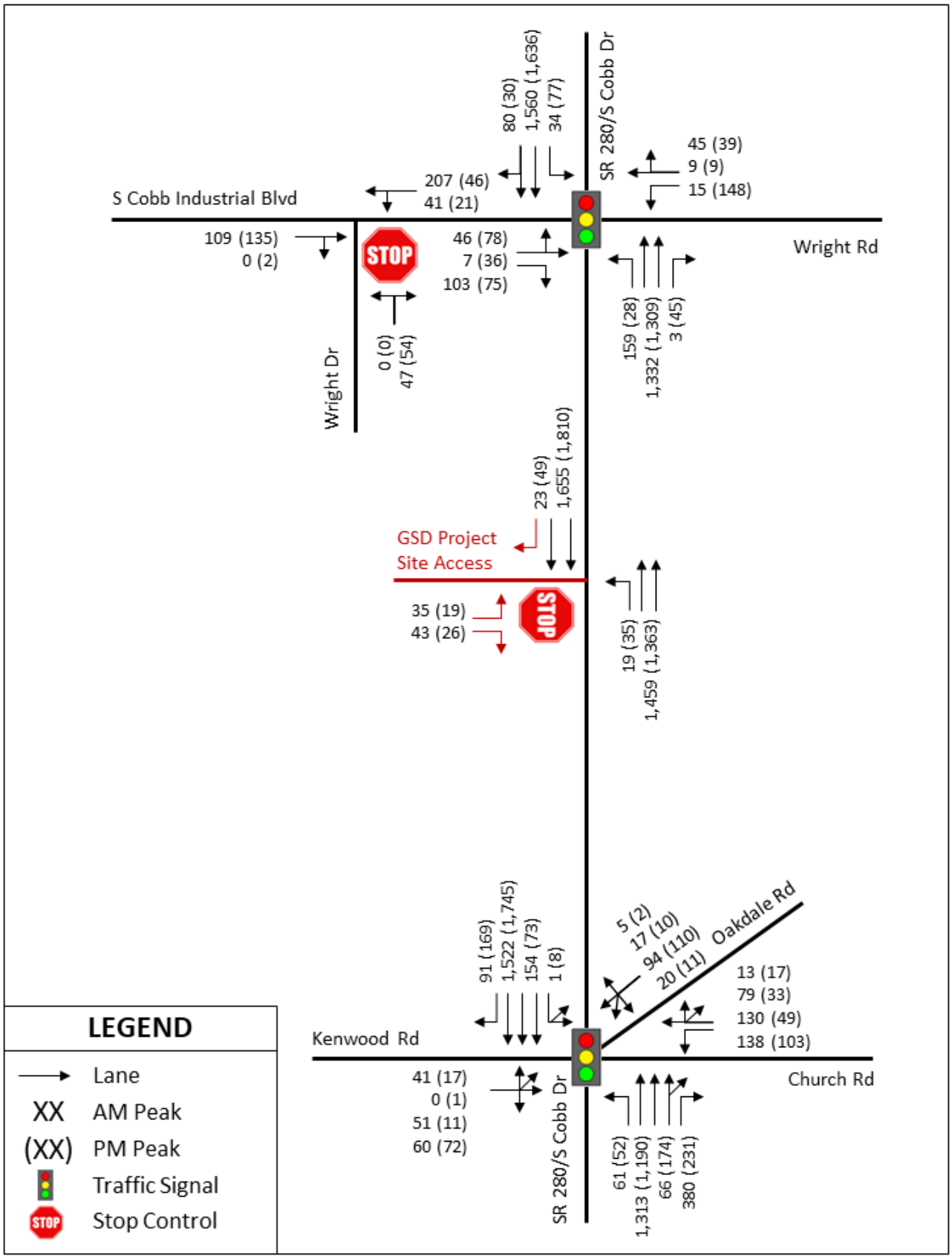


Figure 8 2035 Build Conditions Lane Configurations and Volumes



Intersection Level of Service

Intersection LOS was analyzed following the same methodology used for the existing and no-build conditions analysis. The results of this analysis are presented in **Table 10** and **Table 11**. Synchro generated reports for each intersection are included in **Appendix H**.

Table 10 2025 Build Conditions Intersection Delay and Level of Service

No.	Intersection	Control Type	AM Peak Delay (s) / LOS	PM Peak Delay (s) / LOS
1	SR 280/S Cobb Dr at S Cobb Industrial Blvd	Signalized	10.1 (B)	15.6 (B)
2	S Cobb Industrial Blvd at Wright Dr	TWSC	8.4 (A)	8.8 (A)
3	S Cobb Dr at Church Rd/Oakdale Rd*	Signalized	22.2 (C)	14.8 (B)
4	S Cobb Dr & Hanson Dr	TWSC	27.2 (D)	24.5 (C)

*HCM 2000 methodology was used. 5-leg intersections cannot be analyzed in the HCM 6th Edition.

Table 11 2035 Build Conditions Intersection Delay and Level of Service

No.	Intersection	Control Type	AM Peak Delay (s) / LOS	PM Peak Delay (s) / LOS
1	SR 280/S Cobb Dr at S Cobb Industrial Blvd	Signalized	11.9 (B)	18.8 (B)
2	S Cobb Industrial Blvd at Wright Dr	TWSC	8.5 (A)	9.0 (A)
3	S Cobb Dr at Church Rd/Oakdale Rd*	Signalized	25.1 (C)	16.6 (B)
4	S Cobb Dr & Hanson Dr	TWSC	36.2 (E)	32.0 (D)

*HCM 2000 methodology was used. 5-leg intersections cannot be analyzed in the HCM 6th Edition.

In the 2025 build conditions, all intersections are expected to operate at an acceptable LOS. In the 2035 build conditions, the intersection of S Cobb Dr at Hanson Dr (project site access) is expected to operate at LOS E in the AM peak. It is not uncommon for side streets to experience longer delays when the main street volume is heavy. Therefore, all intersections are expected to operate at an acceptable LOS in 2035.

Queuing Analysis

Hanson Dr (project site access) is approximately 450 ft from the intersection of S Cobb Dr at S Cobb Industrial Blvd. A queuing analysis was performed for the build conditions to verify that vehicles are able to turn out of Hanson Dr without being blocked by queued vehicles traveling northbound. In addition, the intersection of S Cobb Industrial Blvd at Wright Dr is 70 ft from S Cobb Dr. Queues were analyzed here to determine the impacts of eastbound vehicles along S Cobb Industrial Blvd.

According to Synchro, the back of queue in the 95th percentile will be 113 ft in the AM peak and 13 ft in the PM peak for the northbound left turn lane at S Cobb Dr at S Cobb Industrial Blvd. The northbound through lane will have a queue of 160 ft and 265 ft in the AM and PM peaks, respectively. Therefore, no queue blockage for left-turning vehicles out of Hanson Dr is expected.

The eastbound queue is expected to exceed the 70-ft right turn lane along S Cobb Industrial Blvd in both the AM and PM peak. This occurs in the no-build and build conditions of the 2035 horizon year, indicating that this is not a result of increased traffic caused by the proposed development. Increasing the right turn bay length would not solve the issue of the queue extending past the side street. The City may consider a low-cost alternative, such as "Do Not

Block Intersection" markings and relevant signage, if queuing impedes vehicles turning out of Wright Dr. The 2009 Edition of the *Manual on Uniform Traffic Control Devices* discusses this option for intersections that are in close proximity to signalized intersections in Section 3B.17.

5

Conclusion

Based on the intersection LOS analysis, all intersections are expected to operate at an acceptable LOS in the 2025 build-out year and 2035 horizon year in the no-build and build conditions. A queuing analysis indicates that eastbound queues along S Cobb Industrial Blvd will extend past Wright Dr in the no-build and build conditions.

Lane configuration improvements are required to access the site at the intersection of S Cobb Dr at Hanson Dr, including:

- EB left turn lane with 50-ft storage length
- EB right turn lane with 50-ft storage length and 50-ft taper
- SB right turn lane with 150-ft storage length and 50-ft taper

No additional improvements in the study area are required. An optional improvement at S Cobb Industrial Blvd at Wright Dr is recommended to discourage queued vehicles from blocking the intersection by installing "Do Not Block Intersection" pavement markings and relevant signage. The eastbound queuing along S Cobb Industrial Blvd is expected to extend past Wright Dr by 2035, with or without the construction of the proposed development.

A

Site Plan

SOUTH COBB DRIVE

200' R/W PAVEMENT AS SHOWN

40'-0"

R 25'-0"

R 25'-0"

R 25'-0"

R 40'-0"

R 25'-0"

R 25'-0"

R 25'-0"

LIFE SAFETY ACCESS AREA

50' BUFFER

CREEK

LIFE SAFETY ACCESS AREA

40' PLANTATION PIPELINE COMPANY
EASEMENT (DB 142/666 AND DB 1064/637)

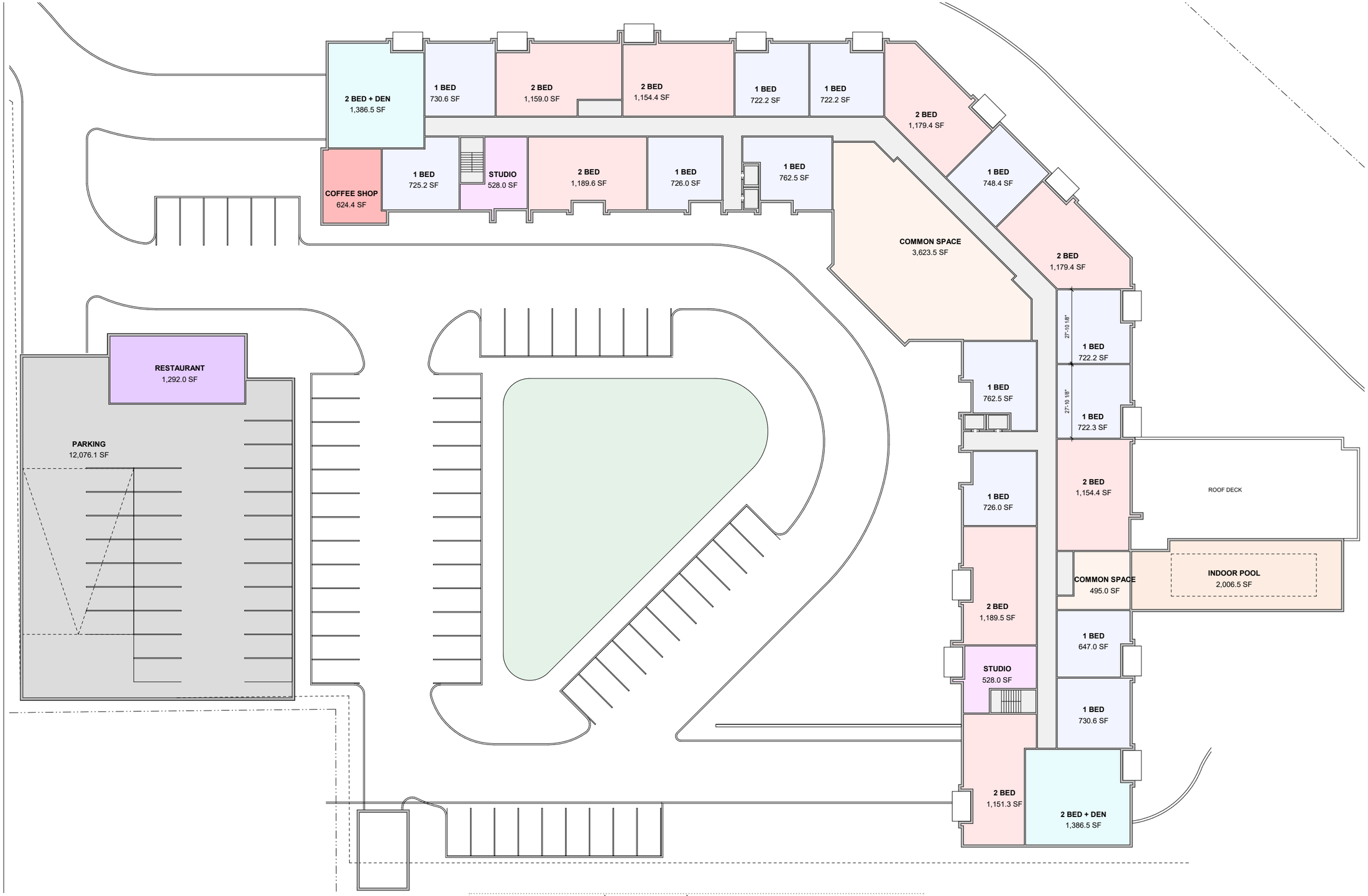
N/F
PROVIDENT GROUP CREEKSIDE
PROPERTIES LLC
DB 15153/2557

N/F
PATRICK INGLESE & ANGELO SCIULLO
& PIONEER CONCRETE CO.
P.B. 6/172
#4776 WRIGHT DR.

N/F
INEYENESS ENTERPRISES & PIONEER
CONCRETE CO.
P.B. 6/172
#4776 WRIGHT DR.

N/F
PATRICK INGLESE
P.B. 6/172
#4793 WRIGHT DR.

N/F
MEK BUSINESS PARK LLC
P.B. 6/172
#4806 WRIGHT DR.


2 BED + DEN
1,386.5 SF
1 BED
730.6 SF
2 BED
1,159.0 SF
2 BED
1,154.4 SF
1 BED
722.2 SF
1 BED
722.2 SF
2 BED
1,179.4 SF
COFFEE SHOP
624.4 SF
1 BED
725.2 SF
STUDIO
528.0 SF
2 BED
1,189.6 SF
1 BED
726.0 SF
1 BED
762.5 SF
1 BED
748.4 SF
COMMON SPACE
3,623.5 SF
2 BED
1,179.4 SF
RESTAURANT
1,292.0 SF
PARKING
12,076.1 SF
27'-10 1/8"
1 BED
722.2 SF
27'-10 1/8"
1 BED
722.3 SF
1 BED
762.5 SF
1 BED
726.0 SF
2 BED
1,154.4 SF
ROOF DECK
COMMON SPACE
495.0 SF
INDOOR POOL
2,006.5 SF
2 BED
1,189.5 SF
1 BED
647.0 SF
STUDIO
528.0 SF
1 BED
730.6 SF
2 BED
1,151.3 SF
2 BED + DEN
1,386.5 SF

B

CPC Smyrna Multifamily Traffic Impact Study

Traffic Impact Study

CPC Smyrna Multifamily

City of Smyrna, Georgia

Report Prepared:

October 2021

Prepared for:

Core Property Capital, LLC

Prepared by:

Kimley-Horn and Associates, Inc.
11720 Amber Park Drive, Suite 600
Alpharetta, GA 30009
October 2021
017313020

Traffic Impact Study

CPC Smyrna Multifamily

City of Smyrna, Georgia

Report Prepared:

October 2021

Prepared for:

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Kimley»Horn

Kimley-Horn and Associates, Inc.
11720 Amber Park Drive, Suite 600
Alpharetta, GA 30009
October 2021
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10/6/2021

Kimley»Horn

CONTENTS

Kimley»Horn

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

This report presents the analysis of the anticipated traffic impacts associated with the proposed *CPC Smyrna Multifamily* development, which is expected to be completed in 2023 (referred to herein as "build-out year"). The site is located northeast of the intersection of South Cobb Drive (SR 280) at Oakdale Road in the City of Smyrna, Georgia.

The 6.87-acre site is currently undeveloped and is proposed to be consist of approximately 173 residential units and 8,500 square feet of retail/restaurant space. The site is proposed to be rezoned from GC (general commercial) to MU (mixed-use).

This report will summarize the analyses of the following five (5) scenarios during the AM and PM peak hours:

1. Estimated 2021 Traffic Conditions
2. Projected 2023 No-Build Traffic Conditions (Estimated 2021 Traffic Conditions, plus background traffic growth)
3. Projected 2023 Build Traffic Conditions (Projected 2023 No-Build Traffic Conditions, plus the traffic associated with the proposed *CPC Smyrna Multifamily* development).
4. Horizon Year 2033 No-Build conditions (Projected 2023 No-Build conditions plus an additional ten (10) years of background traffic growth)
5. Horizon Year 2033 Build conditions (Horizon Year 2033 No-Build conditions plus traffic generated by the proposed *CPC Smyrna Multifamily* development)

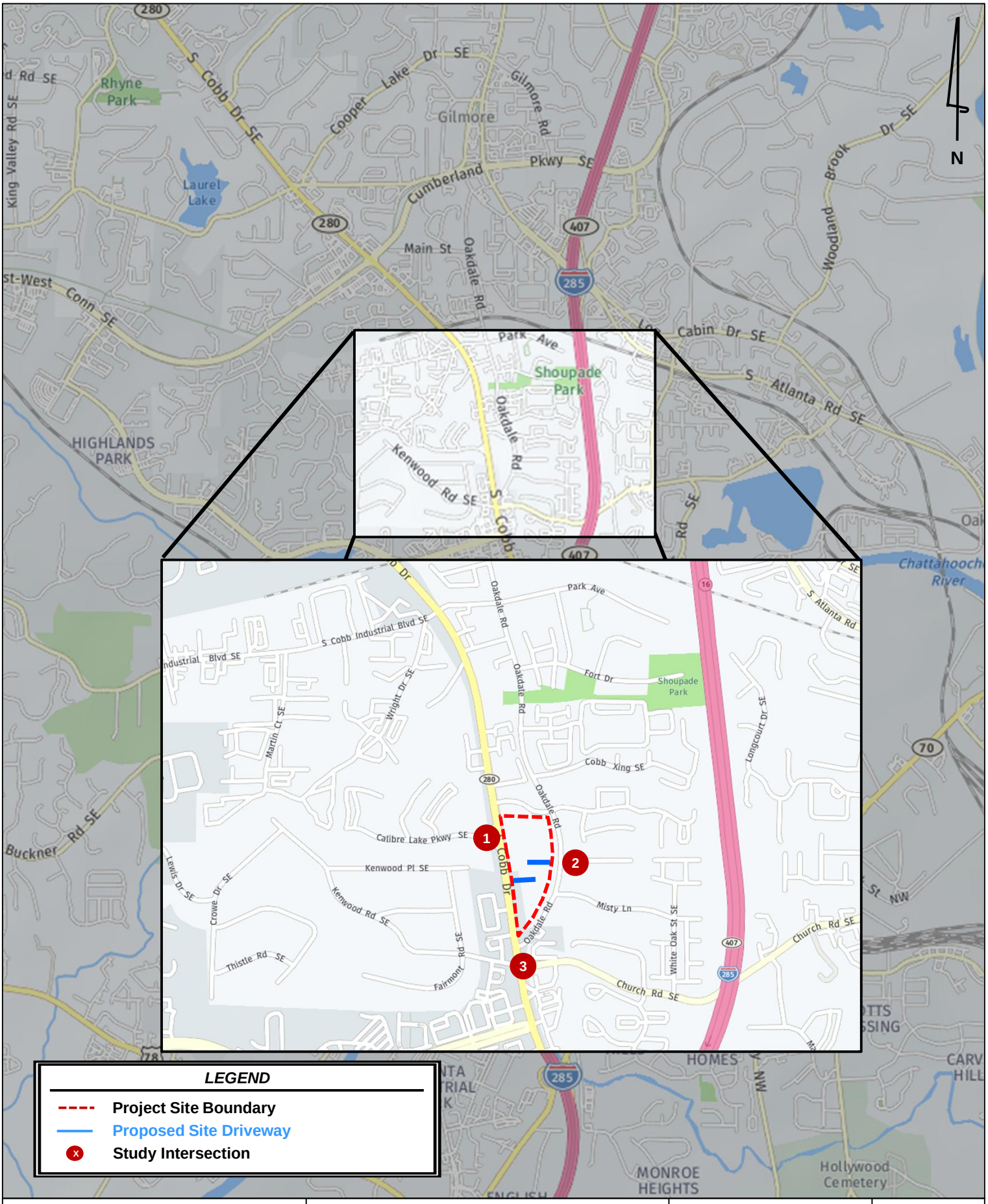
Figure 1 provides a location map of the project site. **Figure 2** provides aerial imagery of the project site. Additionally, a copy of the proposed site plan is provided in Appendix A.

2.0 STUDY AREA DETERMINATION

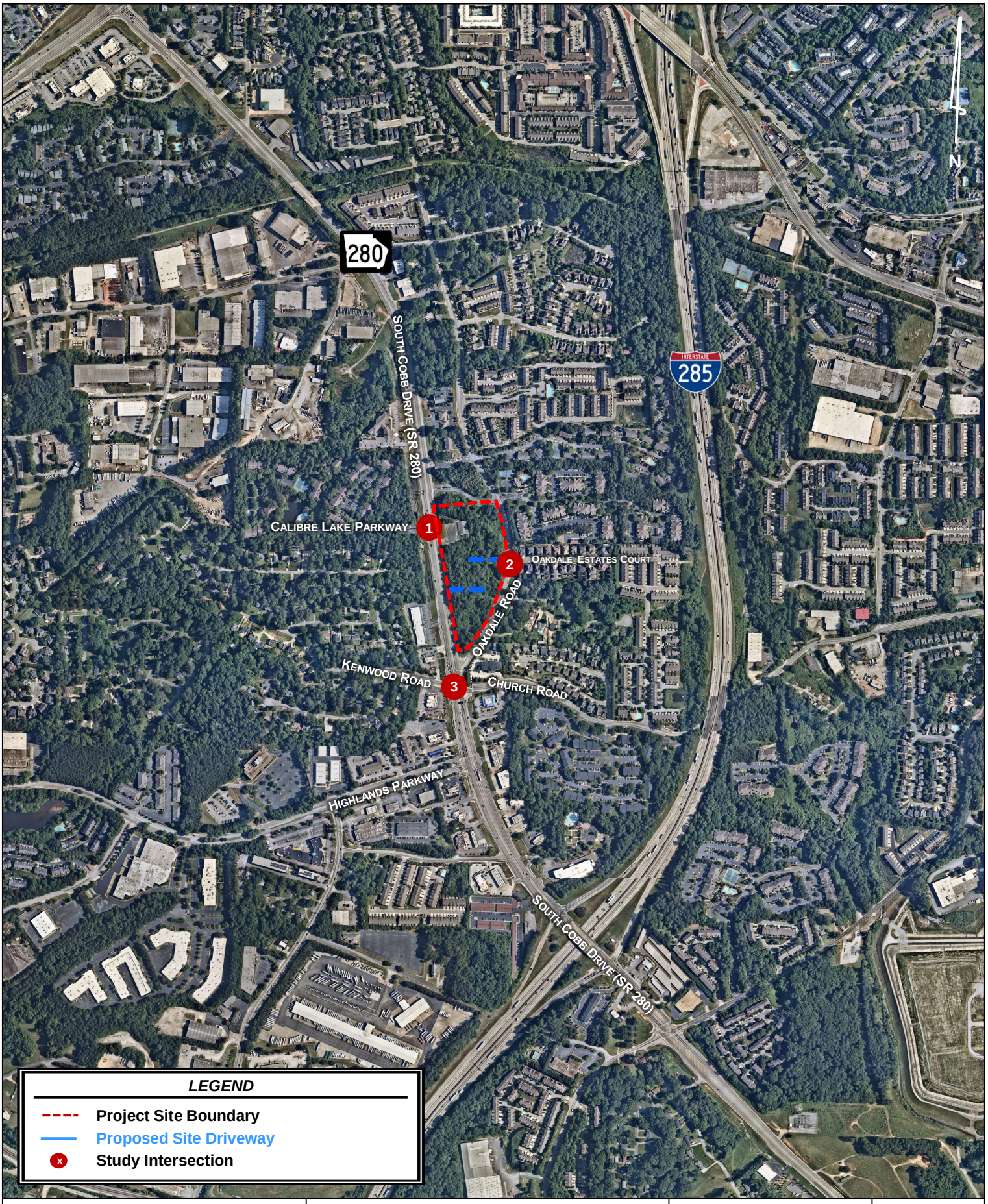
The study area consists of the following three (3) existing intersections, plus the site driveways:

1. South Cobb Drive (SR 280) at Calibre Lake Parkway (unsignalized)
2. Oakdale Road at Oakdale Estates Court (unsignalized)
3. South Cobb Drive (SR 280) at Kenwood Road/Church Road/Oakdale Road (signalized)

This analysis considers South Cobb Drive (SR 280) and Oakdale Road as having a north-south orientation, and Calibre Lake Parkway, Oakdale Estates Court, Kenwood Road, Church Road, Site Driveway A and Site Driveway B as having an east-west orientation. At the intersection of South Cobb Drive (SR 280) at Kenwood Road/Church Road/Oakdale Road, Oakdale Road has a northeast/southwest orientation.



Kimley»Horn	*CPC Smyrna Multifamily* Traffic Impact Study	Site Location Map	Figure 1
			Page 2



Kimley»Horn	*CPC Smyrna Multifamily* Traffic Impact Study	Site Aerial	Figure 2 Page 3

3.0 EXISTING TRAFFIC CONDITIONS

3.1 ROADWAY CHARACTERISTICS

The roadways within the study network have the following characteristics:

South Cobb Drive (SR 280) is a six-lane principal arterial roadway divided by a center two-way left-turn lane, with a posted speed limit of 45 MPH. GDOT counts taken north of Oak Drive indicated an AADT of 44,800 vehicles per day in 2019. Note: In the vicinity of the site, South Cobb Drive (SR 280) transitions to a five-lane roadway (two (2) through lanes in each direction and a center two-way left-turn lane north of the site.)

Calibre Lake Parkway is an apartment complex driveway with no posted speed limit. There are no GDOT count stations along Calibre Lake Parkway. Calibre Lake Parkway serves an apartment complex and dead-ends approximately 800 feet west of South Cobb Drive (SR 280).

Church Road/Kenwood Road is a two-lane, undivided roadway with a posted speed limit of 35 MPH. GDOT Counts taken east of North Church Lane indicated an AADT of 7,630 vehicles per day in 2019. West of South Cobb Drive (SR 280), Kenwood Road is a local roadway. West of South Cobb Drive (SR 280), Church Road is a major collector.

Oakdale Road is a two-lane, major collector with a posted speed limit of 35 MPH. GDOT counts taken north of Fort Drive indicated an AADT of 3,210 vehicles per day in 2019.

Oakdale Estates Court is a two-lane private driveway serving the Oakdale Estates community. There is no posted speed limit and no GDOT count stations along Oakdale Estates Court. Oakdale Estates Court dead-ends approximately 600 feet east of Oakdale Road.

3.2 EXISTING TRAFFIC VOLUMES

Vehicle peak hour turning movement counts were performed at the following existing study intersections:

1. South Cobb Drive (SR 280) at Calibre Lake Parkway (unsignalized)
2. Oakdale Road at Oakdale Estates Court (unsignalized)
3. South Cobb Drive (SR 280) at Kenwood Road/Church Road/Oakdale Road (signalized)

The vehicle peak hour turning movement counts for the study intersection were collected on Wednesday, September 1, 2021. The counts were performed during the AM period (7:00 AM to 9:00 AM) and the PM period (4:00 PM to 6:00 PM). The AM and PM peak hours for each intersection are shown in **Table 1**. Complete traffic count data is provided in Appendix D.

Table 1: Peak Hour Summary		
Intersection	**AM Peak Hour**	**PM Peak Hour**
1. South Cobb Drive (SR 280) at Calibre Lake Parkway (unsignalized)	7:30 AM – 8:30 AM	5:00 PM – 6:00 PM
2. Oakdale Road at Oakdale Estates Court (unsignalized)	8:00 AM – 9:00 AM	5:00 PM – 6:00 PM
3. South Cobb Drive (SR 280) at Kenwood Road/Church Road/Oakdale Road (signalized)	7:30 AM – 8:30 AM	5:00 PM – 6:00 PM

Additionally, a 24-Hour volume count was performed along South Cobb Drive (SR 280) north of Oak Drive to line up with an existing GDOT count station 067-2603.

Due to COVID-19's impact on traffic, the existing turning movement counts were adjusted based on historical data and engineering judgement. Average Daily Traffic (ADT) volumes collected in 2021 and Annual Average Daily Traffic (AADT) volumes from GDOT's Traffic Analysis & Data Application (TADA) were used to compare typical traffic volumes in the vicinity of the project site.

The volume comparison is shown in a tabular format in **Table 2**. **Figure 3** illustrates the comparison between the October 2019 GDOT AADT and the September 2021 collected ADT.

Table 2: Traffic Count Comparison and Adjustment Calculations

Count Station	Location	GDOT					Collected		
		Two-Way AADT	ADT Date	ADT	AM Peak	PM Peak	2021 ADT	AM Peak	PM Peak
067-2603	South Cobb Drive (SR 280) n/o Oak Drive (NB)	44,800	Oct 2019	22,666	1,404	1,741	22,023	1,212	1,782
067-2603	South Cobb Drive (SR 280) n/o Oak Drive (SB)	44,800	Oct 2019	26,901	2,054	1,755	23,061	1,583	1,530

Difference Calculations		ADT			AM Peak			PM Peak		
		Vol Diff	Percent	Factor	Vol Diff	Percent	Factor	Vol Diff	Percent	Factor
067-2603	South Cobb Drive (SR 280) n/o Oak Drive (NB)	-643	-3%	1.03	-192	-14%	1.16	+41	+2%	0.98
067-2603	South Cobb Drive (SR 280) n/o Oak Drive (SB)	-3,840	-14%	1.17	-471	-23%	1.30	-225	-13%	1.15
					Average		1.23	Average		1.06

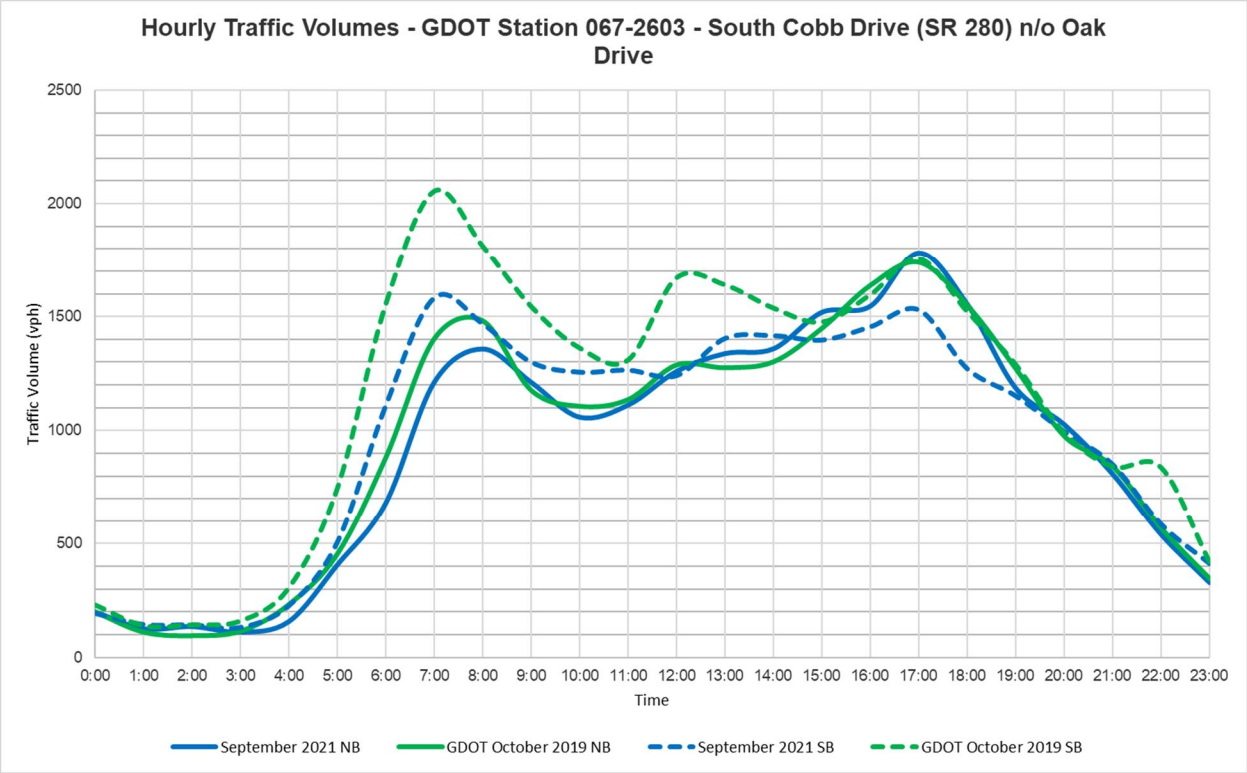
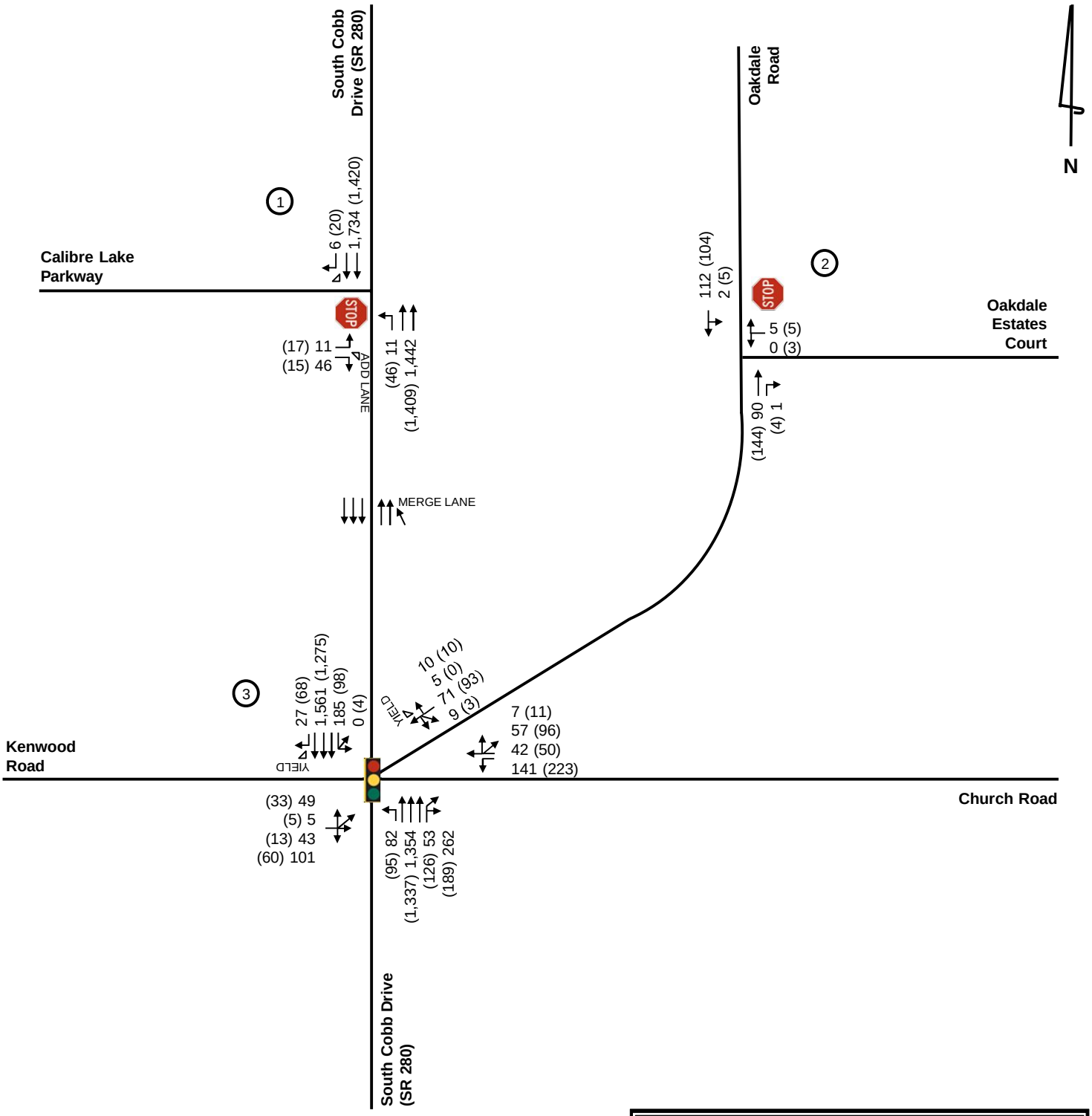


Figure 3: South Cobb Drive (SR 280) n/o Oak Drive ADT Comparison

As a result of the volume comparison, it was determined that an adjustment factor of 1.23 should be used for all roadways during the AM peak, and an adjustment factor of 1.06 should be used for all roadways during the PM peak.

The complete traffic count data is provided in **Appendix D**.

Figure 4 illustrates the adjusted 2021 peak hour traffic volumes at the study intersections as well as the existing roadway geometry (intersection layout).



LEGEND

- Existing Roadway Laneage
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- Existing Traffic Signal
- Existing STOP Control
- (X) — Intersection Reference Number

Collected traffic counts were adjusted by a growth factor of 1.23 during the AM Peak and 1.06 during the PM peak to account for fluctuations in normal traffic patterns due to COVID-19.

Kimley»Horn	***CPC Smyrna Multifamily*** **Traffic Impact Study**	**Estimated 2021 Conditions**	**Figure 4**
			Page 7

4.0 PROJECTED BACKGROUND (NON-PROJECT) TRAFFIC

Projected background (non-project) traffic is defined as the expected traffic on the roadway network in the future year(s) absent the construction and opening of the proposed *CPC Smyrna Multifamily* development. The Estimated 2021 peak hour traffic volumes were increased by 2.5% per year for two (2) years to account for the expected background growth in traffic through year 2023, build-out of the project. Base year 2023 volumes were increased by 1.0% per year for ten (10) years to account for the expected background growth to horizon year 2033.

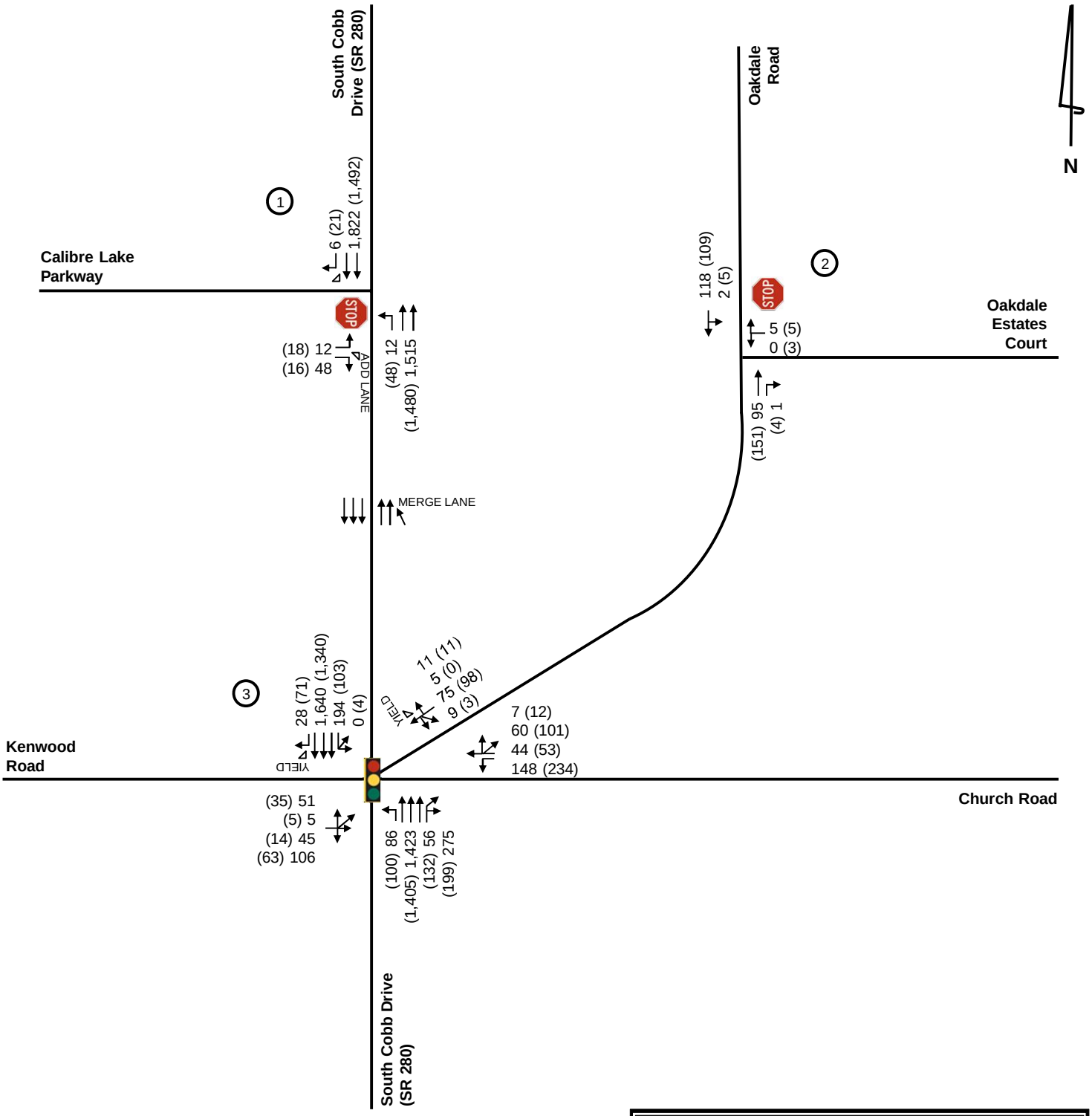
Figure 5 illustrates the Projected 2023 No-Build traffic conditions for the AM and PM peak hours. **Figure 6** illustrates the Horizon Year 2033 No-Build traffic volumes for the AM and PM peak hours.

4.1 FUTURE ROADWAY/INTERSECTION PROJECTS

The Atlanta Regional Commission's *Atlanta Region's Plan*, the GDOT GeoPI system, and the 2016 Cobb County SPLOST project list was researched for programmed transportation projects within the vicinity of the proposed development. Fact sheets are included in Appendix E.

1. **CO-432:** This project will grade separate South Cobb Drive (SR 280) and the East-West Connector through a new interchange.

The above project either does not affect the intersection laneage, or no concept improvement graphics have been identified. Therefore, no changes to the study network were assumed.

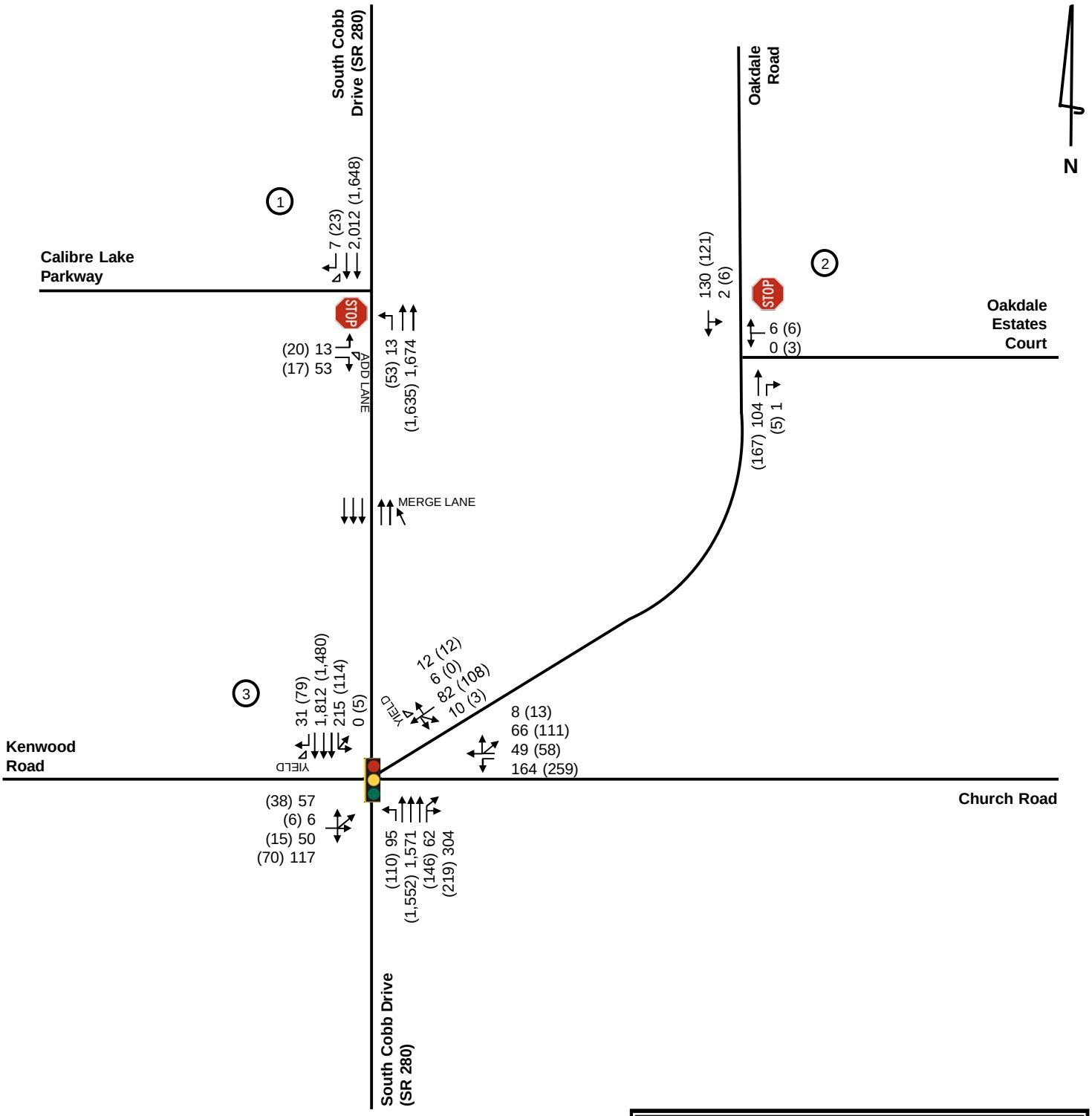


LEGEND

- Existing Roadway Laneage
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- Existing Traffic Signal
- Existing STOP Control
- (X) — Intersection Reference Number

Estimated 2021 Traffic Volumes grown by 2.5% per year for two (2) years.

Kimley»Horn	*CPC Smyrna Multifamily* Traffic Impact Study	Projected 2023 No-Build Conditions	Figure 5
			Page 9



LEGEND

- Existing Roadway Laneage
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- Existing Traffic Signal
- Existing STOP Control
- (X) — Intersection Reference Number

Projected 2023 No-Build Traffic volumes grown at 1.0% per year for ten (10) years.

5.0 PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the proposed *CPC Smyrna Multifamily* development, and the distribution and assignment of that traffic through the study roadway network. This traffic impact study evaluated the impacts of developing a 6.87-acre multi-use commercial property.

5.1 PROJECT SITE ACCESS

Access to the proposed *CPC Smyrna Multifamily* development will be provided at two locations listed below:

1. Site Driveway A – a proposed unsignalized full-movement driveway located along South Cobb Drive (SR 280) approximately 335 feet south of Calibre Lake Parkway and 335 feet north of Kenwood Plaza Retail Shops Driveway. This intersection is proposed to operate under sidestreet stop control. This driveway is proposed to have one (1) egress lane exiting the site and one (1) ingress lane entering the site.
2. Site Driveway B – a proposed unsignalized full-movement driveway located at the intersection of Oakdale Road at Oakdale Estates Court. (Intersection 2). The driveway is proposed to add a fourth leg to the existing unsignalized intersection of Oakdale Road at Oakdale Estates Court. This driveway is proposed to have one (1) egress lane exiting the site and one (1) ingress lane entering the site.

See the referenced site plans in Appendix A for a visual representation of vehicular access and circulation throughout the site.

5.2 TRIP GENERATION

Traffic for the proposed development was calculated using equations contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, Tenth Edition, 2017. The trip generation was calculated assuming multi-family housing (mid-rise) (Land Use 221), retail (Land Use 820), and restaurant (Land Use 932). **Table 3** summarizes the trip generation for the proposed development under full build-out (year 2023).

Table 3: Trip Generation											
Land Use	Density	ITE Code	Daily Traffic			AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit
Multifamily Housing (Mid-Rise)	*173 units*	221	942	471	471	59	15	44	75	46	29
Shopping Center	*4,250 SF*	820	160	80	80	4	2	2	16	8	8
High Turnover (Sit-Down) Restaurant	*4,250 SF*	932	476	238	238	42	23	19	42	26	16
Total Gross Trips			**1,578**	**789**	**789**	**105**	**40**	**65**	**133**	**80**	**53**
Mixed-Use Reduction			*-128*	*-64*	*-64*	*-12*	*-6*	*-6*	*-32*	*-16*	*-16*
Pass-by Reduction			*-234*	*-117*	*-117*	*0*	*0*	*0*	*-16*	*-8*	*-8*
Total Net New Trips			**1,216**	**608**	**608**	**92**	**34**	**59**	**85**	**56**	**29**

Due to the size, nature, and location of the proposed development, alternative mode reductions were assumed to be zero.

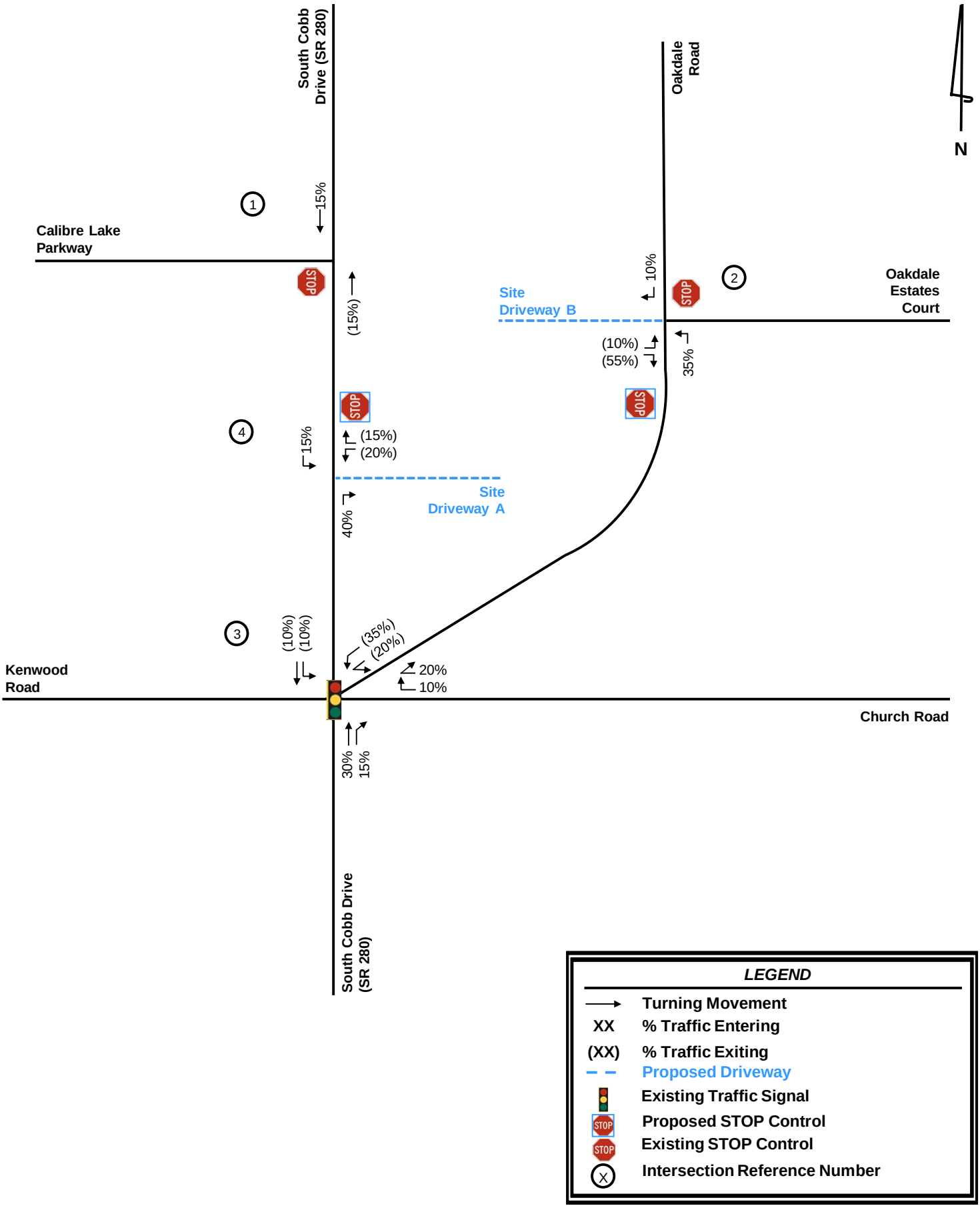
Mixed-use reductions occur when a site has a combination of different land uses that interact with one another. For example, people living in a residential development may walk to the restaurants and retail instead of driving off-site or to the site. This reduces the number of vehicle trips that will be made on the roadway. Mixed-use vehicle trip reductions were taken according to the *ITE Trip Generation Handbook*, Third Edition, 2014, for the AM and PM peak hour volumes and the *ITE Trip Generation Handbook*, Second Edition, 2004, for daily volumes. Total internal capture and vehicle trip reduction between the land uses is expected to be 8.1% daily, 11.5% for the AM peak hour, and 24.1% for the PM peak hour as a result of the anticipated interaction between the residential, retail, and restaurant land uses within the proposed development.

Pass-by reductions are considered for traffic normally traveling along a roadway which may choose to visit a retail or restaurant establishment that is along the vehicle's path. These trips were already on the road and would therefore only be new trips on the driveways. Pass-by reductions were determined according to the *ITE Trip Generation Handbook*, *Third Edition*, *2014*. Per ITE guidance, the pass-by trip reduction rate for the proposed restaurant land use is 43% for the PM peak hour. The pass-by trip reduction rate for the proposed retail land use is 34% for the PM peak hour. It should be noted that pass-by trips are not new trips to the roadway network, rather, they are vehicles already travelling along the existing roadway network that stop to visit the retail and restaurant land uses. No pass-by reductions were taken for the AM peak hour as pass-by trips are minimal in the morning for retail and restaurant land uses.

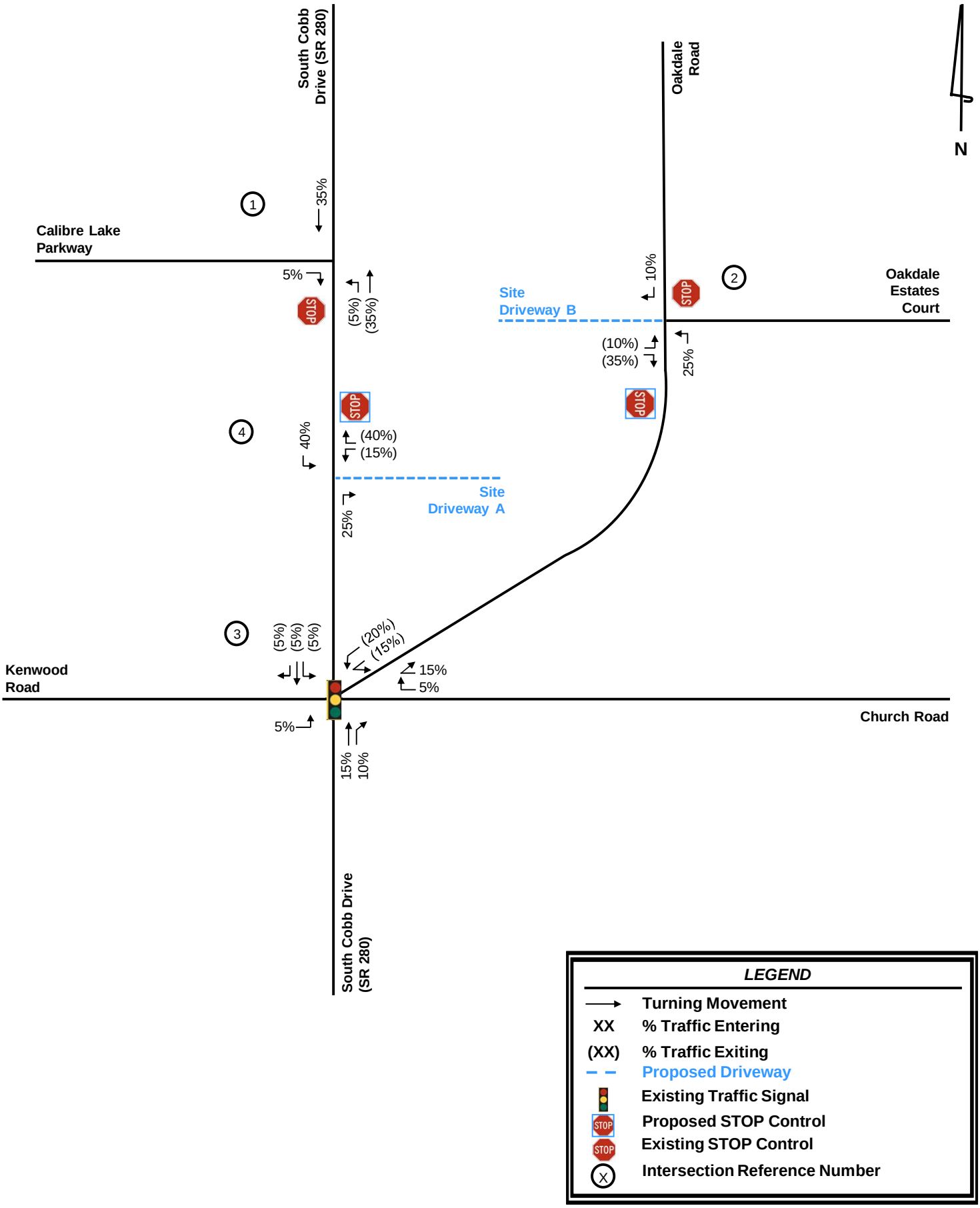
5.3 TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution and assignment of new project trips was based on a review of land uses and population densities in the area; and the existing peak hour turning movement counts. Detailed trip distributions are illustrated in **Figure 7** and **Figure 8**.

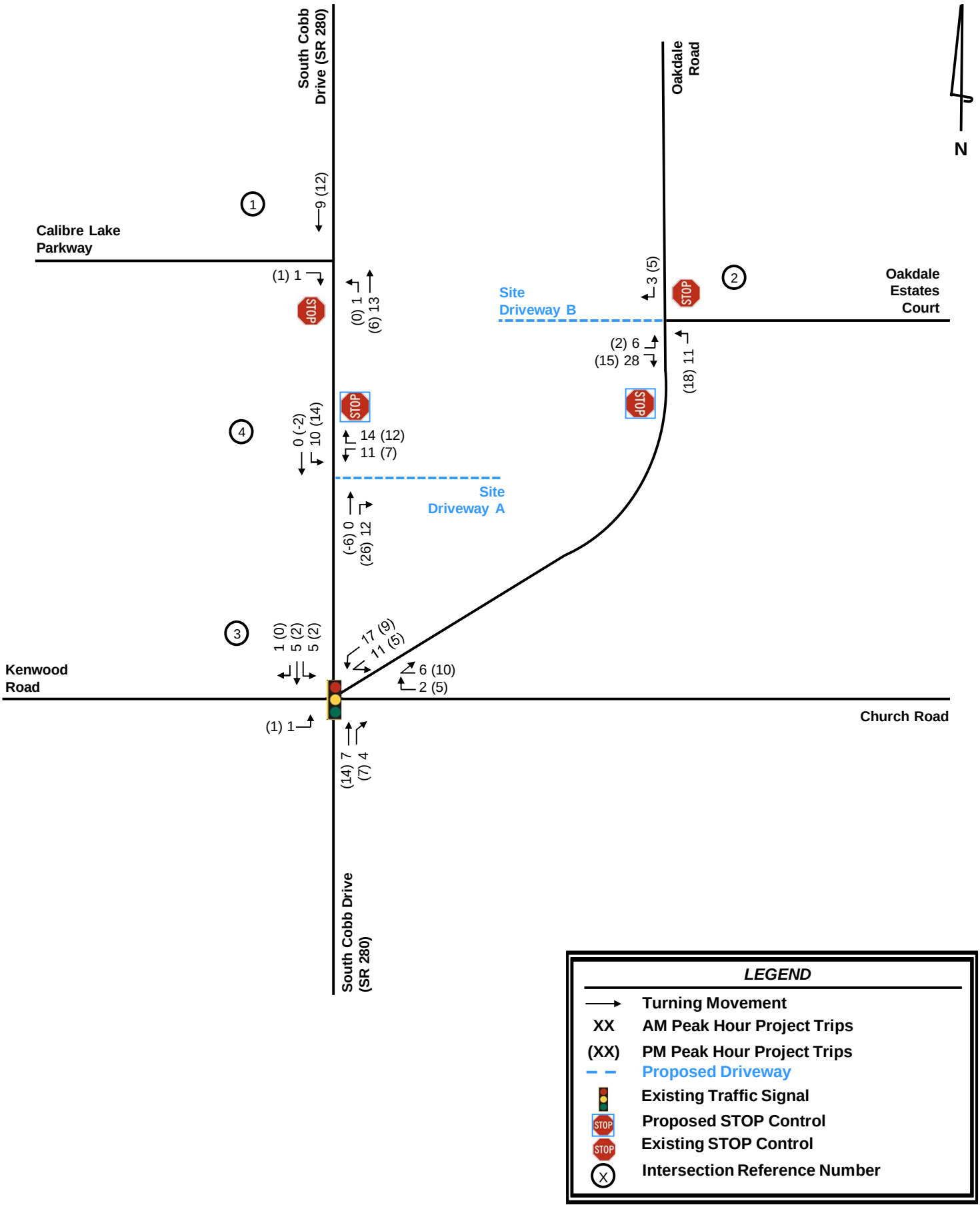
Based on the trip generation from **Table 3** and the anticipated trip distribution (shown on **Figure 7** and **Figure 8**), net new project trips were assigned to the study roadway network and are illustrated on **Figure 9**. **Figure 10** illustrates the Projected 2023 Build traffic conditions for the AM and PM peak hours. **Figure 11** illustrates the Horizon Year 2033 Build traffic volumes for the AM and PM peak hours. Appendix B provides intersection volume worksheets for the study network.



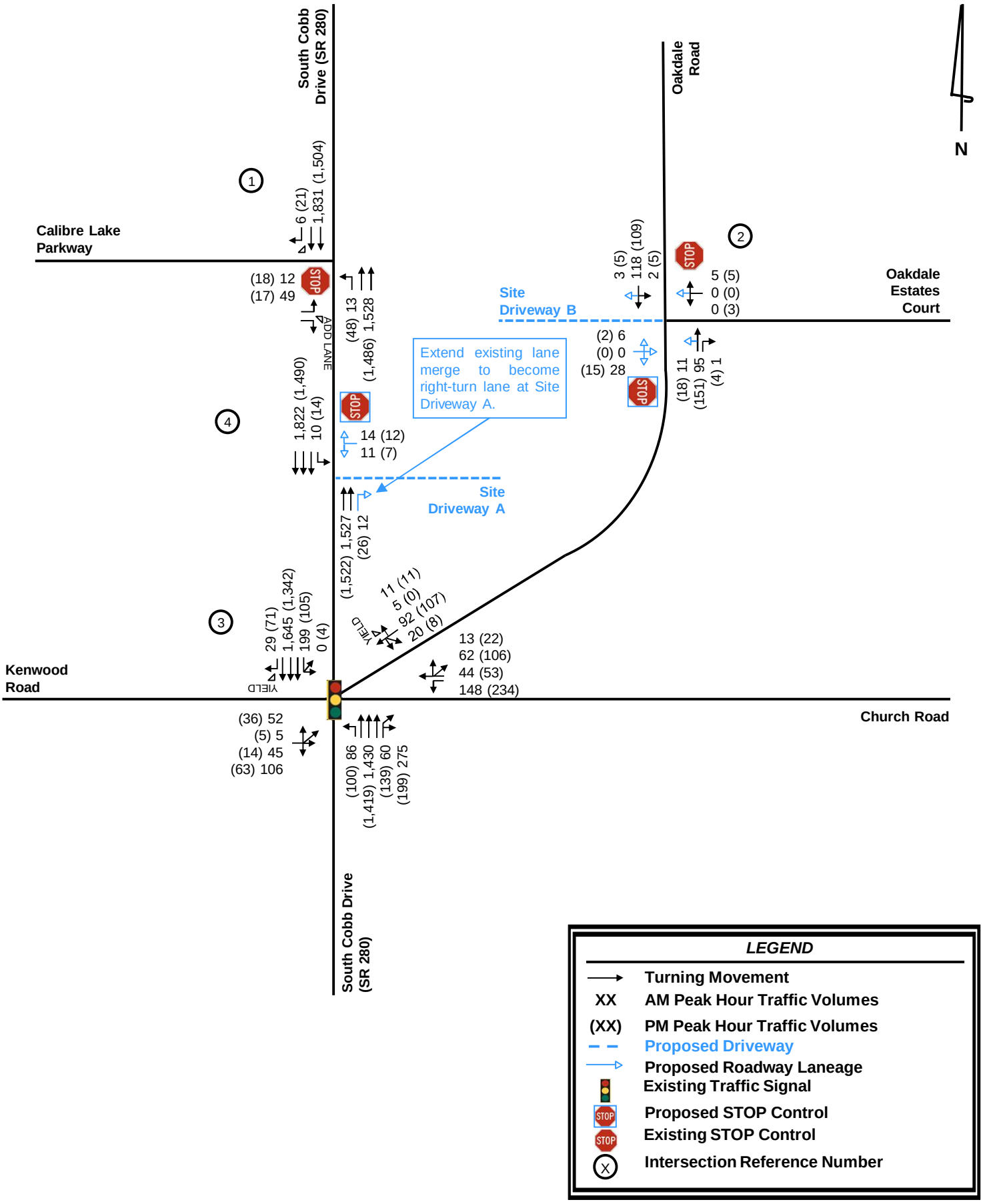
Kimley»Horn	*CPC Smyrna Multifamily* Traffic Impact Study	Residential Trip Distribution	Figure 7
			Page 14



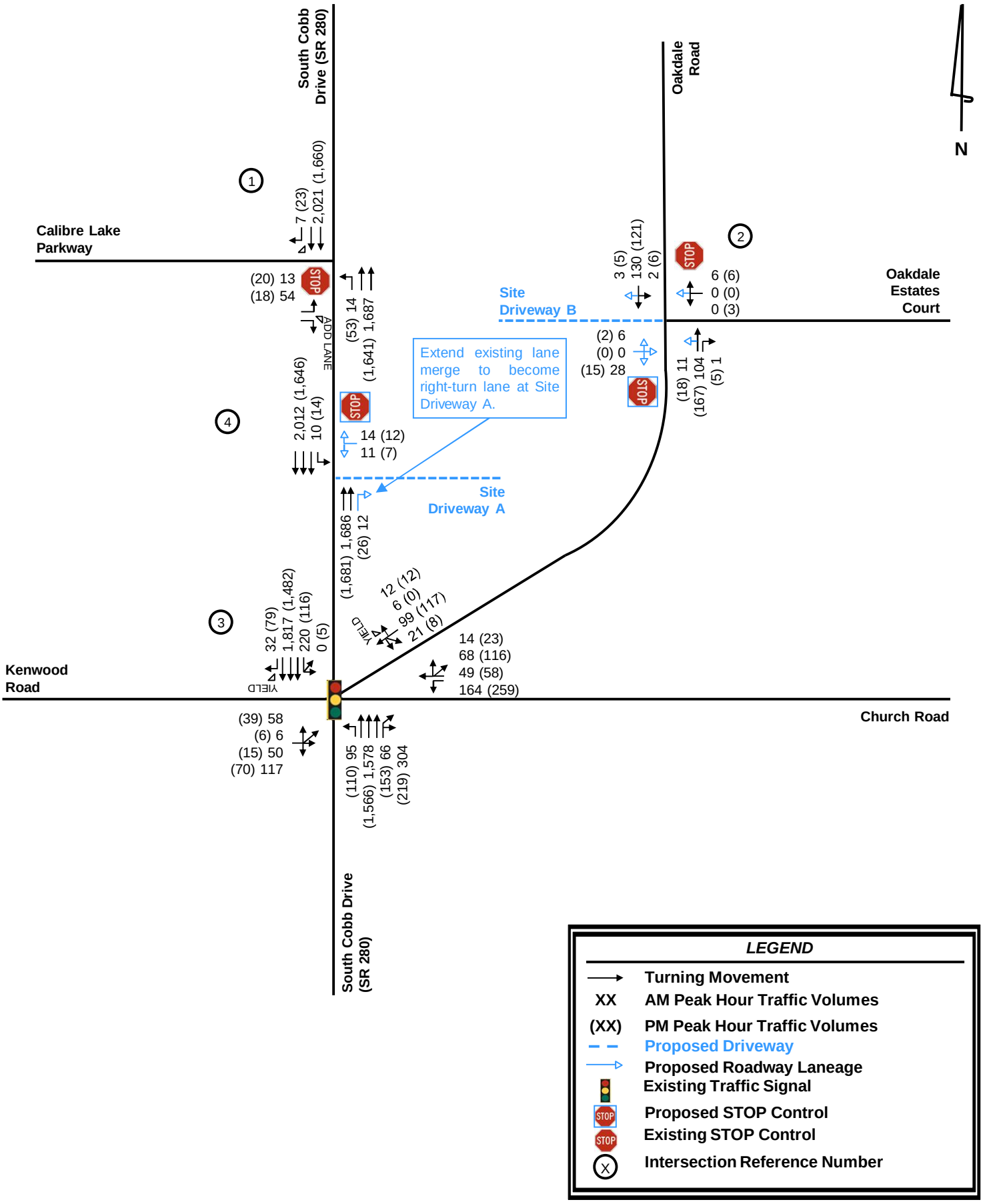
Kimley»Horn	*CPC Smyrna Multifamily* Traffic Impact Study	Non-Residential Trip Distribution	Figure 8
			Page 15



Kimley»Horn	*CPC Smyrna Multifamily* Traffic Impact Study	Project Trips	Figure 9
			Page 16



Kimley»Horn	*CPC Smyrna Multifamily* Traffic Impact Study	Projected 2023 Build Conditions	Figure 10
			Page 17


South Cobb Drive (SR 280)
Oakdale Road
N
1
Calibre Lake Parkway
7 (23)
2,021 (1,660)
(20) 13
(18) 54
STOP
ADD LANE
(53) 14
(1,641) 1,687
2
3 (5)
130 (121)
2 (6)
STOP
6 (6)
0 (0)
0 (3)
Oakdale Estates Court
Site Driveway B
(2) 6
(0) 0
(15) 28
STOP
(18) 11
(167) 104
(5) 1
Extend existing lane merge to become right-turn lane at Site Driveway A.
4
2,012 (1,646)
10 (14)
STOP
14 (12)
11 (7)
Site Driveway A
(1,681) 1,686
(26) 12
12 (12)
6 (0)
99 (117)
21 (8)
YIELD
3
32 (79)
1,817 (1,482)
220 (116)
0 (5)
YIELD
14 (23)
68 (116)
49 (58)
164 (259)
Kenwood Road
Church Road
(39) 58
(6) 6
(15) 50
(70) 117
(110) 95
(1,566) 1,578
(153) 66
(219) 304
South Cobb Drive (SR 280)
LEGEND
Turning Movement
XX AM Peak Hour Traffic Volumes
(XX) PM Peak Hour Traffic Volumes
Proposed Driveway
Proposed Roadway Laneage
Existing Traffic Signal
Proposed STOP Control
Existing STOP Control
X Intersection Reference Number

6.0 LEVEL-OF-SERVICE ANALYSIS

Level-of-service (LOS) determinations were made for the weekday AM and PM peak hours for the existing study network intersections and proposed access intersections using *Synchro Professional, Version 11.0*. The program uses methodologies contained in the *Highway Capacity Manual, 6th Edition* to determine the operating characteristics of an intersection. Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a specified period under prevailing roadway, traffic, and control conditions.

LOS is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions of a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A being the best and F the worst.

LOS for signalized intersections are reported for the intersection as a whole. One or more movements at an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

LOS for unsignalized intersections, with stop control on the minor street(s) only, are reported for the side street approaches. It is not uncommon to have long delays for stop-controlled approaches when there is heavy major street volume.

LOS analyses were performed for the AM and PM peak hours under adjusted Estimated 2021 conditions, Projected 2023 No-Build conditions, Projected 2023 Build conditions, Horizon Year 2033 No-Build conditions, and Horizon Year 2033 Build conditions. The results of the existing and build-out year analyses with existing roadway laneage are summarized in **Table 4**. The results of the horizon year analyses with existing roadway laneage are summarized in **Table 5**. A detailed set of analyses from *Synchro* is available in Appendix C.

Table 4: Level-of-Service Summary *LOS (Delay, in seconds)*							
Intersection	**Approach / Movement**	**Estimated 2021**		**Projected 2023 No-Build**		**Projected 2023 Build**	
		AM Peak	**PM Peak**	**AM Peak**	**PM Peak**	**AM Peak**	**PM Peak**
1. South Cobb Drive (SR 280) at Calibre Lake Parkway (unsignalized)	EB	F (59.3)	E (41.9)	F (69.0)	E (47.0)	F (70.1)	E (48.0)
	NBL	C (16.9)	B (13.8)	C (18.1)	B (14.5)	C (18.3)	B (14.6)
2. Oakdale Road at Oakdale Estates Court/Site Driveway B (unsignalized)	WB	A (8.8)	A (9.7)	A (8.8)	A (9.8)	A (8.8)	B (10.2)
	SBL	A (7.4)	A (7.6)	A (7.4)	A (7.6)	A (7.4)	A (7.6)
	EB					A (9.3)	A (9.2)
	NBL					A (7.5)	A (7.5)
3. South Cobb Drive (SR 280) at Kenwood Road/Church Road/Oakdale Road (signalized)	Overall	D (43.7)*	D (41.1)*	D (49.2)*	D (44.5)*	D (50.5)*	D (45.5)*
4. South Cobb Drive (SR 280) at Site Driveway A (unsignalized)	WB					D (31.1)	C (24.3)
	SBL					B (14.8)	B (14.0)

**Due to the intersection phasing, HCM 2000 was used for the analysis. HCM 2010 and HCM 6th Edition cannot analyze a 5-leg intersection.*

As shown in **Table 4**, all intersections except one (1) are expected to operate at an acceptable LOS under Estimated 2021, Projected 2023 No-Build, and Projected 2023 Build conditions. The eastbound approach of South Cobb Drive (SR 280) at Calibre Lake Parkway (Intersection #1) is projected to operate at LOS F during the AM peak and LOS E during the PM peak under Estimated 2021, Projected 2023 No-Build, and Projected 2023 Build conditions. It should be noted that it is not uncommon to have long delays for stop-controlled approaches when there is heavy major street volume. All site driveways are projected to operate at an acceptable LOS.

Additionally, a Horizon Year 2033 analysis was performed. The results of the LOS analysis for the Horizon Year 2033 scenarios are summarized in **Table 5.**

Table 5: Horizon Year 2033 Level-of-Service Summary *LOS (Delay in Seconds)*					
Intersection	**Approach**	**Horizon Year 2033 No-Build**		**Horizon Year 2033 Build**	
		AM Peak	**PM Peak**	**AM Peak**	**PM Peak**
1. South Cobb Drive (SR 280) at Calibre Lake Parkway (unsignalized)	EB	F (96.0)	F (63.1)	F (100.7)	F (64.0)
	NBL	C (21.0)	C (16.4)	C (21.3)	C (16.5)
2. Oakdale Road at Oakdale Estates Court/Site Driveway B (unsignalized)	WB	A (8.9)	A (9.9)	A (8.9)	B (10.3)
	SBL	A (7.4)	A (7.6)	A (7.4)	A (7.6)
	EB			A (9.4)	A (9.3)
	NBL			A (7.5)	A (7.5)
3. South Cobb Drive (SR 280) at Kenwood Road/Church Road/Oakdale Road (signalized)	Overall	D (53.1)	D (50.5)	D (54.1)	D (52.1)
4. South Cobb Drive (SR 280) at Site Driveway A (unsignalized)	WB			E (38.0)	D (28.4)
	SBL			C (16.5)	C (15.4)

**Due to the intersection phasing, HCM 2000 was used for the analysis. HCM 2010 and HCM 6th Edition cannot analyze a 5-leg intersection.*

Based on the results shown in **Table 5**, and similar to the year 2023 Results, all intersections except one (1) are expected to operate at an acceptable LOS under Horizon Year 2033 No-Build and Build conditions. The eastbound approach of South Cobb Drive (SR 280) at Calibre Lake Parkway (Intersection #1) is projected to operate at LOS F during the AM peak and PM peak under Horizon Year 2033 No-Build, and Horizon Year 2033 Build conditions. As stated earlier, it is not uncommon to have delays on side-street approaches during the peak hour. All site driveways are projected to operate at an acceptable LOS.

7.0 ADDITIONAL CONSIDERATIONS

7.1 QUEUEING ANALYSIS

The proposed Site Driveway A is located approximately 335' south of Calibre Lake Parkway. This distance exceeds GDOT's Requirement of 230' per the Driveway and Encroachment manual. However, because South Cobb Drive (SR 280) has an existing center two-way left-turn lane, a queueing analysis was performed for the northbound left-turn into Calibre Lake Parkway, and the southbound left-turn into the proposed Site Driveway A, in order to ensure the approximate 335' separation is sufficient.

Queueing analyses were performed for the AM and PM peak hours based on the peak of the overall intersection (peak of adjacent street traffic) for the northbound left-turn movement into Calibre Lake Parkway and southbound left-turn movement into proposed Site Driveway A. *Synchro, Version 11* which uses methodologies in the *6th Edition Highway Capacity Manual* were used to analyze the Horizon Year 2033 Build conditions. The average length of a passenger car is assumed to be 20 feet with 5 feet between vehicles.

Table 6 summarizes the 95th percentile queue lengths (in feet) for Horizon Year 2033 Build conditions. *Synchro* analyses are provided in **Appendix C**.

Table 6: 95th Percentile Queueing Summary (Design Year 2033 Build)
(in feet)

INT #	Intersection	Movement	Horizon Year 2033 Build	
			AM Peak	PM Peak
1	South Cobb Drive (SR 280) at Calibre Lake Parkway *(Unsignalized)*	NBL	25'	25'
4	South Cobb Drive (SR 280) at Site Driveway A *(Unsignalized)*	SBL	25'	25'

Note: N/SBL = Northbound/Southbound Left-Turn Movement, 1 car length is assumed to be 25 feet.

Under **Horizon Year 2033 Build** conditions, the left-turn queues along South Cobb Drive (SR 280) are projected to not interfere with each other or overlap during both AM and PM peak hours.

8.0 CONCLUSION

This traffic study evaluated the traffic impacts associated with the *CPC Smyrna Multifamily* development, located at the intersection of South Cobb Drive (SR 280) and Oakdale Road in the City of Smyrna, Georgia. The site is currently undeveloped and is proposed to be consist of approximately 173 residential units and 8,500 SF of retail/restaurant space on approximately 6.87 acres. The development is expected to be completed in 2023.

The study network, which consists of two (2) existing unsignalized intersections and one (1) signalized intersection, was analyzed for the weekday AM and PM peak hours under the following five (5) scenarios:

1. Estimated 2021 conditions
2. Projected 2023 No-Build conditions (Estimated 2021 Traffic Conditions, plus background traffic growth)
3. Projected 2023 Build conditions (Projected 2023 No-Build conditions plus traffic generated by the proposed *CPC Smyrna Multifamily* development)
4. Horizon Year 2033 No-Build conditions (Projected 2023 No-Build conditions plus an additional ten (10) years of background traffic growth)
5. Horizon Year 2033 Build conditions (Horizon Year 2033 No-Build conditions plus traffic generated by the proposed *CPC Smyrna Multifamily* development)

Based on the results of this traffic impact study, all study intersections except one (1) are expected to operate at an acceptable LOS under Estimated 2021, Projected 2023 No-Build, and Projected 2023 Build conditions. The eastbound approach of South Cobb Drive (SR 280) at Calibre Lake Parkway (Intersection #1) is projected to operate at LOS F during the AM peak and LOS E during the PM peak under Estimated 2021, Projected 2023 No-Build, and Projected 2023 Build conditions. Additionally, the eastbound approach of South Cobb Drive (SR 280) at Calibre Lake Parkway (Intersection #1) is projected to operate at LOS F during the AM and PM peak hours under both the Horizon Year 2033 No-Build and Build conditions. It should be noted that it is not uncommon to have long delays for stop-controlled approaches when there is heavy major street volume. All site driveways are projected to operate at an acceptable LOS.

Kimley-Horn and Associates, Inc. does not recommend system improvements, but does recommend site access improvements based on the results of this study.

8.1 SITE-ACCESS IMPROVEMENT RECOMMENDATIONS

Based on the results of this study, Kimley-Horn and Associates, Inc. recommends the following site-access improvements to serve the Projected 2023 Build traffic conditions (note: this would be the improvements needed to serve the traffic associated with the *CPC Smyrna Multifamily* development).

- Intersection 2 – Oakdale Road at Oakdale Estates Court/Site Driveway B
    - On the site, construct one (1) egress lane exiting the site and one (1) ingress lane entering the site.
- Intersection 4 – South Cobb Drive (SR 280) at Site Driveway A
    - On the site, construct one (1) egress lane exiting the site and one (1) ingress lane entering the site.
    - Extend the merge lane along South Cobb Drive (SR 280) up to the proposed site driveway to become a new right-turn lane into the site.

C

Trip Generation Sheets

Land Use: 222
Multifamily Housing (High-Rise)

Description

High-rise multifamily housing includes apartments, townhouses, and condominiums. Each building has more than 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevators, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (mid-rise) (Land Use 221), off-campus student apartment (high-rise) (Land Use 227), and high-rise residential with ground-floor commercial (Land Use 232) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the 12 sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 1.6 residents per occupied dwelling unit.

For the 26 sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 98 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

For the 12 sites for which data were provided for both occupied dwelling units and residents, there was an average of 1.6 residents per occupied dwelling unit.

For the 26 sites for which data were provided for both occupied dwelling units and total dwelling units, an average of 98 percent of the units were occupied.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1980s, the 2000s, and the 2010s in California, District of Columbia, Maryland, New Jersey, New York, Ontario (CAN), Oregon, Pennsylvania, and Virginia.

Source Numbers

105, 168, 169, 237, 321, 356, 818, 862, 901, 910, 949, 963, 964, 966, 967, 1056, 1057, 1076, 1077

Multifamily Housing (High-Rise)
Not Close to Rail Transit (222)

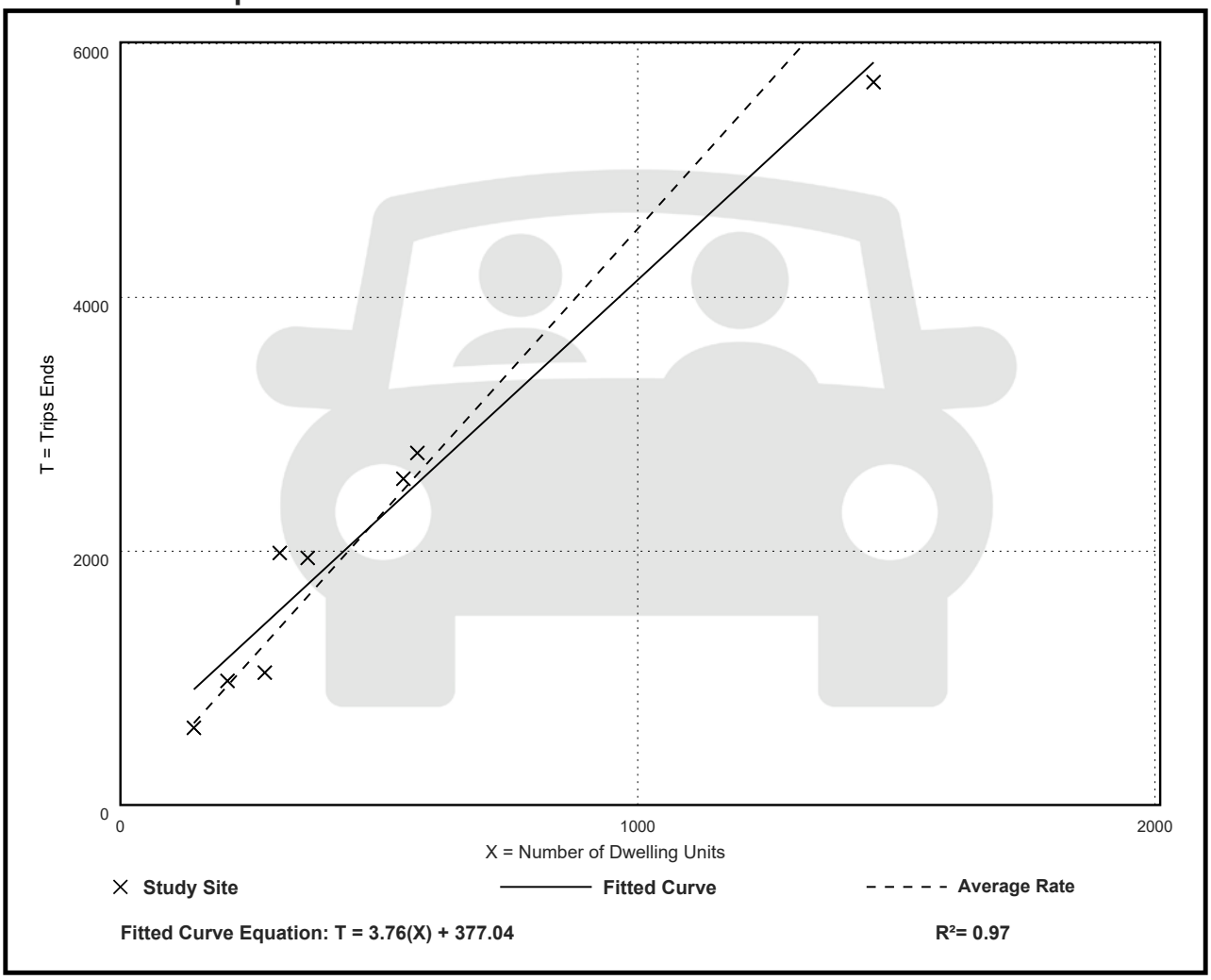
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 8
Avg. Num. of Dwelling Units: 484
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.74 - 6.45	0.81

Data Plot and Equation



Fitted Curve Equation: T = 3.76(X) + 377.04

R^2= 0.97

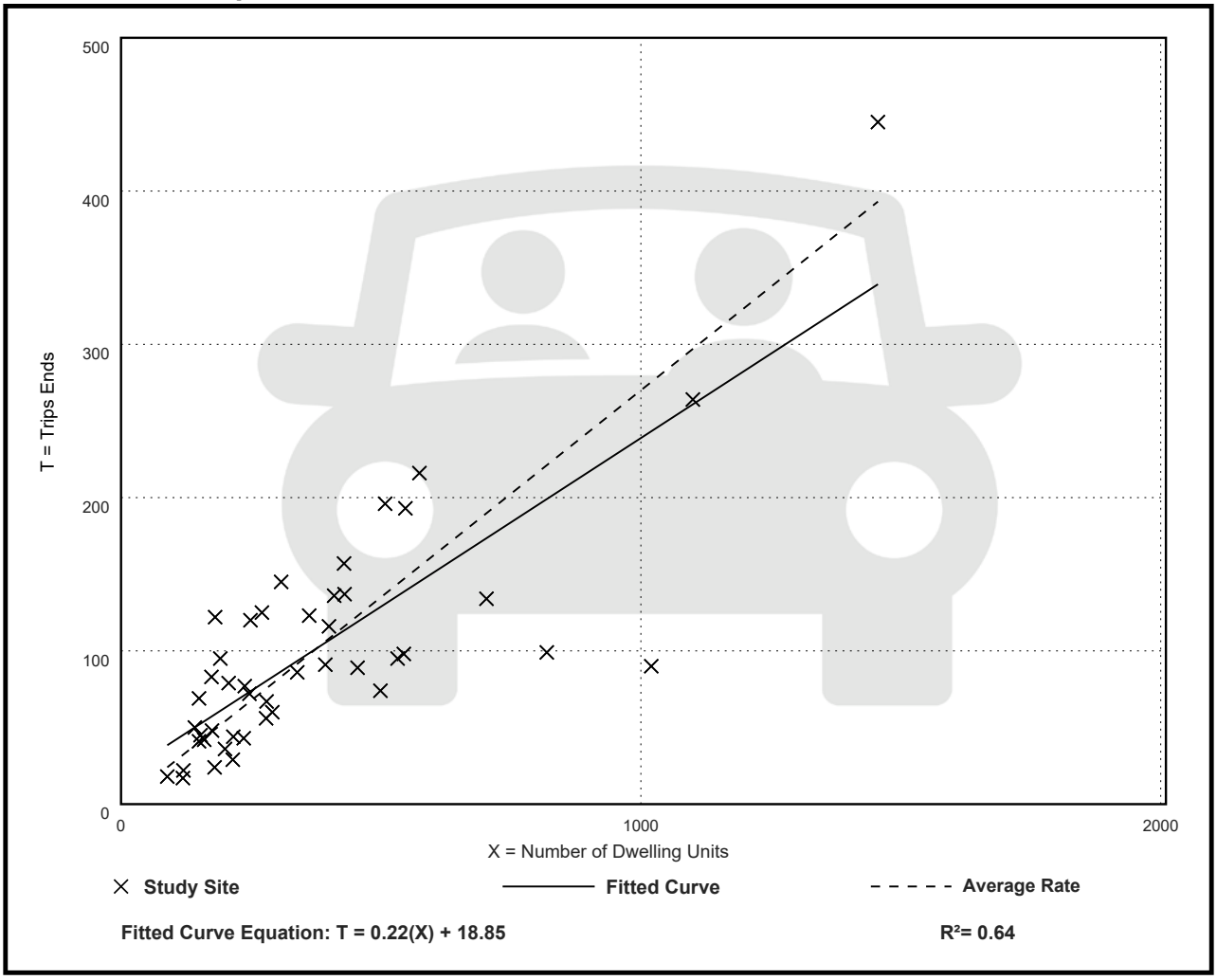
Multifamily Housing (High-Rise)
Not Close to Rail Transit (222)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 45
Avg. Num. of Dwelling Units: 372
Directional Distribution: 34% entering, 66% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.27	0.09 - 0.67	0.11

Data Plot and Equation



Fitted Curve Equation: T = 0.22(X) + 18.85

R^2= 0.64

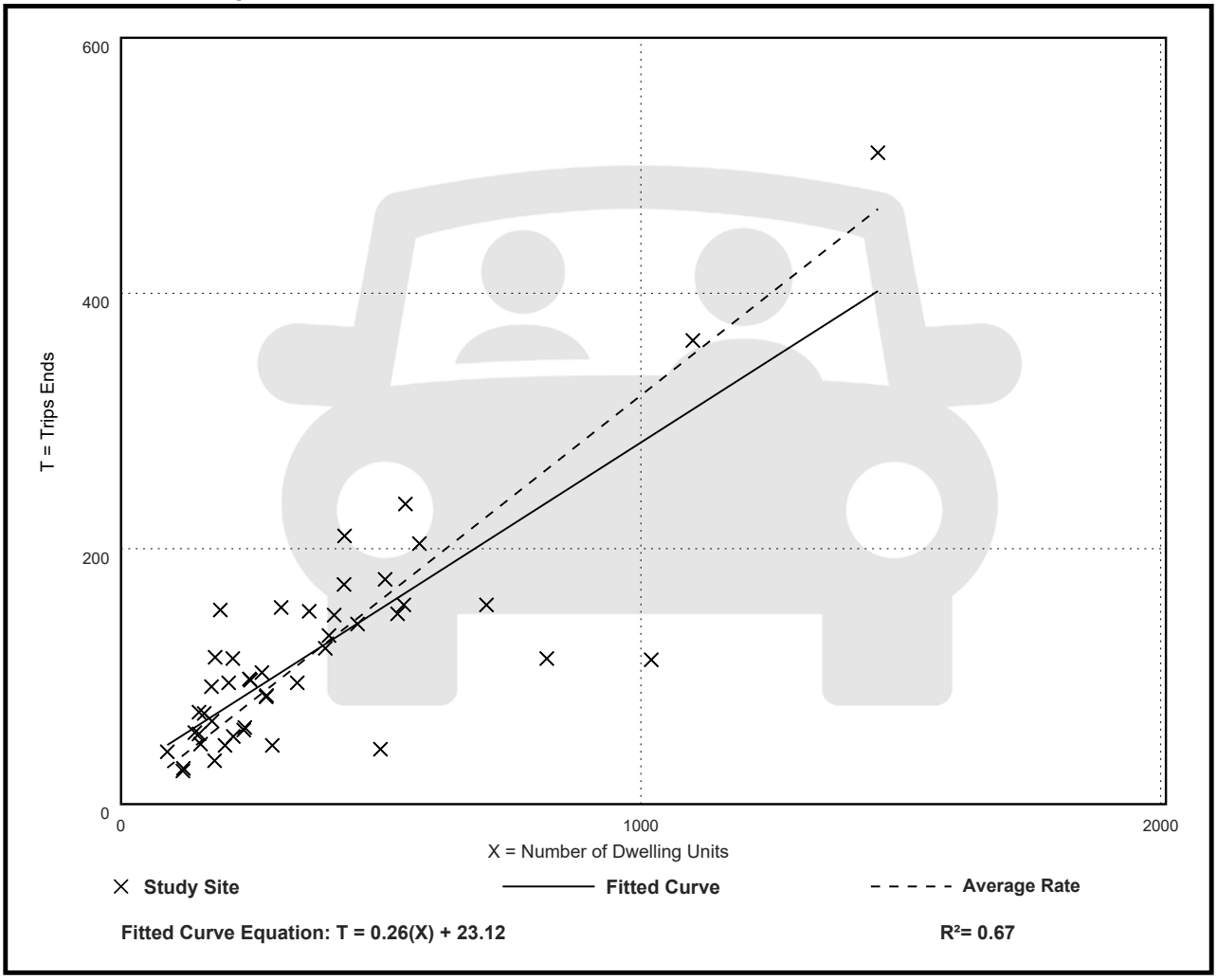
Multifamily Housing (High-Rise)
Not Close to Rail Transit (222)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 45
Avg. Num. of Dwelling Units: 372
Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.32	0.09 - 0.80	0.13

Data Plot and Equation



Fitted Curve Equation: T = 0.26(X) + 23.12

R^2= 0.67

Land Use: 931
Fine Dining Restaurant

Description

A fine dining restaurant is a full-service eating establishment with a typical duration of stay of at least 1 hour. A fine dining restaurant generally does not serve breakfast; some do not serve lunch; all serve dinner. This type of restaurant often requests and sometimes requires a reservation and is generally not part of a chain. A patron commonly waits to be seated, is served by wait staff, orders from a menu and pays after the meal. Some of the study sites have lounge or bar facilities (serving alcoholic beverages), but meal service is the primary draw to the restaurant. Fast casual restaurant (Land Use 930) and high-turnover (sit-down) restaurant (Land Use 932) are related uses.

Additional Data

If the fine dining restaurant has outdoor seating, its area is not included in the overall gross floor area. For a restaurant that has significant outdoor seating, the number of seats may be more reliable than GFA as an independent variable on which to establish a trip generation rate.

The sites were surveyed in the 1980s, the 1990s, and the 2010s in Alberta (CAN), California, Colorado, Florida, Indiana, Kentucky, New Jersey, and Utah.

Source Numbers

126, 260, 291, 301, 338, 339, 368, 437, 440, 976, 1053

Fine Dining Restaurant
(931)

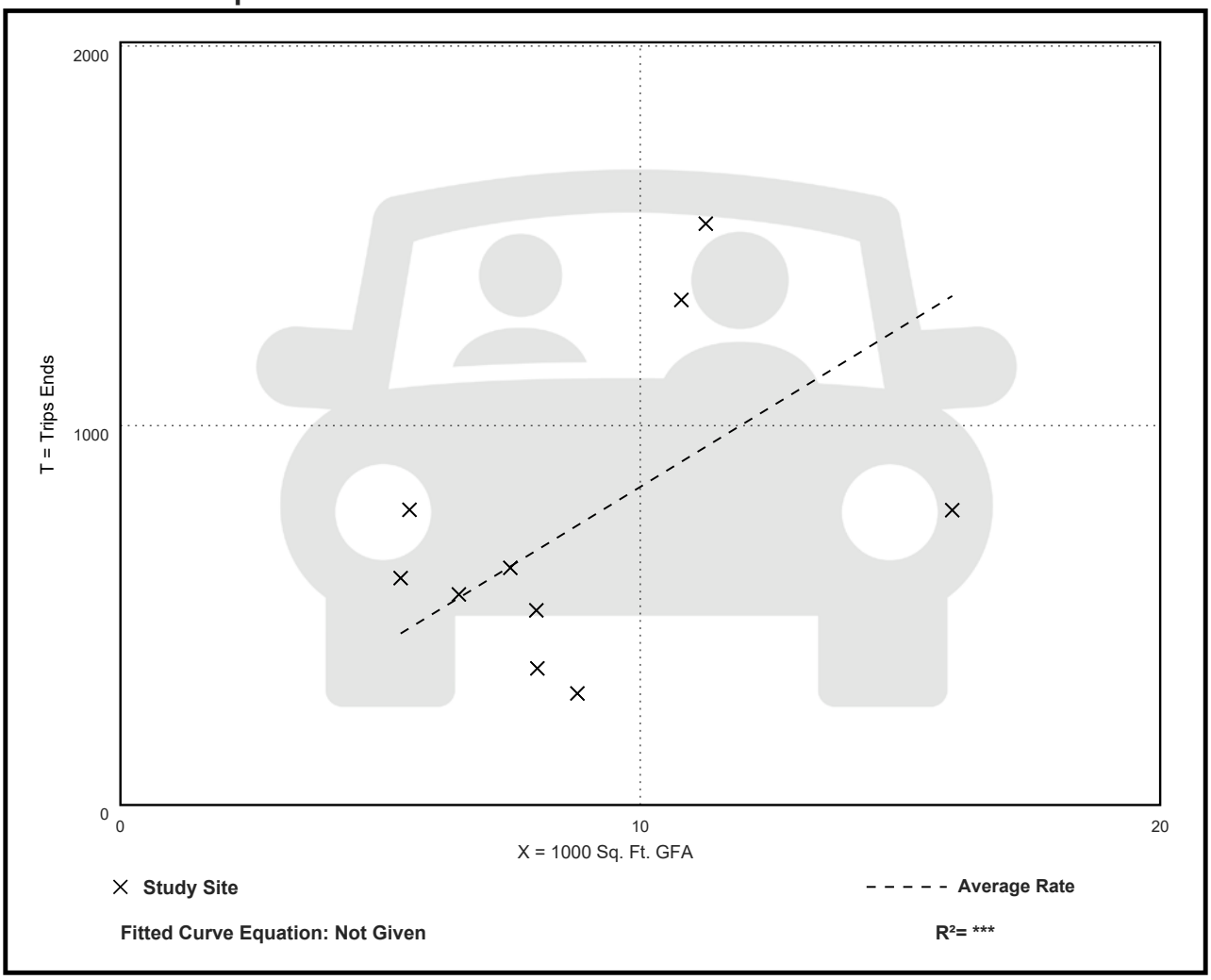
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 10
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.84	33.45 - 139.93	40.01

Data Plot and Equation



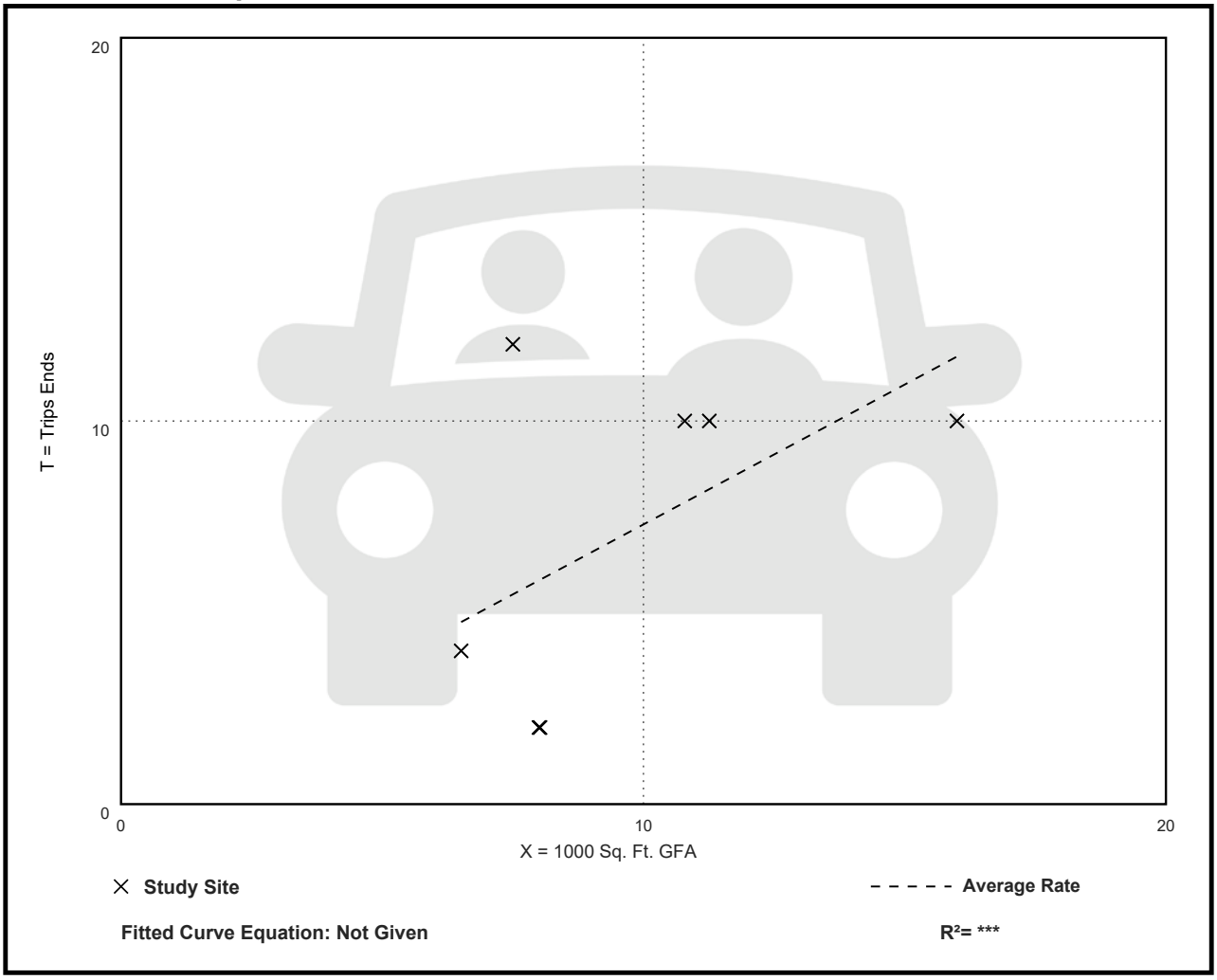
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. 1000 Sq. Ft. GFA: 10
Directional Distribution: Not Available

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

Data Plot and Equation



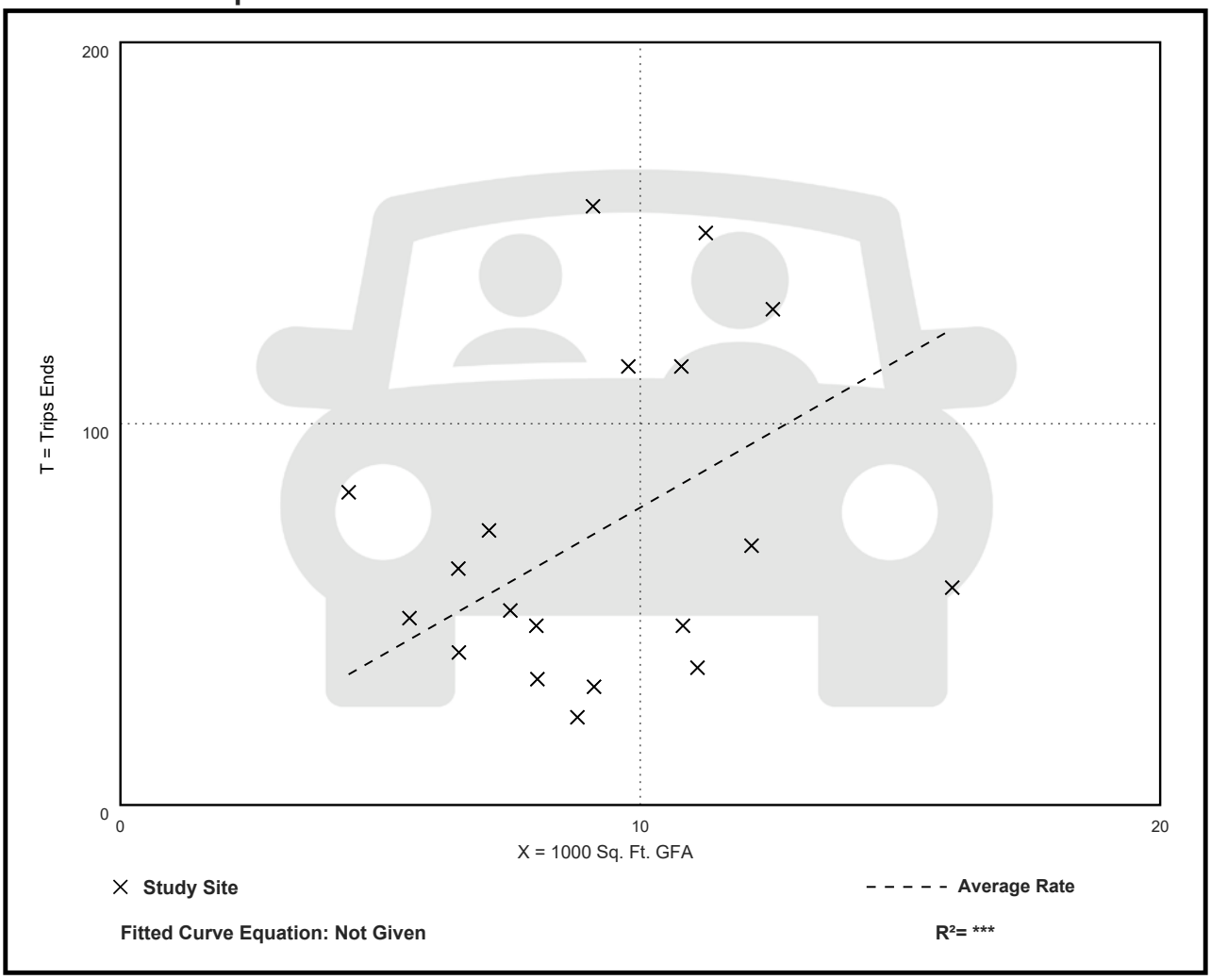
Fine Dining Restaurant
(931)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 19
Avg. 1000 Sq. Ft. GFA: 9
Directional Distribution: 67% entering, 33% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

Data Plot and Equation



Land Use: 936
Coffee/Donut Shop without Drive-Through Window

Description

This land use includes any coffee and donut restaurant that does not have a drive-through window. The restaurant sells freshly brewed coffee (along with coffee-related accessories) and a variety of food/drink products such as donuts, bagels, breads, muffins, cakes, sandwiches, wraps, salads, and other hot and cold beverages. The restaurant marketing and sales may emphasize coffee beverages over food (or vice versa).

A coffee/donut shop typically holds long store hours (more than 15 hours) with an early morning opening. Limited indoor seating is generally provided for patrons, but table service is not provided.

Coffee/donut shop with drive-through window (Land Use 937) and coffee/donut shop with drive-through window and no indoor seating (Land Use 938) are related uses.

Additional Data

Many of the facilities in this land use were located within a shopping center or as an outparcel to a shopping center.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1990s, the 2000s, and the 2010s in California, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, and Vermont.

Specialized Land Use Data

One study provided data for a coffee/donut shop without a drive-through window that sells donuts and ice cream (source 563). The trip generating characteristics of this site differed from the sites included in this land use; therefore, trip generation information for this site is presented here and was excluded from the data plots. The site had a gross floor area of 2,400 square feet. It generated 48 vehicle trips during the weekday PM peak hour of adjacent street traffic and 52 vehicle trips during the weekday PM peak hour of the generator.

One study provided data for a coffee/donut shop without a drive-through window that sells donuts and sandwiches (source 563). The trip generating characteristics of this site differed from the sites included in this land use; therefore, trip generation information for this site is presented here and was excluded from the data plots. The site had a gross floor area of 4,000 square feet. It generated 239 vehicle trips during the weekday AM peak hour of adjacent street traffic, 52 vehicle trips during the weekday PM peak hour of adjacent street traffic, and 111 vehicle trips during the weekday PM peak hour of the generator.

Source Numbers

555, 563, 571, 594, 617, 618, 621, 728, 863, 902, 954, 955, 982, 1020

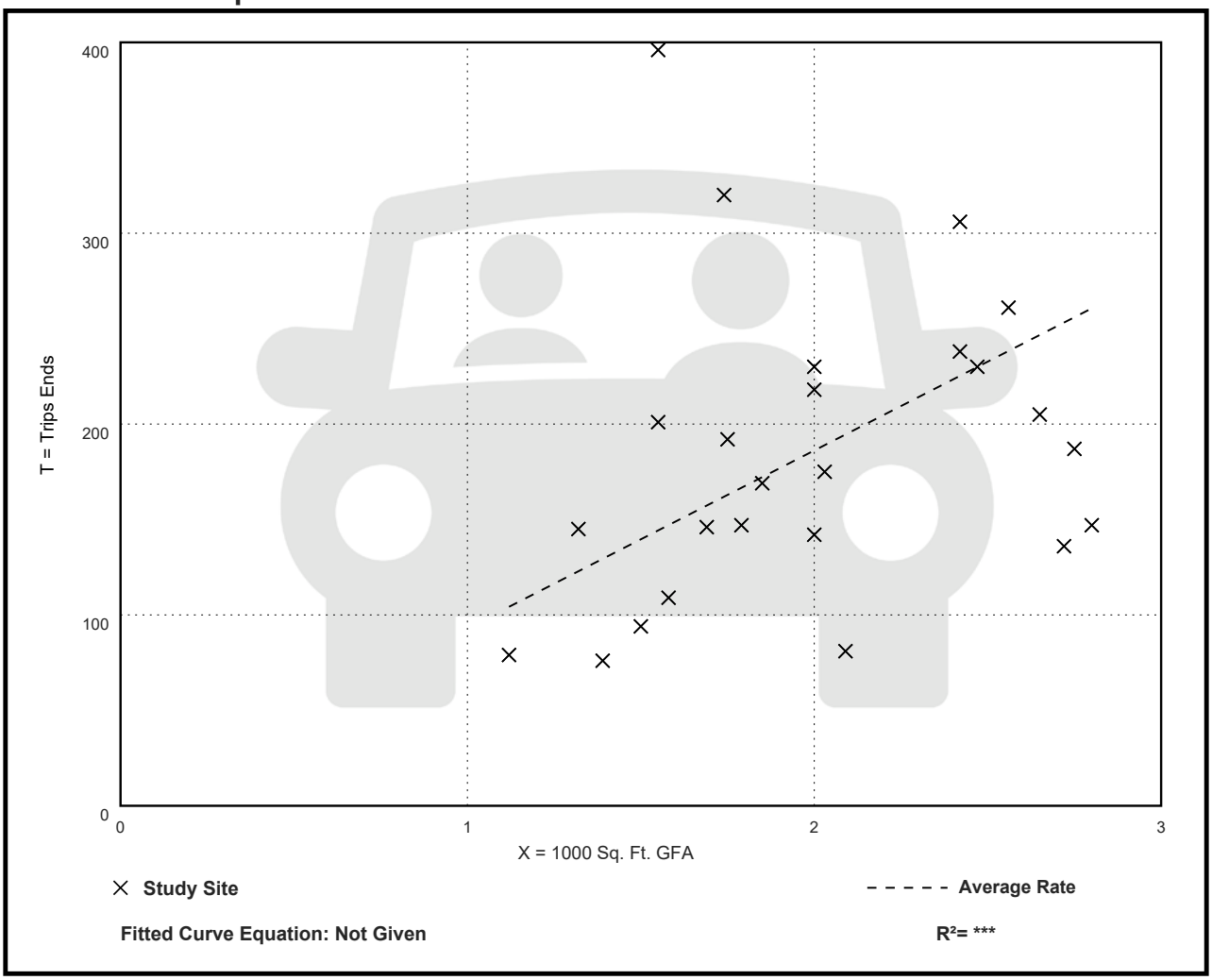
Coffee/Donut Shop without Drive-Through Window (936)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 25
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
93.08	38.76 - 255.48	42.71

Data Plot and Equation



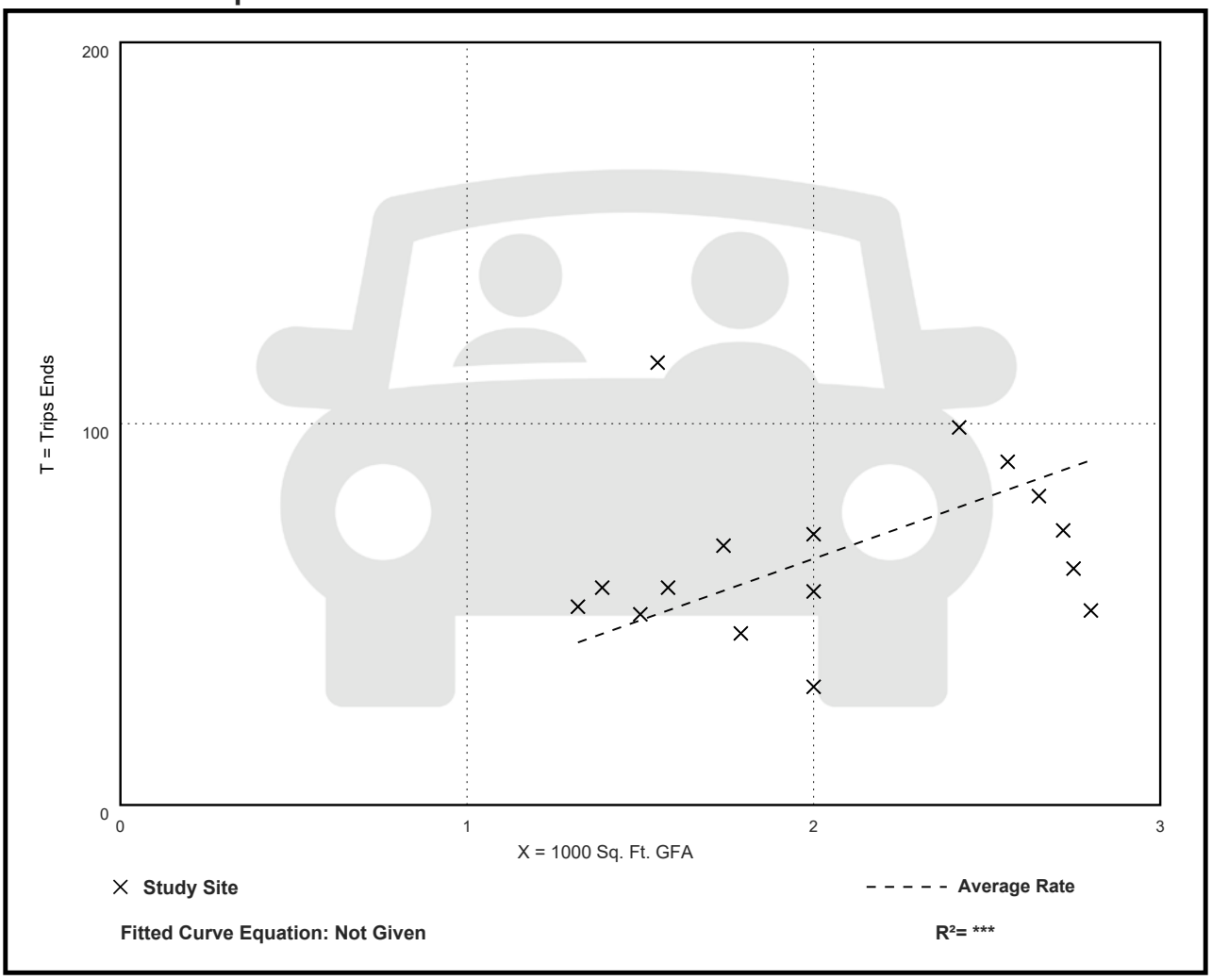
Coffee/Donut Shop without Drive-Through Window (936)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 16
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
32.29	15.50 - 74.84	12.64

Data Plot and Equation



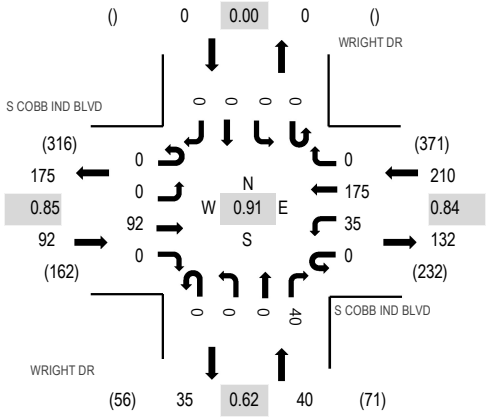
D

Raw Data

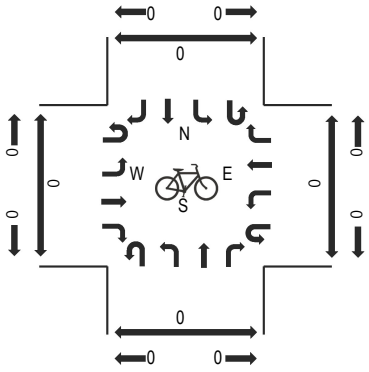
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 WRIGHT DR & S COBB IND BLVD AM
Date: Tuesday, March 14, 2023
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

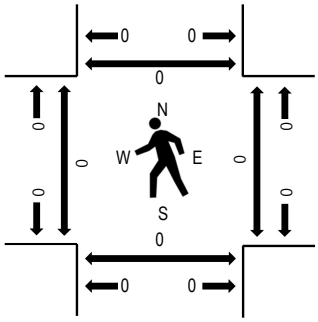
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S COBB IND BLVD Eastbound				S COBB IND BLVD Westbound				WRIGHT DR Northbound				WRIGHT DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	18	0	0	5	43	0	0	0	0	21	0	0	0	0	87	326	0	0	0	0
7:15 AM	0	0	9	0	0	9	37	0	0	0	0	5	0	0	0	0	60	331	0	0	0	0
7:30 AM	0	0	23	0	0	11	38	0	0	0	0	13	0	0	0	0	85	342	0	0	0	0
7:45 AM	0	0	17	0	0	12	52	0	0	0	0	13	0	0	0	0	94	319	0	0	0	0
8:00 AM	0	0	28	0	0	8	49	0	0	0	0	7	0	0	0	0	92	278	0	0	0	0
8:15 AM	0	0	24	0	0	4	36	0	0	0	0	7	0	0	0	0	71		0	0	0	0
8:30 AM	0	0	24	0	0	4	30	0	0	0	0	4	0	0	0	0	62		0	0	0	0
8:45 AM	0	0	18	1	0	2	31	0	0	0	0	1	0	0	0	0	53		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	12
Lights	0	0	77	0	0	35	161	0	0	0	0	38	0	0	0	0	311
Mediums	0	0	9	0	0	0	8	0	0	0	0	2	0	0	0	0	19
Total	0	0	92	0	0	35	175	0	0	0	0	40	0	0	0	0	342

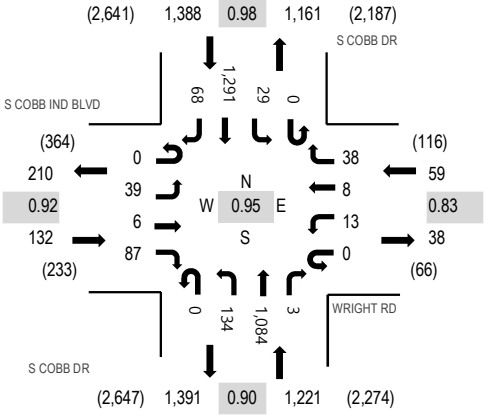
Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %			16.3%				6.7%				5.0%				0.0%		9.1%
Heavy Vehicle %	0.0%	0.0%	16.3%	0.0%	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%	0.0%	0.0%	0.0%	9.1%
Peak Hour Factor			0.85				0.84				0.62				0.00		0.91
Peak Hour Factor	0.00	0.00	0.84	0.25	0.00	0.83	0.85	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.91

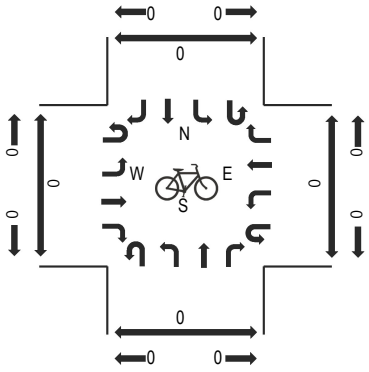
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 S COBB DR & WRIGHT RD AM
Date: Tuesday, March 14, 2023
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

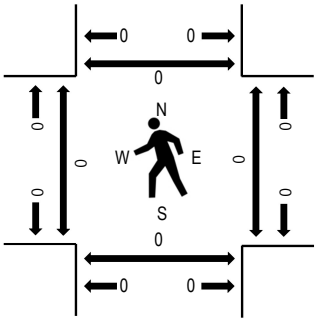
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S COBB IND BLVD Eastbound				WRIGHT RD Westbound				S COBB DR Northbound				S COBB DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	16	1	23	0	1	0	11	0	28	157	2	0	6	246	16	507	2,563	0	0	0	0
7:15 AM	0	3	0	11	0	1	1	12	0	30	231	0	0	3	315	11	618	2,745	0	0	0	0
7:30 AM	0	10	2	24	0	4	2	9	0	34	262	1	0	4	337	14	703	2,800	0	0	0	0
7:45 AM	0	5	1	24	0	4	4	9	0	43	300	1	0	10	314	20	735	2,782	0	0	0	0
8:00 AM	0	9	3	22	0	3	0	8	0	32	264	0	0	7	320	21	689	2,701	0	0	0	0
8:15 AM	0	15	0	17	0	2	2	12	0	25	258	1	0	8	320	13	673		0	0	0	0
8:30 AM	0	5	1	20	0	2	3	14	1	22	293	1	0	7	306	10	685		1	0	0	0
8:45 AM	0	9	1	11	0	5	0	7	0	19	268	1	0	5	314	14	654		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	5	0	0	0	0	0	6	18	0	0	0	8	1	39
Lights	0	37	6	72	0	13	8	36	0	122	1,057	3	0	29	1,276	66	2,725
Mediums	0	1	0	10	0	0	0	2	0	6	9	0	0	0	7	1	36
Total	0	39	6	87	0	13	8	38	0	134	1,084	3	0	29	1,291	68	2,800

Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %		12.9%				3.4%				3.2%				1.2%			2.7%
Heavy Vehicle %	0.0%	5.1%	0.0%	17.2%	0.0%	0.0%	0.0%	5.3%	0.0%	9.0%	2.5%	0.0%	0.0%	0.0%	1.2%	2.9%	2.7%
Peak Hour Factor		0.92				0.83				0.90				0.98			0.95
Peak Hour Factor	0.00	0.65	0.50	0.91	0.00	0.81	0.56	0.77	0.25	0.81	0.93	0.50	0.00	0.80	0.96	0.81	0.95

ALL TRAFFIC DATA SERVICES
(303) 216-2439
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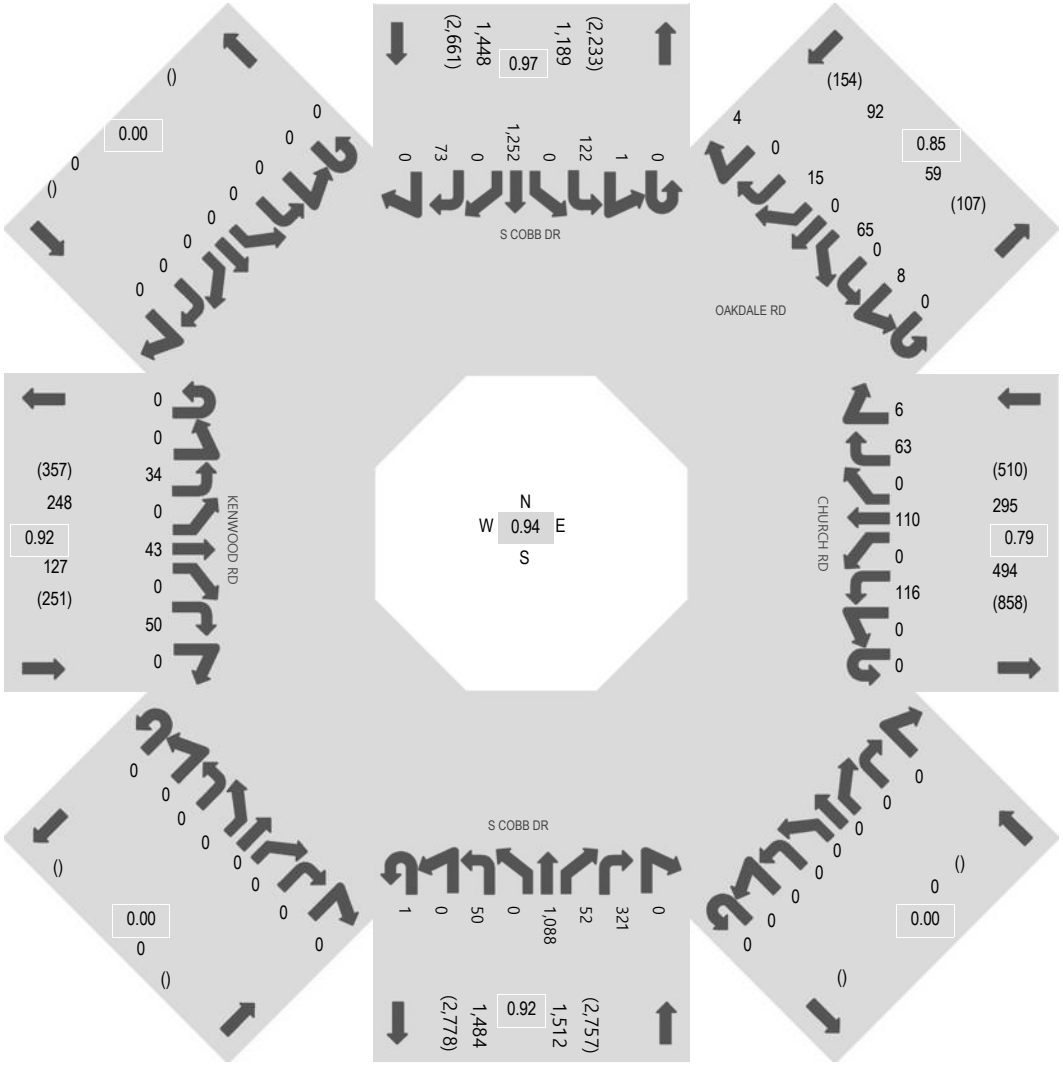
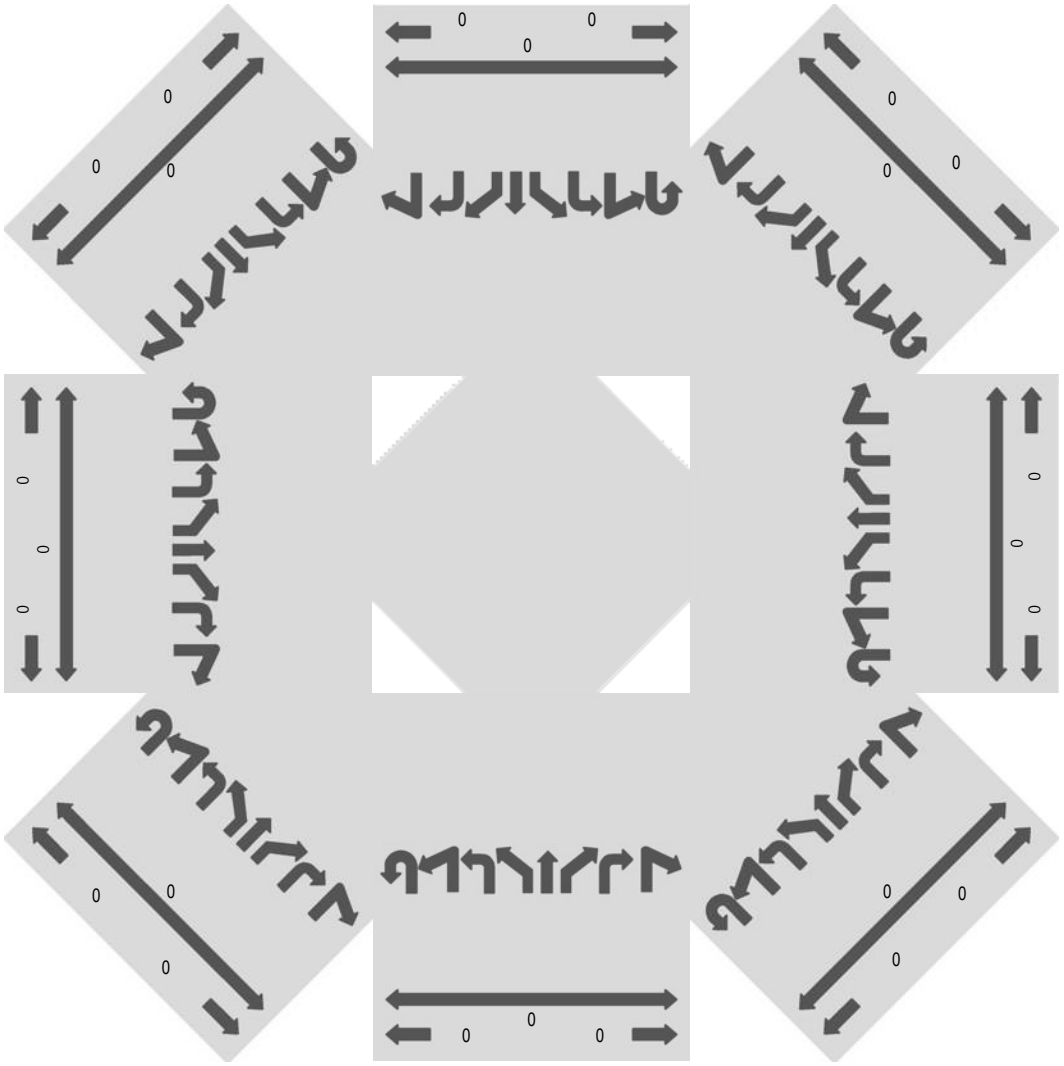
Location: 3 S COBB DR & CHURCH RD AM
Date: Tuesday, March 14, 2023
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - Motorized Vehicles

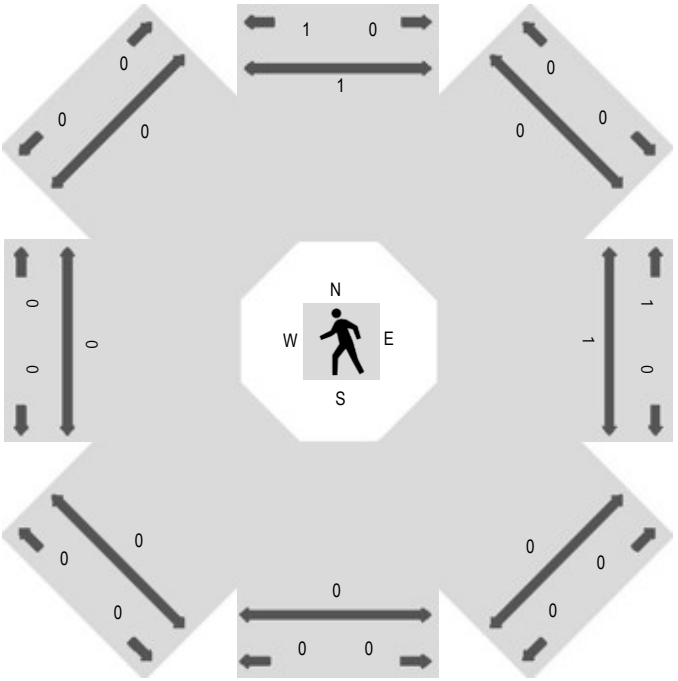


Note: Total study counts contained in parentheses.

Peak Hour - Bicycles



Peak Hour - Pedestrians



Traffic Counts - Motorized Vehicles

Interval Start Time	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
7:00 AM	0	0	30	0	6	0	14	2	0	0	0	0	0	0	0	0	0	0	6	0	159	7	46	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	31	0	17	0	16	1	0	0	0	0	0	0	0	0	0	0	5	0	227	11	58	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	29	0	46	0	18	2	0	0	0	0	0	0	0	0	0	0	15	0	261	8	79	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	33	0	32	0	21	3	0	0	0	0	0	0	0	0	1	0	12	0	304	14	88	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	24	0	13	0	12	1	0	0	0	0	0	0	0	0	0	0	9	0	264	15	81	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	30	0	19	0	12	0	0	0	0	0	0	0	0	0	0	0	14	0	259	15	73	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	35	0	5	0	10	2	0	0	0	0	0	0	0	0	0	0	12	0	308	7	67	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	30	0	3	0	12	1	0	0	0	0	0	0	0	0	0	0	8	0	252	15	57	0	0	0	0	0	0	0	0	0
Count Total	0	0	242	0	141	0	115	12	0	0	0	0	0	0	0	0	1	0	81	0	2,034	92	549	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	116	0	110	0	63	6	0	0	0	0	0	0	0	0	1	0	50	0	1,088	52	321	0	0	0	0	0	0	0	0	0

Interval Start Time	Eastbound								Southeastbound								Southbound								Southwestbound								Total	Rolling Hour
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR		
7:00 AM	0	0	9	0	4	0	18	0	0	0	0	0	0	0	0	0	0	2	25	0	213	0	2	0	0	2	0	13	0	0	0	1	559	3,116
7:15 AM	0	0	13	0	12	0	10	0	0	0	0	0	0	0	0	0	0	0	33	0	282	0	5	0	0	2	0	14	0	1	0	0	738	3,402
7:30 AM	0	0	12	0	14	0	13	0	0	0	0	0	0	0	0	0	0	0	32	0	326	0	14	0	0	2	0	18	0	7	0	0	896	3,474
7:45 AM	0	0	9	0	19	0	11	0	0	0	0	0	0	0	0	0	0	1	35	0	287	0	31	0	0	1	0	15	0	6	0	0	923	3,404
8:00 AM	0	0	7	0	7	0	15	0	0	0	0	0	0	0	0	0	0	0	39	0	320	0	15	0	0	2	0	17	0	2	0	2	845	3,217
8:15 AM	0	0	6	0	3	0	11	0	0	0	0	0	0	0	0	0	0	0	16	0	319	0	13	0	0	3	0	15	0	0	0	2	810	
8:30 AM	0	0	11	0	3	0	21	0	0	0	0	0	0	0	0	0	0	0	18	0	291	0	18	0	0	3	0	11	0	3	0	1	826	
8:45 AM	0	0	10	0	5	0	8	0	0	0	0	0	0	0	0	0	0	0	28	0	279	0	17	0	0	1	0	8	0	1	0	1	736	
Count Total	0	0	77	0	67	0	107	0	0	0	0	0	0	0	0	0	0	3	226	0	2,317	0	115	0	0	16	0	111	0	20	0	7	6,333	
Peak Hour	0	0	34	0	43	0	50	0	0	0	0	0	0	0	0	0	0	1	122	0	1,252	0	73	0	0	8	0	65	0	15	0	4	3,474	

Peak Rolling Hour Flow Rates

Vehicle Type	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
Articulated Trucks	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	5	0	0	0	0	0	0	0	0	0
Lights	0	0	108	0	109	0	59	4	0	0	0	0	0	0	0	0	1	0	49	0	1,056	52	304	0	0	0	0	0	0	0	0	0
Mediums	0	0	5	0	1	0	4	2	0	0	0	0	0	0	0	0	0	0	1	0	14	0	12	0	0	0	0	0	0	0	0	0
Count Total	0	0	116	0	110	0	63	6	0	0	0	0	0	0	0	0	1	0	50	0	1,088	52	321	0	0	0	0	0	0	0	0	0

Vehicle Type	Eastbound								Southeastbound								Southbound								Southwestbound								
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	Total
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	39
Lights	0	0	33	0	43	0	50	0	0	0	0	0	0	0	0	0	0	1	115	0	1,228	0	72	0	0	8	0	65	0	15	0	4	3,376
Mediums	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	11	0	1	0	0	0	0	0	0	0	0	0	59
Count Total	0	0	34	0	43	0	50	0	0	0	0	0	0	0	0	0	0	1	122	0	1,252	0	73	0	0	8	0	65	0	15	0	4	3,474

Heavy Vehicle Percentage and Peak Hour Factor

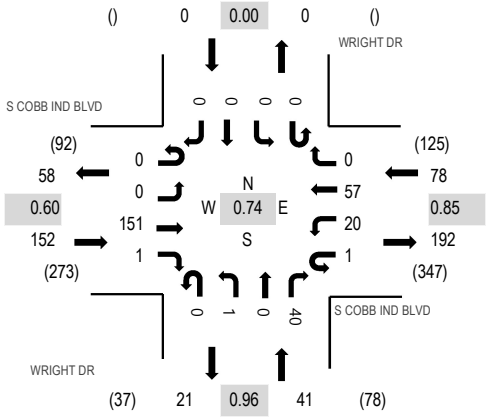
	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
HV%				5.1%								0.0%								3.3%								0.0%				
HV%	0.0%	0.0%	6.9%	0.0%	0.9%	0.0%	6.3%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	2.9%	0.0%	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHF				0.79								0.00								0.92								0.00				
PHF	0.00	0.00	0.93	0.00	0.60	0.00	0.82	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.83	0.00	0.92	0.87	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Eastbound								Southeastbound								Southbound								Southwestbound								
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	Total
HV%				0.8%								0.0%								2.2%								0.0%					2.8%
HV%	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.7%	0.0%	1.9%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%
PHF				0.92								0.00								0.97								0.85					0.94
PHF	0.00	0.00	0.83	0.00	0.68	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.89	0.00	0.96	0.00	0.62	0.00	0.00	0.75	0.00	0.90	0.00	0.57	0.00	0.75	0.94

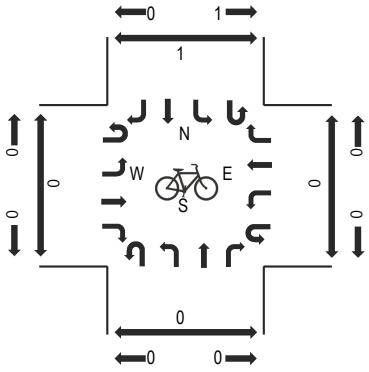
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 WRIGHT DR & S COBB IND BLVD PM
Date: Tuesday, March 14, 2023
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

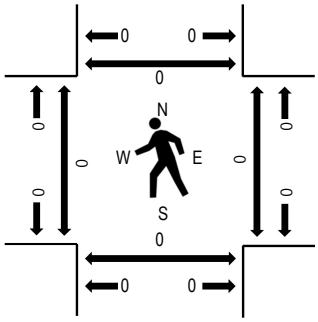
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S COBB IND BLVD Eastbound				S COBB IND BLVD Westbound				WRIGHT DR Northbound				WRIGHT DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	63	0	1	3	17	0	0	0	0	7	0	0	0	0	91	271	0	0	0	0
4:15 PM	0	0	42	0	0	6	11	0	0	0	0	9	0	0	0	0	68	252	0	0	0	0
4:30 PM	0	0	27	1	0	6	17	0	0	1	0	12	0	0	0	0	64	238	0	0	0	0
4:45 PM	0	0	19	0	0	5	12	0	0	0	0	12	0	0	0	0	48	218	0	0	0	0
5:00 PM	0	0	46	1	0	5	8	0	0	0	0	12	0	0	0	0	72	205	0	0	0	0
5:15 PM	1	0	29	1	0	5	5	0	0	0	0	13	0	0	0	0	54		0	0	0	0
5:30 PM	0	0	22	0	0	2	11	0	0	0	0	9	0	0	0	0	44		0	0	0	0
5:45 PM	0	0	21	0	0	2	9	0	0	0	0	3	0	0	0	0	35		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	3	0	0	0	6	0	0	0	0	0	0	0	0	0	9
Lights	0	0	147	1	1	19	50	0	0	1	0	40	0	0	0	0	259
Mediums	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3
Total	0	0	151	1	1	20	57	0	0	1	0	40	0	0	0	0	271

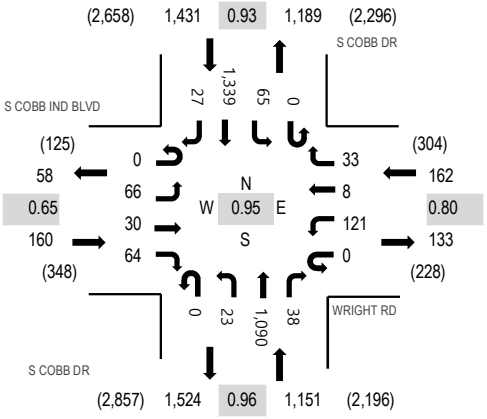
Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %			2.6%				10.3%				0.0%				0.0%		4.4%
Heavy Vehicle %	0.0%	0.0%	2.6%	0.0%	0.0%	5.0%	12.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.4%
Peak Hour Factor			0.60				0.85				0.96				0.00		0.74
Peak Hour Factor	0.25	0.00	0.60	0.75	0.25	0.92	0.84	0.00	0.00	0.25	0.00	0.94	0.00	0.00	0.00	0.00	0.74

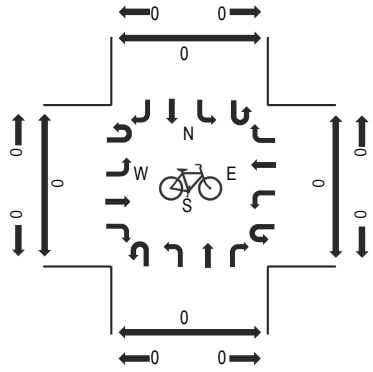
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 S COBB DR & WRIGHT RD PM
Date: Tuesday, March 14, 2023
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

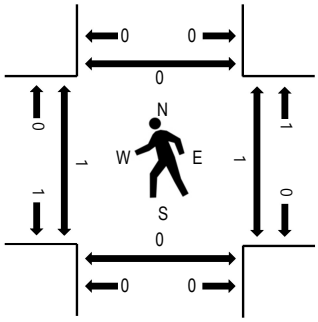
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S COBB IND BLVD Eastbound				WRIGHT RD Westbound				S COBB DR Northbound				S COBB DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	38	10	28	0	25	0	8	0	10	257	5	0	8	260	8	657	2,633	0	0	0	0
4:15 PM	0	21	7	19	0	27	1	3	0	7	220	11	1	15	286	9	627	2,741	0	0	0	0
4:30 PM	0	17	8	14	0	34	1	7	0	9	234	6	0	14	295	15	654	2,855	0	0	0	0
4:45 PM	0	11	6	18	0	25	0	9	0	11	270	13	0	12	313	7	695	2,904	0	1	0	0
5:00 PM	0	24	11	17	0	37	1	13	0	5	263	10	0	11	367	6	765	2,873	0	0	0	0
5:15 PM	0	16	9	17	0	29	1	7	0	4	288	8	0	34	322	6	741		0	0	0	0
5:30 PM	0	15	4	12	0	30	6	4	0	3	269	7	0	8	337	8	703		1	0	0	0
5:45 PM	0	9	2	15	0	25	1	10	0	2	281	3	1	6	305	4	664		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0	0	3	6	0	0	0	28	0	38
Lights	0	65	30	64	0	121	8	33	0	20	1,078	38	0	65	1,298	26	2,846
Mediums	0	0	0	0	0	0	0	0	0	0	6	0	0	0	13	1	20
Total	0	66	30	64	0	121	8	33	0	23	1,090	38	0	65	1,339	27	2,904

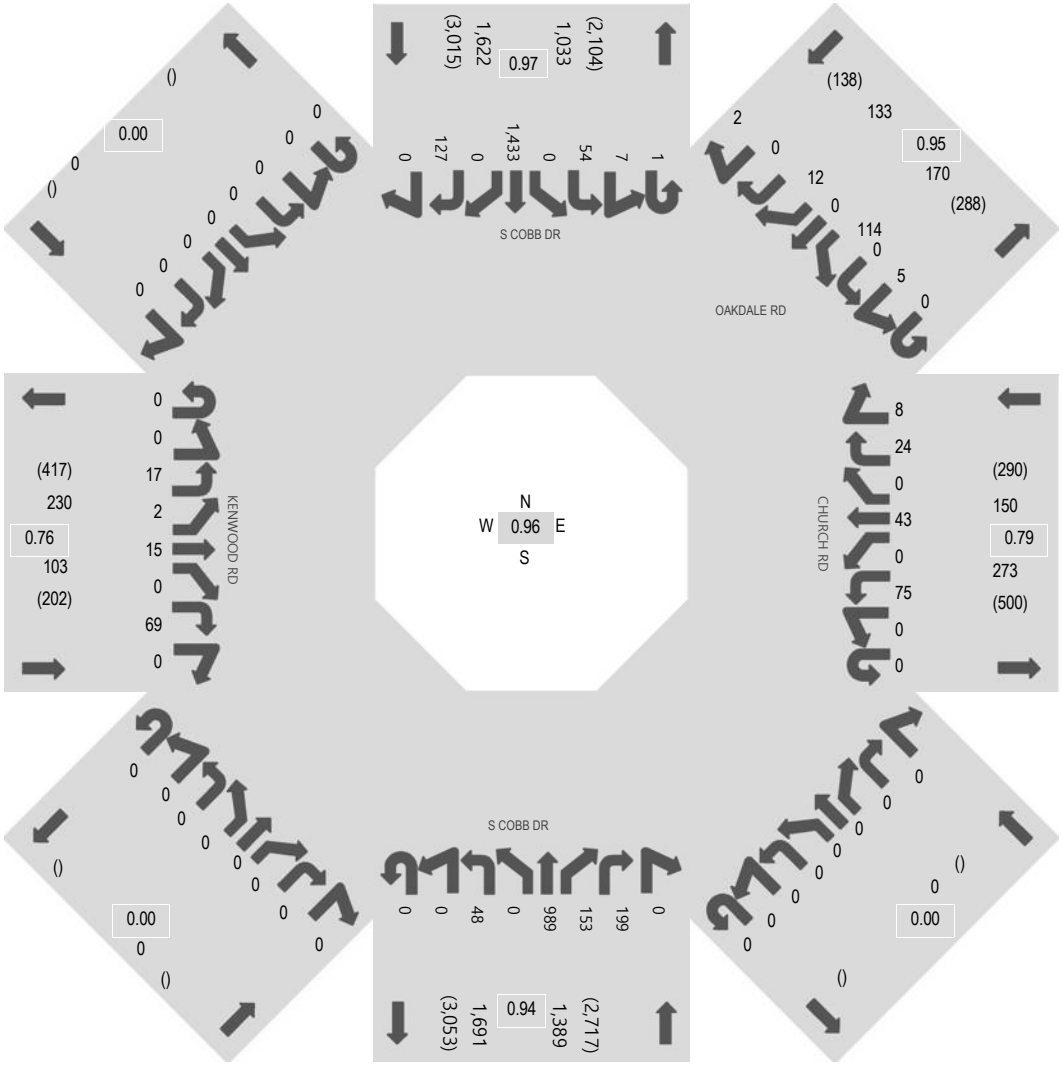
Heavy Vehicle Percentage and Peak Hour Factor

	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Heavy Vehicle %		0.6%				0.0%				1.3%				2.9%			2.0%
Heavy Vehicle %	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.0%	1.1%	0.0%	0.0%	0.0%	3.1%	3.7%	2.0%
Peak Hour Factor		0.65				0.80				0.96				0.93			0.95
Peak Hour Factor	0.00	0.57	0.77	0.71	0.00	0.84	0.38	0.69	0.00	0.84	0.96	0.77	0.25	0.52	0.91	0.65	0.95

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

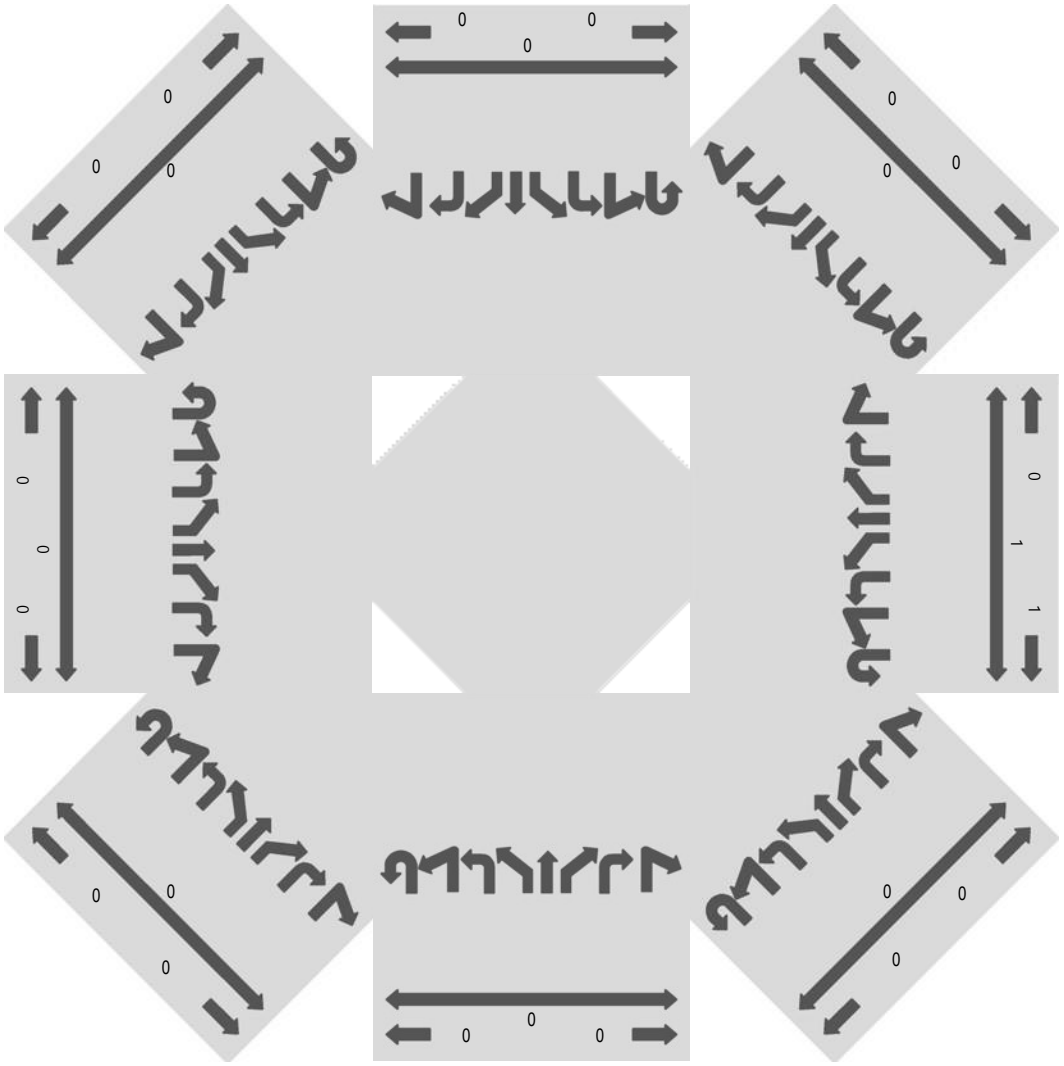
Location: 3 S COBB DR & CHURCH RD PM
Date: Tuesday, March 14, 2023
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - Motorized Vehicles

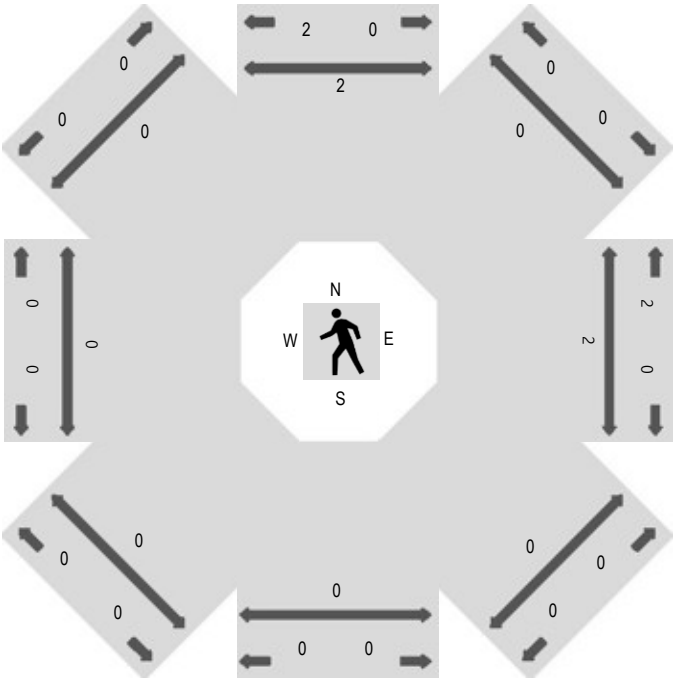


Note: Total study counts contained in parentheses.

Peak Hour - Bicycles



Peak Hour - Pedestrians



Traffic Counts - Motorized Vehicles

Interval Start Time	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
4:00 PM	0	0	13	0	11	0	11	2	0	0	0	0	0	0	0	0	0	0	8	0	281	19	45	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	13	0	12	0	13	0	0	0	0	0	0	0	0	0	0	0	6	0	264	29	44	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	18	0	5	0	7	1	0	0	0	0	0	0	0	0	0	0	11	0	245	29	39	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	25	0	5	0	3	1	0	0	0	0	0	0	0	0	0	0	10	0	224	30	44	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	25	0	16	0	7	2	0	0	0	0	0	0	0	0	0	0	11	0	253	36	51	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	10	0	9	0	4	1	0	0	0	0	0	0	0	0	0	0	12	0	268	39	50	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	27	0	12	0	9	2	0	0	0	0	0	0	0	0	0	0	11	0	224	36	50	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	13	0	6	0	4	3	0	0	0	0	0	0	0	0	0	0	14	0	244	42	48	0	0	0	0	0	0	0	0	0
Count Total	0	0	144	0	76	0	58	12	0	0	0	0	0	0	0	0	0	0	83	0	2,003	260	371	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	75	0	43	0	24	8	0	0	0	0	0	0	0	0	0	0	48	0	989	153	199	0	0	0	0	0	0	0	0	0

Interval Start Time	Eastbound								Southeastbound								Southbound								Southwestbound								Total	Rolling Hour
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR		
4:00 PM	0	0	11	1	5	0	19	0	0	0	0	0	0	0	0	0	0	2	8	0	275	0	35	0	0	0	0	1	0	1	0	0	748	2,965
4:15 PM	0	0	5	1	3	0	16	0	0	0	0	0	0	0	0	0	0	1	12	0	272	0	13	0	0	0	0	0	0	2	0	0	706	3,105
4:30 PM	0	0	5	0	1	0	15	0	0	0	0	0	0	0	0	0	0	1	8	0	330	0	32	0	0	0	0	0	0	0	0	0	747	3,269
4:45 PM	0	0	2	0	1	0	14	0	0	0	0	0	0	0	0	0	0	1	17	0	351	0	35	0	0	0	0	0	0	1	0	0	764	3,359
5:00 PM	0	0	5	0	4	0	18	0	0	0	0	0	0	0	0	0	1	4	15	0	375	0	34	0	0	0	0	27	0	4	0	0	888	3,397
5:15 PM	0	0	4	1	3	0	16	0	0	0	0	0	0	0	0	0	0	1	14	0	370	0	34	0	0	2	0	29	0	2	0	1	870	
5:30 PM	0	0	3	0	2	0	13	0	0	0	0	0	0	0	0	0	0	1	12	0	362	0	38	0	0	3	0	29	0	2	0	1	837	
5:45 PM	0	0	5	1	6	0	22	0	0	0	0	0	0	0	0	0	0	1	13	0	326	0	21	0	0	0	0	29	0	4	0	0	802	
Count Total	0	0	40	4	25	0	133	0	0	0	0	0	0	0	0	0	1	12	99	0	2,661	0	242	0	0	5	0	115	0	16	0	2	6,362	
Peak Hour	0	0	17	2	15	0	69	0	0	0	0	0	0	0	0	0	1	7	54	0	1,433	0	127	0	0	5	0	114	0	12	0	2	3,397	

Peak Rolling Hour Flow Rates

Vehicle Type	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
Articulated Trucks	0	0	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0
Lights	0	0	70	0	42	0	24	8	0	0	0	0	0	0	0	0	0	0	48	0	982	151	198	0	0	0	0	0	0	0	0	0
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0
Count Total	0	0	75	0	43	0	24	8	0	0	0	0	0	0	0	0	0	0	48	0	989	153	199	0	0	0	0	0	0	0	0	0

Vehicle Type	Eastbound								Southeastbound								Southbound								Southwestbound								Total
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	0	35
Lights	0	0	16	2	15	0	69	0	0	0	0	0	0	0	0	0	1	7	54	0	1,404	0	126	0	0	5	0	114	0	12	0	2	3,350
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	0	12
Count Total	0	0	17	2	15	0	69	0	0	0	0	0	0	0	0	0	1	7	54	0	1,433	0	127	0	0	5	0	114	0	12	0	2	3,397

Heavy Vehicle Percentage and Peak Hour Factor

	Westbound								Northwestbound								Northbound								Northeastbound							
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR
HV%				4.0%								0.0%								0.7%								0.0%				
HV%	0.0%	0.0%	6.7%	0.0%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	1.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHF				0.79								0.00								0.94								0.00				
PHF	0.00	0.00	0.81	0.00	0.67	0.00	0.65	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.00	0.90	0.91	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Eastbound								Southeastbound								Southbound								Southwestbound								
	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	U	HL	L	BL	T	BR	R	HR	Total
HV%				1.0%								0.0%								1.8%								0.0%					1.4%
HV%	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
PHF				0.76								0.00								0.97								0.95					0.96
PHF	0.00	0.00	0.52	0.50	0.63	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.44	0.85	0.00	0.97	0.00	0.93	0.00	0.00	0.42	0.00	0.98	0.00	0.75	0.00	0.50	0.96

All Traffic Data Services

www.alltrafficdata.net

Site Code: 1
Station ID: 1
S COBB DR SOUTH OF WRIGHT RD

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start Time	14-Mar-23 Tue	NB	SB							Total
12:00 AM		44	35							79
12:15		47	48							95
12:30		36	38							74
12:45		35	31							66
01:00		17	25							42
01:15		27	28							55
01:30		25	18							43
01:45		25	20							45
02:00		24	23							47
02:15		23	19							42
02:30		22	31							53
02:45		30	26							56
03:00		17	18							35
03:15		25	22							47
03:30		13	24							37
03:45		17	24							41
04:00		20	33							53
04:15		26	35							61
04:30		33	59							92
04:45		41	66							107
05:00		48	79							127
05:15		74	100							174
05:30		88	144							232
05:45		97	121							218
06:00		108	192							300
06:15		130	243							373
06:30		160	265							425
06:45		222	223							445
07:00		184	260							444
07:15		254	317							571
07:30		292	**337**							629
07:45		**322**	**316**							**638**
08:00		**282**	**331**							**613**
08:15		**270**	**319**							**589**
08:30		**324**	314							**638**
08:45		276	314							590
09:00		260	265							525
09:15		241	274							515
09:30		208	250							458
09:45		244	234							478
10:00		189	192							381
10:15		237	220							457
10:30		173	219							392
10:45		219	227							446
11:00		242	246							488
11:15		223	271							494
11:30		234	224							458
11:45		241	259							500
Total		6389	7379							13768
Percent		46.4%	53.6%							
Peak	-	07:45	07:30	-	-	-	-	-	-	07:45
Vol.	-	1198	1303	-	-	-	-	-	-	2478
P.H.F.		0.924	0.967							0.971

All Traffic Data Services

www.alltrafficdata.net

Site Code: 1
Station ID: 1
S COBB DR SOUTH OF WRIGHT RD

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start Time	14-Mar-23 Tue	NB	SB							Total
12:00 PM		233	278							511
12:15		251	285							536
12:30		243	295							538
12:45		239	307							546
01:00		226	254							480
01:15		239	299							538
01:30		230	287							517
01:45		255	251							506
02:00		260	278							538
02:15		264	289							553
02:30		284	348							632
02:45		260	335							595
03:00		**287**	396							683
03:15		**294**	365							659
03:30		**295**	271							566
03:45		**342**	230							572
04:00		252	289							541
04:15		192	199							391
04:30		176	172							348
04:45		201	181							382
05:00		213	116							329
05:15		268	124							392
05:30		244	117							361
05:45		272	161							433
06:00		345	140							485
06:15		320	113							433
06:30		244	150							394
06:45		220	183							403
07:00		280	289							**569**
07:15		322	**408**							**730**
07:30		260	**425**							**685**
07:45		255	**398**							**653**
08:00		178	**365**							543
08:15		194	354							548
08:30		183	348							531
08:45		189	269							458
09:00		140	295							435
09:15		167	263							430
09:30		128	194							322
09:45		113	138							251
10:00		130	140							270
10:15		92	113							205
10:30		88	95							183
10:45		78	106							184
11:00		59	61							120
11:15		72	76							148
11:30		58	73							131
11:45		67	71							138
Total		10202	11194							21396
Percent		47.7%	52.3%							
Peak	-	15:00	19:15	-	-	-	-	-	-	19:00
Vol.	-	1218	1596	-	-	-	-	-	-	2637
P.H.F.		0.890	0.939							0.903
Grand Total		16591	18573							35164
Percent		47.2%	52.8%							

ADT ADT 35,164 AADT 35,164

E

Existing Conditions Synchro Reports

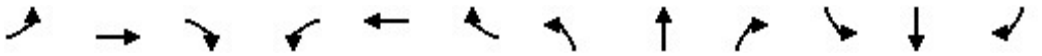
Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	0	35	175	0	40
Future Vol, veh/h	92	0	35	175	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	16	16	6	6	10	10
Mvmt Flow	108	0	41	206	0	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	108	0	396	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	-	-	4.16	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.254	-	3.59	3.39
Pot Cap-1 Maneuver	-	0	1458	-	594	925
Stage 1	-	0	-	-	897	-
Stage 2	-	0	-	-	743	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1458	-	575	925
Mov Cap-2 Maneuver	-	-	-	-	575	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	925	-	1458	-
HCM Lane V/C Ratio	0.051	-	0.028	-
HCM Control Delay (s)	9.1	-	7.5	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	6	87	13	8	38	134	1084	3	29	1291	68
Future Volume (veh/h)	39	6	87	13	8	38	134	1084	3	29	1291	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	41	6	92	14	8	40	141	1141	0	31	1359	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	14	14	2	2	2	3	3	3	1	1	1
Cap, veh/h	138	15	131	113	25	124	343	2816		417	2404	127
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.05	0.80	0.00	0.69	0.69	0.69
Sat Flow, veh/h	774	168	1434	1297	271	1355	1767	3526	1572	497	3460	183
Grp Volume(v), veh/h	47	0	92	14	0	48	141	1141	0	31	702	729
Grp Sat Flow(s),veh/h/ln	942	0	1434	1297	0	1626	1767	1763	1572	497	1791	1852
Q Serve(g_s), s	3.2	0.0	6.2	1.1	0.0	2.8	2.0	9.6	0.0	2.0	19.7	19.8
Cycle Q Clear(g_c), s	5.9	0.0	6.2	7.0	0.0	2.8	2.0	9.6	0.0	2.0	19.7	19.8
Prop In Lane	0.87		1.00	1.00		0.83	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	153	0	131	113	0	148	343	2816		417	1244	1287
V/C Ratio(X)	0.31	0.00	0.70	0.12	0.00	0.32	0.41	0.41		0.07	0.56	0.57
Avail Cap(c_a), veh/h	270	0	262	232	0	298	481	2816		417	1244	1287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	44.1	47.4	0.0	42.6	6.9	3.0	0.0	5.0	7.7	7.7
Incr Delay (d2), s/veh	1.1	0.0	6.7	0.5	0.0	1.3	0.8	0.4	0.0	0.3	1.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.5	0.4	0.0	1.2	0.6	1.9	0.0	0.2	6.3	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	0.0	50.9	47.9	0.0	43.8	7.7	3.4	0.0	5.3	9.5	9.5
LnGrp LOS	D	A	D	D	A	D	A	A		A	A	A
Approach Vol, veh/h		139			62			1282			1462	
Approach Delay, s/veh		49.2			44.7			3.9			9.4	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		85.4		14.6	10.4	75.0		14.6				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		70.7		18.3	12.7	52.5		18.3				
Max Q Clear Time (g_c+I1), s		11.6		8.2	4.0	21.8		9.0				
Green Ext Time (p_c), s		10.0		0.3	0.2	11.8		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			9.6									
HCM 6th LOS			A									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	34	43	50	116	110	63	6	51	1088	52	321	1
Future Volume (vph)	34	43	50	116	110	63	6	51	1088	52	321	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00		1.00	1.00			1.00	0.91		1.00	
Frt		0.95		1.00	0.94			1.00	0.99		0.85	
Flt Protected		0.99		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		1758		1687	1673			1752	5001		1568	
Flt Permitted		0.67		0.59	1.00			0.15	1.00		1.00	
Satd. Flow (perm)		1200		1041	1673			278	5001		1568	
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)	37	47	54	126	120	68	7	55	1183	57	349	1
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	0	106	0
Lane Group Flow (vph)	0	114	0	126	195	0	0	55	1240	0	243	0
Heavy Vehicles (%)	1%	1%	1%	7%	7%	7%	7%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA			pm+pt	NA		Perm	pm+pt
Protected Phases		4			8			5	2			1
Permitted Phases	4			8				2			2	6
Actuated Green, G (s)		16.1		16.1	16.1			53.6	47.9		47.9	
Effective Green, g (s)		16.1		16.1	16.1			53.6	47.9		47.9	
Actuated g/C Ratio		0.16		0.16	0.16			0.54	0.48		0.48	
Clearance Time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		193		167	269			233	2395		751	
v/s Ratio Prot					0.12			0.01	0.25			
v/s Ratio Perm		0.09		c0.12				0.11			0.16	
v/c Ratio		0.59		0.75	0.72			0.24	0.52		0.32	
Uniform Delay, d1		38.9		40.1	39.8			11.6	18.0		16.1	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		4.5		17.4	9.3			0.5	0.8		1.1	
Delay (s)		43.4		57.5	49.2			12.2	18.9		17.2	
Level of Service		D		E	D			B	B		B	
Approach Delay (s)		43.4			52.4				18.3			
Approach LOS		D			D				B			

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	122	1252	73	8	65	15	4
Future Volume (vph)	122	1252	73	8	65	15	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.5		
Lane Util. Factor	1.00	0.91	1.00		1.00		
Frt	1.00	1.00	0.85		0.97		
Flt Protected	0.95	1.00	1.00		0.96		
Satd. Flow (prot)	1752	5036	1568		1778		
Flt Permitted	0.15	1.00	1.00		0.96		
Satd. Flow (perm)	274	5036	1568		1778		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1361	79	9	71	16	4
RTOR Reduction (vph)	0	0	38	0	95	0	0
Lane Group Flow (vph)	134	1361	41	0	5	0	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	6		9	9		
Permitted Phases	6		6				
Actuated Green, G (s)	60.8	51.5	51.5		4.7		
Effective Green, g (s)	60.8	51.5	51.5		4.7		
Actuated g/C Ratio	0.61	0.52	0.52		0.05		
Clearance Time (s)	5.5	5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)	304	2593	807		83		
v/s Ratio Prot	c0.04	c0.27			c0.00		
v/s Ratio Perm	0.23		0.03				
v/c Ratio	0.44	0.52	0.05		0.06		
Uniform Delay, d1	10.2	16.1	12.1		45.5		
Progression Factor	0.74	0.50	1.00		1.00		
Incremental Delay, d2	0.9	0.2	0.0		0.3		
Delay (s)	8.4	8.3	12.1		45.8		
Level of Service	A	A	B		D		
Approach Delay (s)		8.5			45.8		
Approach LOS		A			D		

Intersection Summary

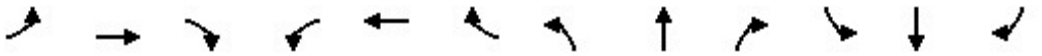
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	114	2	17	39	0	46
Future Vol, veh/h	114	2	17	39	0	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	150	3	22	51	0	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	153	0	247	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1428	-	741	894
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1428	-	729	894
Mov Cap-2 Maneuver	-	-	-	-	729	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	914	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	894	-	-	1428	-
HCM Lane V/C Ratio	0.068	-	-	0.016	-
HCM Control Delay (s)	9.3	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	30	64	121	8	33	23	1090	38	65	1339	25
Future Volume (veh/h)	66	30	64	121	8	33	23	1090	38	65	1339	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885
Adj Flow Rate, veh/h	69	32	67	127	8	35	24	1147	0	68	1409	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	1
Cap, veh/h	229	95	296	224	57	248	256	2498		347	2226	41
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.02	0.70	0.00	0.62	0.62	0.62
Sat Flow, veh/h	899	510	1585	1296	304	1328	1781	3554	1585	490	3570	66
Grp Volume(v), veh/h	101	0	67	127	0	43	24	1147	0	68	701	734
Grp Sat Flow(s),veh/h/ln	1409	0	1585	1296	0	1631	1781	1777	1585	490	1777	1859
Q Serve(g_s), s	4.8	0.0	3.6	9.6	0.0	2.2	0.5	14.2	0.0	7.1	24.5	24.6
Cycle Q Clear(g_c), s	7.0	0.0	3.6	16.6	0.0	2.2	0.5	14.2	0.0	13.3	24.5	24.6
Prop In Lane	0.68		1.00	1.00		0.81	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	324	0	296	224	0	305	256	2498		347	1108	1159
V/C Ratio(X)	0.31	0.00	0.23	0.57	0.00	0.14	0.09	0.46		0.20	0.63	0.63
Avail Cap(c_a), veh/h	351	0	325	247	0	334	311	2498		347	1108	1159
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	0.0	34.5	43.2	0.0	33.9	9.4	6.5	0.0	11.2	11.7	11.7
Incr Delay (d2), s/veh	0.5	0.0	0.4	2.5	0.0	0.2	0.2	0.6	0.0	1.3	2.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.4	3.2	0.0	0.9	0.1	4.2	0.0	0.8	8.8	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	0.0	34.9	45.7	0.0	34.2	9.5	7.1	0.0	12.4	14.4	14.3
LnGrp LOS	D	A	C	D	A	C	A	A		B	B	B
Approach Vol, veh/h		168			170			1171			1503	
Approach Delay, s/veh		36.0			42.8			7.2			14.3	
Approach LOS		D			D			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.8		24.2	7.9	67.9		24.2				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		68.5		20.5	5.5	57.5		20.5				
Max Q Clear Time (g_c+I1), s		16.2		9.0	2.5	26.6		18.6				
Green Ext Time (p_c), s		10.0		0.5	0.0	12.6		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		14.3
HCM 6th LOS		B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	14	1	10	61	87	42	23	6	44	969	141	195
Future Volume (vph)	14	1	10	61	87	42	23	6	44	969	141	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Lane Util. Factor			1.00		1.00	1.00			1.00	0.91		1.00
Frt			0.91		1.00	0.94			1.00	0.98		0.85
Flt Protected			0.99		0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)			1671		1770	1749			1770	4989		1583
Flt Permitted			0.93		0.68	1.00			0.12	1.00		1.00
Satd. Flow (perm)			1564		1261	1749			230	4989		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	15	1	11	64	92	44	24	6	46	1020	148	205
RTOR Reduction (vph)	0	0	57	0	0	0	0	0	0	0	0	64
Lane Group Flow (vph)	0	0	34	0	92	74	0	0	46	1168	0	141
Turn Type	Perm	Perm	NA		Perm	NA			pm+pt	NA		Perm
Protected Phases			4			8			5	2		
Permitted Phases	4	4			8				2			2
Actuated Green, G (s)			10.8		10.8	10.8			60.7	56.5		56.5
Effective Green, g (s)			10.8		10.8	10.8			60.7	56.5		56.5
Actuated g/C Ratio			0.11		0.11	0.11			0.61	0.56		0.56
Clearance Time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Vehicle Extension (s)			3.0		3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)			168		136	188			204	2818		894
v/s Ratio Prot						0.04			0.01	0.23		
v/s Ratio Perm			0.02		c0.07				0.13			0.09
v/c Ratio			0.20		0.68	0.39			0.23	0.41		0.16
Uniform Delay, d1			40.7		42.9	41.5			8.8	12.4		10.4
Progression Factor			1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2			0.6		12.5	1.4			0.6	0.5		0.4
Delay (s)			41.3		55.5	42.9			9.3	12.8		10.8
Level of Service			D		E	D			A	B		B
Approach Delay (s)			41.3			49.9				12.4		
Approach LOS			D			D				B		

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

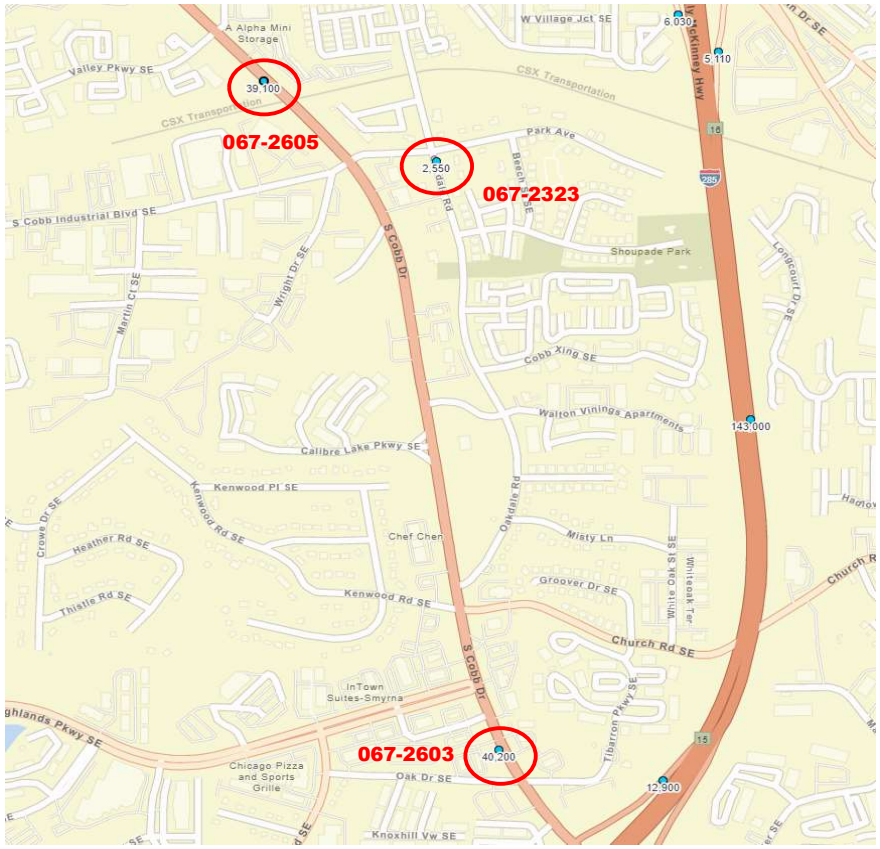
Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	7	58	1458	141	5	85	9	2
Future Volume (vph)	7	58	1458	141	5	85	9	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5		5.5		
Lane Util. Factor		1.00	0.91	1.00		1.00		
Frt		1.00	1.00	0.85		0.99		
Flt Protected		0.95	1.00	1.00		0.96		
Satd. Flow (prot)		1770	5085	1583		1758		
Flt Permitted		0.19	1.00	1.00		0.96		
Satd. Flow (perm)		357	5085	1583		1758		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	61	1535	148	5	89	9	2
RTOR Reduction (vph)	0	0	0	62	0	100	0	0
Lane Group Flow (vph)	0	68	1535	86	0	5	0	0
Turn Type	pm+pt	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	1	6		9	9		
Permitted Phases	6	6		6				
Actuated Green, G (s)		64.1	58.2	58.2		4.8		
Effective Green, g (s)		64.1	58.2	58.2		4.8		
Actuated g/C Ratio		0.64	0.58	0.58		0.05		
Clearance Time (s)		5.5	5.5	5.5		5.5		
Vehicle Extension (s)		3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		312	2959	921		84		
v/s Ratio Prot		c0.01	c0.30			c0.00		
v/s Ratio Perm		0.13		0.05				
v/c Ratio		0.22	0.52	0.09		0.06		
Uniform Delay, d1		7.3	12.5	9.2		45.4		
Progression Factor		0.75	0.61	0.16		1.00		
Incremental Delay, d2		0.3	0.1	0.0		0.3		
Delay (s)		5.8	7.7	1.6		45.7		
Level of Service		A	A	A		D		
Approach Delay (s)			7.1			45.7		
Approach LOS			A			D		

Intersection Summary

F

Historical Growth Rate

	TC# 067-2605 SR 280/S Cobb Dr N/O Cobb Industrial Blvd		TC# 067-2603 SR 280/S Cobb Dr S/O Highlands Pkwy		TC# 067-2323 Oakdale Rd E/O S Cobb Dr		
	Year	AADT	Year	AADT	Year	AADT	
	2010	28,975	2009	36,100	2010	2,075	
	2012	31,025	2011	51,100	2017	2,925	
	2014	36,775	2013	37,350	2019	3,200	
	2016	47,900	2019	44,625			
	2018	35,800					
	2020	39,425					
	2010	30827	2010	40600	2010	2077	
	2020	42413	2020	45006	2020	3369	
10-yr	10-20	3.1%	10-20	1.0%	10-20	4.7%	AVERAGE
					Weighted Avg	1.9%	



G

Future No-Build Conditions Synchro Reports

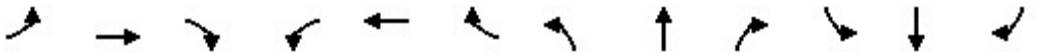
Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	0	36	180	0	41
Future Vol, veh/h	95	0	36	180	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	16	16	6	6	10	10
Mvmt Flow	112	0	42	212	0	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	112	0	408	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	4.16	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.254	-	3.59	3.39
Pot Cap-1 Maneuver	-	0	1453	-	584	920
Stage 1	-	0	-	-	893	-
Stage 2	-	0	-	-	737	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1453	-	565	920
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	920	-	1453	-
HCM Lane V/C Ratio	0.052	-	0.029	-
HCM Control Delay (s)	9.1	-	7.6	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	6	90	13	8	39	138	1130	3	30	1339	70
Future Volume (veh/h)	40	6	90	13	8	39	138	1130	3	30	1339	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	42	6	95	14	8	41	145	1189	0	32	1409	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	14	14	2	2	2	3	3	3	1	1	1
Cap, veh/h	125	14	129	97	24	123	326	2885		405	2531	133
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.82	0.00	0.73	0.73	0.73
Sat Flow, veh/h	763	154	1434	1294	265	1360	1767	3526	1572	475	3462	181
Grp Volume(v), veh/h	48	0	95	14	0	49	145	1189	0	32	727	756
Grp Sat Flow(s),veh/h/ln	917	0	1434	1294	0	1626	1767	1763	1572	475	1791	1853
Q Serve(g_s), s	4.0	0.0	7.7	1.3	0.0	3.4	2.3	11.1	0.0	2.4	22.1	22.2
Cycle Q Clear(g_c), s	7.4	0.0	7.7	8.7	0.0	3.4	2.3	11.1	0.0	3.0	22.1	22.2
Prop In Lane	0.87		1.00	1.00		0.84	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	139	0	129	97	0	146	326	2885		405	1309	1354
V/C Ratio(X)	0.35	0.00	0.74	0.14	0.00	0.33	0.45	0.41		0.08	0.56	0.56
Avail Cap(c_a), veh/h	222	0	224	182	0	253	481	2885		405	1309	1354
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	53.2	57.3	0.0	51.2	7.1	3.0	0.0	4.8	7.3	7.3
Incr Delay (d2), s/veh	1.5	0.0	7.8	0.7	0.0	1.3	1.0	0.4	0.0	0.4	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.1	0.4	0.0	1.5	0.9	2.4	0.0	0.2	7.2	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	0.0	61.0	58.0	0.0	52.6	8.0	3.4	0.0	5.2	9.0	9.0
LnGrp LOS	E	A	E	E	A	D	A	A		A	A	A
Approach Vol, veh/h		143			63			1334			1515	
Approach Delay, s/veh		59.3			53.8			3.9			8.9	
Approach LOS		E			D			A			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		103.7		16.3	10.5	93.2		16.3				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		90.3		18.7	15.5	69.3		18.7				
Max Q Clear Time (g_c+I1), s		13.1		9.7	4.3	24.2		10.7				
Green Ext Time (p_c), s		10.8		0.3	0.2	14.2		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		10.0
HCM 6th LOS		B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	36	44	52	120	113	67	12	53	1130	58	331	1
Future Volume (vph)	36	44	52	120	113	67	12	53	1130	58	331	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00		1.00	1.00			1.00	0.91		1.00	
Frt		0.95		1.00	0.94			1.00	0.99		0.85	
Flt Protected		0.99		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		1757		1687	1666			1752	4999		1568	
Flt Permitted		0.60		0.55	1.00			0.15	1.00		1.00	
Satd. Flow (perm)		1072		977	1666			270	4999		1568	
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)	39	48	57	130	123	73	13	58	1228	63	360	1
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	85	0
Lane Group Flow (vph)	0	123	0	130	209	0	0	58	1291	0	275	0
Heavy Vehicles (%)	1%	1%	1%	7%	7%	7%	7%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA			pm+pt	NA		Perm	pm+pt
Protected Phases		4			8			5	2			1
Permitted Phases	4			8				2			2	6
Actuated Green, G (s)		19.9		19.9	19.9			66.9	61.0		61.0	
Effective Green, g (s)		19.9		19.9	19.9			66.9	61.0		61.0	
Actuated g/C Ratio		0.17		0.17	0.17			0.56	0.51		0.51	
Clearance Time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		177		162	276			223	2541		797	
v/s Ratio Prot					0.13			0.01	0.26			
v/s Ratio Perm		0.11		c0.13				0.13			0.18	
v/c Ratio		0.70		0.80	0.76			0.26	0.51		0.34	
Uniform Delay, d1		47.2		48.2	47.7			12.8	19.6		17.6	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		11.3		24.1	11.3			0.6	0.7		1.2	
Delay (s)		58.5		72.3	59.0			13.4	20.3		18.8	
Level of Service		E		E	E			B	C		B	
Approach Delay (s)		58.5			64.1				19.7			
Approach LOS		E			E				B			

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	131	1295	76	19	84	15	4
Future Volume (vph)	131	1295	76	19	84	15	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.5		
Lane Util. Factor	1.00	0.91	1.00		1.00		
Frt	1.00	1.00	0.85		0.98		
Flt Protected	0.95	1.00	1.00		0.96		
Satd. Flow (prot)	1752	5036	1568		1785		
Flt Permitted	0.14	1.00	1.00		0.96		
Satd. Flow (perm)	257	5036	1568		1785		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	1408	83	21	91	16	4
RTOR Reduction (vph)	0	0	37	0	125	0	0
Lane Group Flow (vph)	143	1408	46	0	7	0	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	6		9	9		
Permitted Phases	6		6				
Actuated Green, G (s)	77.1	66.1	66.1		6.1		
Effective Green, g (s)	77.1	66.1	66.1		6.1		
Actuated g/C Ratio	0.64	0.55	0.55		0.05		
Clearance Time (s)	5.5	5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)	302	2773	863		90		
v/s Ratio Prot	c0.04	c0.28			c0.00		
v/s Ratio Perm	0.26		0.03				
v/c Ratio	0.47	0.51	0.05		0.07		
Uniform Delay, d1	11.2	16.8	12.5		54.3		
Progression Factor	1.41	0.56	0.15		1.00		
Incremental Delay, d2	1.0	0.1	0.0		0.4		
Delay (s)	16.8	9.5	1.8		54.6		
Level of Service	B	A	A		D		
Approach Delay (s)		9.8			54.6		
Approach LOS		A			D		

Intersection Summary

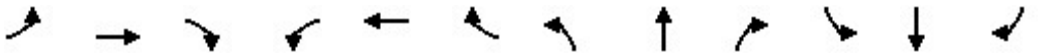
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	118	2	18	40	0	47
Future Vol, veh/h	118	2	18	40	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	6	6	0	0
Mvmt Flow	155	3	24	53	0	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	158	0	258	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	101	-
Critical Hdwy	-	-	4.16	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.254	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1398	-	735	894
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1398	-	722	894
Mov Cap-2 Maneuver	-	-	-	-	722	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	894	-	-	1398	-
HCM Lane V/C Ratio	0.069	-	-	0.017	-
HCM Control Delay (s)	9.3	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-



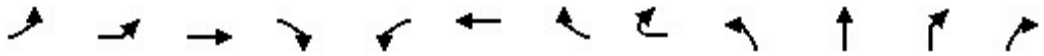
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	31	65	125	8	34	24	1129	39	67	1390	26
Future Volume (veh/h)	68	31	65	125	8	34	24	1129	39	67	1390	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1885	1885	1885	1856	1856	1870
Adj Flow Rate, veh/h	72	33	68	132	8	36	25	1188	0	71	1463	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	3	3	2
Cap, veh/h	235	97	305	228	58	259	242	2504		329	2192	40
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.03	0.70	0.00	0.62	0.62	0.62
Sat Flow, veh/h	910	508	1598	1314	301	1355	1795	3582	1598	468	3541	65
Grp Volume(v), veh/h	105	0	68	132	0	44	25	1188	0	71	728	762
Grp Sat Flow(s),veh/h/ln	1418	0	1598	1314	0	1656	1795	1791	1598	468	1763	1844
Q Serve(g_s), s	5.0	0.0	3.6	9.8	0.0	2.2	0.5	14.9	0.0	8.1	26.8	26.9
Cycle Q Clear(g_c), s	7.2	0.0	3.6	17.1	0.0	2.2	0.5	14.9	0.0	15.0	26.8	26.9
Prop In Lane	0.69		1.00	1.00		0.82	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	332	0	305	228	0	316	242	2504		329	1091	1141
V/C Ratio(X)	0.32	0.00	0.22	0.58	0.00	0.14	0.10	0.47		0.22	0.67	0.67
Avail Cap(c_a), veh/h	344	0	318	239	0	330	287	2504		329	1091	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.9	0.0	34.2	43.2	0.0	33.6	10.2	6.8	0.0	12.0	12.4	12.4
Incr Delay (d2), s/veh	0.5	0.0	0.4	3.2	0.0	0.2	0.2	0.6	0.0	1.5	3.2	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	1.4	3.4	0.0	0.9	0.2	4.5	0.0	0.9	9.7	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	0.0	34.5	46.3	0.0	33.8	10.4	7.4	0.0	13.5	15.6	15.5
LnGrp LOS	D	A	C	D	A	C	B	A		B	B	B
Approach Vol, veh/h		173			176			1213			1561	
Approach Delay, s/veh		35.7			43.2			7.5			15.4	
Approach LOS		D			D			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.4		24.6	8.0	67.4		24.6				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		69.1		19.9	5.0	58.6		19.9				
Max Q Clear Time (g_c+I1), s		16.9		9.2	2.5	28.9		19.1				
Green Ext Time (p_c), s		10.5		0.5	0.0	13.2		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	15	1	10	63	90	43	29	16	45	1012	152	201
Future Volume (vph)	15	1	10	63	90	43	29	16	45	1012	152	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Lane Util. Factor			1.00		1.00	1.00			1.00	0.91		1.00
Frt			0.91		1.00	0.92			1.00	0.98		0.85
Flt Protected			0.99		0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)			1688		1752	1702			1787	5035		1599
Flt Permitted			0.93		0.68	1.00			0.11	1.00		1.00
Satd. Flow (perm)			1578		1249	1702			204	5035		1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1	11	66	95	45	31	17	47	1065	160	212
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	69
Lane Group Flow (vph)	0	0	36	0	95	93	0	0	47	1225	0	143
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%	3%	3%	1%	1%	1%	1%
Turn Type	Perm	Perm	NA		Perm	NA			pm+pt	NA		Perm
Protected Phases			4			8			5	2		
Permitted Phases	4	4			8				2			2
Actuated Green, G (s)			12.5		12.5	12.5			57.4	53.1		53.1
Effective Green, g (s)			12.5		12.5	12.5			57.4	53.1		53.1
Actuated g/C Ratio			0.12		0.12	0.12			0.57	0.53		0.53
Clearance Time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Vehicle Extension (s)			3.0		3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)			197		156	212			185	2673		849
v/s Ratio Prot						0.05			0.01	0.24		
v/s Ratio Perm			0.02		c0.08				0.13			0.09
v/c Ratio			0.18		0.61	0.44			0.25	0.46		0.17
Uniform Delay, d1			39.2		41.4	40.5			10.5	14.5		12.1
Progression Factor			1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2			0.5		6.6	1.5			0.7	0.6		0.4
Delay (s)			39.6		48.0	42.0			11.3	15.1		12.5
Level of Service			D		D	D			B	B		B
Approach Delay (s)			39.6			45.0				14.6		
Approach LOS			D			D				B		

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	7	62	1505	145	10	97	9	2
Future Volume (vph)	7	62	1505	145	10	97	9	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5		5.5		
Lane Util. Factor		1.00	0.91	1.00		1.00		
Frt		1.00	1.00	0.85		0.99		
Flt Protected		0.95	1.00	1.00		0.96		
Satd. Flow (prot)		1770	5085	1583		1795		
Flt Permitted		0.17	1.00	1.00		0.96		
Satd. Flow (perm)		317	5085	1583		1795		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	65	1584	153	11	102	9	2
RTOR Reduction (vph)	0	0	0	69	0	116	0	0
Lane Group Flow (vph)	0	72	1584	84	0	8	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%
Turn Type	pm+pt	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	1	6		9	9		
Permitted Phases	6	6		6				
Actuated Green, G (s)		60.8	54.8	54.8		6.4		
Effective Green, g (s)		60.8	54.8	54.8		6.4		
Actuated g/C Ratio		0.61	0.55	0.55		0.06		
Clearance Time (s)		5.5	5.5	5.5		5.5		
Vehicle Extension (s)		3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		279	2786	867		114		
v/s Ratio Prot		c0.02	c0.31			c0.00		
v/s Ratio Perm		0.14		0.05				
v/c Ratio		0.26	0.57	0.10		0.07		
Uniform Delay, d1		8.9	14.8	10.8		44.0		
Progression Factor		0.72	0.61	0.13		1.00		
Incremental Delay, d2		0.4	0.2	0.0		0.3		
Delay (s)		6.8	9.3	1.4		44.3		
Level of Service		A	A	A		D		
Approach Delay (s)			8.5			44.3		
Approach LOS			A			D		

Intersection Summary

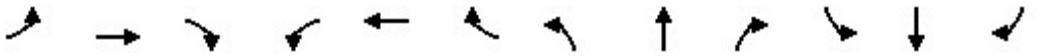
Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	0	41	208	0	47
Future Vol, veh/h	110	0	41	208	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	16	16	6	6	10	10
Mvmt Flow	129	0	48	245	0	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	129	0	470	129
Stage 1	-	-	-	-	129	-
Stage 2	-	-	-	-	341	-
Critical Hdwy	-	-	4.16	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.254	-	3.59	3.39
Pot Cap-1 Maneuver	-	0	1432	-	538	900
Stage 1	-	0	-	-	878	-
Stage 2	-	0	-	-	703	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1432	-	517	900
Mov Cap-2 Maneuver	-	-	-	-	517	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	676	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	900	-	1432	-
HCM Lane V/C Ratio	0.061	-	0.034	-
HCM Control Delay (s)	9.3	-	7.6	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	7	103	15	9	45	159	1297	3	34	1537	80
Future Volume (veh/h)	46	7	103	15	9	45	159	1297	3	34	1537	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	48	7	108	16	9	47	167	1365	0	36	1618	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	14	14	2	2	2	3	3	3	1	1	1
Cap, veh/h	132	15	145	98	26	138	269	2846		335	2493	129
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.04	0.81	0.00	0.72	0.72	0.72
Sat Flow, veh/h	754	151	1434	1277	261	1364	1767	3526	1572	401	3465	179
Grp Volume(v), veh/h	55	0	108	16	0	56	167	1365	0	36	832	870
Grp Sat Flow(s),veh/h/ln	904	0	1434	1277	0	1625	1767	1763	1572	401	1791	1853
Q Serve(g_s), s	4.7	0.0	8.8	1.5	0.0	3.9	2.8	14.6	0.0	3.7	29.2	29.8
Cycle Q Clear(g_c), s	8.5	0.0	8.8	10.0	0.0	3.9	2.8	14.6	0.0	7.8	29.2	29.8
Prop In Lane	0.87		1.00	1.00		0.84	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	147	0	145	98	0	164	269	2846		335	1288	1333
V/C Ratio(X)	0.37	0.00	0.75	0.16	0.00	0.34	0.62	0.48		0.11	0.65	0.65
Avail Cap(c_a), veh/h	213	0	219	164	0	248	423	2846		335	1288	1333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	0.0	52.4	57.2	0.0	50.2	13.4	3.6	0.0	6.5	8.8	8.9
Incr Delay (d2), s/veh	1.6	0.0	7.4	0.8	0.0	1.2	2.3	0.6	0.0	0.6	2.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	0.0	6.3	0.9	0.0	3.0	4.1	6.2	0.0	0.6	15.1	15.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.3	0.0	59.8	57.9	0.0	51.5	15.7	4.2	0.0	7.2	11.3	11.4
LnGrp LOS	E	A	E	E	A	D	B	A		A	B	B
Approach Vol, veh/h		163			72			1532			1738	
Approach Delay, s/veh		58.3			52.9			5.5			11.3	
Approach LOS		E			D			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		102.4		17.6	10.6	91.8		17.6				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		90.7		18.3	15.5	69.7		18.3				
Max Q Clear Time (g_c+I1), s		16.6		10.8	4.8	31.8		12.0				
Green Ext Time (p_c), s		13.8		0.3	0.3	17.4		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	41	51	60	138	130	77	13	61	1296	66	380	1
Future Volume (vph)	41	51	60	138	130	77	13	61	1296	66	380	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00		1.00	1.00			1.00	0.91		1.00	
Frt		0.95		1.00	0.94			1.00	0.99		0.85	
Flt Protected		0.99		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		1757		1687	1666			1752	4999		1568	
Flt Permitted		0.55		0.53	1.00			0.10	1.00		1.00	
Satd. Flow (perm)		972		939	1666			191	4999		1568	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	55	65	150	141	84	14	66	1409	72	413	1
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	93	0
Lane Group Flow (vph)	0	145	0	150	239	0	0	66	1481	0	320	0
Heavy Vehicles (%)	1%	1%	1%	7%	7%	7%	7%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA			pm+pt	NA		Perm	pm+pt
Protected Phases		4			8			5	2			1
Permitted Phases	4			8				2			2	6
Actuated Green, G (s)		21.9		21.9	21.9			63.2	57.0		57.0	
Effective Green, g (s)		21.9		21.9	21.9			63.2	57.0		57.0	
Actuated g/C Ratio		0.18		0.18	0.18			0.53	0.48		0.48	
Clearance Time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		177		171	304			181	2374		744	
v/s Ratio Prot					0.14			0.02	0.30			
v/s Ratio Perm		0.15		c0.16				0.17			0.20	
v/c Ratio		0.82		0.88	0.79			0.36	0.62		0.43	
Uniform Delay, d1		47.1		47.7	46.8			15.4	23.5		20.8	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		24.4		36.0	12.6			1.3	1.2		1.8	
Delay (s)		71.5		83.8	59.4			16.6	24.7		22.6	
Level of Service		E		F	E			B	C		C	
Approach Delay (s)		71.5			68.8				24.0			
Approach LOS		E			E				C			

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	150	1487	87	20	94	17	5
Future Volume (vph)	150	1487	87	20	94	17	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.5		
Lane Util. Factor	1.00	0.91	1.00		1.00		
Frt	1.00	1.00	0.85		0.98		
Flt Protected	0.95	1.00	1.00		0.96		
Satd. Flow (prot)	1752	5036	1568		1785		
Flt Permitted	0.09	1.00	1.00		0.96		
Satd. Flow (perm)	172	5036	1568		1785		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1616	95	22	102	18	5
RTOR Reduction (vph)	0	0	45	0	139	0	0
Lane Group Flow (vph)	164	1616	50	0	8	0	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	6		9	9		
Permitted Phases	6		6				
Actuated Green, G (s)	75.1	63.4	63.4		6.5		
Effective Green, g (s)	75.1	63.4	63.4		6.5		
Actuated g/C Ratio	0.63	0.53	0.53		0.05		
Clearance Time (s)	5.5	5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)	273	2660	828		96		
v/s Ratio Prot	c0.06	c0.32			c0.00		
v/s Ratio Perm	0.31		0.03				
v/c Ratio	0.60	0.61	0.06		0.08		
Uniform Delay, d1	15.9	19.7	13.8		53.9		
Progression Factor	1.29	0.44	0.61		1.00		
Incremental Delay, d2	2.9	0.3	0.0		0.4		
Delay (s)	23.4	9.0	8.4		54.3		
Level of Service	C	A	A		D		
Approach Delay (s)		10.3			54.3		
Approach LOS		B			D		

Intersection Summary

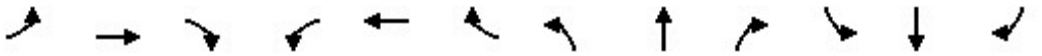
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	2	21	46	0	54
Future Vol, veh/h	135	2	21	46	0	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	6	6	0	0
Mvmt Flow	178	3	28	61	0	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	181	0	297	180
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	-	-	4.16	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.254	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1371	-	698	868
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	913	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1371	-	683	868
Mov Cap-2 Maneuver	-	-	-	-	683	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	868	-	-	1371	-
HCM Lane V/C Ratio	0.082	-	-	0.02	-
HCM Control Delay (s)	9.5	-	-	7.7	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	36	74	144	9	39	28	1296	45	77	1596	30
Future Volume (veh/h)	78	36	74	144	9	39	28	1296	45	77	1596	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1885	1885	1885	1856	1856	1870
Adj Flow Rate, veh/h	82	38	78	152	9	41	29	1364	0	81	1680	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	3	3	2
Cap, veh/h	229	97	312	208	58	265	197	2524		272	2222	42
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.03	0.70	0.00	0.63	0.63	0.63
Sat Flow, veh/h	891	494	1598	1296	298	1358	1795	3582	1598	396	3539	67
Grp Volume(v), veh/h	120	0	78	152	0	50	29	1364	0	81	835	877
Grp Sat Flow(s),veh/h/ln	1386	0	1598	1296	0	1656	1795	1791	1598	396	1763	1843
Q Serve(g_s), s	6.7	0.0	4.5	12.1	0.0	2.8	0.6	20.0	0.0	13.5	36.9	37.1
Cycle Q Clear(g_c), s	9.4	0.0	4.5	21.5	0.0	2.8	0.6	20.0	0.0	25.1	36.9	37.1
Prop In Lane	0.68		1.00	1.00		0.82	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	326	0	312	208	0	324	197	2524		272	1107	1157
V/C Ratio(X)	0.37	0.00	0.25	0.73	0.00	0.15	0.15	0.54		0.30	0.75	0.76
Avail Cap(c_a), veh/h	326	0	312	208	0	324	232	2524		272	1107	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	0.0	37.4	49.4	0.0	36.7	13.7	7.8	0.0	15.7	14.5	14.5
Incr Delay (d2), s/veh	0.7	0.0	0.4	12.5	0.0	0.2	0.3	0.8	0.0	2.8	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	3.3	8.6	0.0	2.1	0.5	10.4	0.0	2.4	20.0	20.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	0.0	37.8	61.8	0.0	36.9	14.1	8.6	0.0	18.5	19.3	19.2
LnGrp LOS	D	A	D	E	A	D	B	A		B	B	B
Approach Vol, veh/h		198			202			1393			1793	
Approach Delay, s/veh		39.5			55.7			8.7			19.2	
Approach LOS		D			E			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		83.0		27.0	8.4	74.6		27.0				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		77.5		21.5	5.1	66.9		21.5				
Max Q Clear Time (g_c+I1), s		22.0		11.4	2.6	39.1		23.5				
Green Ext Time (p_c), s		13.3		0.6	0.0	15.9		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	17	1	11	72	103	49	33	17	52	1161	174	231
Future Volume (vph)	17	1	11	72	103	49	33	17	52	1161	174	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Lane Util. Factor			1.00		1.00	1.00			1.00	0.91		1.00
Frt			0.90		1.00	0.92			1.00	0.98		0.85
Flt Protected			0.99		0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)			1686		1752	1705			1787	5035		1599
Flt Permitted			0.93		0.61	1.00			0.07	1.00		1.00
Satd. Flow (perm)			1576		1122	1705			134	5035		1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	1	12	76	108	52	35	18	55	1222	183	243
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	61
Lane Group Flow (vph)	0	0	41	0	108	105	0	0	55	1405	0	182
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%	3%	3%	1%	1%	1%	1%
Turn Type	Perm	Perm	NA		Perm	NA			pm+pt	NA		Perm
Protected Phases			4			8			5	2		
Permitted Phases	4	4			8				2			2
Actuated Green, G (s)			14.4		14.4	14.4			65.5	59.8		59.8
Effective Green, g (s)			14.4		14.4	14.4			65.5	59.8		59.8
Actuated g/C Ratio			0.13		0.13	0.13			0.60	0.54		0.54
Clearance Time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Vehicle Extension (s)			3.0		3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)			206		146	223			165	2737		869
v/s Ratio Prot						0.06			0.02	0.28		
v/s Ratio Perm			0.03		c0.10				0.18			0.11
v/c Ratio			0.20		0.74	0.47			0.33	0.51		0.21
Uniform Delay, d1			42.7		46.0	44.3			12.4	15.9		12.9
Progression Factor			1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2			0.5		17.7	1.6			1.2	0.7		0.5
Delay (s)			43.1		63.7	45.8			13.6	16.6		13.5
Level of Service			D		E	D			B	B		B
Approach Delay (s)			43.1			54.9				16.0		
Approach LOS			D			D				B		

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	8	71	1729	167	11	110	10	2
Future Volume (vph)	8	71	1729	167	11	110	10	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5		5.5		
Lane Util. Factor		1.00	0.91	1.00		1.00		
Frt		1.00	1.00	0.85		0.99		
Flt Protected		0.95	1.00	1.00		0.96		
Satd. Flow (prot)		1770	5085	1583		1795		
Flt Permitted		0.13	1.00	1.00		0.96		
Satd. Flow (perm)		249	5085	1583		1795		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	75	1820	176	12	116	11	2
RTOR Reduction (vph)	0	0	0	79	0	125	0	0
Lane Group Flow (vph)	0	83	1820	97	0	16	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%
Turn Type	pm+pt	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	1	6		9	9		
Permitted Phases	6	6		6				
Actuated Green, G (s)		67.1	60.6	60.6		7.3		
Effective Green, g (s)		67.1	60.6	60.6		7.3		
Actuated g/C Ratio		0.61	0.55	0.55		0.07		
Clearance Time (s)		5.5	5.5	5.5		5.5		
Vehicle Extension (s)		3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		241	2801	872		119		
v/s Ratio Prot		c0.02	c0.36			c0.01		
v/s Ratio Perm		0.19		0.06				
v/c Ratio		0.34	0.65	0.11		0.13		
Uniform Delay, d1		10.2	17.3	11.8		48.4		
Progression Factor		0.60	0.57	0.12		1.00		
Incremental Delay, d2		0.7	0.4	0.0		0.5		
Delay (s)		6.8	10.3	1.5		48.9		
Level of Service		A	B	A		D		
Approach Delay (s)			9.4			48.9		
Approach LOS			A			D		

Intersection Summary

H

Future Build Conditions Synchro Report

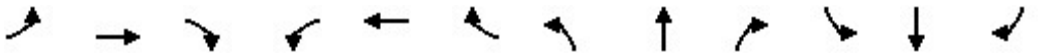
Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	0	36	180	0	41
Future Vol, veh/h	95	0	36	180	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	16	16	6	6	10	10
Mvmt Flow	112	0	42	212	0	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	112	0	408	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	4.16	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.254	-	3.59	3.39
Pot Cap-1 Maneuver	-	0	1453	-	584	920
Stage 1	-	0	-	-	893	-
Stage 2	-	0	-	-	737	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1453	-	565	920
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	920	-	1453	-
HCM Lane V/C Ratio	0.052	-	0.029	-
HCM Control Delay (s)	9.1	-	7.6	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	6	90	13	8	39	138	1165	3	30	1362	70
Future Volume (veh/h)	40	6	90	13	8	39	138	1165	3	30	1362	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	42	6	95	14	8	41	145	1226	0	32	1434	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	14	14	2	2	2	3	3	3	1	1	1
Cap, veh/h	125	14	129	97	24	122	319	2885		391	2534	130
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.82	0.00	0.73	0.73	0.73
Sat Flow, veh/h	763	154	1434	1294	265	1360	1767	3526	1572	458	3466	178
Grp Volume(v), veh/h	48	0	95	14	0	49	145	1226	0	32	739	769
Grp Sat Flow(s),veh/h/ln	917	0	1434	1294	0	1626	1767	1763	1572	458	1791	1853
Q Serve(g_s), s	4.0	0.0	7.7	1.3	0.0	3.4	2.3	11.6	0.0	2.5	22.7	22.9
Cycle Q Clear(g_c), s	7.4	0.0	7.7	8.7	0.0	3.4	2.3	11.6	0.0	3.7	22.7	22.9
Prop In Lane	0.87		1.00	1.00		0.84	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	139	0	129	97	0	146	319	2885		391	1309	1355
V/C Ratio(X)	0.35	0.00	0.74	0.14	0.00	0.33	0.45	0.42		0.08	0.56	0.57
Avail Cap(c_a), veh/h	220	0	221	180	0	251	463	2885		391	1309	1355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	0.0	53.2	57.3	0.0	51.2	7.4	3.0	0.0	5.0	7.4	7.4
Incr Delay (d2), s/veh	1.5	0.0	7.9	0.7	0.0	1.3	1.0	0.5	0.0	0.4	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.1	0.4	0.0	1.5	0.9	2.5	0.0	0.2	7.4	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	0.0	61.1	58.0	0.0	52.6	8.4	3.5	0.0	5.4	9.2	9.1
LnGrp LOS	E	A	E	E	A	D	A	A		A	A	A
Approach Vol, veh/h		143			63			1371			1540	
Approach Delay, s/veh		59.3			53.8			4.0			9.1	
Approach LOS		E			D			A			A	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		103.7		16.3	10.5	93.2		16.3				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		90.5		18.5	14.7	70.3		18.5				
Max Q Clear Time (g_c+I1), s		13.6		9.7	4.3	24.9		10.7				
Green Ext Time (p_c), s		11.4		0.3	0.2	14.7		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			10.1									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	36	44	52	120	113	69	12	53	1147	58	331	1
Future Volume (vph)	36	44	52	120	113	69	12	53	1147	58	331	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00		1.00	1.00			1.00	0.91		1.00	
Frt		0.95		1.00	0.94			1.00	0.99		0.85	
Flt Protected		0.99		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		1757		1687	1665			1752	5000		1568	
Flt Permitted		0.60		0.55	1.00			0.14	1.00		1.00	
Satd. Flow (perm)		1067		979	1665			256	5000		1568	
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)	39	48	57	130	123	75	13	58	1247	63	360	1
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	0	0	86	0
Lane Group Flow (vph)	0	123	0	130	211	0	0	58	1310	0	274	0
Heavy Vehicles (%)	1%	1%	1%	7%	7%	7%	7%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA			pm+pt	NA		Perm	pm+pt
Protected Phases		4			8			5	2			1
Permitted Phases	4			8				2			2	6
Actuated Green, G (s)		20.0		20.0	20.0			66.5	60.6		60.6	
Effective Green, g (s)		20.0		20.0	20.0			66.5	60.6		60.6	
Actuated g/C Ratio		0.17		0.17	0.17			0.55	0.51		0.51	
Clearance Time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		177		163	277			215	2525		791	
v/s Ratio Prot					0.13			0.01	0.26			
v/s Ratio Perm		0.12		c0.13				0.14			0.17	
v/c Ratio		0.70		0.80	0.76			0.27	0.52		0.35	
Uniform Delay, d1		47.1		48.1	47.7			13.0	19.9		17.8	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		11.3		23.1	11.7			0.7	0.8		1.2	
Delay (s)		58.4		71.2	59.4			13.7	20.7		19.0	
Level of Service		E		E	E			B	C		B	
Approach Delay (s)		58.4			63.9				20.1			
Approach LOS		E			E				C			

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	135	1330	80	19	84	15	4
Future Volume (vph)	135	1330	80	19	84	15	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.5		
Lane Util. Factor	1.00	0.91	1.00		1.00		
Frt	1.00	1.00	0.85		0.98		
Flt Protected	0.95	1.00	1.00		0.96		
Satd. Flow (prot)	1752	5036	1568		1785		
Flt Permitted	0.13	1.00	1.00		0.96		
Satd. Flow (perm)	247	5036	1568		1785		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	1446	87	21	91	16	4
RTOR Reduction (vph)	0	0	39	0	125	0	0
Lane Group Flow (vph)	148	1446	48	0	7	0	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	6		9	9		
Permitted Phases	6		6				
Actuated Green, G (s)	77.3	66.0	66.0		6.1		
Effective Green, g (s)	77.3	66.0	66.0		6.1		
Actuated g/C Ratio	0.64	0.55	0.55		0.05		
Clearance Time (s)	5.5	5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)	300	2769	862		90		
v/s Ratio Prot	c0.05	c0.29			c0.00		
v/s Ratio Perm	0.27		0.03				
v/c Ratio	0.49	0.52	0.06		0.07		
Uniform Delay, d1	11.5	17.0	12.5		54.3		
Progression Factor	1.54	0.57	0.14		1.00		
Incremental Delay, d2	1.1	0.2	0.0		0.4		
Delay (s)	18.9	9.8	1.7		54.6		
Level of Service	B	A	A		D		
Approach Delay (s)		10.2			54.6		
Approach LOS		B			D		

Intersection Summary

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	43	19	1271	1442	23
Future Vol, veh/h	35	43	19	1271	1442	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	3	3	3	3
Mvmt Flow	37	45	20	1338	1518	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2227	759	1542	0	-	0
Stage 1	1518	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.16	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.23	-	-	-
Pot Cap-1 Maneuver	37	353	422	-	-	-
Stage 1	171	-	-	-	-	-
Stage 2	454	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 35	353	422	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	163	-	-	-	-	-
Stage 2	454	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.4	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	422	-	121	353	-	-
HCM Lane V/C Ratio	0.047	-	0.304	0.128	-	-
HCM Control Delay (s)	14	-	47.3	16.7	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	0.4	-	-

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

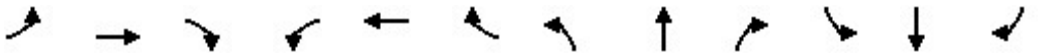
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	117	2	18	40	0	47
Future Vol, veh/h	117	2	18	40	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	3	24	53	0	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	157	0	257	156
Stage 1	-	-	-	-	156	-
Stage 2	-	-	-	-	101	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1423	-	732	890
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	923	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1423	-	720	890
Mov Cap-2 Maneuver	-	-	-	-	720	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	890	-	-	1423	-
HCM Lane V/C Ratio	0.069	-	-	0.017	-
HCM Control Delay (s)	9.3	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	31	65	129	8	34	24	1142	39	67	1430	26
Future Volume (veh/h)	68	31	65	129	8	34	24	1142	39	67	1430	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885
Adj Flow Rate, veh/h	72	33	68	136	8	36	25	1202	0	71	1505	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	1
Cap, veh/h	238	98	311	232	58	262	229	2466		322	2193	39
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.03	0.69	0.00	0.61	0.61	0.61
Sat Flow, veh/h	905	502	1585	1294	296	1334	1781	3554	1585	465	3572	64
Grp Volume(v), veh/h	105	0	68	136	0	44	25	1202	0	71	748	784
Grp Sat Flow(s),veh/h/ln	1407	0	1585	1294	0	1630	1781	1777	1585	465	1777	1859
Q Serve(g_s), s	5.0	0.0	3.6	10.3	0.0	2.2	0.5	15.6	0.0	8.3	28.1	28.2
Cycle Q Clear(g_c), s	7.3	0.0	3.6	17.6	0.0	2.2	0.5	15.6	0.0	16.0	28.1	28.2
Prop In Lane	0.69		1.00	1.00		0.82	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	337	0	311	232	0	320	229	2466		322	1091	1141
V/C Ratio(X)	0.31	0.00	0.22	0.59	0.00	0.14	0.11	0.49		0.22	0.69	0.69
Avail Cap(c_a), veh/h	350	0	325	243	0	334	274	2466		322	1091	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	33.8	42.9	0.0	33.2	10.8	7.1	0.0	12.6	12.9	12.9
Incr Delay (d2), s/veh	0.5	0.0	0.4	3.3	0.0	0.2	0.2	0.7	0.0	1.6	3.5	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	1.4	3.5	0.0	0.9	0.2	4.7	0.0	0.9	10.3	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	34.1	46.3	0.0	33.4	11.0	7.8	0.0	14.2	16.4	16.3
LnGrp LOS	D	A	C	D	A	C	B	A		B	B	B
Approach Vol, veh/h		173			180			1227			1603	
Approach Delay, s/veh		35.3			43.1			7.8			16.2	
Approach LOS		D			D			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		74.9		25.1	8.0	66.9		25.1				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		68.5		20.5	5.0	58.0		20.5				
Max Q Clear Time (g_c+I1), s		17.6		9.3	2.5	30.2		19.6				
Green Ext Time (p_c), s		10.7		0.5	0.0	13.3		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		15.6
HCM 6th LOS		B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	15	1	10	63	90	43	29	16	45	1041	152	201
Future Volume (vph)	15	1	10	63	90	43	29	16	45	1041	152	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Lane Util. Factor			1.00		1.00	1.00			1.00	0.91		1.00
Frt			0.91		1.00	0.92			1.00	0.98		0.85
Flt Protected			0.99		0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)			1671		1770	1719			1770	4988		1583
Flt Permitted			0.93		0.68	1.00			0.11	1.00		1.00
Satd. Flow (perm)			1563		1261	1719			196	4988		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	16	1	11	66	95	45	31	17	47	1096	160	212
RTOR Reduction (vph)	0	0	58	0	0	0	0	0	0	0	0	69
Lane Group Flow (vph)	0	0	36	0	95	93	0	0	47	1256	0	143
Turn Type	Perm	Perm	NA		Perm	NA			pm+pt	NA		Perm
Protected Phases			4			8			5	2		
Permitted Phases	4	4			8				2			2
Actuated Green, G (s)			12.5		12.5	12.5			57.4	53.1		53.1
Effective Green, g (s)			12.5		12.5	12.5			57.4	53.1		53.1
Actuated g/C Ratio			0.12		0.12	0.12			0.57	0.53		0.53
Clearance Time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Vehicle Extension (s)			3.0		3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)			195		157	214			180	2648		840
v/s Ratio Prot						0.05			0.01	0.25		
v/s Ratio Perm			0.02		c0.08				0.14			0.09
v/c Ratio			0.19		0.61	0.43			0.26	0.47		0.17
Uniform Delay, d1			39.2		41.4	40.5			10.6	14.7		12.1
Progression Factor			1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2			0.5		6.4	1.4			0.8	0.6		0.4
Delay (s)			39.7		47.9	41.9			11.4	15.3		12.5
Level of Service			D		D	D			B	B		B
Approach Delay (s)			39.7			44.9				14.8		
Approach LOS			D			D				B		

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	7	64	1521	147	10	97	9	2
Future Volume (vph)	7	64	1521	147	10	97	9	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5		5.5		
Lane Util. Factor		1.00	0.91	1.00		1.00		
Frt		1.00	1.00	0.85		0.99		
Flt Protected		0.95	1.00	1.00		0.96		
Satd. Flow (prot)		1770	5085	1583		1760		
Flt Permitted		0.16	1.00	1.00		0.96		
Satd. Flow (perm)		303	5085	1583		1760		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	7	67	1601	155	11	102	9	2
RTOR Reduction (vph)	0	0	0	70	0	116	0	0
Lane Group Flow (vph)	0	74	1601	85	0	8	0	0
Turn Type	pm+pt	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	1	6		9	9		
Permitted Phases	6	6		6				
Actuated Green, G (s)		60.8	54.8	54.8		6.4		
Effective Green, g (s)		60.8	54.8	54.8		6.4		
Actuated g/C Ratio		0.61	0.55	0.55		0.06		
Clearance Time (s)		5.5	5.5	5.5		5.5		
Vehicle Extension (s)		3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		272	2786	867		112		
v/s Ratio Prot		c0.02	c0.31			c0.00		
v/s Ratio Perm		0.15		0.05				
v/c Ratio		0.27	0.57	0.10		0.07		
Uniform Delay, d1		9.0	14.9	10.8		44.0		
Progression Factor		0.69	0.60	0.10		1.00		
Incremental Delay, d2		0.5	0.2	0.0		0.3		
Delay (s)		6.7	9.1	1.2		44.3		
Level of Service		A	A	A		D		
Approach Delay (s)			8.4			44.3		
Approach LOS			A			D		

Intersection Summary

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	26	35	1186	1575	49
Future Vol, veh/h	19	26	35	1186	1575	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	20	27	37	1248	1658	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2356	829	1710	0	-	0
Stage 1	1658	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.14	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.22	-	-	-
Pot Cap-1 Maneuver	31	318	367	-	-	-
Stage 1	143	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	28	318	367	-	-	-
Mov Cap-2 Maneuver	100	-	-	-	-	-
Stage 1	129	-	-	-	-	-
Stage 2	460	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.1	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	367	-	100	318	-	-
HCM Lane V/C Ratio	0.1	-	0.2	0.086	-	-
HCM Control Delay (s)	15.9	-	49.8	17.4	-	-
HCM Lane LOS	C	-	E	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.7	0.3	-	-

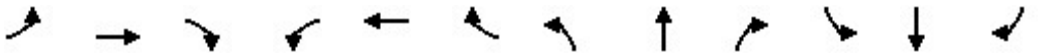
Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	109	0	41	207	0	47
Future Vol, veh/h	109	0	41	207	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	16	16	6	6	10	10
Mvmt Flow	128	0	48	244	0	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	128	0	468	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	340	-
Critical Hdwy	-	-	4.16	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.254	-	3.59	3.39
Pot Cap-1 Maneuver	-	0	1434	-	539	901
Stage 1	-	0	-	-	878	-
Stage 2	-	0	-	-	703	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1434	-	518	901
Mov Cap-2 Maneuver	-	-	-	-	518	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	676	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	901	-	1434	-
HCM Lane V/C Ratio	0.061	-	0.034	-
HCM Control Delay (s)	9.3	-	7.6	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	7	103	15	9	45	159	1332	3	34	1560	80
Future Volume (veh/h)	46	7	103	15	9	45	159	1332	3	34	1560	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1693	1693	1693	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	48	7	108	16	9	47	167	1402	0	36	1642	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	14	14	2	2	2	3	3	3	1	1	1
Cap, veh/h	132	15	145	98	26	138	264	2846		324	2495	127
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.04	0.81	0.00	0.72	0.72	0.72
Sat Flow, veh/h	754	151	1434	1277	261	1364	1767	3526	1572	387	3468	176
Grp Volume(v), veh/h	55	0	108	16	0	56	167	1402	0	36	844	882
Grp Sat Flow(s),veh/h/ln	904	0	1434	1277	0	1625	1767	1763	1572	387	1791	1853
Q Serve(g_s), s	4.7	0.0	8.8	1.5	0.0	3.9	2.8	15.3	0.0	3.9	30.0	30.6
Cycle Q Clear(g_c), s	8.5	0.0	8.8	10.0	0.0	3.9	2.8	15.3	0.0	8.7	30.0	30.6
Prop In Lane	0.87		1.00	1.00		0.84	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	147	0	145	98	0	164	264	2846		324	1288	1333
V/C Ratio(X)	0.37	0.00	0.75	0.16	0.00	0.34	0.63	0.49		0.11	0.65	0.66
Avail Cap(c_a), veh/h	213	0	219	164	0	248	418	2846		324	1288	1333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	0.0	52.4	57.2	0.0	50.2	14.3	3.7	0.0	6.8	8.9	9.0
Incr Delay (d2), s/veh	1.6	0.0	7.4	0.8	0.0	1.2	2.5	0.6	0.0	0.7	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	0.0	6.3	0.9	0.0	3.0	4.5	6.4	0.0	0.6	15.4	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.3	0.0	59.8	57.9	0.0	51.5	16.8	4.3	0.0	7.5	11.5	11.6
LnGrp LOS	E	A	E	E	A	D	B	A		A	B	B
Approach Vol, veh/h		163			72			1569			1762	
Approach Delay, s/veh		58.3			52.9			5.6			11.5	
Approach LOS		E			D			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		102.4		17.6	10.6	91.8		17.6				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		90.7		18.3	15.5	69.7		18.3				
Max Q Clear Time (g_c+I1), s		17.3		10.8	4.8	32.6		12.0				
Green Ext Time (p_c), s		14.5		0.3	0.3	17.7		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	41	51	60	138	130	79	13	61	1313	66	380	1
Future Volume (vph)	41	51	60	138	130	79	13	61	1313	66	380	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00		1.00	1.00			1.00	0.91		1.00	
Frt		0.95		1.00	0.94			1.00	0.99		0.85	
Flt Protected		0.99		0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		1757		1687	1665			1752	5000		1568	
Flt Permitted		0.54		0.53	1.00			0.10	1.00		1.00	
Satd. Flow (perm)		962		939	1665			180	5000		1568	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	55	65	150	141	86	14	66	1427	72	413	1
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	92	0
Lane Group Flow (vph)	0	145	0	150	241	0	0	66	1499	0	321	0
Heavy Vehicles (%)	1%	1%	1%	7%	7%	7%	7%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA			pm+pt	NA		Perm	pm+pt
Protected Phases		4			8			5	2			1
Permitted Phases	4			8				2			2	6
Actuated Green, G (s)		21.9		21.9	21.9			63.0	56.8		56.8	
Effective Green, g (s)		21.9		21.9	21.9			63.0	56.8		56.8	
Actuated g/C Ratio		0.18		0.18	0.18			0.52	0.47		0.47	
Clearance Time (s)		5.5		5.5	5.5			5.5	5.5		5.5	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		175		171	303			175	2366		742	
v/s Ratio Prot					0.14			0.02	0.30			
v/s Ratio Perm		0.15		c0.16				0.18			0.20	
v/c Ratio		0.83		0.88	0.80			0.38	0.63		0.43	
Uniform Delay, d1		47.2		47.7	46.9			15.6	23.8		20.9	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		26.1		36.0	13.4			1.4	1.3		1.8	
Delay (s)		73.3		83.8	60.3			17.0	25.1		22.8	
Level of Service		E		F	E			B	C		C	
Approach Delay (s)		73.3			69.3				24.3			
Approach LOS		E			E				C			

Intersection Summary			
HCM 2000 Control Delay	25.1	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)	22.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations							
Traffic Volume (vph)	154	1522	91	20	94	17	5
Future Volume (vph)	154	1522	91	20	94	17	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5		5.5		
Lane Util. Factor	1.00	0.91	1.00		1.00		
Frt	1.00	1.00	0.85		0.98		
Flt Protected	0.95	1.00	1.00		0.96		
Satd. Flow (prot)	1752	5036	1568		1785		
Flt Permitted	0.09	1.00	1.00		0.96		
Satd. Flow (perm)	166	5036	1568		1785		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	1654	99	22	102	18	5
RTOR Reduction (vph)	0	0	47	0	139	0	0
Lane Group Flow (vph)	168	1654	52	0	8	0	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%
Turn Type	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	6		9	9		
Permitted Phases	6		6				
Actuated Green, G (s)	75.1	63.4	63.4		6.5		
Effective Green, g (s)	75.1	63.4	63.4		6.5		
Actuated g/C Ratio	0.63	0.53	0.53		0.05		
Clearance Time (s)	5.5	5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)	273	2660	828		96		
v/s Ratio Prot	c0.07	c0.33			c0.00		
v/s Ratio Perm	0.32		0.03				
v/c Ratio	0.62	0.62	0.06		0.08		
Uniform Delay, d1	16.9	19.9	13.8		53.9		
Progression Factor	1.30	0.45	0.49		1.00		
Incremental Delay, d2	3.2	0.4	0.0		0.4		
Delay (s)	25.1	9.3	6.8		54.3		
Level of Service	C	A	A		D		
Approach Delay (s)		10.6			54.3		
Approach LOS		B			D		

Intersection Summary

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	43	19	1459	1655	23
Future Vol, veh/h	35	43	19	1459	1655	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	3	3	3	3
Mvmt Flow	37	45	20	1536	1742	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2550	871	1766	0	-	0
Stage 1	1742	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.16	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.23	-	-	-
Pot Cap-1 Maneuver	~ 23	298	345	-	-	-
Stage 1	129	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 22	298	345	-	-	-
Mov Cap-2 Maneuver	92	-	-	-	-	-
Stage 1	122	-	-	-	-	-
Stage 2	404	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	41.1	0.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	345	-	92	298	-	-
HCM Lane V/C Ratio	0.058	-	0.4	0.152	-	-
HCM Control Delay (s)	16.1	-	68.1	19.2	-	-
HCM Lane LOS	C	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	0.5	-	-

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

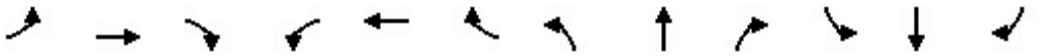
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	2	21	46	0	54
Future Vol, veh/h	135	2	21	46	0	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	178	3	28	61	0	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	181	0	297	180
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	117	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1394	-	694	863
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	908	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1394	-	679	863
Mov Cap-2 Maneuver	-	-	-	-	679	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	889	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	863	-	-	1394	-
HCM Lane V/C Ratio	0.082	-	-	0.02	-
HCM Control Delay (s)	9.5	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	36	75	148	9	39	28	1309	45	77	1636	30
Future Volume (veh/h)	78	36	75	148	9	39	28	1309	45	77	1636	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1885
Adj Flow Rate, veh/h	82	38	79	156	9	41	29	1378	0	81	1722	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	1
Cap, veh/h	228	96	310	204	57	261	190	2504		269	2241	42
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.03	0.70	0.00	0.63	0.63	0.63
Sat Flow, veh/h	882	489	1585	1275	293	1336	1781	3554	1585	393	3569	66
Grp Volume(v), veh/h	120	0	79	156	0	50	29	1378	0	81	856	898
Grp Sat Flow(s),veh/h/ln	1372	0	1585	1275	0	1630	1781	1777	1585	393	1777	1858
Q Serve(g_s), s	6.8	0.0	4.6	11.9	0.0	2.8	0.6	20.6	0.0	13.8	38.0	38.3
Cycle Q Clear(g_c), s	9.6	0.0	4.6	21.5	0.0	2.8	0.6	20.6	0.0	25.9	38.0	38.3
Prop In Lane	0.68		1.00	1.00		0.82	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	323	0	310	204	0	319	190	2504		269	1116	1167
V/C Ratio(X)	0.37	0.00	0.25	0.77	0.00	0.16	0.15	0.55		0.30	0.77	0.77
Avail Cap(c_a), veh/h	323	0	310	204	0	319	225	2504		269	1116	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	0.0	37.5	49.7	0.0	36.7	14.3	7.8	0.0	16.1	14.7	14.7
Incr Delay (d2), s/veh	0.7	0.0	0.4	15.8	0.0	0.2	0.4	0.9	0.0	2.9	5.1	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	3.3	9.0	0.0	2.1	0.5	10.6	0.0	2.4	20.7	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	0.0	37.9	65.5	0.0	37.0	14.6	8.7	0.0	19.0	19.8	19.7
LnGrp LOS	D	A	D	E	A	D	B	A		B	B	B
Approach Vol, veh/h		199			206			1407			1835	
Approach Delay, s/veh		39.6			58.6			8.8			19.7	
Approach LOS		D			E			A			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		83.0		27.0	8.4	74.6		27.0				
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s		77.5		21.5	5.1	66.9		21.5				
Max Q Clear Time (g_c+I1), s		22.6		11.6	2.6	40.3		23.5				
Green Ext Time (p_c), s		13.6		0.6	0.0	16.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			18.8									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	17	1	11	72	103	49	33	17	52	1190	174	231
Future Volume (vph)	17	1	11	72	103	49	33	17	52	1190	174	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Lane Util. Factor			1.00		1.00	1.00			1.00	0.91		1.00
Frt			0.90		1.00	0.92			1.00	0.98		0.85
Flt Protected			0.99		0.95	1.00			0.95	1.00		1.00
Satd. Flow (prot)			1669		1770	1722			1770	4988		1583
Flt Permitted			0.93		0.61	1.00			0.07	1.00		1.00
Satd. Flow (perm)			1561		1133	1722			129	4988		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	18	1	12	76	108	52	35	18	55	1253	183	243
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	0	61
Lane Group Flow (vph)	0	0	41	0	108	105	0	0	55	1436	0	182
Turn Type	Perm	Perm	NA		Perm	NA			pm+pt	NA		Perm
Protected Phases			4			8			5	2		
Permitted Phases	4	4			8				2			2
Actuated Green, G (s)			14.4		14.4	14.4			65.3	59.6		59.6
Effective Green, g (s)			14.4		14.4	14.4			65.3	59.6		59.6
Actuated g/C Ratio			0.13		0.13	0.13			0.59	0.54		0.54
Clearance Time (s)			5.5		5.5	5.5			5.5	5.5		5.5
Vehicle Extension (s)			3.0		3.0	3.0			3.0	3.0		3.0
Lane Grp Cap (vph)			204		148	225			161	2702		857
v/s Ratio Prot						0.06			0.02	0.29		
v/s Ratio Perm			0.03		c0.10				0.18			0.11
v/c Ratio			0.20		0.73	0.47			0.34	0.53		0.21
Uniform Delay, d1			42.7		45.9	44.2			12.7	16.2		13.0
Progression Factor			1.00		1.00	1.00			1.00	1.00		1.00
Incremental Delay, d2			0.5		16.4	1.5			1.3	0.8		0.6
Delay (s)			43.2		62.4	45.8			13.9	17.0		13.6
Level of Service			D		E	D			B	B		B
Approach Delay (s)			43.2			54.2				16.4		
Approach LOS			D			D				B		

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	SWL2	SWL	SWR	SWR2
Lane Configurations								
Traffic Volume (vph)	8	73	1745	169	11	110	10	2
Future Volume (vph)	8	73	1745	169	11	110	10	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	5.5		5.5		
Lane Util. Factor		1.00	0.91	1.00		1.00		
Frt		1.00	1.00	0.85		0.99		
Flt Protected		0.95	1.00	1.00		0.96		
Satd. Flow (prot)		1770	5085	1583		1760		
Flt Permitted		0.13	1.00	1.00		0.96		
Satd. Flow (perm)		237	5085	1583		1760		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	8	77	1837	178	12	116	11	2
RTOR Reduction (vph)	0	0	0	80	0	125	0	0
Lane Group Flow (vph)	0	85	1837	98	0	16	0	0
Turn Type	pm+pt	pm+pt	NA	Perm	Prot	Prot		
Protected Phases	1	1	6		9	9		
Permitted Phases	6	6		6				
Actuated Green, G (s)		67.1	60.5	60.5		7.4		
Effective Green, g (s)		67.1	60.5	60.5		7.4		
Actuated g/C Ratio		0.61	0.55	0.55		0.07		
Clearance Time (s)		5.5	5.5	5.5		5.5		
Vehicle Extension (s)		3.0	3.0	3.0		3.0		
Lane Grp Cap (vph)		236	2796	870		118		
v/s Ratio Prot		c0.02	c0.36			c0.01		
v/s Ratio Perm		0.20		0.06				
v/c Ratio		0.36	0.66	0.11		0.14		
Uniform Delay, d1		10.4	17.4	11.9		48.3		
Progression Factor		0.61	0.57	0.15		1.00		
Incremental Delay, d2		0.7	0.4	0.0		0.5		
Delay (s)		7.1	10.3	1.9		48.8		
Level of Service		A	B	A		D		
Approach Delay (s)			9.5			48.8		
Approach LOS			A			D		

Intersection Summary

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	26	35	1363	1810	49
Future Vol, veh/h	19	26	35	1363	1810	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	20	27	37	1435	1905	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2697	953	1957	0	-	0
Stage 1	1905	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.14	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.22	-	-	-
Pot Cap-1 Maneuver	~ 18	263	294	-	-	-
Stage 1	105	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 16	263	294	-	-	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	92	-	-	-	-	-
Stage 2	412	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.1	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	294	-	73	263	-	-
HCM Lane V/C Ratio	0.125	-	0.274	0.104	-	-
HCM Control Delay (s)	19	-	72	20.3	-	-
HCM Lane LOS	C	-	F	C	-	-
HCM 95th %tile Q(veh)	0.4	-	1	0.3	-	-

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