TRAFFIC IMPACT STUDY

For

Cathedral Rock Commons
El Paso County, Colorado

September 2021

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21-051432

Table of Contents **Page**

List of Figures **Page**

List of Tables **Page**

Appendices

I. Introduction

Project Overview

This traffic impact study addresses the capacity, geometric, and control requirements associated with the development entitled Cathedral Rock Commons.

This proposed mixed-use development consists of multifamily residential, institutional, and retail land uses. The development is located near the east corner of Struthers Road and Spanish Bit Drive in El Paso County, Colorado.

Study Area Boundaries

The study area to be examined in this analysis was coordinated with County Staff and encompasses Struthers Road north to W Baptist Road and south to Spanish Bit Drive, and Spanish Bit Drive from Struthers Road east to proposed site accesses.

The study area did not extend south towards N Gate Boulevard because the development's trip distribution pattern does not anticipate much, if any, site traffic traveling to/from the N Gate Boulevard and Struthers Road intersection.

Figure 1 illustrates location of the site and study intersections.

Site Description

Land for the development is currently vacant and zoned as CC (Commercial Community) and R-4 (an obsolete zoning district previously allowing medium density residential). The proposed development will rezone the obsolete R-4 district area to RM-30 (Residential Multi-Dwelling), allowing for a variety of multifamily residential, personal care, and institutional land uses. The area is surrounded by a mix of open space, retail, and residential land uses.

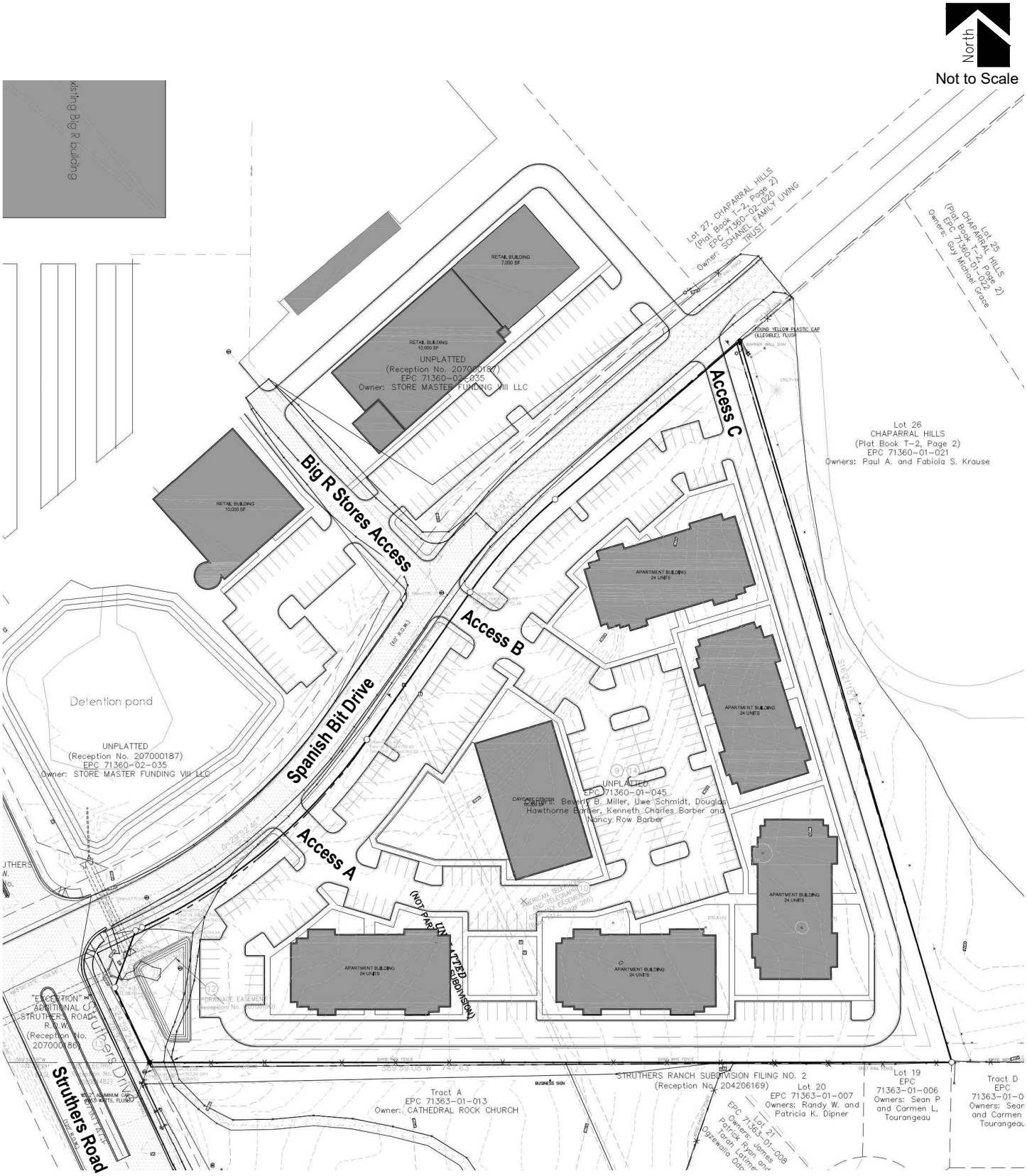
South of Spanish Bit Drive, the proposed development is understood to entail the new construction of 120 multifamily residential dwelling units and an approximately 10,000 square foot day care center. The proposed retail development north of Spanish Bit Drive is conceptual and no specific land uses have been determined. However, for purposes of this analysis, development north of Spanish Bit Drive is assumed to entail approximately 29,000 square feet of shopping center.

Proposed access to the development is provided at the following locations: one full-movement access approximately 270 feet east of Struthers Road serving the southern area of development (referred to as Access A), one four-legged intersection on Spanish Bit Drive at the existing Big R Stores site access (referred to as Access B), and one full-movement intersection on Spanish Bit Drive approximately 340 feet east of the existing Big R Stores site access (referred to as Access C). In order to provide for a conservative analysis, Access C was not included within this study.

It is anticipated that development construction would be phased. Phase One is understood to consist of the multifamily and day care center land uses south of Spanish Bit Drive, and Phase Two will consist of the proposed retail land uses north of Spanish Bit Drive. For purposes of this analysis, it is assumed that overall development build-out would be completed by end of Year 2023.

A rezone map, as prepared by YOW Architects, is shown on Figure 2. This plan is provided for illustrative purposes.


North
Not to Scale
Jackson Creek Parkway
W Baptist Road
Interstate 25
Struthers Road
Spanish Bit Drive
Development Site


North
Not to Scale
existing Big R building
RETAIL BUILDING
7,000 SF
RETAIL BUILDING
12,000 SF
UNPLATTED
(Reception No. 207000187)
EPC 71360-02-035
Owner: STORE MASTER FUNDING VIII LLC
RETAIL BUILDING
10,000 SF
Big R Stores Access
Access C
Access B
Spanish Bit Drive
Access A
Lot 27, CHAPARRAL HILLS
(Plat Book T-2, Page 2)
EPC 71360-02-020
Owner: SCHANEL FAMILY LIVING TRUST
Lot 25
CHAPARRAL HILLS
(Plat Book T-2, Page 2)
EPC 71360-01-022
Owners: Guy Michael Grace
FOUND YELLOW PLASTIC CAP
(ILLEGIBLE), FLUSH
Lot 26
CHAPARRAL HILLS
(Plat Book T-2, Page 2)
EPC 71360-01-021
Owners: Paul A. and Fabiola S. Krause
APARTMENT BUILDING
24 UNITS
APARTMENT BUILDING
24 UNITS
APARTMENT BUILDING
24 UNITS
APARTMENT BUILDING
24 UNITS
APARTMENT BUILDING
24 UNITS
Detention pond
UNPLATTED
(Reception No. 207000187)
EPC 71360-02-035
Owner: STORE MASTER FUNDING VIII LLC
UNPLATTED
EPC 71360-01-045
Owners: Beckett B. Miller, Uwe Schmidt, Douglas Hawthorne Barber, Kenneth Charles Barber and Nancy Row Barber
"EXCEPTION" TO ADDITIONAL COUNTY STRUTHERS ROAD R.O.W. (Reception No. 207000186)
Struthers Road
Tract A
EPC 71363-01-013
Owner: CATHEDRAL ROCK CHURCH
STRUTHERS RANCH SUBDIVISION FILING NO. 2
(Reception No. 204206169)
Lot 20
EPC 71363-01-007
Owners: Randy W. and Patricia K. Dipner
Lot 19
EPC
71363-01-006
Owners: Sean P and Carmen L. Tourangeau
Tract D
EPC
71363-01-0
Owners: Sean and Carmen Tourangeau
Lot 21
EPC 71363-01-008
Owners: James Patrick Ryan and Torah Lorine Ogawala
BUSINESS SIGN

Existing and Committed Surface Transportation Network

Within the study area, Struthers Road is the primary roadway that will accommodate traffic to and from the proposed development. Secondary roadways include W Baptist Road and Spanish Bit Drive. A brief description of each roadway is provided below:

> Struthers Road is a north-south minor arterial roadway having four through lanes (two lanes in each direction) with a combination of shared and exclusive turn lanes at the intersections within the study area. Struthers Road provides a posted speed limit of 45 MPH. Struthers Road ends at W Baptist Road and continues north as Jackson Creek Parkway.
>
> W Baptist Road is an east-west principal arterial roadway having four to six through lanes (two to three lanes in each direction) with exclusive turn lanes at the intersection within the study area. W Baptist Road provides a posted speed limit of 45 MPH.
>
> Spanish Bit Drive is an east-west rural local roadway having two through lanes (one lane in each direction) with a shared turn lanes at the intersections within the study area. Spanish Bit Drive is a paved roadway at its intersection with Struthers Road but becomes a gravel roadway east of the Big R Stores access drive. Spanish Bit Drive provides a posted speed limit of 25 MPH.

The study intersection of W Baptist Road with Struthers Road is signalized. All other study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

Pursuant to the El Paso County 2016 Major Transportation Corridors Plan Update (MTCP)[1], no regional or specific improvements for the roadways described above are known to be planned or committed at this time.

[1] El Paso County 2016 Major Transportation Corridors Plan Update, Felsburg Holt & Ullevig, December 2016.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the Struthers Road intersections with W Baptist Road and Spanish Bit Drive, as well as the intersection of Spanish Bit Drive with the existing site access for Big R Stores. Average daily (24-hour) traffic volumes were collected on Struthers Road. These counts are shown on Figure 3.

It is noted that a significant number of U-turn vehicles are present at the intersection W Baptist Road with Struthers Road. These are shown separately in Figure 3; however, it is understood that these U-turns utilize the existing westbound left-turn lane.

Traffic count data is included for reference in Appendix A.

In coordination with County Staff, existing signal timing parameters for the W Baptist Road and Struthers Road intersection were assumed based on the existing signal head configuration, allowable movements, and pursuant to typical timing data described within the County's Engineering Criteria Manual (ECM)[2]. Timings were used throughout this study to the best extent possible in order to remain consistent with typical County signal coordination plans.

[2] El Paso County Engineering Criteria Manual, El Paso County, October 2020.

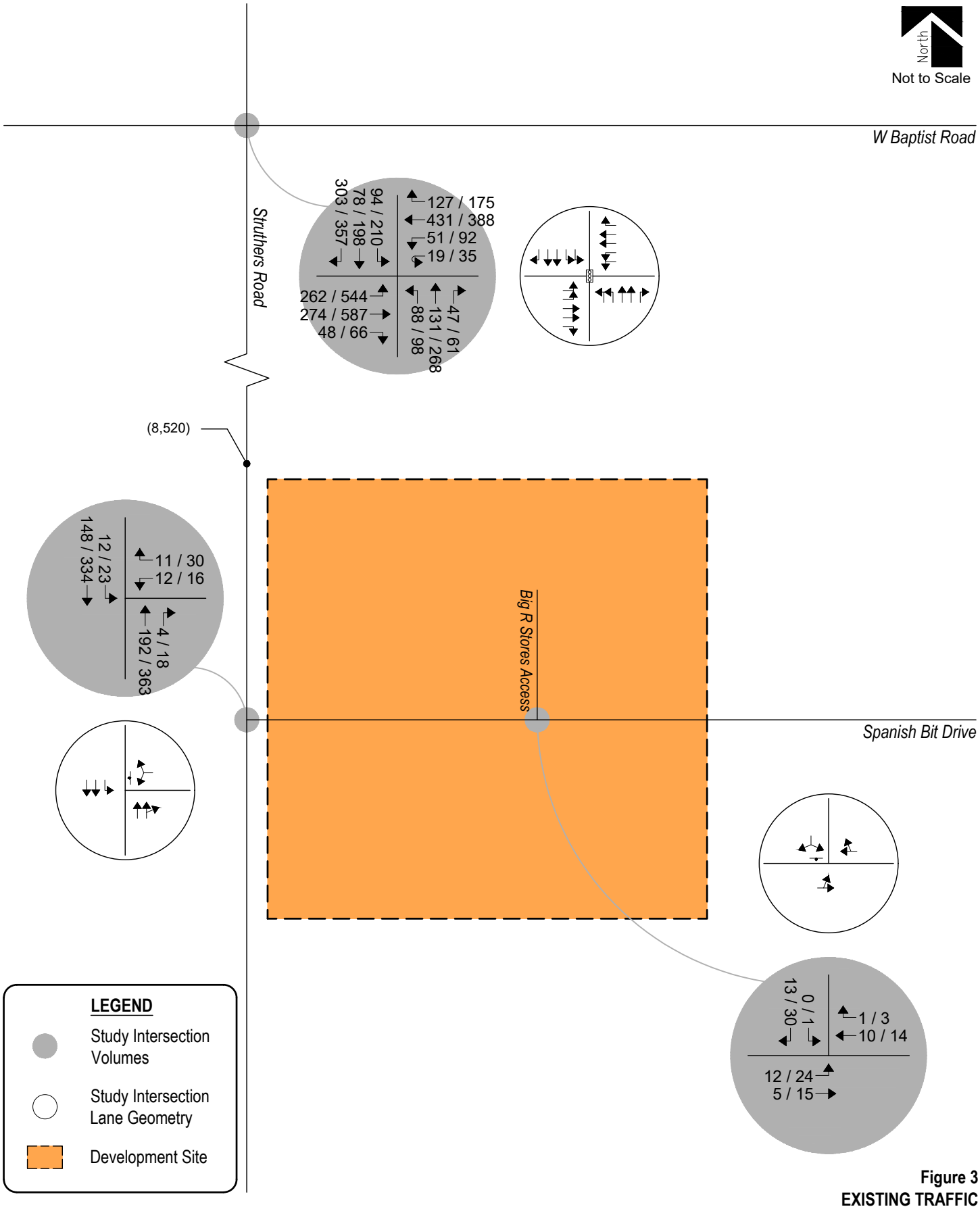


Figure 3
EXISTING TRAFFIC
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

The Signalized and Unsignalized Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM) by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement.

Level of service is a method of measurement used by transportation professionals to quantify a driver's perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix C and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1.

Intersection capacity worksheets developed for this study are provided in Appendix D.

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
W Baptist Road / Struthers Road (Signalized)	C (23.8)	C (31.5)
Spanish Bit Drive / Struthers Road (Stop-Controlled)		
Westbound Left and Right	A	B
Southbound Left	A	A
Spanish Bit Drive / Big R Stores Access (Stop-Controlled)		
Eastbound Left and Through	A	A
Southbound Left and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of W Baptist Road with Struthers Road has overall operations at LOS C during both the morning and afternoon peak traffic hours.

The stop-controlled intersections of Spanish Bit Drive with Struthers Road and the Big R Stores access drive have turning movement operations at LOS A during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

III. Future Traffic Conditions Without Proposed Development

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

To account for projected increases in background traffic for Years 2023 and 2040, a compounded annual growth rate was determined using population growth estimates provided by the Pikes Peak Area Council of Governments' (PPACG) 2045 Long Range Transportation Plan[3], which anticipates a 20-year growth rate between one and two percent. Therefore, in order to provide for a conservative analysis, a growth rate of two percent was applied to existing traffic volumes. This annual growth rate is also consistent with assumptions used within traffic studies prepared for adjacent future developments, and is considered consistent with regional growth projections and the level of in-fill development expected within the area.

To account for projected traffic from adjacent developments not yet built, trip generations from the following traffic studies, provided by the County's Electronic Development Application Review Program (EDARP), were added to background traffic volumes:

- Struthers Ranch Subdivision Filing No. 5[4]
- Falcon Commerce Center[5]
- Monument Ridge Lots 7 & 8[6]

It is important to note that trip generations from the future Monument Ridge Apartments development and other vacant lots within Monument Ridge, as shown within the Monument Ridge Lots 7 & 8 Transportation Memorandum, were also included in background traffic volumes.

Pursuant to the non-committed area roadway improvements discussed in Section I, Year 2023 and Year 2040 background traffic conditions assume no roadway improvements to accommodate regional transportation demands. Year 2023 and Year 2040 also assumes existing signal timing parameters for W Baptist Road and Struthers Road with optimized intersection splits due to the isolated, uncoordinated condition of the signal control.

Projected background traffic volumes and intersection geometry for Years 2023 and 2040 are shown on Figure 4 and Figure 5, respectively.

[3] Moving Forward 2045: Pikes Peak Area Regional Transportation Plan, PPACG, January 2020.
[4] Struthers Ranch Subdivision Filing No. 5: Traffic Impact Study, LSC Transportation Consultants, Inc., May 14, 2021.
[5] Falcon Commerce Center: Traffic Impact Study, SM ROCHA, LLC, August 2020.
[6] Monument Ridge Lots 7 & 8: Transportation Memorandum, LSC Transportation Consultants, Inc., December 20, 2019.

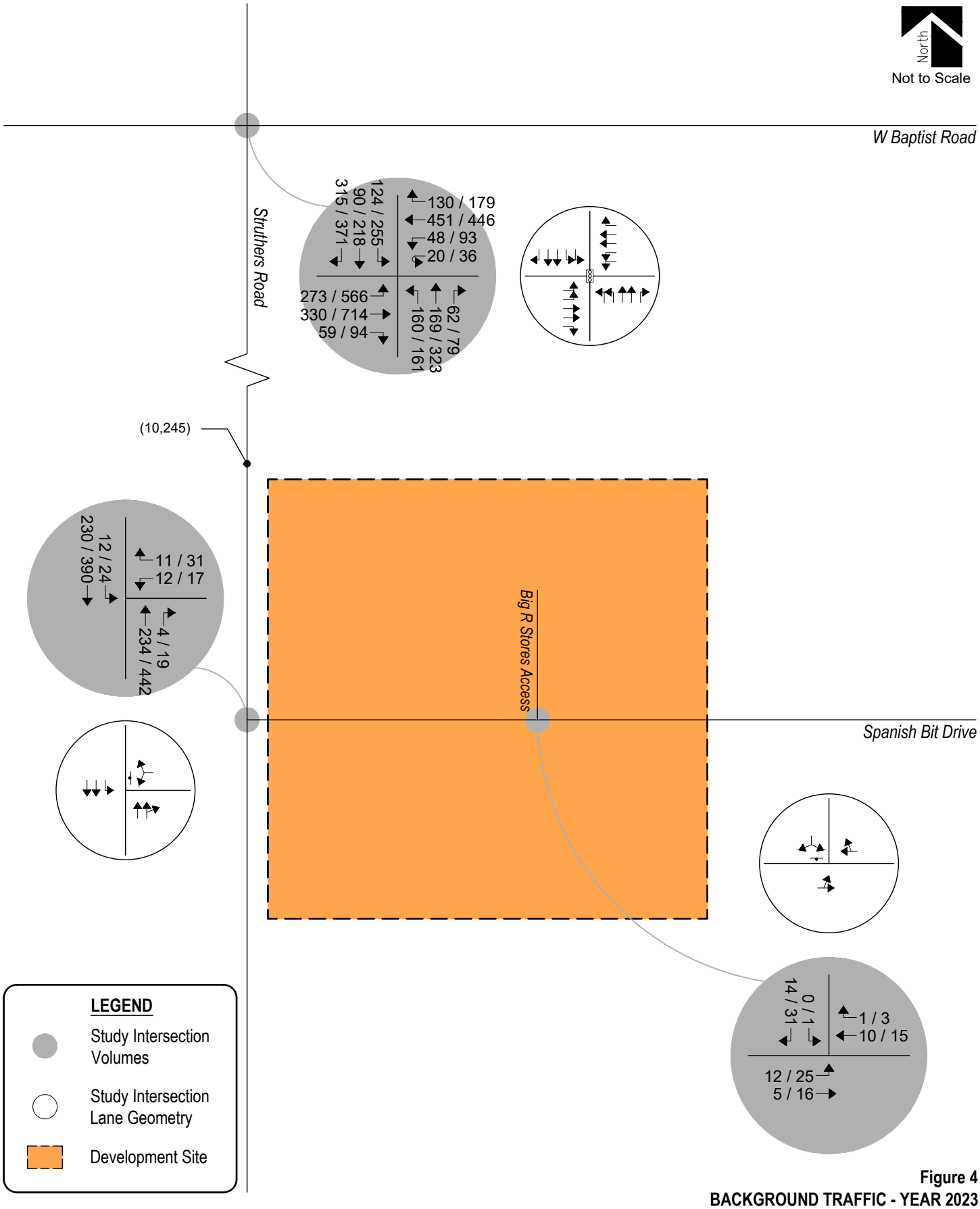


Figure 4
BACKGROUND TRAFFIC - YEAR 2023
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

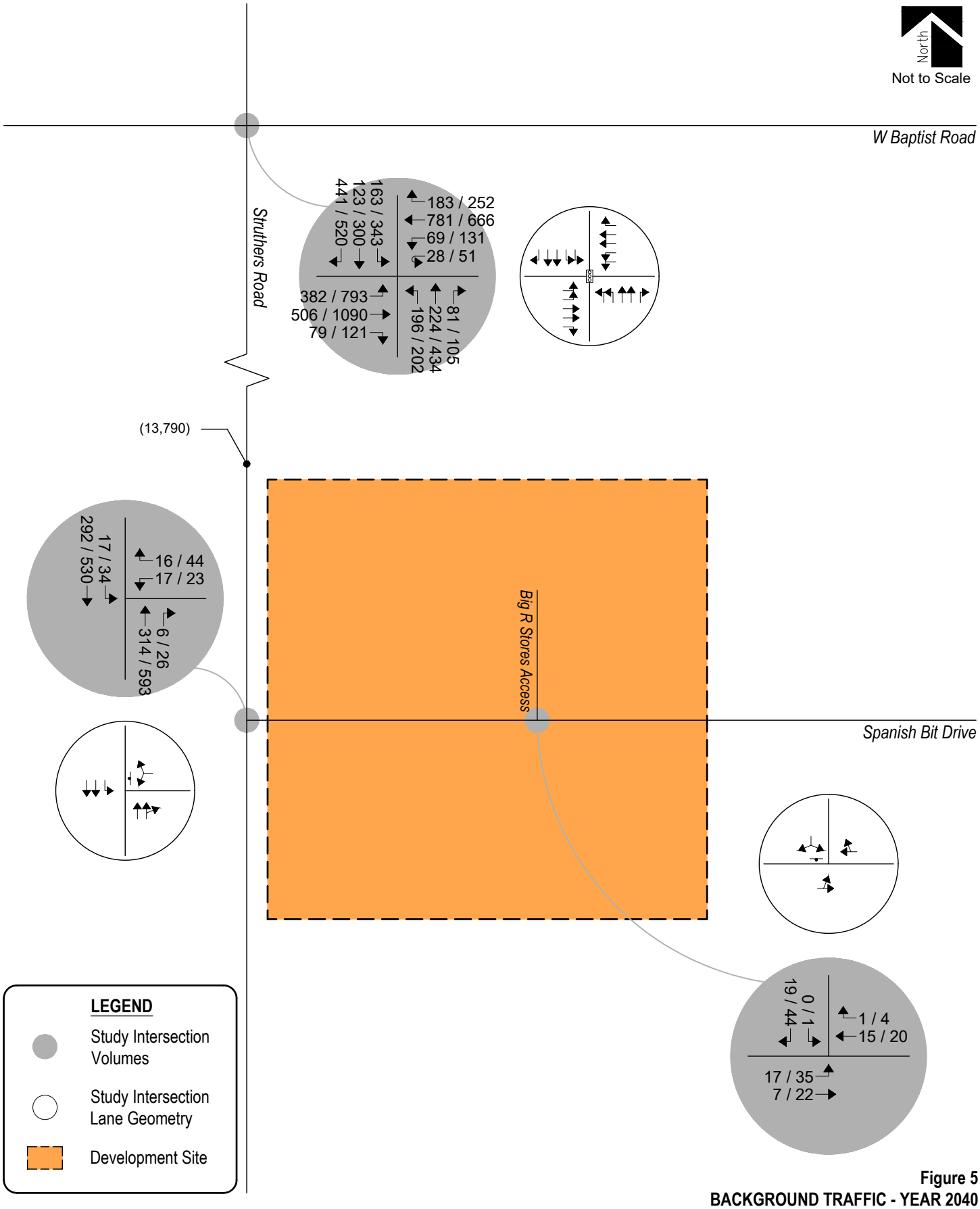


Figure 5
BACKGROUND TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2023 are listed in Table 2. Year 2040 operational results are summarized in Table 3.

Definitions of levels of service are given in Appendix C. Intersection capacity worksheets are provided in Appendix D.

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2023

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
W Baptist Road / Struthers Road (Signalized)	C (25.9)	C (34.3)
Spanish Bit Drive / Struthers Road (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left	A	A
Spanish Bit Drive / Big R Stores Access (Stop-Controlled)		
Eastbound Left and Through	A	A
Southbound Left and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2023

Year 2023 background traffic analysis indicates that the signalized intersection of W Baptist Road with Struthers Road experiences overall operations at LOS C during both the morning and afternoon peak traffic hours.

The stop-controlled intersection of Spanish Bit Drive with Struthers Road has turn movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The stop-controlled intersection of Spanish Bit Drive with the Big R Stores access drive has turn movement operations at LOS A during both the morning and afternoon peak traffic hours.

Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2040

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
W Baptist Road / Struthers Road (Signalized)	D (37.4)	D (44.3)
Spanish Bit Drive / Struthers Road (Stop-Controlled)		
Westbound Left and Right	B	C
Southbound Left	A	A
Spanish Bit Drive / Big R Stores Access (Stop-Controlled)		
Eastbound Left and Through	A	A
Southbound Left and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2040

By Year 2040 and without the proposed development, the signalized intersection of W Baptist Road with Struthers Road anticipates overall operations at LOS D during both the morning and afternoon peak traffic hours.

The stop-controlled intersection of Spanish Bit Drive with Struthers Road experiences turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The stop-controlled intersection of Spanish Bit Drive with the Big R Stores access drive projects turn movement operations at LOS A during both the morning and afternoon peak traffic hours.

IV. Proposed Project Traffic

Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 10th Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use codes 220 (Multifamily Housing (Low-Rise)), 565 (Day Care Center), and 820 (Shopping Center) were used for estimating trip generation because of their conservative trip generation rates and best fit to the proposed land use descriptions.

It is understood that the proposed retail development north of Spanish Bit Drive are conceptual and no specific land uses have been defined. Therefore, as actual land uses, densities, or site plans within the retail portion of Cathedral Rock Commons become defined over time, it is expected that traffic generation characteristics considered within this study may need to be updated by more specific traffic analyses or studies to help assess if transportation improvements are needed to mitigate potential traffic impacts.

Trip generation rates used in this study are presented in Table 4.

Table 4 – Trip Generation Rates

ITE			TRIP GENERATION RATES						
			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	UNIT	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	DU	7.32	0.11	0.35	0.46	0.35	0.21	0.56
565	Day Care Center	KSF	47.62	5.83	5.17	11.00	5.23	5.89	11.12
820	Shopping Center	KSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81

Key: DU = Dwelling Units. KSF = Thousand Square Feet Gross Floor Area.
Note: All data and calculations above are subject to being rounded to nearest value.

Table 5 illustrates projected average daily traffic (ADT), AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

Table 5 – Trip Generation Summary

ITE			TOTAL TRIPS GENERATED						
			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	SIZE	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	120 DU	878	13	43	55	42	25	67
565	Day Care Center	10.0 KSF	476	58	52	110	52	59	111
820	Shopping Center	29.0 KSF	1,095	17	10	27	53	57	110
		Total:	*2,449*	*88*	*105*	*192*	*148*	*141*	*289*

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 2,449 daily trips with 192 of those occurring during the morning peak hour and 289 during the afternoon peak hour.

Adjustments to Trip Generation Rates

It is considered likely that a mixed-use development of this type will attract trips from within area land uses. Utilizing research obtained by the National Cooperative Highway Research Program (NCHRP), ITE created an estimation tool[7] for determining internal capture for mixed-use developments. Using NCHRP Report 684 methodology, it is determined that the proposed land uses have various internal capture percentages ranging from 0 to 35 percent. Applying vehicle occupancy estimates from ITE's Trip Generation Handbook, 3rd Edition, it is determined that overall averages of approximately 0% of total AM peak hour trips and approximately 15% of total PM peak hour trips will be captured internally.

It is important to note that ITE's institutional land uses, such as Day Care Center, are not subject to internal capture computations within the estimation tool. This is due to the nature of such businesses which generally operate as destinations for a specific demographic serving a wide area. Considering the relatively low traffic volumes generated by the residential and retail land uses, it is likely that only a small portion of trips to the Day Care Center, if any, will originate within the development area. As such, no internal capture during the morning peak traffic hour is to be expected.

ITE's internal capture spreadsheets are provided for reference in Appendix B.

Table 6 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out with reductions applied due to internal capture.

Table 6 – Trip Generation Summary with Reductions

ITE			TOTAL TRIPS GENERATED						
			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	SIZE	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
220	Multifamily Housing (Low-Rise)	120 DU	878	13	43	55	42	25	67
		Internal Capture:	*14%*	*0%*	*0%*	*0%*	*35%*	*20%*	*28%*
			758	*13*	*43*	*55*	*28*	*20*	*49*
565	Day Care Center	10.0 KSF	476	58	52	110	52	59	111
		Internal Capture:	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
			476	*58*	*52*	*110*	*52*	*59*	*111*
820	Shopping Center	29.0 KSF	1,095	17	10	27	53	57	110
		Internal Capture:	*9%*	*0%*	*0%*	*0%*	*9%*	*25%*	*17%*
			1,002	*17*	*10*	*27*	*48*	*43*	*92*
		Total:	*2,236*	*88*	*105*	*192*	*128*	*122*	*252*

Note: All data and calculations above are subject to being rounded to nearest value.

[7] NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, National Cooperative Highway Research Program, October 2010.

Upon build-out and with consideration for internal capture trip reductions, Table 6 illustrates that the proposed development has the potential to generate approximately 2,236 daily trips with 192 of those occurring during the morning peak hour and 252 during the afternoon peak hour.

Trip Distribution

The overall directional distribution of site-generated traffic was determined based on the location of development site within the County, proposed and existing area land uses, allowed turning movements, and available roadway network.

Overall trip distribution patterns for the development are shown on Figure 6.

Trip Assignment

Traffic assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

Due to the design of the development area as shown in Figure 2, positioning retail north of Spanish Bit Drive and residential south of Spanish Bit Drive, site-generated trips lost due to internal capture are assumed to represent the through volumes traveling north-south across Spanish Bit Drive. Inclusion of these traffic volumes is understood to provide for a conservative analysis.

It is noted that the 24-hour volume on Struthers Road just north of N Gate Boulevard, as illustrated in CDOT's traffic count database system (TCDS)[8], is expected to have an increase in average daily traffic of less than ten percent as a result of the Cathedral Rock Commons development.

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 6.

[8] Transportation Data Management System, MS2, 2021.

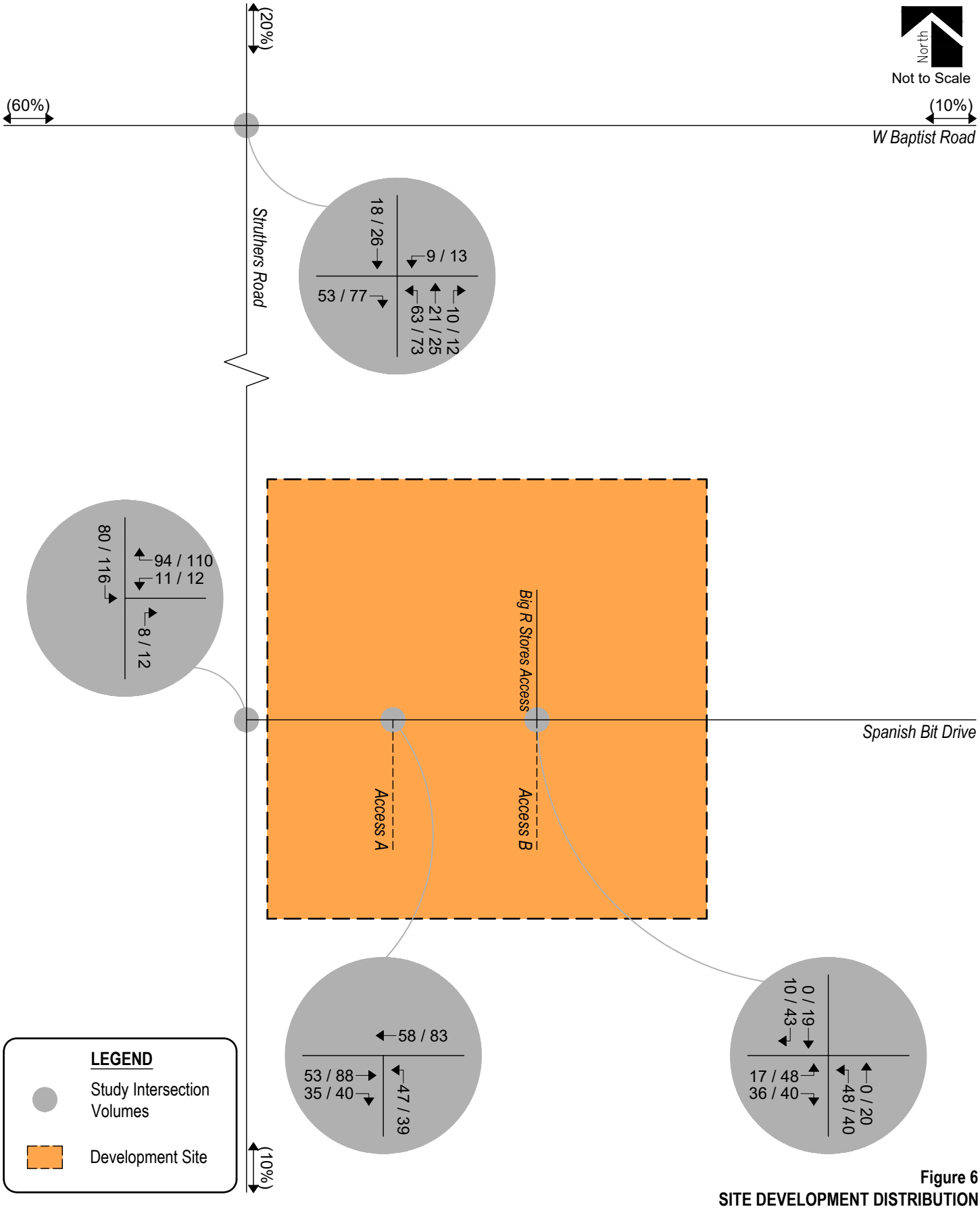


Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour

V. Future Traffic Conditions With Proposed Developments

Site-generated traffic was added to background traffic projections for Years 2023 and 2040 to develop total traffic projections. For analysis purposes, it was assumed that development construction would be completed by end of Year 2023.

Pursuant to area roadway improvement discussions provided in Section III, Year 2023 and Year 2040 total traffic conditions assume no roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

Projected Year 2023 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2040.

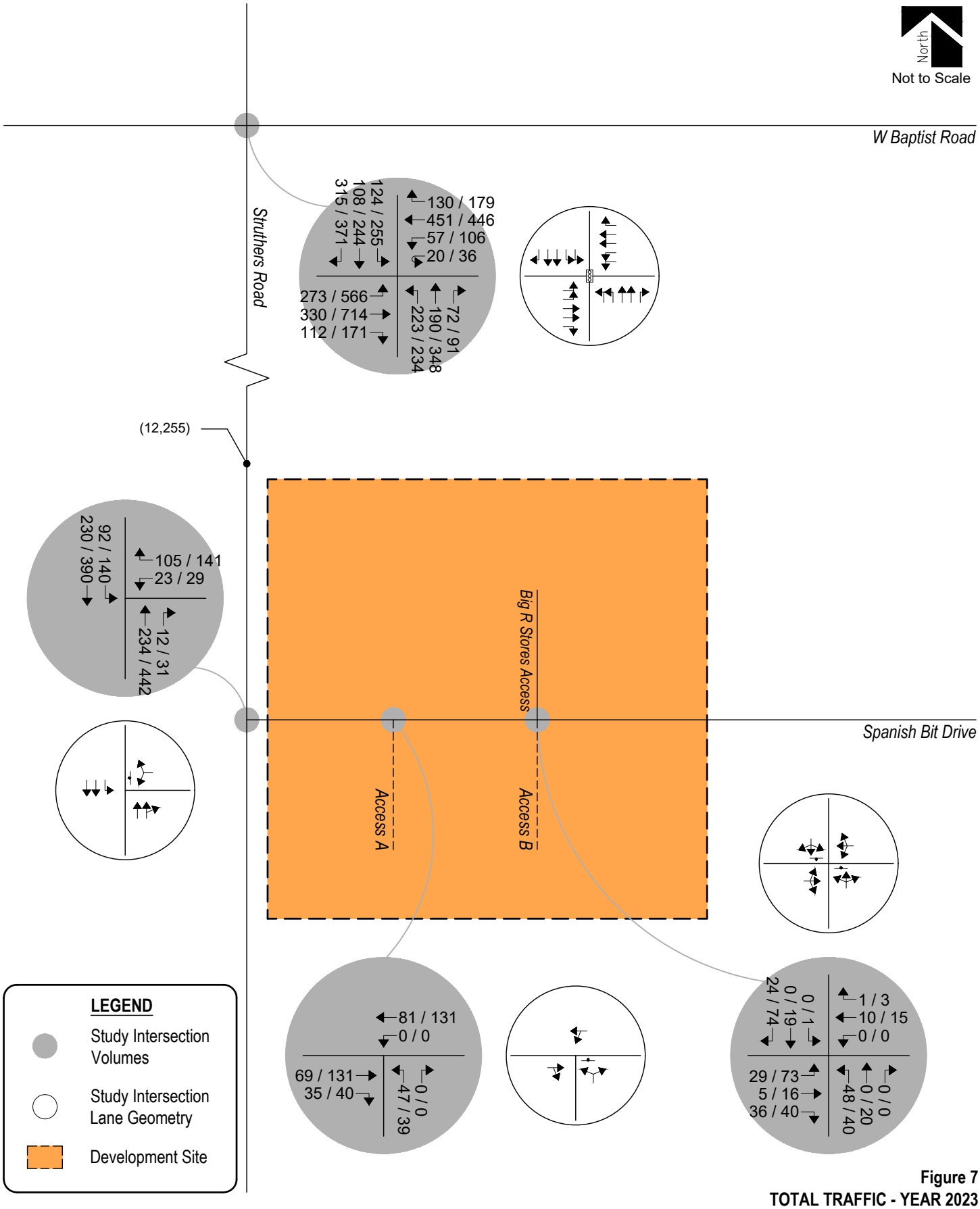


Figure 7
TOTAL TRAFFIC - YEAR 2023
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

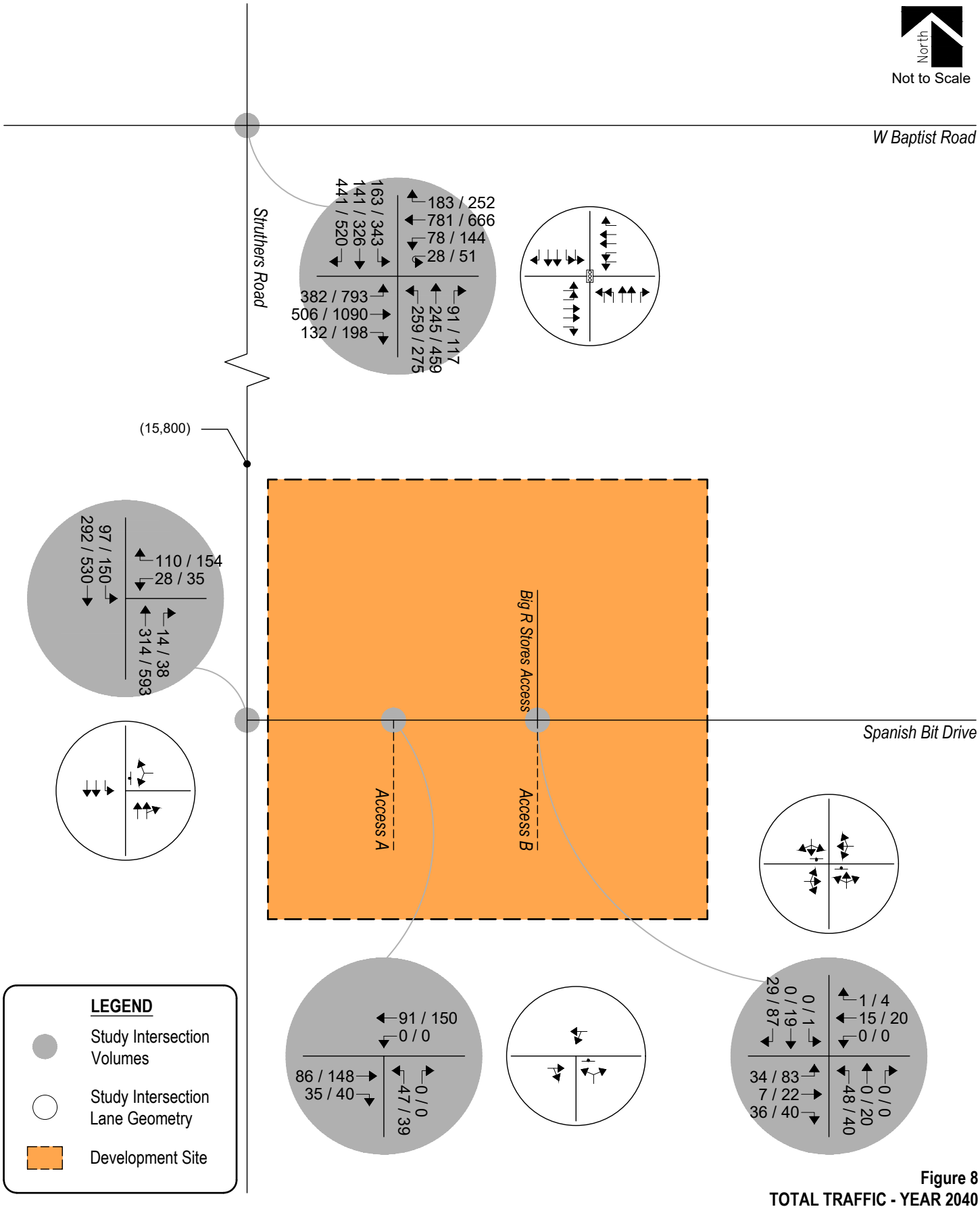


Figure 8
TOTAL TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the Highway Capacity Manual (HCM) and are based upon the worst-case conditions that occur during a typical weekday upon build-out of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

Peak Hour Intersection Levels of Service

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2023 and 2040 are summarized in Table 7 and Table 8, respectively.

Definitions of levels of service are given in Appendix C. Intersection capacity worksheets are provided in Appendix D.

Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2023

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
W Baptist Road / Struthers Road (Signalized)	C (26.7)	D (35.2)
Spanish Bit Drive / Struthers Road (Stop-Controlled)		
Westbound Left and Right	B	C
Southbound Left	A	A
Spanish Bit Drive / Access A (Stop-Controlled)		
Westbound Left and Through	A	B
Northbound Left and Right	A	A
Spanish Bit Drive / Access B (Stop-Controlled)		
Eastbound Left, Through and Right	A	A
Westbound Left, Through and Right	A	A
Northbound Left, Through and Right	A	B
Southbound Left, Through and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Table 8 – Intersection Capacity Analysis Summary – Total Traffic – Year 2040

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
W Baptist Road / Struthers Road (Signalized)	D (38.8)	D (47.9)
Spanish Bit Drive / Struthers Road (Stop-Controlled)		
Westbound Left and Right	B	D
Southbound Left	A	A
Spanish Bit Drive / Access A (Stop-Controlled)		
Westbound Left and Through	B	B
Northbound Left and Right	A	A
Spanish Bit Drive / Access B (Stop-Controlled)		
Eastbound Left, Through and Right	A	A
Westbound Left, Through and Right	A	A
Northbound Left, Through and Right	A	B
Southbound Left, Through and Right	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled Intersection: Level of Service

Total Traffic Analysis Results Upon Development Build-Out

Table 8 illustrates how, by Year 2040 and upon development build-out, the signalized intersection of W Baptist Road with Struthers Road shows an overall LOS D operation during both the morning and afternoon peak traffic hours. Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersection.

The stop-controlled intersection of Spanish Bit Drive with Struthers Road is projected to have turning movement operations at or better than LOS B for the morning peak traffic hour and LOS D or better for the afternoon peak traffic hour.

The stop-controlled intersection of Spanish Bit Drive with Access A is shown to have turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The stop-controlled intersection of Spanish Bit Drive with Access B is expected to have turning movement operations at LOS A during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

Queue Length Analysis

Queue lengths for existing and proposed study intersections were analyzed using Year 2040 total traffic conditions. The analysis yields estimate of 95th percentile queue lengths, which have only a five percent probability of being exceeded during the analysis time period. Queue lengths were modeled and are included with the SYNCHRO worksheets in Appendix D.

No significant queues at the existing intersections and proposed site accesses were indicated. The greatest on-site queue length occurs during the afternoon peak hour at the intersection of Struthers Road with Spanish Bit Drive. The queue length is approximately four vehicles for the westbound left and right turn movement.

Auxiliary Lane Analysis

Auxiliary lanes for site development accesses were based on the County's ECM.

Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 2.3.7 of the County's ECM, reveals that a right turn deceleration lane along Struthers Road at Spanish Bit Drive is not required since the northbound right turn ingress volumes do not exceed the 50 vehicles per hour threshold.

VII. Conclusion

This traffic impact study addressed the capacity, geometric, and control requirements associated with the development entitled Cathedral Rock Commons. This proposed mixed-use development consists of multifamily residential, institutional, and retail land uses. The development is located near the east corner of Struthers Road and Spanish Bit Drive in El Paso County, Colorado.

The study area examined in this analysis was coordinated with County Staff and encompassed Struthers Road north to W Baptist Road and south to Spanish Bit Drive, and Spanish Bit Drive from Struthers Road east to proposed site accesses.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2023 and Year 2040 background traffic conditions, and Year 2023 and Year 2040 total traffic conditions.

Analysis of existing traffic conditions indicates that the signalized intersection of W Baptist Road with Struthers Road has overall operations at LOS C during both the morning and afternoon peak traffic hours. All stop-controlled intersections have turn movement operations at LOS A during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

Without the proposed development, Year 2023 background operational analysis shows that the signalized intersection of W Baptist Road with Struthers Road experiences overall operations at LOS C during both the morning and afternoon peak traffic hours. All stop-controlled intersections expect turn movement operations at or better than LOS B during either peak traffic hour.

By Year 2040 and without the proposed development, the signalized intersection of W Baptist Road with Struthers Road anticipates overall operations at LOS D during both the morning and afternoon peak traffic hours. All stop-controlled intersections anticipate turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2040 background traffic conditions. Proposed site accesses have long-term operations at LOS B or better during peak traffic periods and upon build-out. The addition of Access C, not included in this analysis as indicated in Section I, is expected to better the projected intersection operations for proposed site accesses indicated within this analysis.

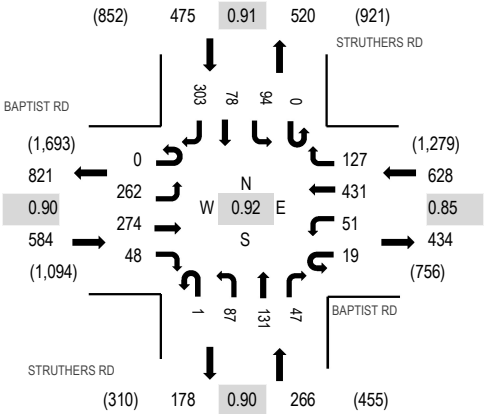
APPENDIX A

Traffic Count Data

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

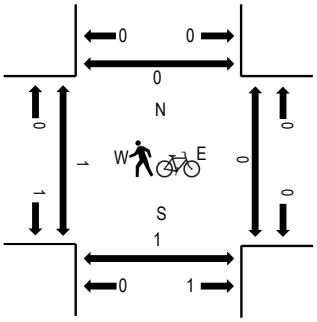
Location: 1 STRUTHERS RD & BAPTIST RD AM
Date: Thursday, July 29, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



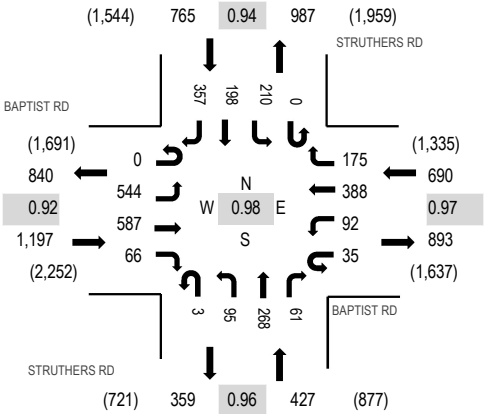
Traffic Counts

Interval Start Time	BAPTIST RD Eastbound				BAPTIST RD Westbound				STRUTHERS RD Northbound				STRUTHERS RD 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	61	39	4	2	9	95	12	1	24	12	5	0	9	16	64	353	1,727	0	0	0	0
7:15 AM	0	50	72	5	2	9	151	13	1	16	15	10	0	10	8	68	430	1,794	0	0	0	0
7:30 AM	0	66	55	6	3	12	159	21	0	20	21	8	0	10	21	64	466	1,896	0	0	1	0
7:45 AM	0	75	69	8	0	15	120	28	0	21	27	8	0	20	17	70	478	1,939	1	0	0	1
8:00 AM	0	57	61	10	5	8	87	26	0	24	25	12	0	17	12	76	420	1,953	0	0	0	0
8:15 AM	0	60	76	14	2	13	126	37	0	37	30	7	0	23	18	89	532		1	0	1	0
8:30 AM	0	73	62	8	7	12	120	31	0	11	41	17	0	29	20	78	509		0	0	0	0
8:45 AM	0	72	75	16	5	18	98	33	1	15	35	11	0	25	28	60	492		0	0	0	0
Count Total	0	514	509	71	26	96	956	201	3	168	206	78	0	143	140	569	3,680		2	0	2	1
Peak Hour	0	262	274	48	19	51	431	127	1	87	131	47	0	94	78	303	1,953		1	0	1	0

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

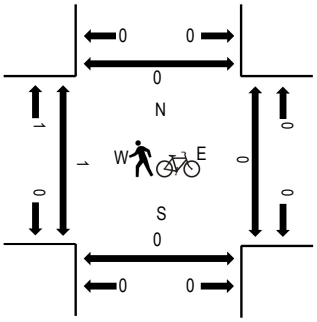
Location: 1 STRUTHERS RD & BAPTIST RD PM
Date: Thursday, July 29, 2021
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



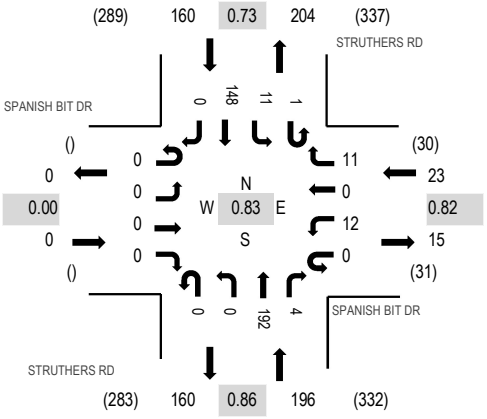
Traffic Counts

Interval Start Time	BAPTIST RD Eastbound				BAPTIST RD Westbound				STRUTHERS RD Northbound				STRUTHERS RD 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	134	112	16	7	20	94	47	0	26	72	14	0	41	54	112	749	3,004	0	0	0	1
4:15 PM	0	132	118	17	4	17	79	40	1	19	78	19	0	52	49	91	716	3,004	0	0	0	0
4:30 PM	0	155	116	28	13	21	110	35	0	23	73	20	0	47	51	92	784	3,075	0	0	0	0
4:45 PM	0	143	144	12	12	25	87	43	0	27	57	19	0	48	52	86	755	3,079	0	0	0	0
5:00 PM	0	115	126	17	5	22	105	41	1	27	67	16	0	58	50	99	749	3,004	0	0	0	0
5:15 PM	0	149	159	19	9	23	96	48	0	23	68	13	0	53	47	80	787		0	0	0	0
5:30 PM	0	137	158	18	9	22	100	43	2	18	76	13	0	51	49	92	788		1	0	0	0
5:45 PM	1	105	108	13	10	26	89	33	1	25	68	11	0	52	48	90	680		0	0	0	0
Count Total	1	1,070	1,041	140	69	176	760	330	5	188	559	125	0	402	400	742	6,008		1	0	0	1
Peak Hour	0	544	587	66	35	92	388	175	3	95	268	61	0	210	198	357	3,079		1	0	0	0

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

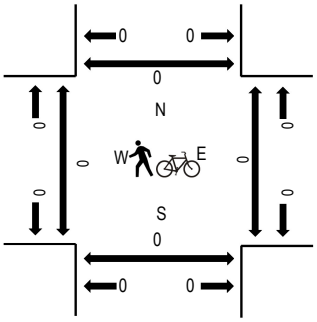
Location: 2 STRUTHERS RD & SPANISH BIT DR AM
Date: Thursday, July 29, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



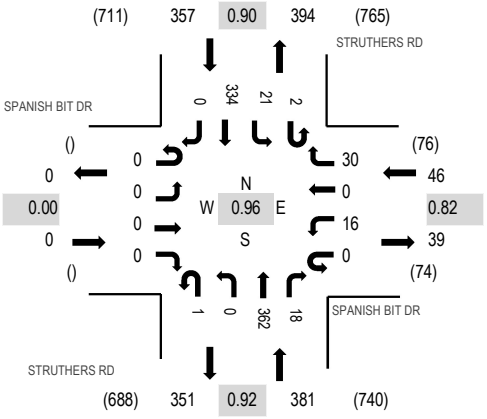
Traffic Counts

Interval Start Time	SPANISH BIT DR Eastbound				SPANISH BIT DR Westbound				STRUTHERS RD Northbound				STRUTHERS RD 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	0	0	0	1	0	0	1	0	19	2	1	0	20	0	44	272	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	1	0	0	31	1	1	1	29	0	65	295	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	2	0	0	31	4	0	1	25	0	64	326	0	1	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	46	1	0	6	45	0	99	364	0	1	0	0
8:00 AM	0	0	0	0	0	1	0	2	0	0	35	1	0	2	26	0	67	379	0	0	0	0
8:15 AM	0	0	0	0	0	4	0	3	0	0	49	1	0	5	34	0	96		0	0	0	0
8:30 AM	0	0	0	0	0	5	0	2	0	0	56	1	0	4	34	0	102		0	0	0	0
8:45 AM	0	0	0	0	0	2	0	4	0	0	52	1	1	0	54	0	114		0	0	0	0
Count Total	0	0	0	0	0	15	0	15	1	0	319	12	3	19	267	0	651		0	2	0	0
Peak Hour	0	0	0	0	0	12	0	11	0	0	192	4	1	11	148	0	379		0	0	0	0

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

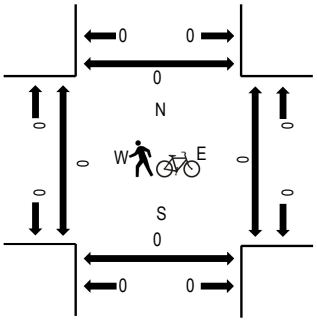
Location: 2 STRUTHERS RD & SPANISH BIT DR PM
Date: Thursday, July 29, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



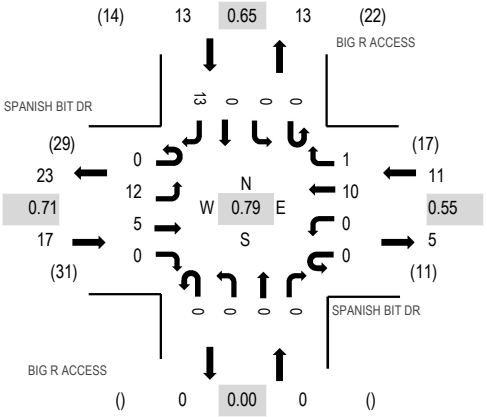
Traffic Counts

Interval Start Time	SPANISH BIT DR Eastbound				SPANISH BIT DR Westbound				STRUTHERS RD Northbound				STRUTHERS RD 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	0	0	0	4	0	8	1	0	91	3	0	4	79	0	190	784	0	0	0	0
4:15 PM	0	0	0	0	0	5	0	8	0	0	96	8	0	6	81	0	204	763	0	0	0	0
4:30 PM	0	0	0	0	0	5	0	9	0	0	91	3	1	4	79	0	192	756	0	0	0	0
4:45 PM	0	0	0	0	0	2	0	5	0	0	84	4	1	7	95	0	198	749	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	6	0	0	79	0	0	3	81	0	169	743	0	0	0	0
5:15 PM	0	0	0	0	0	4	0	5	0	0	93	2	0	10	83	0	197		0	0	0	0
5:30 PM	0	0	0	0	0	3	0	4	0	0	84	4	0	5	85	0	185		0	0	0	0
5:45 PM	0	0	0	0	0	1	0	7	0	0	93	4	0	7	80	0	192		0	0	0	0
Count Total	0	0	0	0	0	24	0	52	1	0	711	28	2	46	663	0	1,527		0	0	0	0
Peak Hour	0	0	0	0	0	16	0	30	1	0	362	18	2	21	334	0	784		0	0	0	0

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

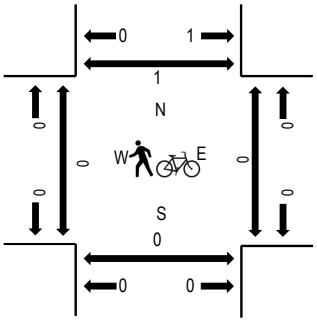
Location: 3 BIG R ACCESS & SPANISH BIT DR AM
Date: Thursday, July 29, 2021
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



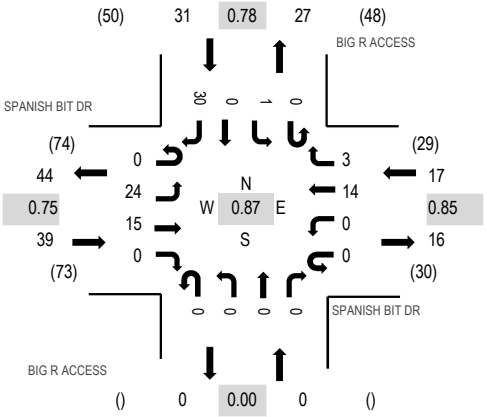
Traffic Counts

Interval Start Time	SPANISH BIT DR Eastbound				SPANISH BIT DR Westbound				BIG R ACCESS Northbound				BIG R ACCESS 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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	21	0	0	0	1
7:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	26	0	0	0	1
7:30 AM	0	4	3	0	0	0	3	0	0	0	0	0	0	0	0	0	10	37	0	0	0	0
7:45 AM	0	4	1	0	0	0	1	0	0	0	0	0	0	1	0	0	7	37	0	0	0	1
8:00 AM	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	3	7	41	0	0	0	0
8:15 AM	0	3	2	0	0	0	5	0	0	0	0	0	0	0	0	3	13		0	0	0	0
8:30 AM	0	4	1	0	0	0	2	1	0	0	0	0	0	0	0	2	10		0	0	0	0
8:45 AM	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0	5	11		0	0	0	1
Count Total	0	21	10	0	0	0	16	1	0	0	0	0	0	1	0	13	62		0	0	0	4
Peak Hour	0	12	5	0	0	0	10	1	0	0	0	0	0	0	0	13	41		0	0	0	1

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

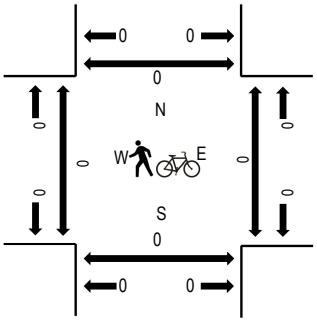
Location: 3 BIG R ACCESS & SPANISH BIT DR PM
Date: Thursday, July 29, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	SPANISH BIT DR Eastbound				SPANISH BIT DR Westbound				BIG R ACCESS Northbound				BIG R ACCESS 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	4	4	0	0	0	4	1	0	0	0	0	0	0	0	10	23	87	0	0	0	0
4:15 PM	0	8	5	0	0	0	4	0	0	0	0	0	0	0	0	8	25	76	0	0	0	0
4:30 PM	0	6	1	0	0	0	4	1	0	0	0	0	0	0	0	8	20	70	0	0	0	0
4:45 PM	0	6	5	0	0	0	2	1	0	0	0	0	0	1	0	4	19	64	0	0	0	0
5:00 PM	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0	4	12	65	0	0	0	0
5:15 PM	0	7	5	0	0	0	4	0	0	0	0	0	0	0	0	3	19		0	0	0	0
5:30 PM	0	4	2	0	0	0	1	0	0	0	0	0	0	0	0	7	14		0	0	0	0
5:45 PM	0	7	5	0	0	0	2	1	0	0	0	0	0	0	0	5	20		0	0	0	0
Count Total	0	44	29	0	0	0	25	4	0	0	0	0	0	1	0	49	152		0	0	0	0
Peak Hour	0	24	15	0	0	0	14	3	0	0	0	0	0	1	0	30	87		0	0	0	0

All Traffic Data Services

www.alltrafficdata.net

Date Start: 29-Jul-21
Site Code: 4
Station ID: 4
STRUTHERS RD N.O. SPANISH BIT DR

Start Time	29-Jul-21 Thu	NB	SB							Total
12:00 AM		11	11							22
01:00		4	5							9
02:00		5	1							6
03:00		5	3							8
04:00		22	8							30
05:00		33	9							42
06:00		77	47							124
07:00		135	127							262
08:00		195	159							354
09:00		257	221							478
10:00		301	270							571
11:00		**321**	**338**							**659**
12:00 PM		347	355							702
01:00		350	**358**							708
02:00		307	332							639
03:00		377	333							710
04:00		**396**	358							**754**
05:00		371	354							725
06:00		282	297							579
07:00		208	241							449
08:00		168	186							354
09:00		95	117							212
10:00		34	52							86
11:00		18	19							37
Total		4319	4201							8520
Percent		50.7%	49.3%							
AM Peak	-	11:00	11:00	-	-	-	-	-	-	11:00
Vol.	-	321	338	-	-	-	-	-	-	659
PM Peak	-	16:00	13:00	-	-	-	-	-	-	16:00
Vol.	-	396	358	-	-	-	-	-	-	754
Grand Total		4319	4201							8520
Percent		50.7%	49.3%							
ADT		ADT 8,520		AADT 8,520						

APPENDIX B

Internal Capture Worksheets

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Cathedral Rock Commons	**Organization:**	SM ROCHA, LLC
Project Location:	NEC Stuthers Road & Spanish Bit Drive	**Performed By:**	Brandon Wilson
Scenario Description:		**Date:**	8/20/2021
Analysis Year:	Development Built-Out	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	29	KSF	27	17	10
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	120	DU	56	13	43
Hotel				0		
All Other Land Uses[2]	565	10	KSF	110	58	52
				193	88	105

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail	1.17	0%	0%	1.16	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.13	0%	4%	1.09	0%	2%
Hotel						
All Other Land Uses[2]	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	204	93	111
Internal Capture Percentage	0%	0%	0%
External Vehicle-Trips[5]	191	87	104
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	2	1	1

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	0%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	0%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Cathedral Rock Commons
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.17	17	20	1.16	10	12
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.13	13	15	1.09	43	47
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	3		2	0	2	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	0	9	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		6	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	2		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	0	0		0
Hotel	0	1	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	0	20	20	17	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	15	15	12	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	58	58	58	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	0	12	12	10	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	47	47	42	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	52	52	52	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Cathedral Rock Commons	**Organization:**	SM ROCHA, LLC
Project Location:	NEC Stuthers Road & Spanish Bit Drive	**Performed By:**	Brandon Wilson
Scenario Description:		**Date:**	8/20/2021
Analysis Year:	Development Built-Out	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	820	29	KSF	110	53	57
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	120	DU	67	42	25
Hotel				0		
All Other Land Uses[2]	565	10	KSF	111	52	59
				288	147	141

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail	1.21	0%	0%	1.18	0%	0%
Restaurant						
Cinema/Entertainment						
Residential	1.15	0%	3%	1.21	0%	4%
Hotel						
All Other Land Uses[2]	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	17	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	6	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	320	164	156
Internal Capture Percentage	14%	14%	15%
External Vehicle-Trips[5]	246	126	120
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	2	1	1

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	25%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	35%	20%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Cathedral Rock Commons
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.21	53	64	1.18	57	67
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.15	42	48	1.21	25	30
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		19	3	17	3
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	13	6	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	2	0
Retail	0		0	0	22	0
Restaurant	0	32		0	8	0
Cinema/Entertainment	0	3	0		2	0
Residential	0	6	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	6	58	64	48	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	17	31	48	26	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	52	52	52	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	17	50	67	42	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	6	24	30	19	0	1
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	59	59	59	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

APPENDIX C

Level of Service Definitions

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016: Chapter 19 – Signalized Intersections and Chapter 20 – Two-Way Stop Controlled Intersections.

Automobile Level of Service (LOS) for Signalized Intersections

Levels of service are defined to represent reasonable ranges in control delay.

LOS A

Describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B

Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C

Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D

Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E

Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F

Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Level of Service (LOS) for Unsignalized TWSC Intersections

Level of Service (v/c ≤ 1.0)	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

APPENDIX D

Capacity Worksheets

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	262	274	48	19	51	431	127	88	131	47	94	78
Future Volume (vph)	262	274	48	19	51	431	127	88	131	47	94	78
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			127				177			182		
Lane Group Flow (vph)	285	298	52	0	76	468	138	96	142	51	102	85
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	26.0	48.0	48.0	14.0	14.0	36.0	36.0	15.0	43.0	43.0	15.0	43.0
Total Split (%)	21.7%	40.0%	40.0%	11.7%	11.7%	30.0%	30.0%	12.5%	35.8%	35.8%	12.5%	35.8%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	12.6	43.2	43.2		7.3	34.9	34.9	7.8	9.6	9.6	7.9	9.7
Actuated g/C Ratio	0.15	0.50	0.50		0.08	0.41	0.41	0.09	0.11	0.11	0.09	0.11
v/c Ratio	0.57	0.17	0.06		0.26	0.33	0.18	0.31	0.36	0.15	0.32	0.21
Control Delay	40.5	14.7	0.1		42.4	20.1	2.3	42.3	39.8	0.9	42.3	38.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	14.7	0.1		42.4	20.1	2.3	42.3	39.8	0.9	42.3	38.2
LOS	D	B	A		D	C	A	D	D	A	D	D
Approach Delay		25.1				19.0			33.8			23.1
Approach LOS		C				B			C			C
Queue Length 50th (ft)	78	50	0		21	92	0	26	40	0	28	23
Queue Length 95th (ft)	125	88	0		45	158	22	54	71	0	57	46
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	838	1778	858		347	1435	747	388	1560	799	388	1560
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.17	0.06		0.22	0.33	0.18	0.25	0.09	0.06	0.26	0.05

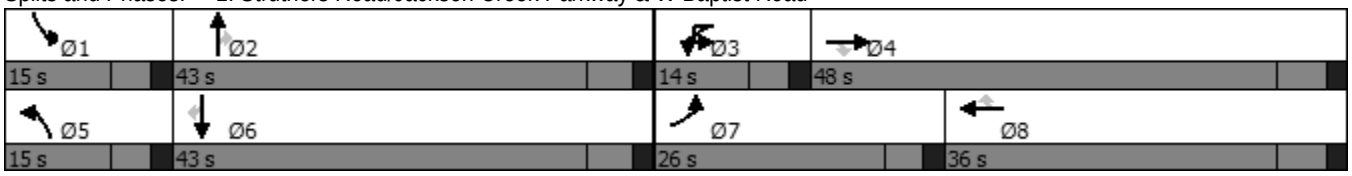
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 85.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	303
Future Volume (vph)	303
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	329
Lane Group Flow (vph)	329
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	43.0
Total Split (%)	35.8%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	9.7
Actuated g/C Ratio	0.11
v/c Ratio	0.70
Control Delay	13.3
Queue Delay	0.0
Total Delay	13.3
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	79
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	881
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.37

Intersection Summary

Intersection Signal Delay: 23.8 Intersection LOS: C
Intersection Capacity Utilization 49.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	11	192	4	12	148
Future Vol, veh/h	12	11	192	4	12	148
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	12	209	4	13	161

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	318	107	0	0	213	0
Stage 1	211	-	-	-	-	-
Stage 2	107	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	650	926	-	-	1355	-
Stage 1	804	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	644	926	-	-	1355	-
Mov Cap-2 Maneuver	644	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	897	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	754	1355	-
HCM Lane V/C Ratio	-	-	0.033	0.01	-
HCM Control Delay (s)	-	-	9.9	7.7	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.8

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	13	12	5	10	1
Future Vol, veh/h	0	13	12	5	10	1
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	13	5	11	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	12	12	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	31	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	968	1069	1607	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	960	1069	1607	-	-	-
Mov Cap-2 Maneuver	960	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.4	5.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1607	-	1069	-	-
HCM Lane V/C Ratio	0.008	-	0.013	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	544	587	66	35	92	388	175	98	268	61	210	198
Future Volume (vph)	544	587	66	35	92	388	175	98	268	61	210	198
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			177				227			232		
Lane Group Flow (vph)	591	638	72	0	138	422	190	107	291	66	228	215
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	37.0	51.0	51.0	16.0	16.0	30.0	30.0	14.0	33.0	33.0	20.0	39.0
Total Split (%)	30.8%	42.5%	42.5%	13.3%	13.3%	25.0%	25.0%	11.7%	27.5%	27.5%	16.7%	32.5%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	22.8	44.7	44.7		9.1	31.0	31.0	7.9	13.8	13.8	11.9	17.8
Actuated g/C Ratio	0.22	0.43	0.43		0.09	0.30	0.30	0.08	0.13	0.13	0.12	0.17
v/c Ratio	0.78	0.42	0.09		0.46	0.40	0.30	0.41	0.62	0.16	0.58	0.35
Control Delay	45.6	22.1	0.2		50.7	31.9	3.7	51.6	48.5	0.8	49.9	39.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	22.1	0.2		50.7	31.9	3.7	51.6	48.5	0.8	49.9	39.2
LOS	D	C	A		D	C	A	D	D	A	D	D
Approach Delay		31.6				28.2			42.4			28.3
Approach LOS		C				C			D			C
Queue Length 50th (ft)	190	150	0		45	116	0	35	96	0	74	66
Queue Length 95th (ft)	252	224	0		80	191	35	67	145	0	119	103
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	1053	1534	786		351	1065	635	284	931	587	484	1138
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.42	0.09		0.39	0.40	0.30	0.38	0.31	0.11	0.47	0.19

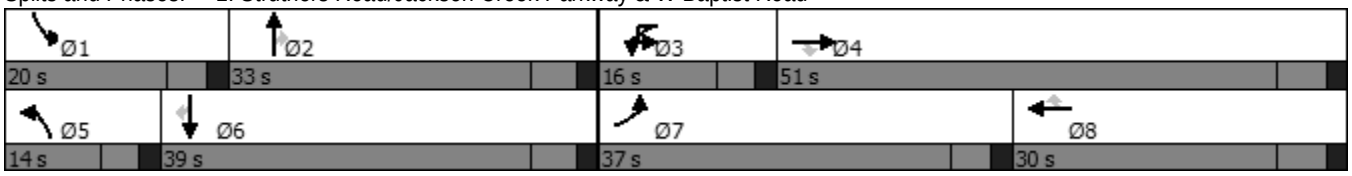
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 103
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	357
Future Volume (vph)	357
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	388
Lane Group Flow (vph)	388
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	39.0
Total Split (%)	32.5%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	17.8
Actuated g/C Ratio	0.17
v/c Ratio	0.65
Control Delay	9.6
Queue Delay	0.0
Total Delay	9.6
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	83
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	772
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.50

Intersection Summary

Intersection Signal Delay: 31.5 Intersection LOS: C
Intersection Capacity Utilization 59.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	30	363	18	23	334
Future Vol, veh/h	16	30	363	18	23	334
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	33	395	20	25	363

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	637	208	0	0	415	0
Stage 1	405	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	410	798	-	-	1140	-
Stage 1	642	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	401	798	-	-	1140	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	768	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	594	1140	-
HCM Lane V/C Ratio	-	-	0.084	0.022	-
HCM Control Delay (s)	-	-	11.6	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	5

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	1	30	24	15	14	3
Future Vol, veh/h	1	30	24	15	14	3
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	33	26	16	15	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	85	17	18	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	916	1062	1599	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	901	1062	1599	-	-	-
Mov Cap-2 Maneuver	901	-	-	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.5	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1599	-	1056	-	-
HCM Lane V/C Ratio	0.016	-	0.032	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	273	330	59	20	48	451	130	160	169	62	124	90
Future Volume (vph)	273	330	59	20	48	451	130	160	169	62	124	90
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			127				177			182		
Lane Group Flow (vph)	297	359	64	0	74	490	141	174	184	67	135	98
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	26.0	48.0	48.0	13.0	13.0	35.0	35.0	19.0	42.0	42.0	17.0	40.0
Total Split (%)	21.7%	40.0%	40.0%	10.8%	10.8%	29.2%	29.2%	15.8%	35.0%	35.0%	14.2%	33.3%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	13.0	42.3	42.3		7.0	33.6	33.6	9.9	10.8	10.8	8.9	9.8
Actuated g/C Ratio	0.14	0.47	0.47		0.08	0.37	0.37	0.11	0.12	0.12	0.10	0.11
v/c Ratio	0.60	0.22	0.08		0.28	0.37	0.20	0.46	0.43	0.19	0.40	0.26
Control Delay	42.4	16.2	0.2		44.5	22.8	2.7	42.9	40.8	1.2	43.2	39.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	16.2	0.2		44.5	22.8	2.7	42.9	40.8	1.2	43.2	39.5
LOS	D	B	A		D	C	A	D	D	A	D	D
Approach Delay		25.6				21.1			35.4			25.1
Approach LOS		C				C			D			C
Queue Length 50th (ft)	84	64	0		21	103	0	49	53	0	38	27
Queue Length 95th (ft)	133	112	0		46	180	25	87	88	0	72	53
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	789	1663	811		288	1321	702	520	1428	747	442	1349
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.22	0.08		0.26	0.37	0.20	0.33	0.13	0.09	0.31	0.07

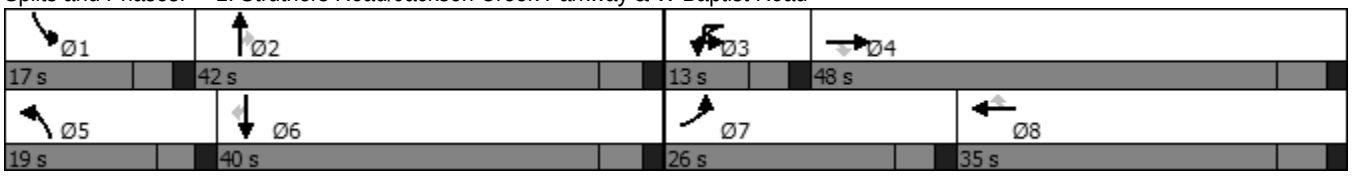
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 90
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.72

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	315
Future Volume (vph)	315
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	342
Lane Group Flow (vph)	342
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	40.0
Total Split (%)	33.3%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	9.8
Actuated g/C Ratio	0.11
v/c Ratio	0.72
Control Delay	13.8
Queue Delay	0.0
Total Delay	13.8
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	81
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	815
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.42

Intersection Summary

Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 51.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	11	234	4	12	230
Future Vol, veh/h	12	11	234	4	12	230
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	12	254	4	13	250

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	407	129	0	0	258	0
Stage 1	256	-	-	-	-	-
Stage 2	151	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	572	897	-	-	1304	-
Stage 1	763	-	-	-	-	-
Stage 2	861	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	566	897	-	-	1304	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	687	1304	-
HCM Lane V/C Ratio	-	-	0.036	0.01	-
HCM Control Delay (s)	-	-	10.4	7.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	14	12	5	10	1
Future Vol, veh/h	0	14	12	5	10	1
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	13	5	11	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	12	12	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	31	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	968	1069	1607	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	992	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	960	1069	1607	-	-	-
Mov Cap-2 Maneuver	960	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	992	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.4	5.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1607	-	1069	-	-
HCM Lane V/C Ratio	0.008	-	0.014	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	566	714	94	36	93	446	179	161	323	79	255	218
Future Volume (vph)	566	714	94	36	93	446	179	161	323	79	255	218
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			127				195			182		
Lane Group Flow (vph)	615	776	102	0	140	485	195	175	351	86	277	237
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	37.0	52.9	52.9	15.1	15.1	31.0	31.0	17.0	30.7	30.7	21.3	35.0
Total Split (%)	30.8%	44.1%	44.1%	12.6%	12.6%	25.8%	25.8%	14.2%	25.6%	25.6%	17.8%	29.2%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	24.4	46.6	46.6		8.9	31.0	31.0	10.2	16.0	16.0	13.5	19.3
Actuated g/C Ratio	0.22	0.43	0.43		0.08	0.29	0.29	0.09	0.15	0.15	0.12	0.18
v/c Ratio	0.80	0.51	0.14		0.50	0.48	0.33	0.54	0.67	0.22	0.65	0.38
Control Delay	48.1	25.0	2.6		55.3	36.1	6.9	54.4	50.9	1.3	53.4	41.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	25.0	2.6		55.3	36.1	6.9	54.4	50.9	1.3	53.4	41.1
LOS	D	C	A		E	D	A	D	D	A	D	D
Approach Delay		33.0				32.5			45.0			30.9
Approach LOS		C				C			D			C
Queue Length 50th (ft)	212	207	0		48	148	0	61	124	0	96	78
Queue Length 95th (ft)	274	293	22		86	234	61	102	177	0	146	116
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	1000	1518	751		304	1012	592	365	808	502	501	949
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.51	0.14		0.46	0.48	0.33	0.48	0.43	0.17	0.55	0.25

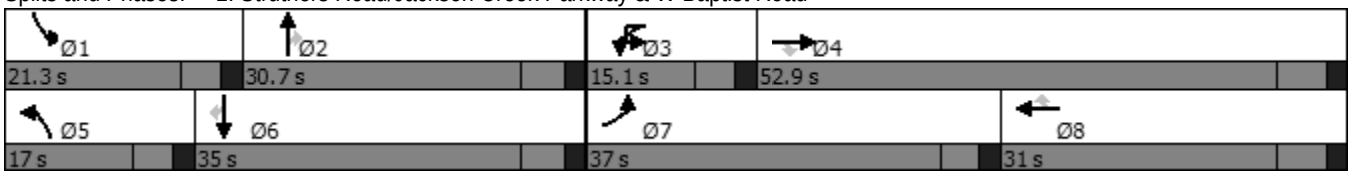
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 108.5
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	371
Future Volume (vph)	371
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	403
Lane Group Flow (vph)	403
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	35.0
Total Split (%)	29.2%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	19.3
Actuated g/C Ratio	0.18
v/c Ratio	0.66
Control Delay	9.5
Queue Delay	0.0
Total Delay	9.5
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	85
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	719
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.56

Intersection Summary

Intersection Signal Delay: 34.3 Intersection LOS: C
Intersection Capacity Utilization 64.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	31	442	19	24	390
Future Vol, veh/h	17	31	442	19	24	390
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	34	480	21	26	424

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	755	251	0	0	501	0
Stage 1	491	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	345	749	-	-	1059	-
Stage 1	581	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	336	749	-	-	1059	-
Mov Cap-2 Maneuver	336	-	-	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	522	1059	-
HCM Lane V/C Ratio	-	-	0.1	0.025	-
HCM Control Delay (s)	-	-	12.7	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	5

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	1	31	25	16	15	3
Future Vol, veh/h	1	31	25	16	15	3
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	34	27	17	16	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	89	18	19	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	912	1061	1597	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	896	1061	1597	-	-	-
Mov Cap-2 Maneuver	896	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	952	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.5	4.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1597	-	1055	-	-
HCM Lane V/C Ratio	0.017	-	0.033	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	382	506	79	28	69	781	183	196	224	81	163	123
Future Volume (vph)	382	506	79	28	69	781	183	196	224	81	163	123
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			127				199			182		
Lane Group Flow (vph)	415	550	86	0	105	849	199	213	243	88	177	134
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	24.0	51.5	51.5	13.5	13.5	41.0	41.0	16.0	38.3	38.3	16.7	39.0
Total Split (%)	20.0%	42.9%	42.9%	11.3%	11.3%	34.2%	34.2%	13.3%	31.9%	31.9%	13.9%	32.5%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	16.8	45.4	45.4		7.6	36.2	36.2	10.1	22.2	22.2	10.1	22.2
Actuated g/C Ratio	0.15	0.42	0.42		0.07	0.33	0.33	0.09	0.20	0.20	0.09	0.20
v/c Ratio	0.78	0.37	0.12		0.44	0.72	0.30	0.67	0.34	0.19	0.56	0.19
Control Delay	56.7	24.4	1.7		57.0	38.3	5.8	60.5	37.7	0.9	56.1	35.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	24.4	1.7		57.0	38.3	5.8	60.5	37.7	0.9	56.1	35.4
LOS	E	C	A		E	D	A	E	D	A	E	D
Approach Delay		35.3				34.4			40.7			42.5
Approach LOS		D				C			D			D
Queue Length 50th (ft)	144	140	0		37	284	0	76	77	0	62	41
Queue Length 95th (ft)	#227	214	13		70	405	55	#132	114	0	106	67
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	587	1474	733		254	1175	658	333	1058	601	355	1080
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.37	0.12		0.41	0.72	0.30	0.64	0.23	0.15	0.50	0.12

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90

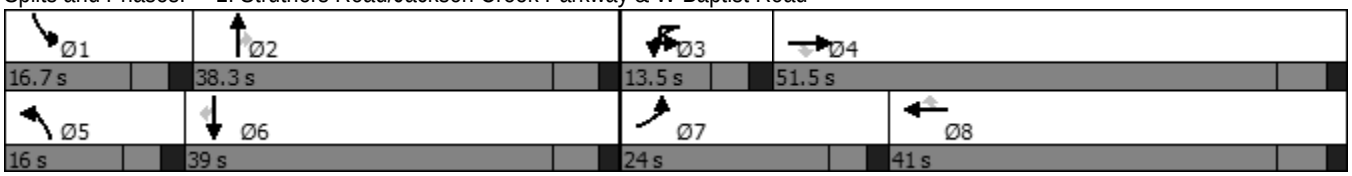
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	441
Future Volume (vph)	441
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	264
Lane Group Flow (vph)	479
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	39.0
Total Split (%)	32.5%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	22.2
Actuated g/C Ratio	0.20
v/c Ratio	0.90
Control Delay	39.5
Queue Delay	0.0
Total Delay	39.5
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	158
Queue Length 95th (ft)	296
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	666
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.72

Intersection Summary

Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	16	314	6	17	292
Future Vol, veh/h	17	16	314	6	17	292
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	17	341	7	18	317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	540	174	0	0	348	0
Stage 1	345	-	-	-	-	-
Stage 2	195	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	472	839	-	-	1208	-
Stage 1	688	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	465	839	-	-	1208	-
Mov Cap-2 Maneuver	465	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	593	1208	-
HCM Lane V/C Ratio	-	-	0.06	0.015	-
HCM Control Delay (s)	-	-	11.5	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	0	19	17	7	15	1
Future Vol, veh/h	0	19	17	7	15	1
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	18	8	16	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	61	17	17	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	44	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	945	1062	1600	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	935	1062	1600	-	-	-
Mov Cap-2 Maneuver	935	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.5	5.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1600	-	1062	-	-
HCM Lane V/C Ratio	0.012	-	0.019	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	793	1090	121	51	131	666	252	202	434	105	343	300
Future Volume (vph)	793	1090	121	51	131	666	252	202	434	105	343	300
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			177				227			232		
Lane Group Flow (vph)	862	1185	132	0	197	724	274	220	472	114	373	326
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	39.0	58.0	58.0	15.0	15.0	34.0	34.0	15.0	26.0	26.0	21.0	32.0
Total Split (%)	32.5%	48.3%	48.3%	12.5%	12.5%	28.3%	28.3%	12.5%	21.7%	21.7%	17.5%	26.7%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	32.3	51.5	51.5		9.4	28.6	28.6	9.5	19.0	19.0	15.1	24.6
Actuated g/C Ratio	0.27	0.43	0.43		0.08	0.24	0.24	0.08	0.16	0.16	0.13	0.21
v/c Ratio	0.92	0.77	0.17		0.73	0.85	0.50	0.80	0.84	0.25	0.85	0.44
Control Delay	57.7	32.9	1.6		69.8	54.2	11.9	75.5	62.2	1.4	69.6	43.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	32.9	1.6		69.8	54.2	11.9	75.5	62.2	1.4	69.6	43.0
LOS	E	C	A		E	D	B	E	E	A	E	D
Approach Delay		40.8				47.1			57.2			39.3
Approach LOS		D				D			E			D
Queue Length 50th (ft)	331	406	0		78	287	29	88	186	0	147	115
Queue Length 95th (ft)	#444	496	16		#128	#393	109	#152	#259	0	#224	161
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	971	1539	788		275	853	553	275	597	460	449	776
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.77	0.17		0.72	0.85	0.50	0.80	0.79	0.25	0.83	0.42

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92

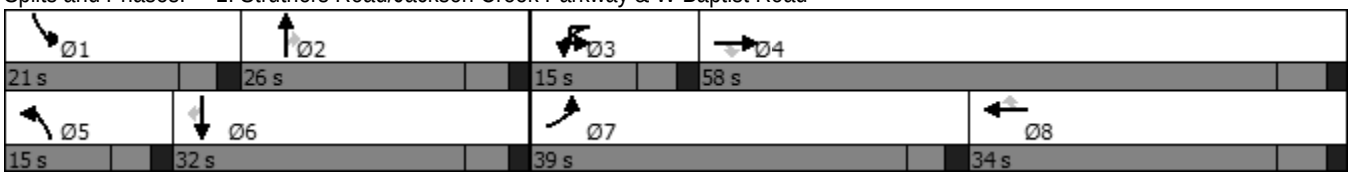
Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	520
Future Volume (vph)	520
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	480
Lane Group Flow (vph)	565
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	32.0
Total Split (%)	26.7%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	24.6
Actuated g/C Ratio	0.21
v/c Ratio	0.80
Control Delay	17.1
Queue Delay	0.0
Total Delay	17.1
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	55
Queue Length 95th (ft)	207
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	721
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.78

Intersection Summary

Intersection Signal Delay: 44.3	Intersection LOS: D
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	44	593	26	34	530
Future Vol, veh/h	23	44	593	26	34	530
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	48	645	28	37	576

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1021	337	0	0	673	0
Stage 1	659	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	232	659	-	-	914	-
Stage 1	476	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	223	659	-	-	914	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	648	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	394	914	-
HCM Lane V/C Ratio	-	-	0.185	0.04	-
HCM Control Delay (s)	-	-	16.2	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

Intersection	
Int Delay, s/veh	5.1

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	1	44	35	22	20	4
Future Vol, veh/h	1	44	35	22	20	4
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	48	38	24	22	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	124	24	26	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	100	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	871	1052	1588	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	850	1052	1588	-	-	-
Mov Cap-2 Maneuver	850	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	924	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.6	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1588	-	1046	-	-
HCM Lane V/C Ratio	0.024	-	0.047	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	273	330	112	20	57	451	130	223	190	72	124	108
Future Volume (vph)	273	330	112	20	57	451	130	223	190	72	124	108
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			127				177			182		
Lane Group Flow (vph)	297	359	122	0	84	490	141	242	207	78	135	117
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	26.0	48.0	48.0	13.0	13.0	35.0	35.0	19.0	42.0	42.0	17.0	40.0
Total Split (%)	21.7%	40.0%	40.0%	10.8%	10.8%	29.2%	29.2%	15.8%	35.0%	35.0%	14.2%	33.3%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	13.1	42.3	42.3		7.1	33.6	33.6	11.4	11.8	11.8	9.0	9.4
Actuated g/C Ratio	0.14	0.46	0.46		0.08	0.37	0.37	0.12	0.13	0.13	0.10	0.10
v/c Ratio	0.60	0.22	0.15		0.32	0.38	0.20	0.56	0.45	0.21	0.40	0.32
Control Delay	42.9	16.7	3.7		45.6	23.4	2.7	44.1	40.7	1.3	43.8	41.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	16.7	3.7		45.6	23.4	2.7	44.1	40.7	1.3	43.8	41.3
LOS	D	B	A		D	C	A	D	D	A	D	D
Approach Delay		24.6				21.9			36.4			26.4
Approach LOS		C				C			D			C
Queue Length 50th (ft)	85	66	0		24	105	0	70	60	0	39	34
Queue Length 95th (ft)	134	112	32		52	181	25	116	97	0	72	62
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	779	1643	803		284	1304	695	513	1410	740	437	1332
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.22	0.15		0.30	0.38	0.20	0.47	0.15	0.11	0.31	0.09

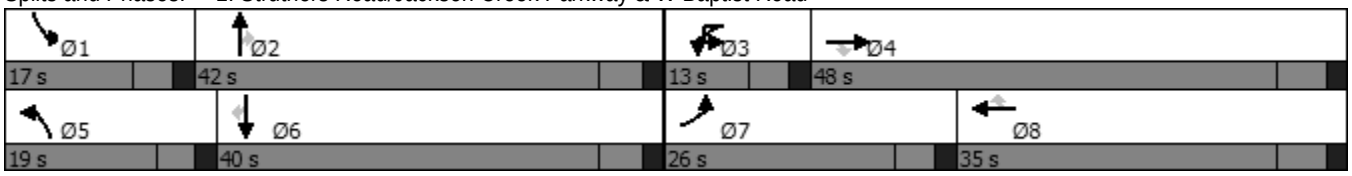
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 91.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	315
Future Volume (vph)	315
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	342
Lane Group Flow (vph)	342
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	40.0
Total Split (%)	33.3%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	9.4
Actuated g/C Ratio	0.10
v/c Ratio	0.73
Control Delay	14.5
Queue Delay	0.0
Total Delay	14.5
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	82
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	809
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.42

Intersection Summary

Intersection Signal Delay: 26.7 Intersection LOS: C
Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	105	234	12	92	230
Future Vol, veh/h	23	105	234	12	92	230
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	114	254	13	100	250

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	586	134	0	0	267	0
Stage 1	261	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	441	890	-	-	1294	-
Stage 1	759	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	407	890	-	-	1294	-
Mov Cap-2 Maneuver	407	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	734	1294	-
HCM Lane V/C Ratio	-	-	0.19	0.077	-
HCM Control Delay (s)	-	-	11	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0.3	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	47	0	69	35	0	81
Future Vol, veh/h	47	0	69	35	0	81
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	0	75	38	0	88

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	182	94	0	0	113	0
Stage 1	94	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	807	963	-	-	1476	-
Stage 1	930	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	807	963	-	-	1476	-
Mov Cap-2 Maneuver	807	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	807	1476	-
HCM Lane V/C Ratio	-	-	0.063	-	-
HCM Control Delay (s)	-	-	9.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	24	48	0	0	29	5	36	0	10	1
Future Vol, veh/h	0	0	24	48	0	0	29	5	36	0	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	26	52	0	0	32	5	39	0	11	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	101	120	12	114	101	25	12	0	0	44	0	0
Stage 1	12	12	-	89	89	-	-	-	-	-	-	-
Stage 2	89	108	-	25	12	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	880	770	1069	863	789	1051	1607	-	-	1564	-	-
Stage 1	1009	886	-	918	821	-	-	-	-	-	-	-
Stage 2	918	806	-	993	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	866	754	1069	828	772	1051	1607	-	-	1564	-	-
Mov Cap-2 Maneuver	866	754	-	828	772	-	-	-	-	-	-	-
Stage 1	988	886	-	899	804	-	-	-	-	-	-	-
Stage 2	899	789	-	969	886	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	8.5	9.6	3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1607	-	-	828	1069	1564	-	-
HCM Lane V/C Ratio	0.02	-	-	0.063	0.024	-	-	-
HCM Control Delay (s)	7.3	0	-	9.6	8.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	566	714	171	36	106	446	179	234	348	91	255	244
Future Volume (vph)	566	714	171	36	106	446	179	234	348	91	255	244
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			186				195			182		
Lane Group Flow (vph)	615	776	186	0	154	485	195	254	378	99	277	265
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	37.0	52.9	52.9	15.1	15.1	31.0	31.0	17.0	30.7	30.7	21.3	35.0
Total Split (%)	30.8%	44.1%	44.1%	12.6%	12.6%	25.8%	25.8%	14.2%	25.6%	25.6%	17.8%	29.2%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	24.5	46.6	46.6		9.0	31.0	31.0	11.2	16.9	16.9	13.5	19.3
Actuated g/C Ratio	0.22	0.43	0.43		0.08	0.28	0.28	0.10	0.15	0.15	0.12	0.18
v/c Ratio	0.80	0.52	0.24		0.55	0.48	0.33	0.73	0.69	0.25	0.65	0.43
Control Delay	48.8	25.7	4.1		57.2	36.8	7.0	61.6	51.2	1.5	54.2	42.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	25.7	4.1		57.2	36.8	7.0	61.6	51.2	1.5	54.2	42.1
LOS	D	C	A		E	D	A	E	D	A	D	D
Approach Delay		32.1				33.6			48.1			31.8
Approach LOS		C				C			D			C
Queue Length 50th (ft)	213	211	0		54	151	0	91	135	0	97	88
Queue Length 95th (ft)	277	298	45		94	237	61	#155	190	0	148	128
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	989	1503	779		301	1001	587	361	800	498	496	939
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.52	0.24		0.51	0.48	0.33	0.70	0.47	0.20	0.56	0.28

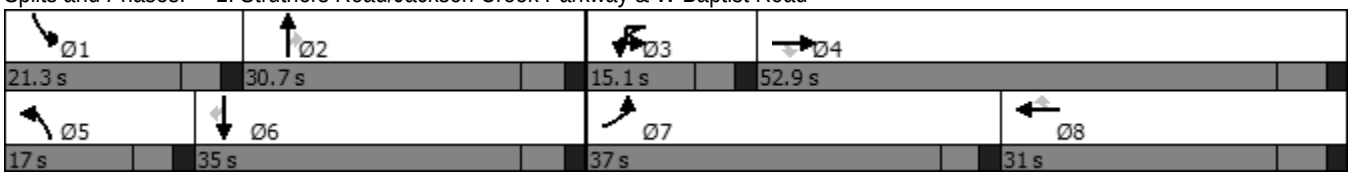
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.6
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	371
Future Volume (vph)	371
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	403
Lane Group Flow (vph)	403
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	35.0
Total Split (%)	29.2%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	19.3
Actuated g/C Ratio	0.18
v/c Ratio	0.66
Control Delay	9.5
Queue Delay	0.0
Total Delay	9.5
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	0
Queue Length 95th (ft)	84
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	716
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.56

Intersection Summary

Intersection Signal Delay: 35.2 Intersection LOS: D
Intersection Capacity Utilization 65.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	141	442	31	140	390
Future Vol, veh/h	29	141	442	31	140	390
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	153	480	34	152	424

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1013	257	0	0	514	0
Stage 1	497	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	235	742	-	-	1048	-
Stage 1	577	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	201	742	-	-	1048	-
Mov Cap-2 Maneuver	201	-	-	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	509	1048	-
HCM Lane V/C Ratio	-	-	0.363	0.145	-
HCM Control Delay (s)	-	-	16	9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.6	0.5	-

Intersection	
Int Delay, s/veh	1.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	39	0	131	40	0	131
Future Vol, veh/h	39	0	131	40	0	131
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	0	142	43	0	142

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	306	164	0	0	185	0
Stage 1	164	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	686	881	-	-	1390	-
Stage 1	865	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	686	881	-	-	1390	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	686	1390	-
HCM Lane V/C Ratio	-	-	0.062	-	-
HCM Control Delay (s)	-	-	10.6	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	19	74	40	20	0	73	16	40	0	15	3
Future Vol, veh/h	1	19	74	40	20	0	73	16	40	0	15	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	21	80	43	22	0	79	17	43	0	16	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	226	236	18	265	216	39	19	0	0	60	0	0
Stage 1	18	18	-	197	197	-	-	-	-	-	-	-
Stage 2	208	218	-	68	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	729	665	1061	688	682	1033	1597	-	-	1544	-	-
Stage 1	1001	880	-	805	738	-	-	-	-	-	-	-
Stage 2	794	723	-	942	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	683	631	1061	596	647	1033	1597	-	-	1544	-	-
Mov Cap-2 Maneuver	683	631	-	596	647	-	-	-	-	-	-	-
Stage 1	950	880	-	764	700	-	-	-	-	-	-	-
Stage 2	730	686	-	850	880	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	9.4	11.6	4.2	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1597	-	-	612	928	1544	-	-
HCM Lane V/C Ratio	0.05	-	-	0.107	0.11	-	-	-
HCM Control Delay (s)	7.4	0	-	11.6	9.4	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.4	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	382	506	132	28	78	781	183	259	245	91	163	141
Future Volume (vph)	382	506	132	28	78	781	183	259	245	91	163	141
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			143				199			182		
Lane Group Flow (vph)	415	550	143	0	115	849	199	282	266	99	177	153
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	24.0	51.5	51.5	13.5	13.5	41.0	41.0	16.0	38.3	38.3	16.7	39.0
Total Split (%)	20.0%	42.9%	42.9%	11.3%	11.3%	34.2%	34.2%	13.3%	31.9%	31.9%	13.9%	32.5%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	16.9	45.3	45.3		7.7	36.1	36.1	10.6	23.1	23.1	10.1	22.6
Actuated g/C Ratio	0.15	0.41	0.41		0.07	0.33	0.33	0.10	0.21	0.21	0.09	0.21
v/c Ratio	0.79	0.38	0.19		0.48	0.73	0.30	0.85	0.36	0.21	0.56	0.21
Control Delay	57.3	24.7	4.7		58.2	38.8	5.8	74.3	37.9	1.0	56.5	35.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	24.7	4.7		58.2	38.8	5.8	74.3	37.9	1.0	56.5	35.8
LOS	E	C	A		E	D	A	E	D	A	E	D
Approach Delay		34.3				35.1			48.1			42.9
Approach LOS		C				D			D			D
Queue Length 50th (ft)	145	142	0		41	286	0	103	85	0	62	47
Queue Length 95th (ft)	#227	214	42		76	405	55	#199	124	0	106	75
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	582	1460	737		251	1164	654	330	1047	597	352	1070
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.38	0.19		0.46	0.73	0.30	0.85	0.25	0.17	0.50	0.14

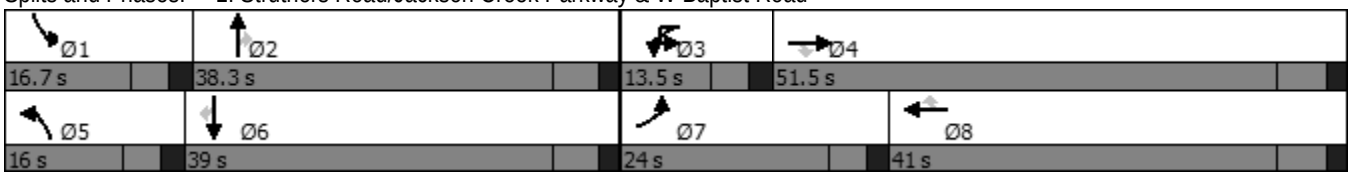
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 109.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	441
Future Volume (vph)	441
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	259
Lane Group Flow (vph)	479
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	39.0
Total Split (%)	32.5%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	22.6
Actuated g/C Ratio	0.21
v/c Ratio	0.90
Control Delay	40.1
Queue Delay	0.0
Total Delay	40.1
LOS	D
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	162
Queue Length 95th (ft)	301
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	659
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.73

Intersection Summary

Intersection Signal Delay: 38.8 Intersection LOS: D
Intersection Capacity Utilization 71.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	110	314	14	97	292
Future Vol, veh/h	28	110	314	14	97	292
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	120	341	15	105	317

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	718	178	0	0	356	0
Stage 1	349	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	364	834	-	-	1199	-
Stage 1	685	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	332	834	-	-	1199	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	611	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	638	1199	-
HCM Lane V/C Ratio	-	-	0.235	0.088	-
HCM Control Delay (s)	-	-	12.4	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.3	-

Intersection	
Int Delay, s/veh	1.8

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	47	0	86	35	0	91
Future Vol, veh/h	47	0	86	35	0	91
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	0	93	38	0	99

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	211	112	0	0	131	0
Stage 1	112	-	-	-	-	-
Stage 2	99	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	777	941	-	-	1454	-
Stage 1	913	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	777	941	-	-	1454	-
Mov Cap-2 Maneuver	777	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	777	1454	-
HCM Lane V/C Ratio	-	-	0.066	-	-
HCM Control Delay (s)	-	-	10	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	29	48	0	0	34	7	36	0	15	1
Future Vol, veh/h	0	0	29	48	0	0	34	7	36	0	15	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	32	52	0	0	37	8	39	0	16	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	119	138	17	135	119	28	17	0	0	47	0	0
Stage 1	17	17	-	102	102	-	-	-	-	-	-	-
Stage 2	102	121	-	33	17	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	857	753	1062	836	771	1047	1600	-	-	1560	-	-
Stage 1	1002	881	-	904	811	-	-	-	-	-	-	-
Stage 2	904	796	-	983	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	842	735	1062	797	752	1047	1600	-	-	1560	-	-
Mov Cap-2 Maneuver	842	735	-	797	752	-	-	-	-	-	-	-
Stage 1	978	881	-	882	792	-	-	-	-	-	-	-
Stage 2	882	777	-	954	881	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	8.5	9.8	3.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1600	-	-	797	1062	1560	-	-
HCM Lane V/C Ratio	0.023	-	-	0.065	0.03	-	-	-
HCM Control Delay (s)	7.3	0	-	9.8	8.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	793	1090	198	51	144	666	252	275	459	117	343	326
Future Volume (vph)	793	1090	198	51	144	666	252	275	459	117	343	326
Satd. Flow (prot)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Flt Permitted	0.950				0.950			0.950			0.950	
Satd. Flow (perm)	3433	3539	1583	0	3433	3539	1583	3433	3539	1583	3433	3539
Satd. Flow (RTOR)			199				227			232		
Lane Group Flow (vph)	862	1185	215	0	212	724	274	299	499	127	373	354
Turn Type	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	3	8		5	2		1	6
Permitted Phases			4				8			2		
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	11.5	11.5	10.5	10.5	11.5	11.5	10.5	11.0	11.0	10.5	11.0
Total Split (s)	39.0	58.0	58.0	15.0	15.0	34.0	34.0	15.0	26.0	26.0	21.0	32.0
Total Split (%)	32.5%	48.3%	48.3%	12.5%	12.5%	28.3%	28.3%	12.5%	21.7%	21.7%	17.5%	26.7%
Yellow Time (s)	3.5	4.5	4.5	3.5	3.5	4.5	4.5	3.5	4.0	4.0	3.5	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.5	6.5		5.5	6.5	6.5	5.5	6.0	6.0	5.5	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	None	None	None	None
Act Effct Green (s)	32.4	51.5	51.5		9.5	28.6	28.6	9.5	19.4	19.4	15.2	25.0
Actuated g/C Ratio	0.27	0.43	0.43		0.08	0.24	0.24	0.08	0.16	0.16	0.13	0.21
v/c Ratio	0.92	0.77	0.27		0.78	0.85	0.50	1.10	0.87	0.28	0.85	0.48
Control Delay	58.2	33.3	4.6		73.6	54.6	11.9	132.5	65.1	1.6	70.1	43.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	33.3	4.6		73.6	54.6	11.9	132.5	65.1	1.6	70.1	43.6
LOS	E	C	A		E	D	B	F	E	A	E	D
Approach Delay		40.0				48.3			78.1			39.7
Approach LOS		D				D			E			D
Queue Length 50th (ft)	331	406	7		84	287	29	~135	199	0	147	126
Queue Length 95th (ft)	#444	496	53		#143	#393	109	#227	#284	0	#224	175
Internal Link Dist (ft)		668				783			3774			650
Turn Bay Length (ft)	430		190		265		535	430		280	140	
Base Capacity (vph)	966	1531	797		273	850	552	273	594	459	447	773
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.77	0.27		0.78	0.85	0.50	1.10	0.84	0.28	0.83	0.46

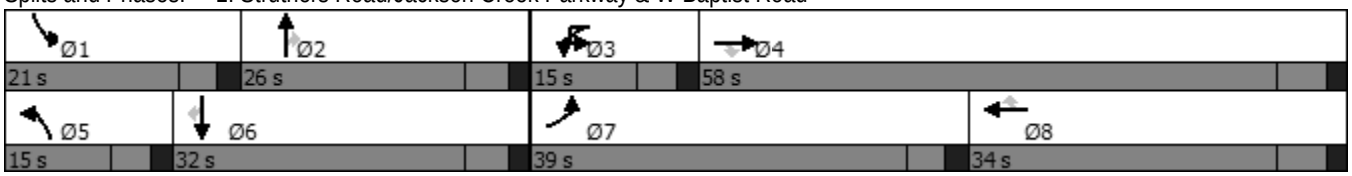
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 119
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.10

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	520
Future Volume (vph)	520
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Satd. Flow (RTOR)	477
Lane Group Flow (vph)	565
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	32.0
Total Split (%)	26.7%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	25.0
Actuated g/C Ratio	0.21
v/c Ratio	0.80
Control Delay	17.3
Queue Delay	0.0
Total Delay	17.3
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	57
Queue Length 95th (ft)	210
Internal Link Dist (ft)	
Turn Bay Length (ft)	160
Base Capacity (vph)	718
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.79

Intersection Summary

Intersection Signal Delay: 47.9 Intersection LOS: D
Intersection Capacity Utilization 83.1% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Struthers Road/Jackson Creek Parkway & W Baptist Road



Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	154	593	38	150	530
Future Vol, veh/h	35	154	593	38	150	530
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	-	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	167	645	41	163	576

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1280	343	0	0	686	0
Stage 1	666	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	158	653	-	-	904	-
Stage 1	472	-	-	-	-	-
Stage 2	502	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	130	653	-	-	904	-
Mov Cap-2 Maneuver	130	-	-	-	-	-
Stage 1	472	-	-	-	-	-
Stage 2	412	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.7	0	2.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	374	904	-
HCM Lane V/C Ratio	-	-	0.549	0.18	-
HCM Control Delay (s)	-	-	25.7	9.9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	3.2	0.7	-

Intersection	
Int Delay, s/veh	1.1

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	39	0	148	40	0	150
Future Vol, veh/h	39	0	148	40	0	150
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	0	161	43	0	163

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	346	183	0	0	204	0
Stage 1	183	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	651	859	-	-	1368	-
Stage 1	848	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	651	859	-	-	1368	-
Mov Cap-2 Maneuver	651	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	651	1368	-
HCM Lane V/C Ratio	-	-	0.065	-	-
HCM Control Delay (s)	-	-	10.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	19	87	40	20	0	83	22	40	0	20	4
Future Vol, veh/h	1	19	87	40	20	0	83	22	40	0	20	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	21	95	43	22	0	90	24	43	0	22	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	261	271	24	308	252	46	26	0	0	67	0	0
Stage 1	24	24	-	226	226	-	-	-	-	-	-	-
Stage 2	237	247	-	82	26	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	692	636	1052	644	651	1023	1588	-	-	1535	-	-
Stage 1	994	875	-	777	717	-	-	-	-	-	-	-
Stage 2	766	702	-	926	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	643	598	1052	545	613	1023	1588	-	-	1535	-	-
Mov Cap-2 Maneuver	643	598	-	545	613	-	-	-	-	-	-	-
Stage 1	935	875	-	731	675	-	-	-	-	-	-	-
Stage 2	698	661	-	823	874	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	9.5	12.2	4.2	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1588	-	-	566	922	1535	-	-
HCM Lane V/C Ratio	0.057	-	-	0.115	0.126	-	-	-
HCM Control Delay (s)	7.4	0	-	12.2	9.5	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.4	0	-	-