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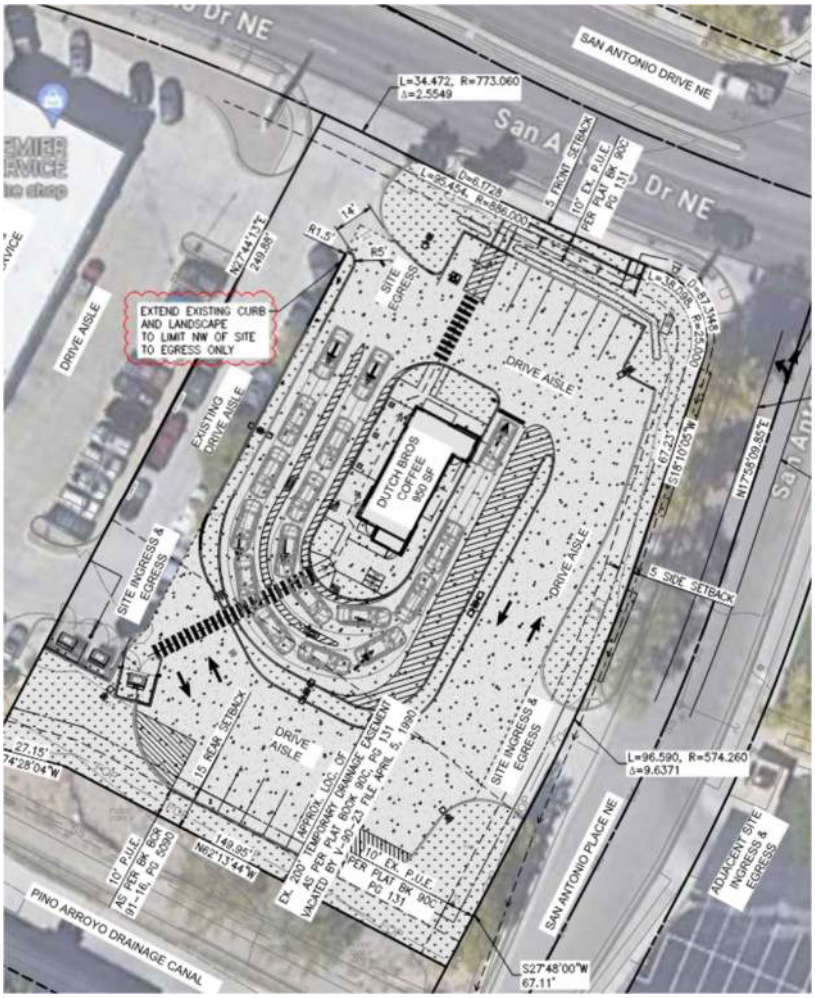
Dutch Bros

Traffic Impact Study - DRAFT



Albuquerque, New Mexico

July 1, 2024

UT24-2716

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EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed Dutch Bros development located in Albuquerque, New Mexico. The development is located on the southwest corner of the San Antonio Place NE / San Antonio Drive NE intersection.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2024) conditions without the proposed project and future (2025) conditions with and without the proposed project and to recommend mitigation measures as needed. The morning and evening peak hour level of service (LOS) results are shown in Table ES-1. A site plan of the project is provided in Appendix A.

Table ES-1: Peak Hour Level of Service Results

Intersection		Level of Service					
		Existing (2024)		Future (2025)			
		Background		Background		Plus Project	
		AM	PM	AM	PM	AM	PM
1	San Antonio Dr NE / Wyoming Blvd NE	D	D	D	D	D	D
2	San Antonio Pl NE / San Antonio Dr NE	f	f	f	f	f	f
3	North Access / San Antonio Dr NE	b	b	b	b	b	b
4	South Access / San Antonio Pl NE	a	a	a	a	a	a

1. Intersection LOS values represent the overall intersection average for roundabout, signalized, and all-way stop-controlled (AWSC) intersections (uppercase letter) and the worst lane group for all other unsignalized intersections (lowercase letter)

Source: Hales Engineering, June 2024

SUMMARY OF KEY FINDINGS & RECOMMENDATIONS

Project Conditions

- The development will consist of a coffee shop with two drive-thru lanes and no indoor seating.
- The project is anticipated to generate approximately 54 (+304 pass-by) weekday daily trips, including 14 (+76 pass-by) trips in the morning peak hour, and 3 (+29 pass-by) trips in the evening peak hour
- No auxiliary lanes are recommended.
- It is anticipated that on-site storage will be sufficient for typical maximum queues. However, it is possible it may occasionally spill over. If that happens, it is recommended that vehicles with larger orders be directed to an available stall to wait for their order.
- It is recommended that signage be installed to direct vehicles entering the south access to turn right after entering for the drive-thru.
- Signage and pavement markings are also recommended to further restrict the North Access to egress-only.

2024	Background
Findings	• Poor LOS at the San Antonio Pl NE / San Antonio Dr NE intersection

Mitigations	• None, intersection does not meet signal warrants or recommended spacing. Drivers will learn to adapt and reroute.	
2025	**Background**	**Plus Project**
Assumptions	• 1% growth rate based on MRCOG data	• None
Findings	• Poor LOS at the San Antonio Pl NE / San Antonio Dr NE intersection • Excessive queueing at the San Antonio Dr NE / Wyoming Blvd NE intersection	• Poor LOS at the San Antonio Pl NE / San Antonio Dr NE intersection
Mitigations	• **San Antonio Dr NE / Wyoming Blvd NE:** Give additional green time to the EB movements • **San Antonio Pl NE / San Antonio Dr NE:** Consider lengthening WBL pocket by 75' and striping separate NBR pocket	• None

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I. INTRODUCTION

A. Purpose

This study addresses the traffic impacts associated with the proposed Dutch Bros development located in Albuquerque, New Mexico. The proposed project is located on the southwest corner of the San Antonio Place NE / San Antonio Drive NE intersection. Figure 1 shows a vicinity map of the proposed development.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2024) conditions without the proposed project and future (2025) conditions with and without the proposed project and to recommend mitigation measures as needed.

Figure 1: Vicinity map showing the project location in Albuquerque, New Mexico

B. Scope

The study area was defined based on conversations with the development team. This study was scoped to evaluate the traffic operational performance impacts of the project on the following intersections:

- San Antonio Drive NE / Wyoming Boulevard NE
- San Antonio Place NE / San Antonio Drive NE
- North Access / San Antonio Drive NE
- South Access / San Antonio Place NE

The scoping letter approved by the City is contained in Appendix D.

C. Analysis Methodology

Level of service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. Table 1 provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for both signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM), 7th Edition, 2022 methodology was used in this study to remain consistent with "state-of-the-practice" professional standards. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized, roundabout, and all-way stop-controlled (AWSC) intersections, the LOS is provided for the overall intersection (weighted average of all approach delays). For all other unsignalized intersections, LOS is reported based on the worst lane group.

Using Synchro software, which follows the HCM methodology, the peak hour LOS and queueing was computed for each study intersection. Detailed Synchro printouts are contained in Appendix C.

Many of the figures in this report are printouts of the Synchro model. These figures are not meant to be a design exhibit for exact lane striping and design, due to the limitations of the Synchro software. Instead, the purpose of these figures is to show assumed peak hour turning movement volumes and the conceptual travel lane configuration of the study roadway network.

D. Level of Service Standards

For the purposes of this study, a minimum acceptable intersection performance for each of the study intersections was set depending on the road type and location, per the Development Process Manual (June 2020). The study area is within the Cherry Hills Village Center. Wyoming Boulevard NE is a Regional Principal Arterial, meaning the acceptable LOS is in the D-E range, and San Antonio Drive NE is a Minor Arterial, meaning the acceptable LOS is also in the D-E

range. San Antonio Place is classified as a local street. No LOS standards are given for local streets, but the minimum acceptable LOS was set at C for the purposes of this study.

Table 1: Level of Service Description

LOS		Description of Traffic Conditions	Average Delay (seconds/vehicle)	
			Signalized Intersections	Unsignalized Intersections
A		Free Flow / Insignificant Delay	≤ 10	≤ 10
B		Stable Operations / Minimum Delays	> 10 to 20	> 10 to 15
C		Stable Operations / Acceptable Delays	> 20 to 35	> 15 to 25
D		Approaching Unstable Flows / Tolerable Delays	> 35 to 55	> 25 to 35
E		Unstable Operations / Significant Delays	> 55 to 80	> 35 to 50
F		Forced Flows / Unpredictable Flows / Excessive Delays	> 80	> 50

Source: Hales Engineering Descriptions, based on the *Highway Capacity Manual* (HCM), 7th Edition, 2022 Methodology (Transportation Research Board)

II. EXISTING (2024) BACKGROUND CONDITIONS

A. Purpose

The purpose of the background analysis is to study the intersections and roadways during the peak travel periods of the day with background traffic and geometric conditions. Through this analysis, background traffic operational deficiencies can be identified, and potential mitigation measures recommended. This analysis provides a baseline condition that may be compared to the build conditions to identify the impacts of the development.

B. Roadway System

The primary roadways that will provide access to the project site are described below:

Wyoming Boulevard NE – is a city-maintained roadway which is classified by the Mid-Region Metropolitan Planning Organization (MRMPO) Metropolitan Transportation Plan as a Regional Principal Arterial. The roadway has three travel lanes in each direction separated by a center median. The posted speed limit is 40 mph in the study area.

San Antonio Drive NE – is a city-maintained roadway which is classified by the Mid-Region Metropolitan Planning Organization (MRMPO) Metropolitan Transportation Plan as a Minor Arterial. The roadway has two travel lanes in each direction separated by a center median. The posted speed limit is 40 mph in the study area.

San Antonio Place NE – is a city-maintained roadway which is classified as a local street. The roadway has one travel lane in each direction. The speed limit is not posted but was assumed to be 25 mph.

C. Multi-modal System

Wyoming Boulevard NE is located along Route 31. Route 31 provides headways of approximately 40 minutes on weekdays from 6:30 a.m. to 7:30 p.m. The nearest stops are located approximately 700 to 1,000 feet from the project site on Wyoming Boulevard NE on either side of San Antonio Drive NE. The north stop contains a shelter, but the south stop does not. Route 31 spans the length of Wyoming Boulevard where transfers may be made to other routes, but it does not feed directly into a transit center.

Sidewalks exist on both sides of all streets within the study area. The nearest pedestrian crossings of San Antonio Drive NE and Wyoming Boulevard NE are located approximately 500-600 feet east of the proposed development. Wyoming Boulevard NE also contains bike lanes. A multi-use path exists along the south edge of the property that crosses underneath Wyoming Boulevard NE to the east along San Antonio Drive NE.

D. Area Description

The land use surrounding the site is primarily commercial, with some auto-oriented services to the west, retail to the north, and office to the east. Multifamily residential uses exist to the south across the bridge.

The existing commercial building on-site is closed and will be demolished as a part of the project. The site is located in the MX-L zone.

E. Safety Analysis

Crash data for the San Antonio Drive NE / Wyoming Boulevard NE and San Antonio Place NE / San Antonio Drive NE intersections from 2018 through 2022 were obtained from NMDOT. During that time period, two crashes occurred at the San Antonio Place NE / San Antonio Drive NE intersection and 102 crashes occurred at the San Antonio Drive NE / Wyoming Boulevard NE intersection.

At the San Antonio Drive NE / Wyoming Boulevard NE, two crashes resulted in a suspected serious injury and none were fatal. 17 crashes were marked as left-turn related (17%) and five were marked as rear end collisions (5%). Two crashes were pedestrian-related (2%).

Because no definitive trend could be identified, no mitigations are recommended.

F. Traffic Volumes

Weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period traffic counts were performed at the following intersections:

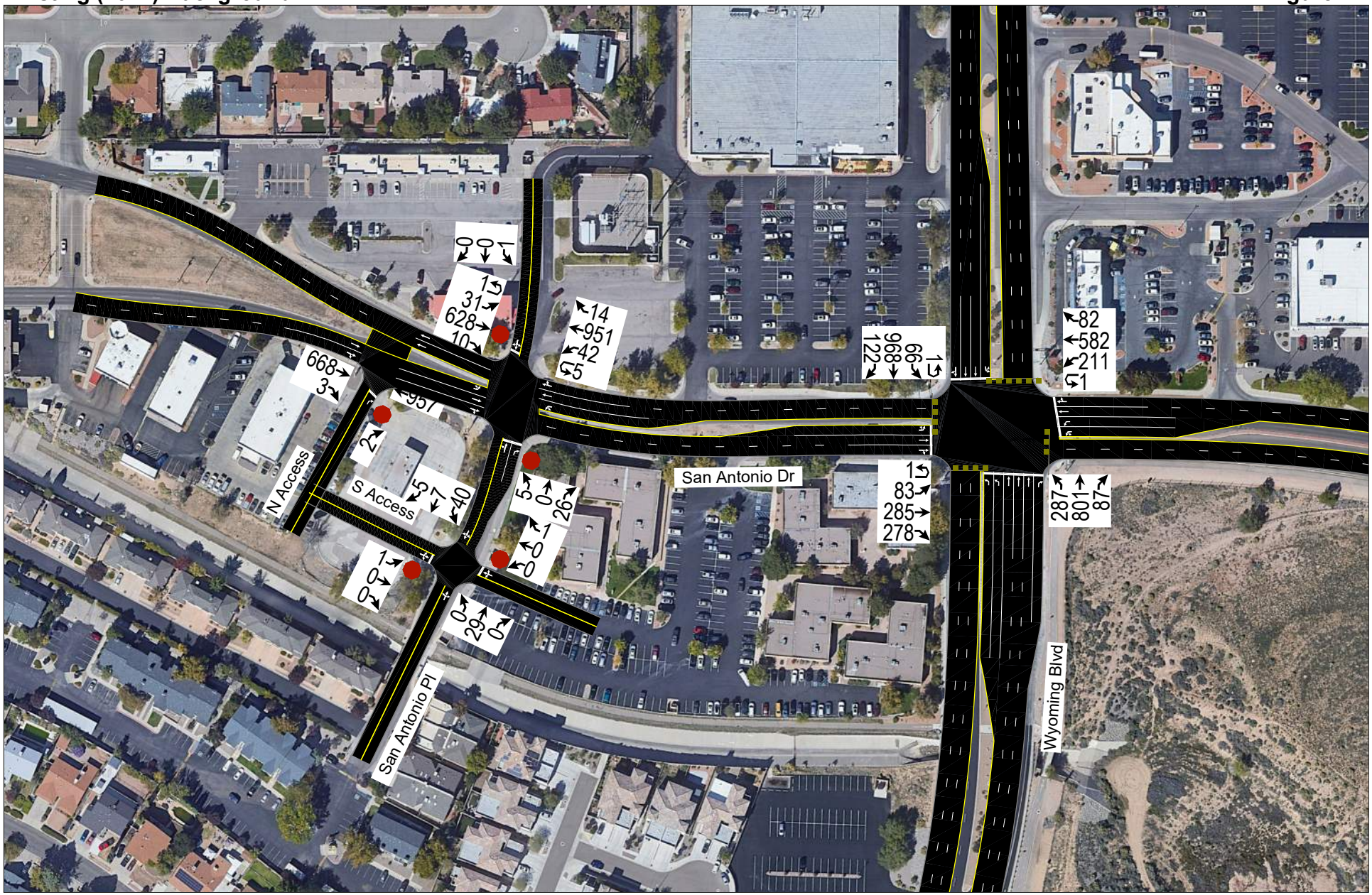
- San Antonio Drive NE / Wyoming Boulevard NE
- San Antonio Place NE / San Antonio Drive NE
- North Access / San Antonio Drive NE
- South Access / San Antonio Place NE

The counts were performed on Tuesday, March 12, 2024. The morning peak hour was determined to be between 7:30 and 8:30 a.m., and the evening peak hour was determined to be between 4:45 and 5:45 p.m. The evening peak hour volumes were approximately 24% higher than the morning peak hour volumes. Both the morning and evening peak hour volumes were used in the analysis. Detailed count data are included in Appendix B.

Figure 2 shows the existing morning and evening peak hour volumes as well as intersection geometry at the study intersections.

Albuquerque - Dutch Bros TIS
Existing (2024) Background

Morning Peak Hour
Figure 2A



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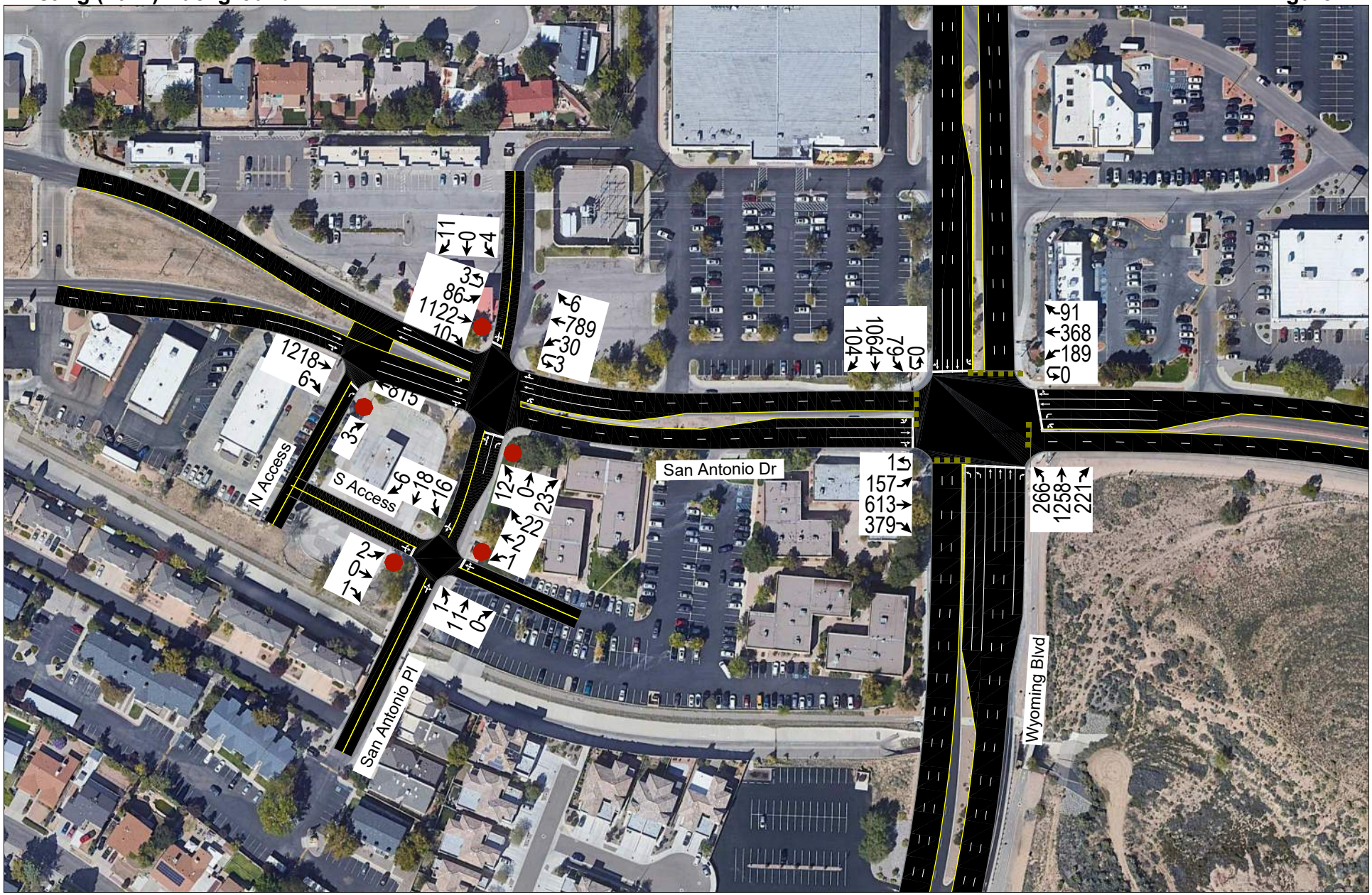
Albuquerque - Dutch Bros TIS
Existing (2024) Background

Evening Peak Hour
Figure 2B



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G. Level of Service Analysis

Hales Engineering determined that the San Antonio Place NE / San Antonio Drive NE intersection is currently operating at a poor LOS during the morning and evening peak hours, as shown in Table 2. These results serve as a baseline condition for the impact analysis of the proposed development during existing (2024) conditions.

Table 2: Existing (2024) Background Peak Hour LOS

Intersection		LOS (Sec. Delay / Veh.) / Lane Group[1]	
Description	Control	Morning Peak	Evening Peak
San Antonio Dr NE / Wyoming Blvd NE	Signal	D (37.8)	D (46.7)
San Antonio Pl NE / San Antonio Dr NE	NB/SB Stop	f (>50) / SB	f (>50) NBTL
North Access / San Antonio Dr NE	NB Stop	b (10.8) / NB	b (13.4) / NB
South Access / San Antonio Pl NE	EB/WB Stop	a (9.4) / EB	a (8.8) / EB

1. Lane group indicated for unsignalized intersections where delay and LOS represents worst lane group. SBL = Southbound left group, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, July 2024

H. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing was observed during the morning and evening peak hours.

I. Mitigation Measures

No mitigation measures are recommended. Signalization is not warranted at the San Antonio Place NE / San Antonio Drive NE intersection and little can be done to mitigate it at this time. If delays become too excessive, drivers will divert to alternative routes, which are available.

III. FUTURE (2025) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2025) background analysis is to study the intersections and roadways during the peak travel periods of the day for future background traffic and geometric conditions. Through this analysis, future background traffic operational deficiencies can be identified, and potential mitigation measures recommended.

B. Roadway Network

According to the City, there are no projects planned before 2025 in the study area. Therefore, no changes were made to the roadway network for the future (2025) analysis.

C. Traffic Volumes

Hales Engineering estimated future (2025) background volumes using 10-year historic growth rates from MRCOG data. Based on the data, Wyoming Boulevard NE carried a lower ADT value in 2022 than it did in 2012, likely due to effects from COVID-19. Ignoring the decline in traffic volumes experienced in 2020, the average annual growth rate was approximately 1%. This 1% growth rate was applied to the existing volumes to calculate future (2025) traffic volumes. According to the City, there are no nearby proposed developments. Future (2025) morning and evening peak hour turning movement volumes are shown in Figure 3.

D. Level of Service Analysis

Hales Engineering determined that the San Antonio Place NE / San Antonio Drive NE intersection is anticipated to operate at a poor LOS during the morning and evening peak hours in future (2025) background conditions, as shown in Table 3. These results serve as a baseline condition for the impact analysis of the proposed development for future (2025) conditions.

Table 3: Future (2025) Background Peak Hour LOS

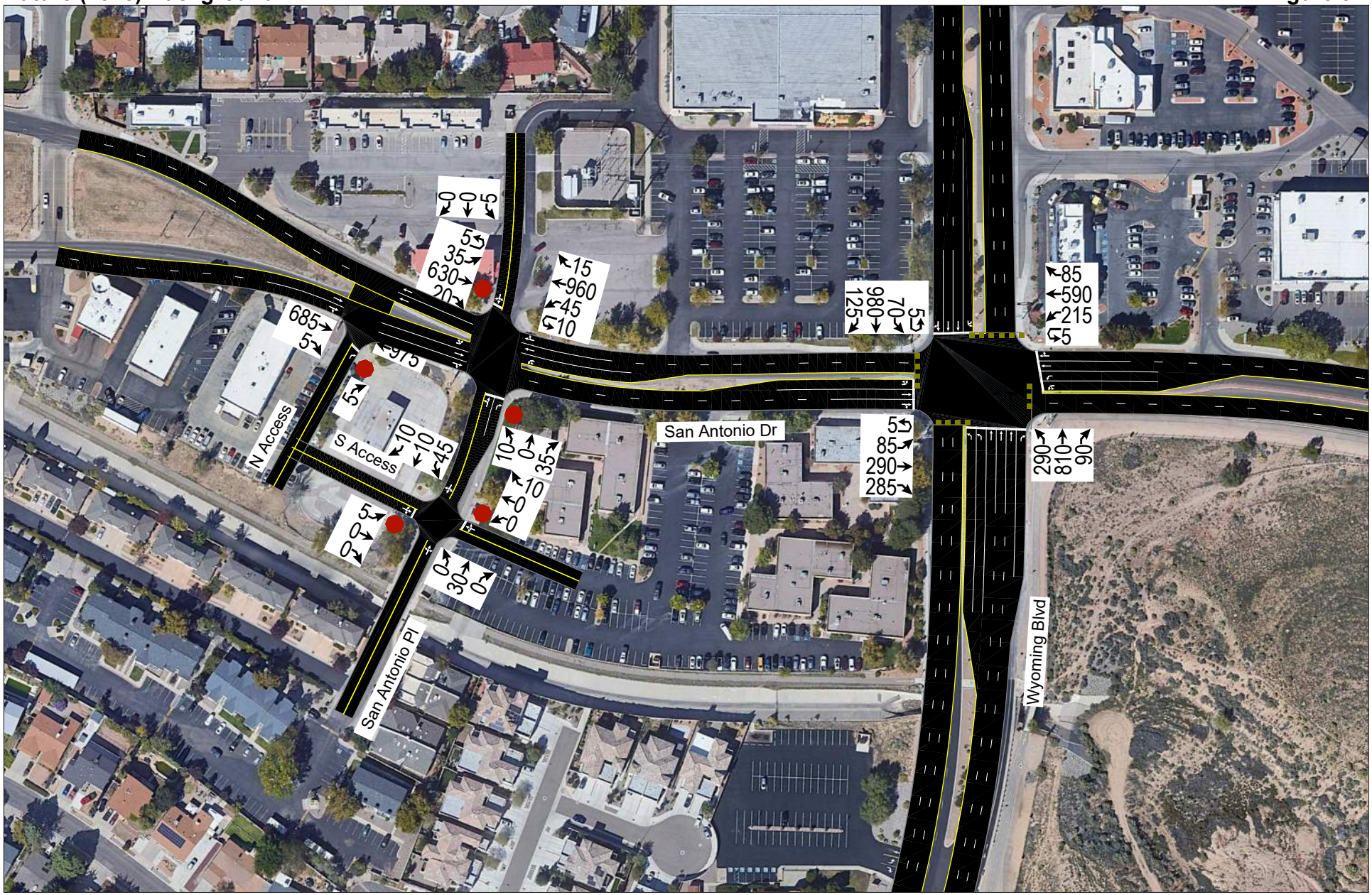
Intersection		LOS (Sec. Delay / Veh.) / Lane Group[1]	
Description	Control	Morning Peak	Evening Peak
San Antonio Dr NE / Wyoming Blvd NE	Signal	D (38.3)	D (47.7)
San Antonio Pl NE / San Antonio Dr NE	NB/SB Stop	f (>50) / SB	f (>50) NBTL
North Access / San Antonio Dr NE	NB Stop	b (10.9) / NB	b (13.4) / NB
South Access / San Antonio Pl NE	EB/WB Stop	a (9.6) / EB	a (8.8) / EB

1. Lane group indicated for unsignalized intersections where delay and LOS represents worst lane group. SBL = Southbound left group, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, July 2024

Albuquerque - Dutch Bros TIS
Future (2025) Background

Morning Peak Hour
Figure 3A



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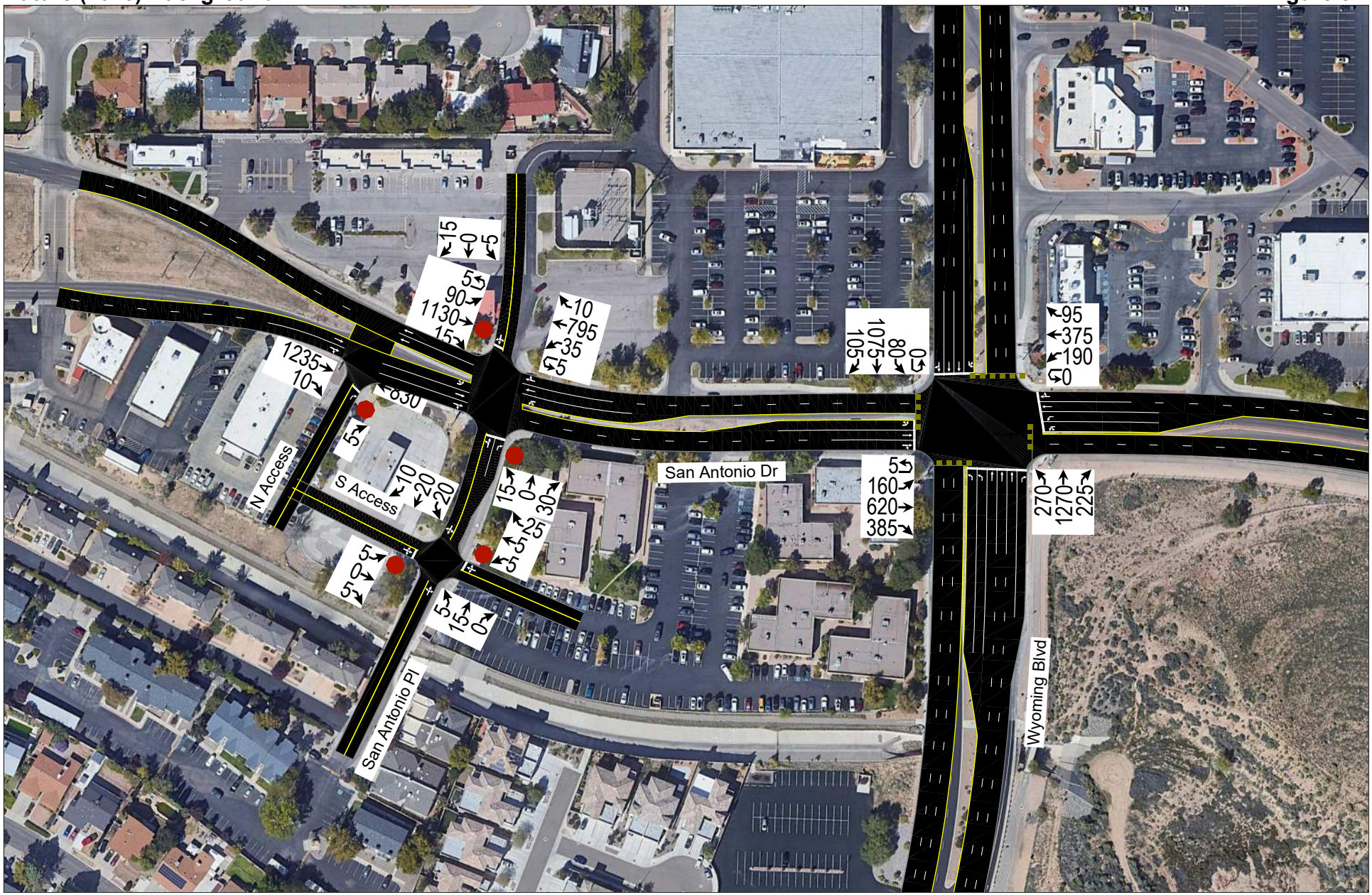
Albuquerque - Dutch Bros TIS
Future (2025) Background

Evening Peak Hour
Figure 3B



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E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. Some significant queueing is anticipated during the evening peak hour at the San Antonio Drive NE / Wyoming Boulevard NE intersection (515 feet, eastbound). This queueing may occasionally extend past San Antonio Place NE.

F. Mitigation Measures

To mitigate the excessive queueing, additional green time could be given to the eastbound movements during the evening peak hour.

In addition to the proposed improvement, the City could also consider extending the westbound left-turn pocket by 75 feet at the San Antono Place NE / San Antonio Drive NE intersection. While additional queue storage is not necessary, it would give turning vehicles additional space to safely decelerate before turning.

The City could also consider striping a separate northbound right-turn pocket at the San Antono Place NE / San Antonio Drive NE intersection. While it would not improve the LOS at the intersection, it would serve to separate lefts and rights and encourage left-turning vehicles to avoid obstructing right-turning vehicles behind them.

G. Mitigated Scenario

With the proposed signal timing improvement, the 95th percentile queue is anticipated to reduce to approximately 450 feet during the evening peak hour, which no longer extends past San Antonio Place NE.

IV. PROJECT CONDITIONS

A. Purpose

The project conditions discussion explains the type and intensity of development. This provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in Chapter I.

B. Project Description

The proposed Dutch Bros development is located on the southwest corner of the San Antonio Place NE / San Antonio Drive NE intersection. The development will consist of a drive-through coffee shop with two lanes and no indoor seating. A concept plan for the proposed development is provided in Appendix A.

C. Trip Generation

Trip generation for the development was calculated using trip generation rates published in the Institute of Transportation Engineers (ITE), *Trip Generation*, 11th Edition, 2021. Trip generation for the proposed project is included in Table 4.

The total trip generation for the development is as follows:

- Daily Trips: 54 (+304 pass-by)
- Morning Peak Hour Trips: 14 (+76 pass-by)
- Evening Peak Hour Trips: 3 (+29 pass-by)

Table 4: Trip Generation

Trip Generation Albuquerque - Dutch Bros TIS												
Land Use[1]	# of Units	Unit Type	Trip Generation					Reductions	New Trips		
			Total	% In	% Out	In	Out	Pass-by	In	Out	Total
Weekday Daily												
Coffee Shop w/Drive-thru & No Indoor Seating (938)	2	Drive-thru Lanes	358	50%	50%	179	179	85%	27	27	54
TOTAL			**358**			**179**	**179**		**27**	**27**	**54**
AM Peak Hour												
Coffee Shop w/Drive-thru & No Indoor Seating (938)	2	Drive-thru Lanes	90	50%	50%	45	45	85%	7	7	14
TOTAL			**90**			**45**	**45**		**7**	**7**	**14**
PM Peak Hour												
Coffee Shop w/Drive-thru & No Indoor Seating (938)	2	Drive-thru Lanes	32	50%	50%	16	16	90%	1	2	3
TOTAL			**32**			**16**	**16**		**1**	**2**	**3**

1. Land Use Code from the Institute of Transportation Engineers (ITE) *Trip Generation*, 11th Edition, 2021.

SOURCE: Hales Engineering, March 2024

D. Trip Distribution and Assignment

Project traffic is assigned to the roadway network based on the type of trip and the proximity of project access points to major streets, high population densities, and regional trip attractions. Per the City's guidance, trip distribution was examined using subareas from MRCOG 2040 population forecasts, within a 2-mile radius of the project. A 2-mile radius circle with the center at the project location falls almost entirely within the Albuquerque Northeast subarea. Existing travel patterns observed during data collection also provide helpful guidance to establishing these distribution percentages, especially near the site. The resulting distribution of new project generated trips during the morning and evening peak hour is shown in Table 5.

Table 5: New Trip Distribution

Direction	% To/From Project
North	25%
South	25%
East	20%
West	30%

The following pass-by distribution was also estimated in Table 6:

Table 6: Pass-by Trip Distribution

Direction	% To/From Project (Morning)	% To/From Project (Evening)
North-to-South	30%	25%
South-to-North	25%	30%
East-to-West	25%	20%
West-to-East	20%	25%

These trip distribution assumptions were used to assign the morning and evening peak hour trip generation at the study intersections to create trip assignment for the proposed development. Trip assignment for the development is shown in Figure 4.

Albuquerque - Dutch Bros TIS
Trip Assignment

Morning Peak Hour
Figure 4A

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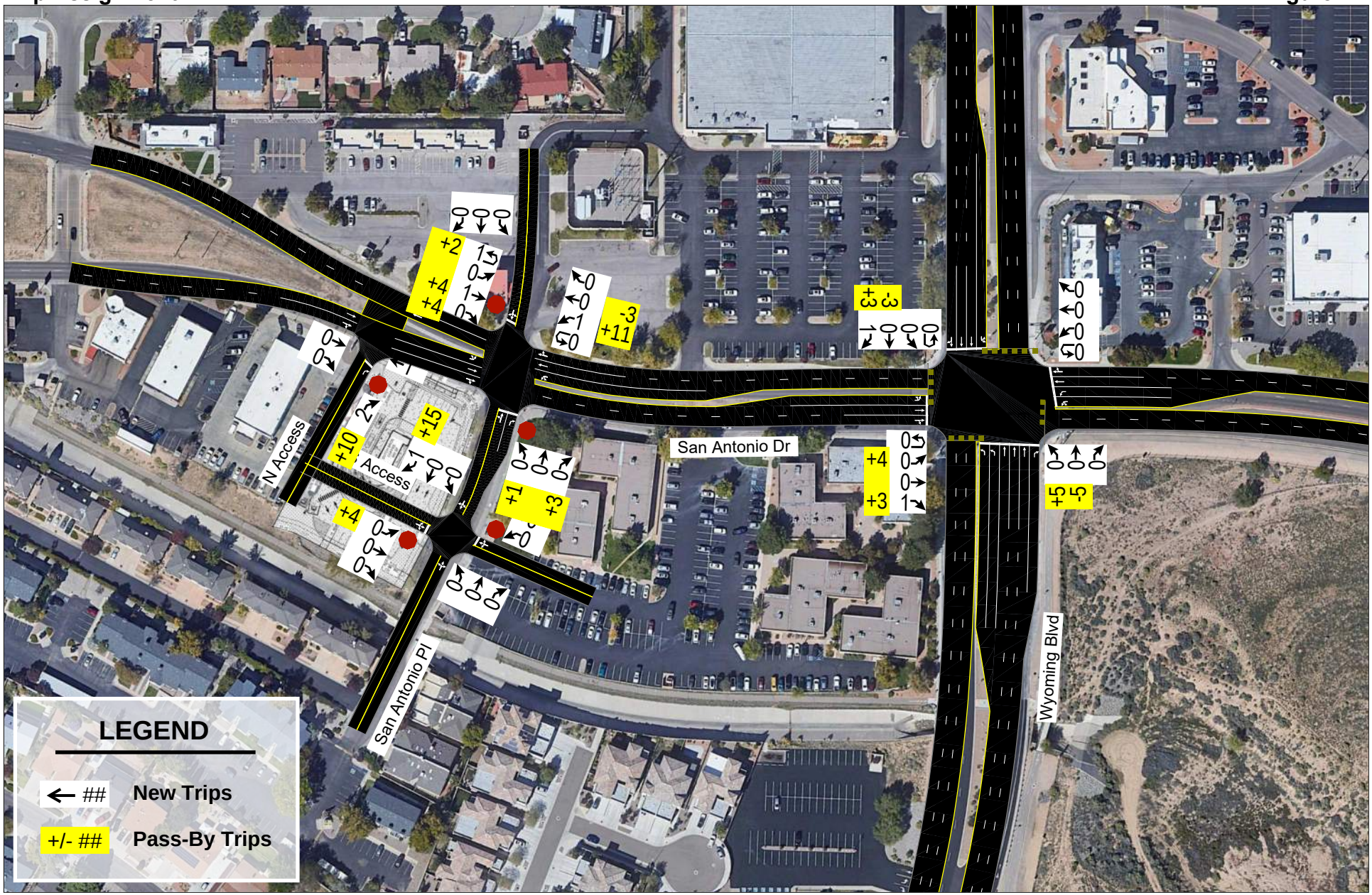
Albuquerque - Dutch Bros TIS
Trip Assignment

Evening Peak Hour
Figure 4B



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E. Access

The proposed access for the site will be gained at the following locations:

San Antonio Drive NE:

- The North Access is an existing access located approximately 130 feet west of the San Antonio Place NE / San Antonio Drive NE intersection. It will access the project on the south side of San Antonio Drive NE, but it is anticipated that access to the project from the existing drive aisle will be restricted to egress-only. It is anticipated that the access will be stop-controlled and restricted to right-in/right-out because of the center median. The access will be shared with the tire store to the west. Additional signage and pavement markings are recommended to further restrict the access to egress-only. Parking will likely need to be restricted on the shared drive aisle with the property to the west.

San Antonio Place NE:

- The South Access is an existing access located approximately 160 feet south of the San Antonio Place NE / San Antonio Drive NE intersection. It will access the project on the west side of San Antonio Place NE. It is anticipated that the access will be stop-controlled.

F. Auxiliary Lanes

Auxiliary lanes are deceleration (ingress) or acceleration (egress) turn lanes that provide for safe turning movements that have less impact on through traffic. These lanes are sometimes needed at accesses or roadway intersections if right- or left-turn volumes are high enough.

The Albuquerque Development Process Manual (2020) outlines minimum peak hour turn volumes to warrant auxiliary lanes on Albuquerque roadways. The following are the minimum requirements for these lanes on San Antonio Drive NE, assuming a design speed of 40 mph:

- Left-turn Deceleration (Ingress): 40 left-turn vehicles per hour
- Right-turn Deceleration (Ingress): 50 right-turn vehicles per hour

Based on these guidelines and the anticipated project traffic, no additional auxiliary lanes are recommended. It is anticipated that the existing westbound left-turn lane at the San Antonio Place NE / San Antonio Drive NE intersection will be sufficient to accommodate left turns into the site.

G. Site Circulation and Queueing

The project site contains two drive-thru lanes which merge into a single lane before the window. The entrance to the drive-thru is located on the northwest corner and the exit is located on the northeast corner. Entry will be possible only from the South Access and exit will be possible from both accesses. To avoid having vehicles make an awkward U-turn, it is recommended that signage at the South Access direct entering vehicles to the right to join the drive thru.

Queue storage is provided for up to 18 vehicles within the drive-thru area. Based on normalized queueing data provided by Dutch Bros, a typical maximum queue of 13 vehicles is anticipated. Therefore, it is anticipated that the proposed queue storage will be sufficient. However, it is possible that queueing may occasionally spill over. In the event that this happens, it is recommended that vehicles with larger orders be directed to an available stall to wait for their order.

V. FUTURE (2025) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the future (2025) plus project analysis is to study the intersections and roadways during the peak travel periods of the day for opening day background traffic and geometric conditions plus the net trips generated by the proposed development. This scenario provides valuable insight into the potential impacts of the proposed project on background traffic conditions.

B. Traffic Volumes

Hales Engineering added the project trips discussed in Chapter III to the future (2025) background traffic volumes to predict turning movement volumes for future (2025) plus project conditions. Future (2025) plus project morning and evening peak hour turning movement volumes are shown in Figure 5.

C. Level of Service Analysis

Hales Engineering determined that the San Antonio Place NE / San Antonio Drive NE intersection is anticipated to operate at a poor LOS during the morning and evening peak hours with project traffic added, as shown in Table 7.

Table 7: Future (2025) Plus Project Peak Hour LOS

Intersection		LOS (Sec. Delay / Veh.) / Lane Group[1]	
Description	Control	Morning Peak	Evening Peak
San Antonio Dr NE / Wyoming Blvd NE	Signal	D (39.3)	D (43.1)
San Antonio Pl NE / San Antonio Dr NE	NB/SB Stop	f (>50) / SB	f (>50) NBTL
North Access / San Antonio Dr NE	NB Stop	b (11.3) / NB	b (13.9) / NB
South Access / San Antonio Pl NE	EB/WB Stop	a (9.9) / EB	a (9.1) / EB

1. Lane group indicated for unsignalized intersections where delay and LOS represents worst lane group. SBL = Southbound left group, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

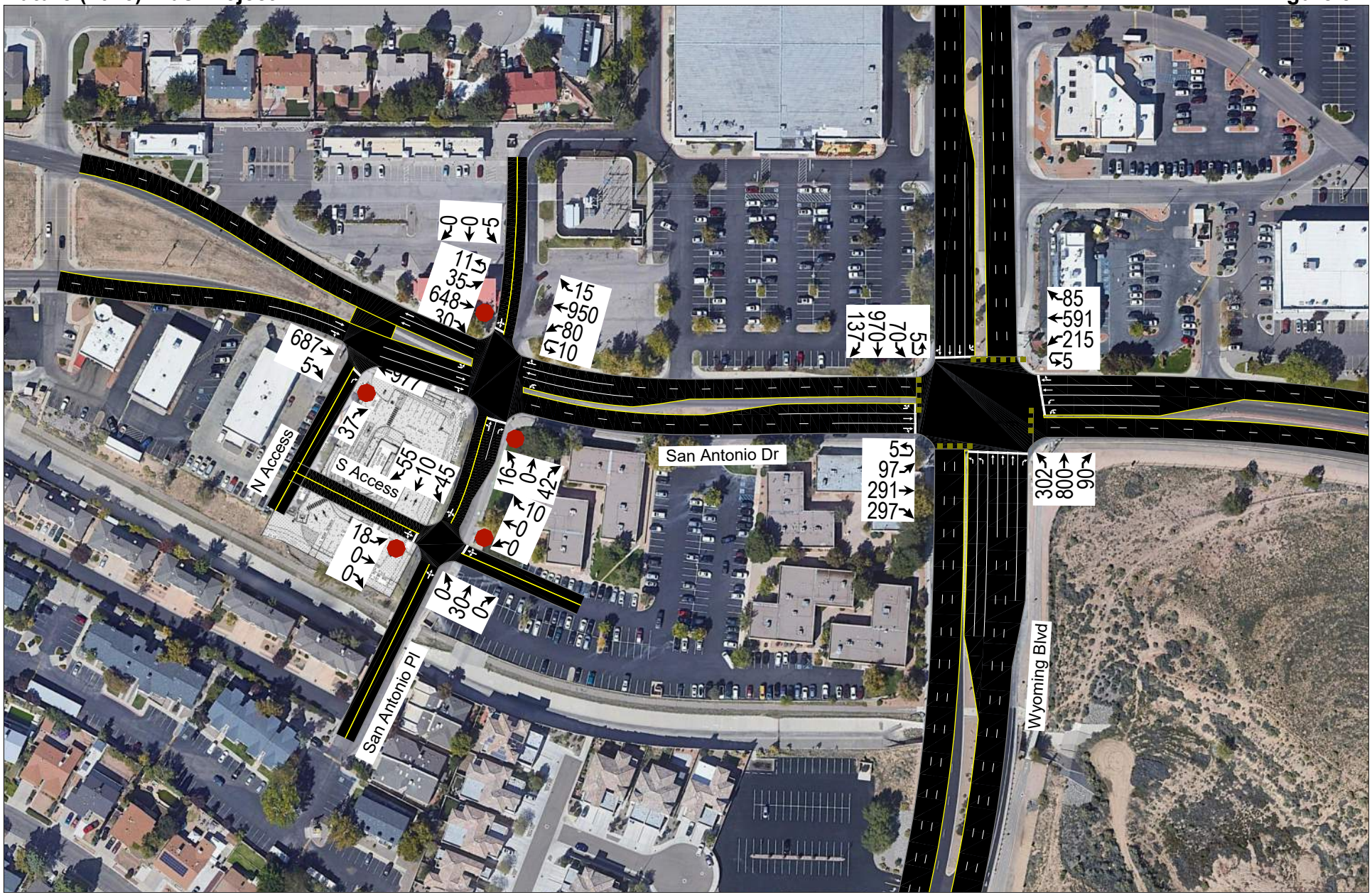
Source: Hales Engineering, July 2024

D. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the morning and evening peak hours.

Albuquerque - Dutch Bros TIS
Future (2025) Plus Project

Morning Peak Hour
Figure 5A



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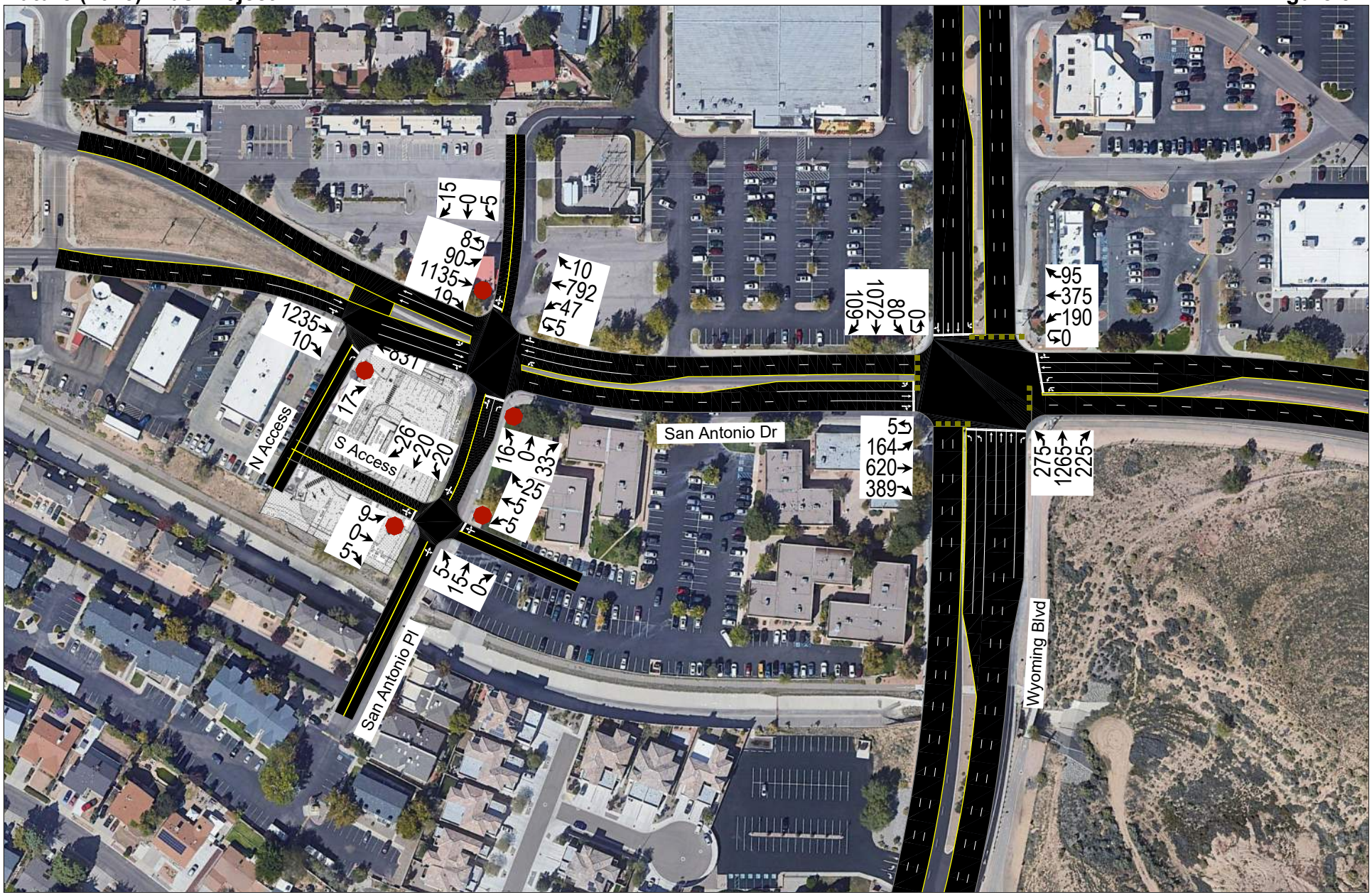
Albuquerque - Dutch Bros TIS
Future (2025) Plus Project

Evening Peak Hour
Figure 5B



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E. Mitigation Measures

No mitigation measures are recommended. Peak hour signal warrants continue to not be met, as demonstrated in Figure 6, which assumes the 70% factor due to the roadway speed, morning peak hour conditions, and the major street left versus opposing thru option. The proximity to an existing signal also means that this location is unfit for a signal.

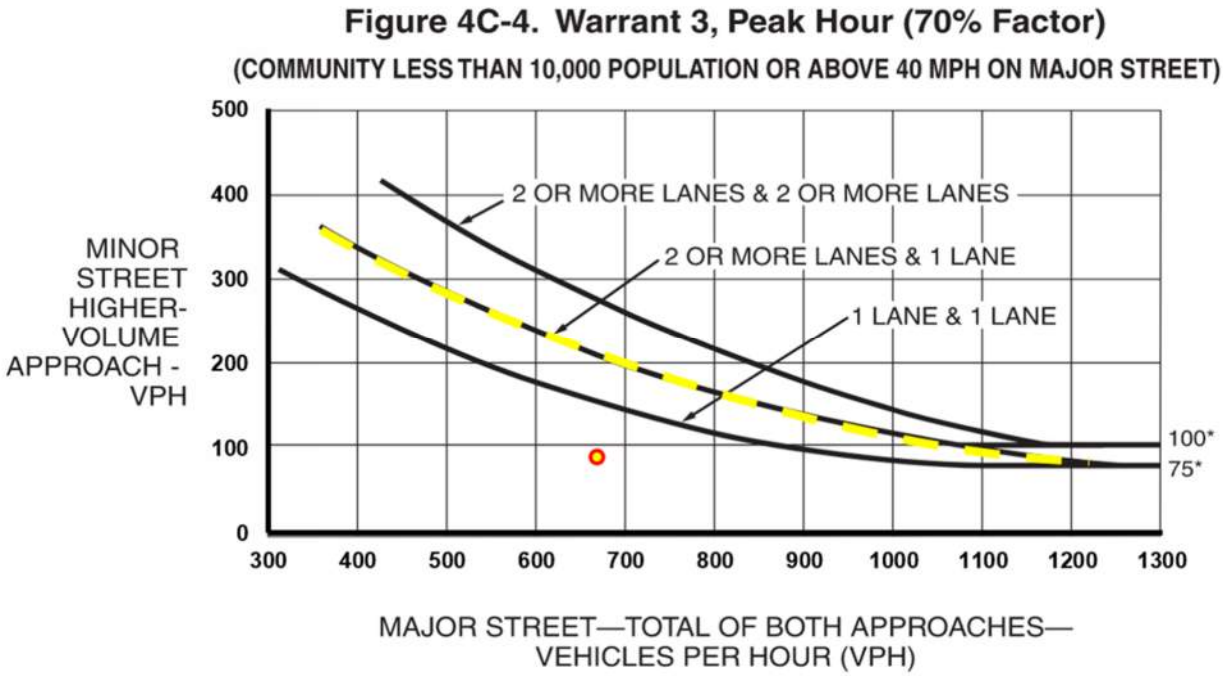


Figure 6: San Antonio Place peak hour signal warrant

APPENDIX A

Site Plan

811 Know what's **below.** **Call** before you dig. Dial 811

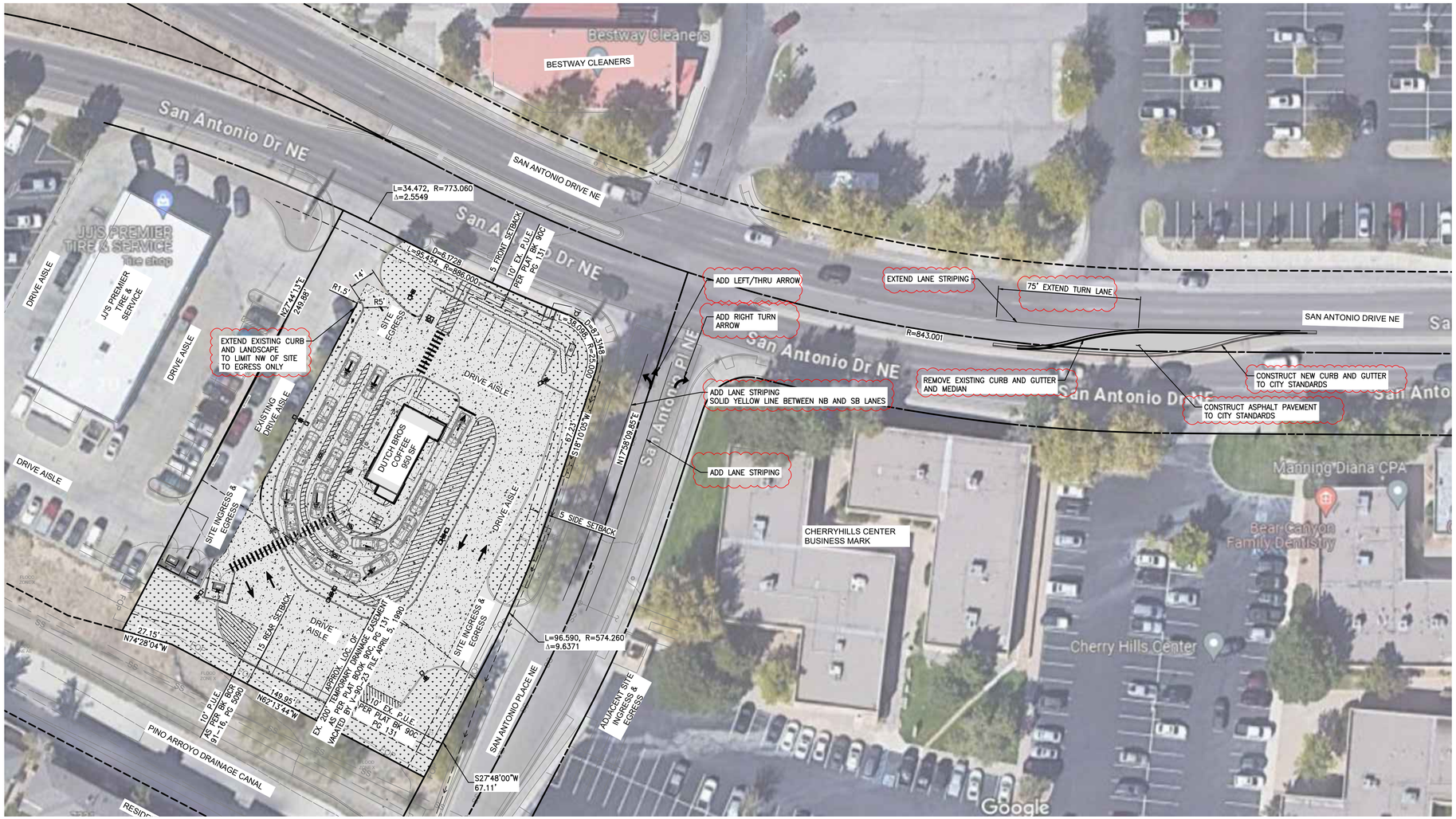
THIS IS A MAJOR AMENDMENT TO THE CONTROLLING SITE DEVELOPMENT PLAN FOR BUILDING F TO ALLOW A RESTAURANT WITH DRIVE THROUGH USE PROPOSED OFF-SITE IMPROVEMENTS

N

0 15' 30' 60'

SCALE: 1"=30'

N.T.S VICINITY MAP



PRELIMINARY NOT FOR CONSTRUCTION

Title: PROPOSED OFFSITE IMPROVEMENTS
7330 SAN ANTONIO DR NE
ALBUQUERQUE, NM 87109

For:

DUTCH BROS

ANTHONY ERNESTO MEJIA — NEW MEXICO — 29486 — PROFESSIONAL ENGINEER — ON — Not for Construction

Scale: Horizontal 1" = 30' Vertical N/A

Designed BB Drawn BB Checked MTL Approved AEM Date 5/24/24

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 barghausen.com

Job Number 23204

Sheet 1 OF 1

2019.08 Franchising USA, LLC

P:\23000s\23204\engineering\23204-PROPOSED OFF-SITE IMPROVEMENTS.dwg 6/18/2024 10:48 AM BBLADES

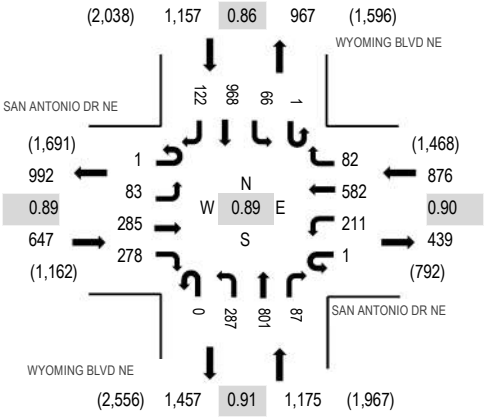
APPENDIX B

Turning Movement Counts

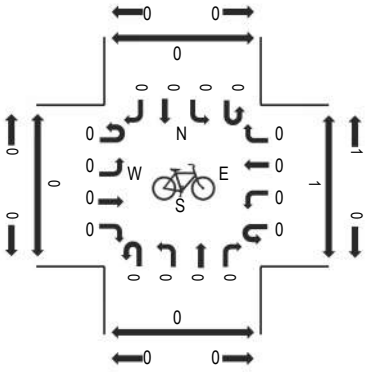
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 WYOMING BLVD NE & SAN ANTONIO DR NE AM
Date: Tuesday, March 12, 2024
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

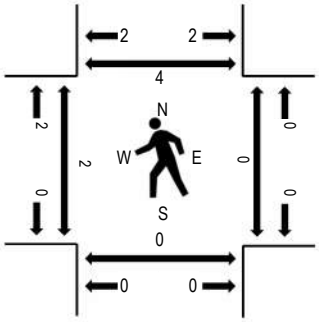
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

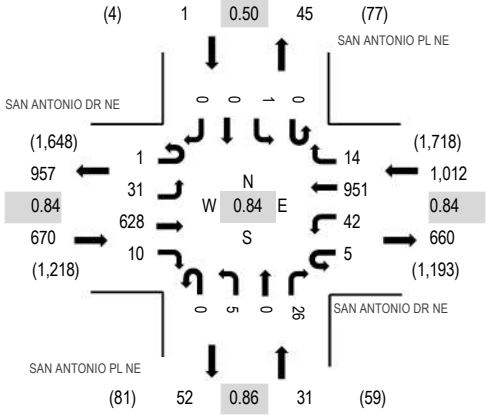
Traffic Counts - Motorized Vehicles

Interval Start Time	SAN ANTONIO DR NE Eastbound				SAN ANTONIO DR NE Westbound				WYOMING BLVD NE Northbound				WYOMING BLVD NE 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	10	52	37	0	34	81	6	0	42	87	12	0	4	130	20	515	3,246	0	1	1	0
7:15 AM	0	19	75	47	0	44	130	14	0	67	114	19	0	13	176	23	741	3,718	0	1	0	0
7:30 AM	0	19	76	60	1	40	156	15	0	71	158	13	0	18	248	33	908	3,855	0	0	0	0
7:45 AM	0	14	91	78	0	42	177	23	0	92	203	27	0	19	287	29	1,082	3,660	1	0	0	0
8:00 AM	0	30	63	80	0	74	122	23	0	63	224	18	0	20	244	26	987	3,389	1	0	0	2
8:15 AM	1	20	55	60	0	55	127	21	0	61	216	29	1	9	189	34	878		0	0	0	2
8:30 AM	0	19	42	65	1	31	93	8	0	40	132	17	0	15	223	27	713		1	0	0	2
8:45 AM	0	25	58	66	0	39	98	13	0	54	182	26	0	19	207	24	811		3	2	0	0
Count Total	1	156	512	493	2	359	984	123	0	490	1,316	161	1	117	1,704	216	6,635		6	4	1	6
Peak Hour	1	83	285	278	1	211	582	82	0	287	801	87	1	66	968	122	3,855		2	0	0	4

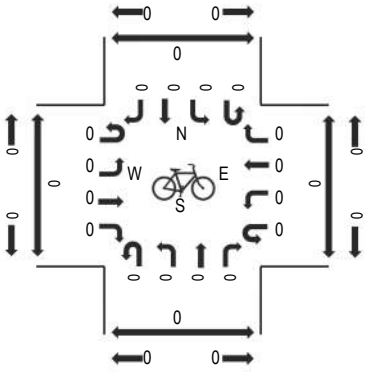
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 SAN ANTONIO PL NE & SAN ANTONIO DR NE AM
Date: Tuesday, March 12, 2024
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

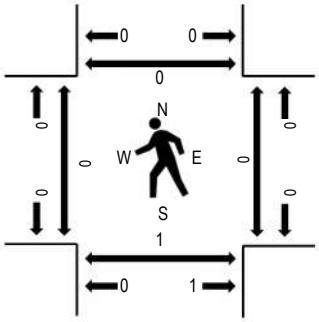
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

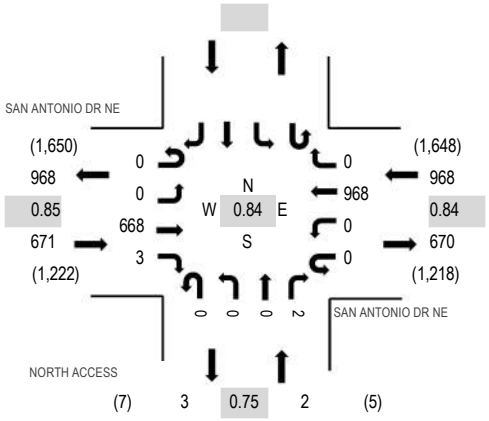
Traffic Counts - Motorized Vehicles

Interval Start Time	SAN ANTONIO DR NE Eastbound				SAN ANTONIO DR NE Westbound				SAN ANTONIO PL NE Northbound				SAN ANTONIO PL NE 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	5	106	1	1	3	141	1	0	4	0	1	0	0	0	0	263	1,563	0	0	1	0
7:15 AM	0	2	138	1	2	6	212	1	0	3	1	4	0	0	0	0	370	1,710	0	0	0	0
7:30 AM	0	10	140	2	1	9	245	4	0	1	0	8	0	0	0	0	420	1,714	0	0	1	0
7:45 AM	0	7	188	4	1	12	287	2	0	2	0	7	0	0	0	0	510	1,602	0	0	0	0
8:00 AM	0	5	170	3	1	5	219	2	0	1	0	3	0	1	0	0	410	1,436	0	0	0	0
8:15 AM	1	9	130	1	2	16	200	6	0	1	0	8	0	0	0	0	374		0	0	0	0
8:30 AM	0	11	128	0	0	8	151	1	0	2	0	5	0	1	0	1	308		0	0	0	0
8:45 AM	1	9	141	5	1	5	172	1	0	4	0	4	0	1	0	0	344		0	0	0	0
Count Total	2	58	1,141	17	9	64	1,627	18	0	18	1	40	0	3	0	1	2,999		0	0	2	0
Peak Hour	1	31	628	10	5	42	951	14	0	5	0	26	0	1	0	0	1,714		0	0	1	0

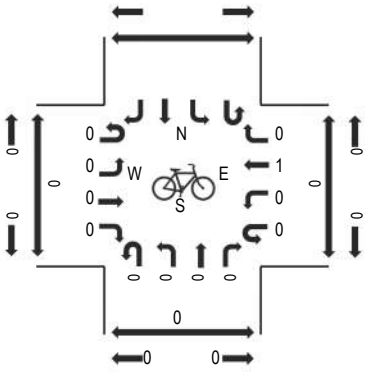
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 NORTH ACCESS & SAN ANTONIO DR NE AM
Date: Tuesday, March 12, 2024
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

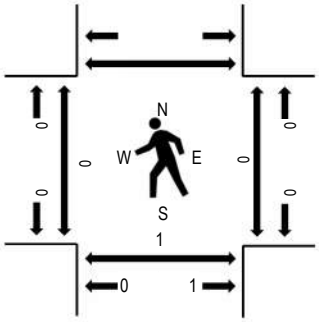
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

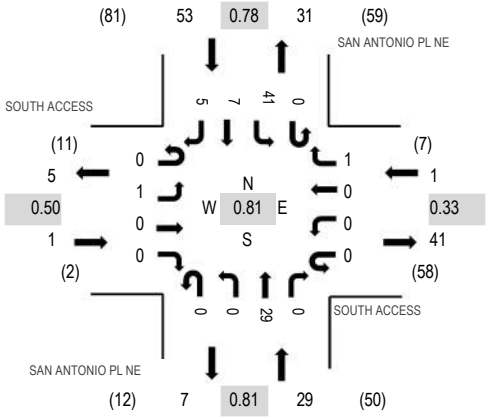
Traffic Counts - Motorized Vehicles

Interval Start Time	SAN ANTONIO DR NE Eastbound				SAN ANTONIO DR NE Westbound				NORTH ACCESS Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	113	0	0	0	143	0	0	0	0	1					257	1,499	0	0	1	
7:15 AM	0	0	139	1	0	0	217	0	0	0	0	0					357	1,641	0	0	0	
7:30 AM	0	0	151	0	0	0	246	0	0	0	0	1					398	1,629	0	0	1	
7:45 AM	0	0	199	0	0	0	287	0	0	0	0	1					487	1,526	0	0	0	
8:00 AM	0	0	179	2	0	0	218	0	0	0	0	0					399	1,376	0	0	0	
8:15 AM	1	0	141	1	0	0	202	0	0	0	0	0					345		0	0	0	
8:30 AM	0	0	137	1	0	0	157	0	0	0	0	0					295		0	0	0	
8:45 AM	0	0	155	2	0	0	178	0	0	1	0	1					337		0	0	0	
Count Total	1	0	1,214	7	0	0	1,648	0	0	1	0	4					2,875		0	0	2	
Peak Hour	0	0	668	3	0	0	968	0	0	0	0	2					1,641		0	0	1	

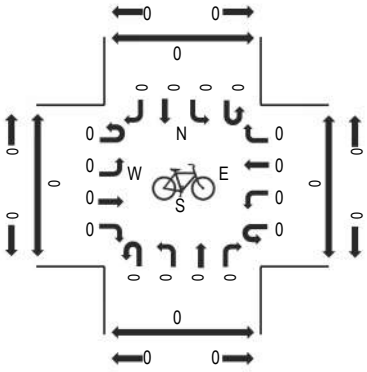
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 SAN ANTONIO PL NE & SOUTH ACCESS AM
Date: Tuesday, March 12, 2024
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

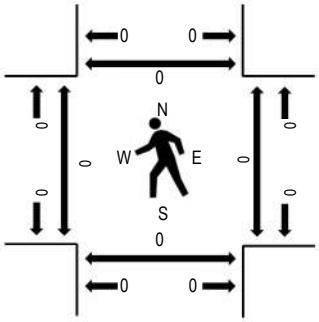
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

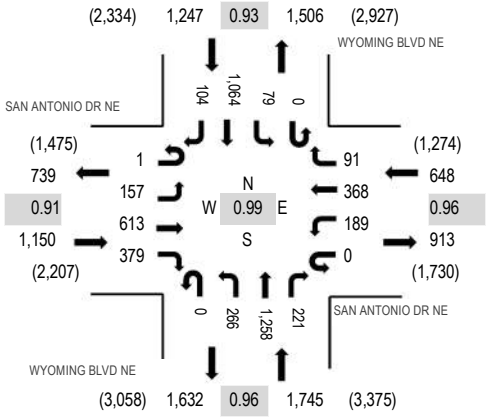
Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTH ACCESS Eastbound				SOUTH ACCESS Westbound				SAN ANTONIO PL NE Northbound				SAN ANTONIO PL NE 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	0	0	1	0	0	4	0	0	2	1	1	9	69	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	1	0	0	7	0	0	3	1	2	15	73	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	10	1	1	21	84	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	12	0	3	24	77	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	1	0	0	2	0	0	7	2	0	13	71	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	12	4	1	26		0	0	0	0
8:30 AM	0	0	0	0	0	0	0	3	0	0	3	0	1	6	1	0	14		0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	0	0	7	0	0	6	2	2	18		0	1	0	0
Count Total	0	2	0	0	0	0	1	6	0	0	50	0	1	58	12	10	140		0	1	0	0
Peak Hour	0	1	0	0	0	0	0	1	0	0	29	0	0	41	7	5	84		0	0	0	0

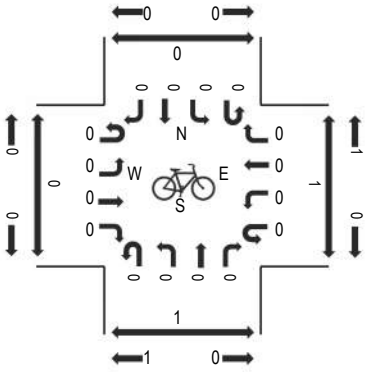
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 WYOMING BLVD NE & SAN ANTONIO DR NE PM
Date: Tuesday, March 12, 2024
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

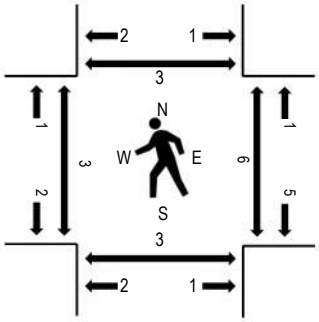
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

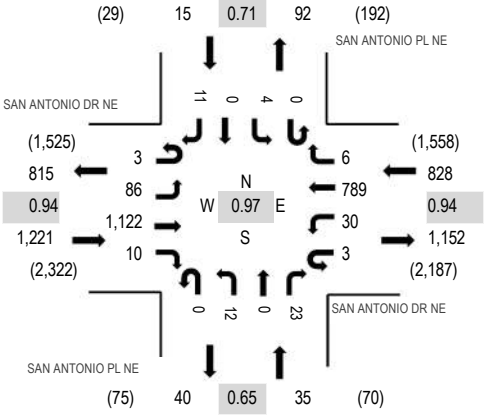
Traffic Counts - Motorized Vehicles

Interval Start Time	SAN ANTONIO DR NE Eastbound				SAN ANTONIO DR NE Westbound				WYOMING BLVD NE Northbound				WYOMING BLVD NE 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	39	124	86	0	42	101	16	0	64	285	50	0	21	239	21	1,088	4,588	1	0	0	2
4:15 PM	1	39	160	80	0	44	88	26	0	60	317	53	0	23	236	25	1,152	4,711	0	0	1	1
4:30 PM	0	41	139	111	0	39	85	26	0	85	306	47	0	20	225	31	1,155	4,748	0	1	0	1
4:45 PM	1	33	142	86	0	45	100	20	0	66	317	48	0	18	289	28	1,193	4,790	2	2	3	1
5:00 PM	0	39	156	105	0	49	101	12	0	71	328	60	0	18	253	19	1,211	4,602	0	0	0	0
5:15 PM	0	46	175	104	0	49	93	26	0	63	286	52	0	20	246	29	1,189		1	4	0	2
5:30 PM	0	39	140	84	0	46	74	33	0	66	327	61	0	23	276	28	1,197		0	0	0	0
5:45 PM	2	41	118	76	0	47	96	16	0	55	269	39	0	23	201	22	1,005		0	0	0	0
Count Total	4	317	1,154	732	0	361	738	175	0	530	2,435	410	0	166	1,965	203	9,190		4	7	4	7
Peak Hour	1	157	613	379	0	189	368	91	0	266	1,258	221	0	79	1,064	104	4,790		3	6	3	3

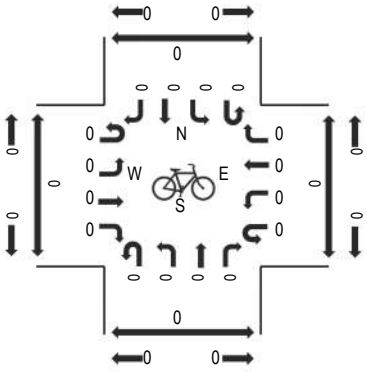
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 SAN ANTONIO PL NE & SAN ANTONIO DR NE PM
Date: Tuesday, March 12, 2024
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

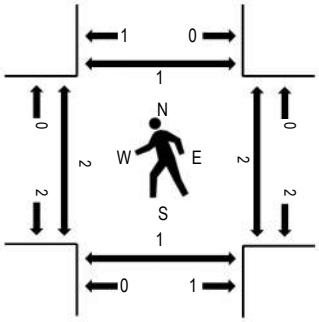
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

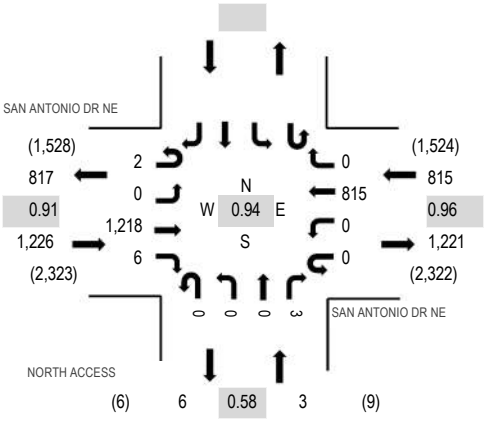
Traffic Counts - Motorized Vehicles

Interval Start Time	SAN ANTONIO DR NE Eastbound				SAN ANTONIO DR NE Westbound				SAN ANTONIO PL NE Northbound				SAN ANTONIO PL NE 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	1	19	245	3	1	10	175	3	0	4	0	11	0	2	0	1	475	1,997	0	0	0	0
4:15 PM	1	18	286	1	0	9	167	2	0	3	0	3	0	1	0	4	495	2,063	0	0	0	0
4:30 PM	1	21	275	5	1	8	208	3	0	3	0	4	0	3	0	1	533	2,099	2	0	1	1
4:45 PM	0	25	243	1	2	13	194	1	0	3	0	8	0	1	0	3	494	2,028	0	2	0	0
5:00 PM	1	17	304	3	0	5	193	1	0	4	0	6	0	0	0	7	541	1,982	0	0	0	0
5:15 PM	1	23	300	1	0	4	194	1	0	2	0	5	0	0	0	0	531		0	0	0	0
5:30 PM	2	27	248	0	0	6	168	3	0	2	0	4	0	0	0	2	462		0	0	0	0
5:45 PM	1	21	227	1	2	5	174	5	0	2	2	4	0	1	0	3	448		0	0	0	0
Count Total	8	171	2,128	15	6	60	1,473	19	0	23	2	45	0	8	0	21	3,979		2	2	1	1
Peak Hour	3	86	1,122	10	3	30	789	6	0	12	0	23	0	4	0	11	2,099		2	2	1	1

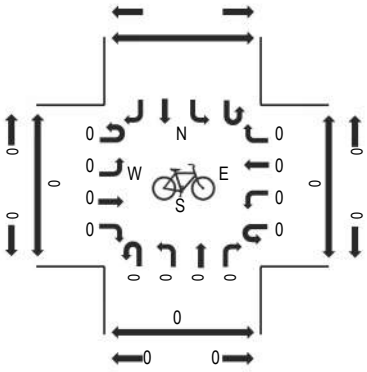
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 NORTH ACCESS & SAN ANTONIO DR NE PM
Date: Tuesday, March 12, 2024
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

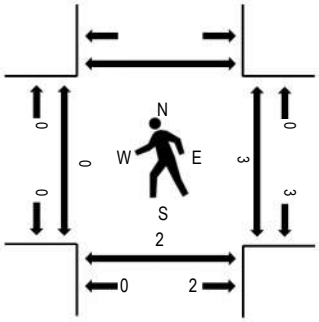
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

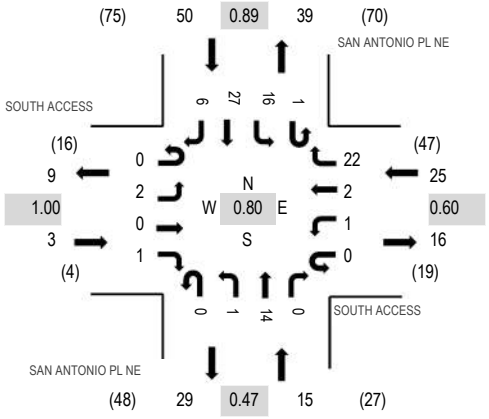
Traffic Counts - Motorized Vehicles

Interval Start Time	SAN ANTONIO DR NE Eastbound				SAN ANTONIO DR NE Westbound				NORTH ACCESS Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South North
4:00 PM	1	0	270	0	0	0	179	0	0	0	0	1					451	1,921	0	0	0
4:15 PM	1	0	303	0	0	0	177	0	0	0	0	0					481	2,012	0	0	0
4:30 PM	1	0	302	2	0	0	212	0	0	0	0	0					517	2,044	0	2	1
4:45 PM	0	0	269	1	0	0	201	0	0	0	0	1					472	1,982	0	1	1
5:00 PM	1	0	336	1	0	0	204	0	0	0	0	0					542	1,935	0	0	0
5:15 PM	0	0	311	2	0	0	198	0	0	0	0	2					513		0	0	0
5:30 PM	0	0	278	0	0	0	174	0	0	0	0	3					455		2	0	0
5:45 PM	0	0	244	0	0	0	179	0	0	0	0	2					425		0	0	0
Count Total	4	0	2,313	6	0	0	1,524	0	0	0	0	9					3,856		2	3	2
Peak Hour	2	0	1,218	6	0	0	815	0	0	0	0	3					2,044		0	3	2

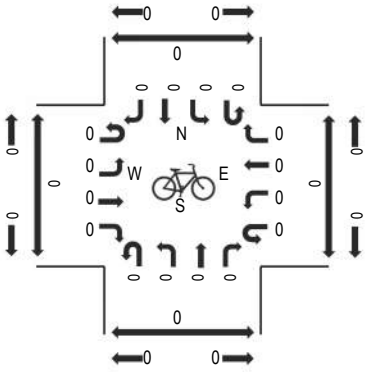
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 SAN ANTONIO PL NE & SOUTH ACCESS PM
Date: Tuesday, March 12, 2024
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

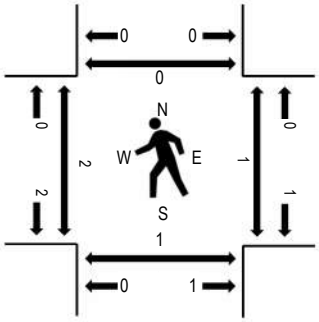
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTH ACCESS Eastbound				SOUTH ACCESS Westbound				SAN ANTONIO PL NE Northbound				SAN ANTONIO PL NE 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	1	0	7	0	1	7	0	1	4	7	1	29	93	0	1	0	0
4:15 PM	0	1	0	0	0	0	0	4	0	0	1	0	0	1	6	3	16	86	0	0	0	0
4:30 PM	0	0	0	1	0	0	1	5	0	0	2	0	0	5	8	0	22	82	2	0	1	0
4:45 PM	0	1	0	0	0	0	1	6	0	0	4	0	0	6	6	2	26	72	0	0	0	0
5:00 PM	0	1	0	0	0	0	4	8	0	0	1	0	0	2	6	0	22	60	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	3	0	0	4	0	0	0	4	1	12		0	0	0	0
5:30 PM	0	0	0	0	0	0	0	4	0	0	2	0	0	0	5	1	12		0	0	0	0
5:45 PM	0	0	0	0	0	0	0	3	0	0	5	0	0	1	4	1	14		0	0	0	0
Count Total	0	3	0	1	0	1	6	40	0	1	26	0	1	19	46	9	153		2	1	1	0
Peak Hour	0	2	0	1	0	1	2	22	0	1	14	0	1	16	27	6	93		2	1	1	0

APPENDIX C

Synchro Printouts

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	632	238	746	322	900	98	75	1225
v/c Ratio	0.67	0.64	0.68	0.78	0.79	0.41	0.13	0.56	0.66
Control Delay (s/veh)	72.4	26.7	58.1	42.9	61.8	24.6	4.8	64.6	31.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.4	26.7	58.1	42.9	61.8	24.6	4.8	64.6	31.9
Queue Length 50th (ft)	65	133	84	247	114	172	0	52	274
Queue Length 95th (ft)	#121	191	123	308	161	223	32	97	331
Internal Link Dist (ft)		499		1415		1110			839
Turn Bay Length (ft)	165		135		220		175	235	
Base Capacity (vph)	162	1048	409	1044	442	2148	733	178	1837
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.60	0.58	0.71	0.73	0.42	0.13	0.42	0.67

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	285	278	212	582	82	287	801	87	67	968	122
Future Volume (veh/h)	84	285	278	212	582	82	287	801	87	67	968	122
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1856	1885	1885	1856	1885
Adj Flow Rate, veh/h	94	320	312	238	654	92	322	900	98	75	1088	137
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1	1	3	1	1	3	1
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	118	420	373	300	803	113	382	2318	730	96	1828	230
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.23	0.23	0.09	0.25	0.25	0.11	0.46	0.46	0.05	0.40	0.40
Unsig. Movement Delay												
Ln Grp Delay, s/veh	62.1	46.2	53.3	54.2	47.7	47.8	58.8	20.2	17.6	56.5	27.8	29.6
Ln Grp LOS	E	D	D	D	D	D	E	C	B	E	C	C
Approach Vol, veh/h		726			984			1320			1300	
Approach Delay, s/veh		51.3			49.3			29.4			30.0	
Approach LOS		D			D			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	4.0	2.0	3.0	2.0	4.0	2.0	4.0
Phs Duration (G+Y+Rc), s	13.5	31.3	9.9	55.3	11.3	33.5	16.1	49.1
Change Period (Y+Rc), s	4.0	5.5	4.0	5.0	4.0	5.5	4.0	5.0
Max Green (Gmax), s	13.0	29.5	11.0	38.0	10.0	32.5	14.0	35.0
Max Allow Headway (MAH), s	2.2	6.2	2.2	3.9	2.2	6.0	2.2	4.0
Max Q Clear (g_c+I1), s	9.4	22.6	6.5	14.9	7.7	23.5	12.0	22.7
Green Ext Time (g_e), s	0.1	2.7	0.0	4.2	0.0	3.8	0.1	4.3
Prob of Phs Call (p_c)	1.00	1.00	0.90	1.00	0.94	1.00	1.00	1.00
Prob of Max Out (p_x)	0.09	0.90	0.01	0.00	0.84	0.70	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	3483		1795		1795		3483	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1791		5066		3151		4555

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1589		1596		443		573

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

2nd-Term Q (Q2), veh/ln	0.0	0.8	0.0	0.1	0.0	1.2	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	8.6	0.0	4.9	0.0	10.3	0.0	8.3
%ile Storage Ratio (RQ%)	0.00	0.46	0.00	0.11	0.00	0.18	0.00	0.25
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	312	0	98	0	375	0	419
Grp Sat Flow (s), veh/h/ln	0	1589	0	1596	0	1803	0	1751
Q Serve Time (g_s), s	0.0	20.6	0.0	3.9	0.0	21.5	0.0	20.7
Cycle Q Clear Time (g_c), s	0.0	20.6	0.0	3.9	0.0	21.5	0.0	20.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	0.25	0.00	0.33
Lane Grp Cap (c), veh/h	0	373	0	730	0	459	0	703
V/C Ratio (X)	0.00	0.84	0.00	0.13	0.00	0.82	0.00	0.60
Avail Cap (c_a), veh/h	0	426	0	730	0	533	0	703
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	40.1	0.0	17.2	0.0	38.6	0.0	25.9
Incr Delay (d2), s/veh	0.0	13.2	0.0	0.4	0.0	9.2	0.0	3.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	53.3	0.0	17.6	0.0	47.8	0.0	29.6
1st-Term Q (Q1), veh/ln	0.0	7.8	0.0	1.4	0.0	9.2	0.0	8.2
2nd-Term Q (Q2), veh/ln	0.0	1.4	0.0	0.1	0.0	1.2	0.0	0.7
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	9.1	0.0	1.5	0.0	10.4	0.0	9.0
%ile Storage Ratio (RQ%)	0.00	0.49	0.00	0.21	0.00	0.19	0.00	0.27
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	37.8
HCM 7th LOS	D

Notes
User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	0.8

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	1	31	628	10	5	42	951	14	5	0	26	1	0	0
Future Vol, veh/h	1	31	628	10	5	42	951	14	5	0	26	1	0	0
Conflicting Peds, #/hr	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	35	706	11	6	47	1069	16	6	0	29	1	0	0

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1084	1084	0	0	717	718	0	0	1424	1974	359	1607	1972	542
Stage 1	-	-	-	-	-	-	-	-	784	784	-	1182	1182	-
Stage 2	-	-	-	-	-	-	-	-	640	1190	-	425	790	-
Critical Hdwy	6.42	4.12	-	-	6.42	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.51	2.21	-	-	2.51	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	296	645	-	-	508	886	-	-	97	62	640	71	62	487
Stage 1	-	-	-	-	-	-	-	-	355	405	-	203	264	-
Stage 2	-	-	-	-	-	-	-	-	433	261	-	580	402	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	622	622	-	-	813	813	-	-	90	57	640	62	58	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	90	57	-	62	58	-
Stage 1	-	-	-	-	-	-	-	-	341	389	-	195	253	-
Stage 2	-	-	-	-	-	-	-	-	416	251	-	533	386	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.53	0.45	16.87	63.68
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	90	640	622	-	-	813	-	-	62
HCM Lane V/C Ratio	0.063	0.046	0.058	-	-	0.065	-	-	0.018
HCM Control Delay (s/veh)	47.9	10.9	11.1	-	-	9.7	-	-	63.7
HCM Lane LOS	E	B	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.2	0.1	0.2	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	668	3	0	957	0	2
Future Vol, veh/h	668	3	0	957	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	751	3	0	1075	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	377
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	624
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	624
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	10.79
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	624	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-
HCM Control Delay (s/veh)	10.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	0	0	1	0	29	0	40	7	5
Future Vol, veh/h	1	0	0	0	0	1	0	29	0	40	7	5
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	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	0	0	0	0	1	0	33	0	45	8	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	133	133	11	130	136	33	13	0	0	33	0	0
Stage 1	101	101	-	33	33	-	-	-	-	-	-	-
Stage 2	33	33	-	98	103	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	841	759	1073	845	757	1044	1611	-	-	1586	-	-
Stage 1	908	814	-	986	870	-	-	-	-	-	-	-
Stage 2	986	870	-	911	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	816	738	1073	820	735	1044	1611	-	-	1586	-	-
Mov Cap-2 Maneuver	816	738	-	820	735	-	-	-	-	-	-	-
Stage 1	882	791	-	986	870	-	-	-	-	-	-	-
Stage 2	985	870	-	885	788	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.42	8.45	0	5.64
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1611	-	-	816	1044	1278	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.001	0.028	-	-
HCM Control Delay (s/veh)	0	-	-	9.4	8.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	160	1002	191	464	269	1271	223	80	1180
v/c Ratio	0.83	0.90	0.63	0.45	0.71	0.64	0.31	0.60	0.69
Control Delay (s/veh)	86.0	47.5	62.0	34.7	62.7	32.9	8.6	71.7	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	86.0	47.5	62.0	34.7	62.7	32.9	8.6	71.7	36.7
Queue Length 50th (ft)	122	349	74	146	105	304	25	61	288
Queue Length 95th (ft)	#230	#504	110	198	147	372	86	112	355
Internal Link Dist (ft)		499		1415		1110			839
Turn Bay Length (ft)	165		135		220		175	235	
Base Capacity (vph)	208	1109	404	1017	462	1966	717	178	1710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.90	0.47	0.46	0.58	0.65	0.31	0.45	0.69

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	613	379	189	368	91	266	1258	221	79	1064	104
Future Volume (veh/h)	158	613	379	189	368	91	266	1258	221	79	1064	104
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1856	1885	1885	1856	1885
Adj Flow Rate, veh/h	160	619	383	191	372	92	269	1271	223	80	1075	105
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	3	1	1	3	1
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	187	610	377	248	726	177	327	2181	684	102	1844	180
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.29	0.29	0.07	0.25	0.25	0.09	0.43	0.43	0.06	0.39	0.39
Unsig. Movement Delay												
Ln Grp Delay, s/veh	76.7	86.2	88.0	56.6	39.5	39.7	58.8	27.1	23.9	60.9	30.5	32.2
Ln Grp LOS	E	F	F	E	D	D	E	C	C	E	C	C
Approach Vol, veh/h		1162			655			1763			1260	
Approach Delay, s/veh		85.7			44.6			31.6			33.0	
Approach LOS		F			D			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	4.0	2.0	3.0	2.0	4.0	2.0	4.0
Phs Duration (G+Y+Rc), s	12.6	40.0	10.8	56.7	16.5	36.1	15.3	52.2
Change Period (Y+Rc), s	4.0	5.5	4.0	5.0	4.0	5.5	4.0	5.0
Max Green (Gmax), s	14.0	34.5	12.0	41.0	14.0	34.5	16.0	37.0
Max Allow Headway (MAH), s	2.2	6.1	2.2	3.9	2.2	6.1	2.2	4.0
Max Q Clear (g_c+I1), s	8.5	36.5	7.3	24.9	12.5	15.6	11.1	23.7
Green Ext Time (g_e), s	0.1	0.0	0.0	5.9	0.0	3.5	0.2	4.3
Prob of Phs Call (p_c)	1.00	1.00	0.93	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	0.00	1.00	0.01	0.00	1.00	0.07	0.01	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	3483		1795		1795		3483	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2121		5066		2850		4690

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1312		1590		697		458

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

2nd-Term Q (Q2), veh/ln	0.0	6.2	0.0	0.2	0.0	0.2	0.0	0.3
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	21.0	0.0	9.1	0.0	5.9	0.0	8.8
%ile Storage Ratio (RQ%)	0.00	1.13	0.00	0.20	0.00	0.11	0.00	0.26
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	479	0	223	0	232	0	406
Grp Sat Flow (s), veh/h/ln	0	1642	0	1590	0	1756	0	1770
Q Serve Time (g_s), s	0.0	34.5	0.0	11.2	0.0	13.6	0.0	21.7
Cycle Q Clear Time (g_c), s	0.0	34.5	0.0	11.2	0.0	13.6	0.0	21.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.80	0.00	1.00	0.00	0.40	0.00	0.26
Lane Grp Cap (c), veh/h	0	472	0	684	0	447	0	696
V/C Ratio (X)	0.00	1.02	0.00	0.33	0.00	0.52	0.00	0.58
Avail Cap (c_a), veh/h	0	472	0	684	0	505	0	696
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	42.8	0.0	22.6	0.0	38.4	0.0	28.7
Incr Delay (d2), s/veh	0.0	45.3	0.0	1.3	0.0	1.3	0.0	3.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	88.0	0.0	23.9	0.0	39.7	0.0	32.2
1st-Term Q (Q1), veh/ln	0.0	13.5	0.0	4.1	0.0	5.7	0.0	8.9
2nd-Term Q (Q2), veh/ln	0.0	5.9	0.0	0.2	0.0	0.2	0.0	0.7
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	19.4	0.0	4.3	0.0	5.9	0.0	9.6
%ile Storage Ratio (RQ%)	0.00	1.05	0.00	0.62	0.00	0.11	0.00	0.29
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	46.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.6

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	3	86	1122	10	3	30	789	6	12	0	23	4	0	11
Future Vol, veh/h	3	86	1122	10	3	30	789	6	12	0	23	4	0	11
Conflicting Peds, #/hr	0	1	0	1	0	1	0	1	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	3	87	1133	10	3	30	797	6	12	0	23	4	0	11

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	803	804	0	0	1143	1144	0	0	1786	2190	575	1616	2192	405
Stage 1	-	-	-	-	-	-	-	-	1319	1319	-	868	868	-
Stage 2	-	-	-	-	-	-	-	-	467	871	-	748	1324	-
Critical Hdwy	6.42	4.12	-	-	6.42	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.51	2.21	-	-	2.51	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	447	822	-	-	271	612	-	-	52	45	464	70	45	598
Stage 1	-	-	-	-	-	-	-	-	167	227	-	316	370	-
Stage 2	-	-	-	-	-	-	-	-	548	369	-	373	225	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	798	798	-	-	543	543	-	-	45	41	463	59	40	597
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	45	41	-	59	40	-
Stage 1	-	-	-	-	-	-	-	-	155	210	-	303	356	-
Stage 2	-	-	-	-	-	-	-	-	516	355	-	328	209	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.73	0.48	46.77	27.68
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	45	463	798	-	-	543	-	-	174
HCM Lane V/C Ratio	0.267	0.05	0.113	-	-	0.061	-	-	0.087
HCM Control Delay (s/veh)	111.1	13.2	10.1	-	-	12.1	-	-	27.7
HCM Lane LOS	F	B	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.9	0.2	0.4	-	-	0.2	-	-	0.3

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1218	6	0	815	0	3
Future Vol, veh/h	1218	6	0	815	0	3
Conflicting Peds, #/hr	0	2	2	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1230	6	0	823	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	623
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	431
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	429
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	13.44
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	429	-	-	-
HCM Lane V/C Ratio	0.007	-	-	-
HCM Control Delay (s/veh)	13.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	1	2	22	1	11	0	16	18	6
Future Vol, veh/h	2	0	1	1	2	22	1	11	0	16	18	6
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	1	1	0	2
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	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	2	0	1	1	2	22	1	11	0	16	18	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	70	70	24	66	73	12	26	0	0	12	0	0
Stage 1	56	56	-	14	14	-	-	-	-	-	-	-
Stage 2	14	14	-	52	59	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	925	823	1055	930	820	1071	1594	-	-	1613	-	-
Stage 1	959	851	-	1009	886	-	-	-	-	-	-	-
Stage 2	1009	886	-	964	848	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	892	812	1052	918	809	1070	1592	-	-	1612	-	-
Mov Cap-2 Maneuver	892	812	-	918	809	-	-	-	-	-	-	-
Stage 1	948	841	-	1007	884	-	-	-	-	-	-	-
Stage 2	985	884	-	952	838	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.84	8.56	0.61	2.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	150	-	-	940	1037	686	-	-
HCM Lane V/C Ratio	0.001	-	-	0.003	0.024	0.01	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.8	8.6	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	102	646	248	759	326	910	101	85	1241
v/c Ratio	1.50	0.66	1.87	0.79	0.79	0.52	0.16	1.25	0.70
Control Delay (s/veh)	323.1	27.4	451.3	42.9	61.9	30.0	5.3	235.7	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	323.1	27.4	451.3	42.9	61.9	30.0	5.3	235.7	33.6
Queue Length 50th (ft)	~100	140	~137	251	115	186	0	~81	282
Queue Length 95th (ft)	#207	196	#217	313	162	226	34	#185	337
Internal Link Dist (ft)		499		1415		1110			839
Turn Bay Length (ft)	165		135		220		175	235	
Base Capacity (vph)	68	1048	132	1044	443	1739	613	68	1755
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.50	0.62	1.88	0.73	0.74	0.52	0.16	1.25	0.71

Intersection Summary

~ 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.

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	5	85	290	285	5	215	590	85	290	810	90	5
Future Volume (veh/h)	5	85	290	285	5	215	590	85	290	810	90	5
Number		5	2	12		1	6	16	7	4	14	
Initial Q, veh		0	0	0		0	0	0	0	0	0	
Lane Width Adj.		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj (A_pbT)		1.00		0.99		1.00		1.00	1.00		1.00	
Parking Bus Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach			No				No			No		
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln		1885	1885	1885		1885	1885	1885	1885	1856	1885	
Adj Flow Rate, veh/h		96	326	320		242	663	96	326	910	101	
Peak Hour Factor		0.89	0.89	0.89		0.89	0.89	0.89	0.89	0.89	0.89	
Percent Heavy Veh, %		1	1	1		1	1	1	1	3	1	
Opposing Right Turn Influence		Yes				Yes			Yes			
Cap, veh/h		121	427	379		304	810	117	386	2281	718	
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Prop Arrive On Green		0.07	0.24	0.24		0.09	0.26	0.26	0.11	0.45	0.45	
Unsig. Movement Delay												
Ln Grp Delay, s/veh		63.0	46.2	54.1		54.5	47.8	47.9	59.1	20.8	18.2	
Ln Grp LOS		E	D	D		D	D	D	E	C	B	
Approach Vol, veh/h			742				1001			1337		
Approach Delay, s/veh			51.8				49.5			29.9		
Approach LOS			D				D			C		

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	4.0	2.0	3.0	2.0	4.0	2.0	4.0
Phs Duration (G+Y+Rc), s	13.6	31.7	10.2	54.5	11.4	33.9	16.2	48.5
Change Period (Y+Rc), s	4.0	5.5	4.0	5.0	4.0	5.5	4.0	5.0
Max Green (Gmax), s	13.0	29.5	11.0	38.0	10.0	32.5	14.0	35.0
Max Allow Headway (MAH), s	2.2	6.2	2.2	3.9	2.2	6.0	2.2	4.0
Max Q Clear (g_c+I1), s	9.5	23.1	6.8	15.2	7.8	23.9	12.1	23.3
Green Ext Time (g_e), s	0.1	2.6	0.0	4.3	0.0	3.8	0.1	4.3
Prob of Phs Call (p_c)	1.00	1.00	0.91	1.00	0.95	1.00	1.00	1.00
Prob of Max Out (p_x)	0.12	0.97	0.02	0.00	1.00	0.74	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	3483		1795		1795		3483	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1791		5066		3138		4550

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1590		1594		454		578

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

2nd-Term Q (Q2), veh/ln	0.0	0.8	0.0	0.1	0.0	1.2	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	8.8	0.0	5.1	0.0	10.5	0.0	8.5
%ile Storage Ratio (RQ%)	0.00	0.47	0.00	0.11	0.00	0.19	0.00	0.25
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	320	0	101	0	381	0	424
Grp Sat Flow (s), veh/h/ln	0	1590	0	1594	0	1801	0	1750
Q Serve Time (g_s), s	0.0	21.1	0.0	4.1	0.0	21.9	0.0	21.3
Cycle Q Clear Time (g_c), s	0.0	21.1	0.0	4.1	0.0	21.9	0.0	21.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	0.25	0.00	0.33
Lane Grp Cap (c), veh/h	0	379	0	718	0	465	0	692
V/C Ratio (X)	0.00	0.85	0.00	0.14	0.00	0.82	0.00	0.61
Avail Cap (c_a), veh/h	0	426	0	718	0	532	0	692
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	40.0	0.0	17.8	0.0	38.4	0.0	26.5
Incr Delay (d2), s/veh	0.0	14.1	0.0	0.4	0.0	9.5	0.0	4.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	54.1	0.0	18.2	0.0	47.9	0.0	30.5
1st-Term Q (Q1), veh/ln	0.0	8.0	0.0	1.4	0.0	9.3	0.0	8.5
2nd-Term Q (Q2), veh/ln	0.0	1.5	0.0	0.1	0.0	1.2	0.0	0.8
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	9.5	0.0	1.5	0.0	10.6	0.0	9.2
%ile Storage Ratio (RQ%)	0.00	0.51	0.00	0.22	0.00	0.19	0.00	0.27
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	38.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	1.3

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	5	35	630	20	10	45	960	15	10	0	35	5	0	0
Future Vol, veh/h	5	35	630	20	10	45	960	15	10	0	35	5	0	0
Conflicting Peds, #/hr	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	6	39	708	22	11	51	1079	17	11	0	39	6	0	0

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1096	1096	0	0	730	731	0	0	1473	2029	366	1654	2032	548
Stage 1	-	-	-	-	-	-	-	-	810	810	-	1211	1211	-
Stage 2	-	-	-	-	-	-	-	-	663	1219	-	444	821	-
Critical Hdwy	6.42	4.12	-	-	6.42	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.51	2.21	-	-	2.51	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	291	639	-	-	498	876	-	-	89	57	634	65	57	483
Stage 1	-	-	-	-	-	-	-	-	342	394	-	195	255	-
Stage 2	-	-	-	-	-	-	-	-	419	253	-	566	389	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	556	556	-	-	755	755	-	-	81	52	633	56	52	483
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	81	52	-	56	52	-
Stage 1	-	-	-	-	-	-	-	-	325	374	-	186	244	-
Stage 2	-	-	-	-	-	-	-	-	400	241	-	505	370	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.7	0.54	21.18	77.03
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	81	633	556	-	-	755	-	-	56
HCM Lane V/C Ratio	0.139	0.062	0.081	-	-	0.082	-	-	0.101
HCM Control Delay (s/veh)	56.6	11.1	12	-	-	10.2	-	-	77
HCM Lane LOS	F	B	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.5	0.2	0.3	-	-	0.3	-	-	0.3

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	685	5	0	975	0	5
Future Vol, veh/h	685	5	0	975	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	770	6	0	1096	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	388
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	614
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	614
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	10.92
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	614	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-
HCM Control Delay (s/veh)	10.9	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	0	0	0	10	0	30	0	45	10	10
Future Vol, veh/h	5	0	0	0	0	10	0	30	0	45	10	10
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	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	6	0	0	0	0	11	0	34	0	51	11	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	152	152	17	146	157	34	22	0	0	34	0	0
Stage 1	118	118	-	34	34	-	-	-	-	-	-	-
Stage 2	34	34	-	112	124	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	818	742	1065	825	737	1042	1599	-	-	1584	-	-
Stage 1	889	800	-	985	869	-	-	-	-	-	-	-
Stage 2	985	869	-	895	796	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	783	718	1065	798	713	1042	1599	-	-	1584	-	-
Mov Cap-2 Maneuver	783	718	-	798	713	-	-	-	-	-	-	-
Stage 1	860	774	-	985	869	-	-	-	-	-	-	-
Stage 2	974	869	-	866	770	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.63	8.49	0	5.09
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	783	1042	1133	-	-
HCM Lane V/C Ratio	-	-	-	0.007	0.011	0.032	-	-
HCM Control Delay (s/veh)	0	-	-	9.6	8.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	1015	192	475	273	1283	227	81	1192
v/c Ratio	2.69	0.91	0.63	0.48	0.72	0.65	0.31	0.60	0.70
Control Delay (s/veh)	827.0	48.2	62.1	35.4	62.9	33.2	8.7	71.8	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	827.0	48.2	62.1	35.4	62.9	33.2	8.7	71.8	37.2
Queue Length 50th (ft)	~219	355	75	150	106	308	26	62	292
Queue Length 95th (ft)	#361	#515	111	202	150	376	88	113	360
Internal Link Dist (ft)		499		1415		1110			839
Turn Bay Length (ft)	165		135		220		175	235	
Base Capacity (vph)	62	1115	404	1012	462	1956	715	178	1698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.69	0.91	0.48	0.47	0.59	0.66	0.32	0.46	0.70

Intersection Summary

~ 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.

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	5	160	620	385	190	375	95	270	1270	225	80	1075
Future Volume (veh/h)	5	160	620	385	190	375	95	270	1270	225	80	1075
Number		5	2	12	1	6	16	7	4	14	3	8
Initial Q, veh		0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)		1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Parking Bus Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No			No			No			No
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln		1885	1885	1885	1885	1885	1885	1885	1856	1885	1885	1856
Adj Flow Rate, veh/h		162	626	389	192	379	96	273	1283	227	81	1086
Peak Hour Factor		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %		1	1	1	1	1	1	1	3	1	1	3
Opposing Right Turn Influence		Yes			Yes			Yes			Yes	
Cap, veh/h		189	609	378	249	720	180	331	2176	681	103	1838
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green		0.11	0.29	0.29	0.07	0.25	0.25	0.09	0.43	0.43	0.06	0.39
Unsig. Movement Delay												
Ln Grp Delay, s/veh		77.2	89.8	91.7	56.6	39.8	40.0	59.1	27.3	24.1	60.8	30.8
Ln Grp LOS		E	F	F	E	D	D	E	C	C	E	C
Approach Vol, veh/h			1177			667			1783			1273
Approach Delay, s/veh			88.9			44.7			31.8			33.3
Approach LOS			F			D			C			C

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	4.0	2.0	3.0	2.0	4.0	2.0	4.0
Phs Duration (G+Y+Rc), s	12.6	40.0	10.9	56.5	16.6	36.0	15.4	52.0
Change Period (Y+Rc), s	4.0	5.5	4.0	5.0	4.0	5.5	4.0	5.0
Max Green (Gmax), s	14.0	34.5	12.0	41.0	14.0	34.5	16.0	37.0
Max Allow Headway (MAH), s	2.2	6.1	2.2	3.9	2.2	6.1	2.2	4.0
Max Q Clear (g_c+I1), s	8.5	36.5	7.3	25.2	12.7	16.0	11.2	24.0
Green Ext Time (g_e), s	0.1	0.0	0.0	5.9	0.0	3.5	0.2	4.3
Prob of Phs Call (p_c)	1.00	1.00	0.93	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	0.00	1.00	0.01	0.00	1.00	0.08	0.02	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	3483		1795		1795		3483	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2117		5066		2835		4690

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1315		1585		710		457

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

2nd-Term Q (Q2), veh/ln	0.0	6.7	0.0	0.2	0.0	0.2	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	21.5	0.0	9.2	0.0	6.1	0.0	9.0
%ile Storage Ratio (RQ%)	0.00	1.16	0.00	0.21	0.00	0.11	0.00	0.27
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	486	0	227	0	237	0	410
Grp Sat Flow (s), veh/h/ln	0	1642	0	1585	0	1753	0	1770
Q Serve Time (g_s), s	0.0	34.5	0.0	11.4	0.0	14.0	0.0	22.0
Cycle Q Clear Time (g_c), s	0.0	34.5	0.0	11.4	0.0	14.0	0.0	22.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.80	0.00	1.00	0.00	0.40	0.00	0.26
Lane Grp Cap (c), veh/h	0	472	0	681	0	445	0	694
V/C Ratio (X)	0.00	1.03	0.00	0.33	0.00	0.53	0.00	0.59
Avail Cap (c_a), veh/h	0	472	0	681	0	504	0	694
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	42.8	0.0	22.8	0.0	38.6	0.0	28.9
Incr Delay (d2), s/veh	0.0	48.9	0.0	1.3	0.0	1.4	0.0	3.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	91.7	0.0	24.1	0.0	40.0	0.0	32.6
1st-Term Q (Q1), veh/ln	0.0	13.5	0.0	4.2	0.0	5.9	0.0	9.1
2nd-Term Q (Q2), veh/ln	0.0	6.4	0.0	0.2	0.0	0.2	0.0	0.7
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	19.9	0.0	4.4	0.0	6.1	0.0	9.8
%ile Storage Ratio (RQ%)	0.00	1.07	0.00	0.63	0.00	0.11	0.00	0.29
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	47.7
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	2.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	5	90	1130	15	5	35	795	10	15	0	30	5	0	15
Future Vol, veh/h	5	90	1130	15	5	35	795	10	15	0	30	5	0	15
Conflicting Peds, #/hr	0	1	0	1	0	1	0	1	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	125	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	5	91	1141	15	5	35	803	10	15	0	30	5	0	15

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	813	814	0	0	1157	1158	0	0	1826	2237	581	1655	2239	410
Stage 1	-	-	-	-	-	-	-	-	1342	1342	-	890	890	-
Stage 2	-	-	-	-	-	-	-	-	484	895	-	765	1349	-
Critical Hdwy	6.42	4.12	-	-	6.42	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.51	2.21	-	-	2.51	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	441	815	-	-	266	605	-	-	48	42	459	65	42	594
Stage 1	-	-	-	-	-	-	-	-	162	221	-	306	362	-
Stage 2	-	-	-	-	-	-	-	-	535	360	-	364	219	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	778	778	-	-	512	512	-	-	41	37	458	53	37	592
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	41	37	-	53	37	-
Stage 1	-	-	-	-	-	-	-	-	149	204	-	291	344	-
Stage 2	-	-	-	-	-	-	-	-	496	342	-	313	202	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.79	0.6	54.15	29.32
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	41	458	778	-	-	512	-	-	168
HCM Lane V/C Ratio	0.366	0.066	0.123	-	-	0.079	-	-	0.12
HCM Control Delay (s/veh)	135.6	13.4	10.3	-	-	12.6	-	-	29.3
HCM Lane LOS	F	B	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	1.3	0.2	0.4	-	-	0.3	-	-	0.4

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1235	10	0	830	0	5
Future Vol, veh/h	1235	10	0	830	0	5
Conflicting Peds, #/hr	0	2	2	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1247	10	0	838	0	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	634
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	424
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	423
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	13.62
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	423	-	-	-
HCM Lane V/C Ratio	0.012	-	-	-
HCM Control Delay (s/veh)	13.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	5	5	5	25	5	15	0	20	20	10
Future Vol, veh/h	5	0	5	5	5	25	5	15	0	20	20	10
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	1	1	0	2
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	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	5	0	5	5	5	25	5	15	0	20	20	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	95	94	28	88	99	16	32	0	0	16	0	0
Stage 1	68	68	-	26	26	-	-	-	-	-	-	-
Stage 2	28	26	-	62	73	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	890	798	1050	900	793	1066	1586	-	-	1608	-	-
Stage 1	945	841	-	994	875	-	-	-	-	-	-	-
Stage 2	992	875	-	952	836	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	848	783	1047	880	778	1065	1584	-	-	1607	-	-
Mov Cap-2 Maneuver	848	783	-	880	778	-	-	-	-	-	-	-
Stage 1	931	828	-	990	872	-	-	-	-	-	-	-
Stage 2	960	872	-	935	824	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.88	8.8	1.82	2.91
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	450	-	-	937	984	675	-	-
HCM Lane V/C Ratio	0.003	-	-	0.011	0.036	0.013	-	-
HCM Control Delay (s/veh)	7.3	0	-	8.9	8.8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	1015	192	475	273	1283	227	81	1192
v/c Ratio	0.77	0.87	0.65	0.47	0.73	0.66	0.32	0.62	0.71
Control Delay (s/veh)	74.5	43.3	63.9	35.1	64.0	34.5	9.7	73.8	38.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.5	43.3	63.9	35.1	64.0	34.5	9.7	73.8	38.6
Queue Length 50th (ft)	127	338	75	146	106	321	29	62	304
Queue Length 95th (ft)	198	436	113	205	151	386	93	114	369
Internal Link Dist (ft)		499		1415		1110			839
Turn Bay Length (ft)	165		135		220		175	235	
Base Capacity (vph)	268	1191	346	1014	433	1921	703	163	1663
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.85	0.55	0.47	0.63	0.67	0.32	0.50	0.72

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	5	160	620	385	190	375	95	270	1270	225	80	1075
Future Volume (veh/h)	5	160	620	385	190	375	95	270	1270	225	80	1075
Number		5	2	12	1	6	16	7	4	14	3	8
Initial Q, veh		0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)		1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Parking Bus Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No			No			No			No
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln		1885	1885	1885	1885	1885	1885	1885	1856	1885	1885	1856
Adj Flow Rate, veh/h		162	626	389	192	379	96	273	1283	227	81	1086
Peak Hour Factor		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %		1	1	1	1	1	1	1	3	1	1	3
Opposing Right Turn Influence		Yes			Yes			Yes			Yes	
Cap, veh/h		189	680	422	249	813	204	330	2008	630	103	1683
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green		0.11	0.32	0.32	0.07	0.29	0.29	0.09	0.40	0.40	0.06	0.36
Unsig. Movement Delay												
Ln Grp Delay, s/veh		65.4	59.4	60.7	58.9	36.1	36.3	60.8	30.8	27.1	60.8	34.7
Ln Grp LOS		E	E	E	E	D	D	E	C	C	E	C
Approach Vol, veh/h			1177			667			1783			1273
Approach Delay, s/veh			60.7			42.7			35.0			37.2
Approach LOS			E			D			C			D

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	4.0	2.0	3.0	2.0	4.0	2.0	4.0
Phs Duration (G+Y+Rc), s	12.6	44.0	10.9	52.6	16.6	39.9	15.4	48.1
Change Period (Y+Rc), s	4.0	5.5	4.0	5.0	4.0	5.5	4.0	5.0
Max Green (Gmax), s	12.0	39.5	11.0	39.0	18.0	33.5	15.0	35.0
Max Allow Headway (MAH), s	2.2	6.1	2.2	3.9	2.2	6.1	2.2	4.0
Max Q Clear (g_c+I1), s	8.5	36.2	7.3	26.6	12.6	15.4	11.2	25.2
Green Ext Time (g_e), s	0.1	2.2	0.0	5.3	0.1	3.5	0.1	3.7
Prob of Phs Call (p_c)	1.00	1.00	0.93	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	0.10	1.00	0.06	0.00	0.01	0.08	0.09	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	3483		1795		1795		3483	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2118		5066		2835		4690

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1316		1589		710		457

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

2nd-Term Q (Q2), veh/ln	0.0	3.2	0.0	0.3	0.0	0.1	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	17.7	0.0	9.9	0.0	5.7	0.0	9.6
%ile Storage Ratio (RQ%)	0.00	0.96	0.00	0.22	0.00	0.10	0.00	0.29
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	486	0	227	0	237	0	410
Grp Sat Flow (s), veh/h/ln	0	1643	0	1589	0	1754	0	1770
Q Serve Time (g_s), s	0.0	34.2	0.0	12.1	0.0	13.4	0.0	23.2
Cycle Q Clear Time (g_c), s	0.0	34.2	0.0	12.1	0.0	13.4	0.0	23.2
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.80	0.00	1.00	0.00	0.40	0.00	0.26
Lane Grp Cap (c), veh/h	0	527	0	630	0	503	0	635
V/C Ratio (X)	0.00	0.92	0.00	0.36	0.00	0.47	0.00	0.65
Avail Cap (c_a), veh/h	0	541	0	630	0	503	0	635
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	39.3	0.0	25.5	0.0	35.3	0.0	32.1
Incr Delay (d2), s/veh	0.0	21.4	0.0	1.6	0.0	1.0	0.0	5.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	60.7	0.0	27.1	0.0	36.3	0.0	37.1
1st-Term Q (Q1), veh/ln	0.0	13.3	0.0	4.4	0.0	5.6	0.0	9.6
2nd-Term Q (Q2), veh/ln	0.0	3.1	0.0	0.3	0.0	0.1	0.0	0.9
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	16.4	0.0	4.7	0.0	5.7	0.0	10.5
%ile Storage Ratio (RQ%)	0.00	0.89	0.00	0.68	0.00	0.10	0.00	0.31
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	42.8
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	115	661	248	760	339	899	101	85	1244
v/c Ratio	0.77	0.65	0.70	0.79	0.80	0.43	0.14	0.60	0.70
Control Delay (s/veh)	80.8	26.5	58.7	42.9	62.7	25.4	5.1	66.5	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	80.8	26.5	58.7	42.9	62.7	25.4	5.1	66.5	33.3
Queue Length 50th (ft)	80	139	88	251	120	175	0	59	285
Queue Length 95th (ft)	#163	200	127	314	#178	222	34	108	337
Internal Link Dist (ft)		499		1415		1110			839
Turn Bay Length (ft)	165		135		220		175	235	
Base Capacity (vph)	162	1056	409	1044	446	2086	714	178	1774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.63	0.61	0.73	0.76	0.43	0.14	0.48	0.70

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	5	97	291	297	5	215	591	85	302	800	90	5
Future Volume (veh/h)	5	97	291	297	5	215	591	85	302	800	90	5
Number		5	2	12		1	6	16	7	4	14	
Initial Q, veh		0	0	0		0	0	0	0	0	0	
Lane Width Adj.		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj (A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	
Parking Bus Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach			No				No			No		
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln		1885	1885	1885		1885	1885	1885	1885	1856	1885	
Adj Flow Rate, veh/h		109	327	334		242	664	96	339	899	101	
Peak Hour Factor		0.89	0.89	0.89		0.89	0.89	0.89	0.89	0.89	0.89	
Percent Heavy Veh, %		1	1	1		1	1	1	1	3	1	
Opposing Right Turn Influence		Yes				Yes			Yes			
Cap, veh/h		135	439	390		304	807	117	399	2246	707	
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Prop Arrive On Green		0.08	0.25	0.25		0.09	0.26	0.26	0.11	0.44	0.44	
Unsig. Movement Delay												
Ln Grp Delay, s/veh		68.0	44.7	55.3		54.5	48.3	48.4	60.1	21.3	18.6	
Ln Grp LOS		E	D	E		D	D	D	E	C	B	
Approach Vol, veh/h			770				1002			1339		
Approach Delay, s/veh			52.6				49.8			30.9		
Approach LOS			D				D			C		

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	4.0	2.0	3.0	2.0	4.0	2.0	4.0
Phs Duration (G+Y+Rc), s	13.6	32.5	10.2	53.8	12.3	33.8	16.6	47.4
Change Period (Y+Rc), s	4.0	5.5	4.0	5.0	4.0	5.5	4.0	5.0
Max Green (Gmax), s	13.0	29.5	11.0	38.0	10.0	32.5	14.0	35.0
Max Allow Headway (MAH), s	2.2	6.2	2.2	3.9	2.2	6.0	2.2	4.0
Max Q Clear (g_c+I1), s	9.5	24.1	6.8	15.2	8.6	24.0	12.5	23.7
Green Ext Time (g_e), s	0.1	2.4	0.0	4.2	0.0	3.8	0.1	4.2
Prob of Phs Call (p_c)	1.00	1.00	0.91	1.00	0.96	1.00	1.00	1.00
Prob of Max Out (p_x)	0.12	1.00	0.02	0.00	1.00	0.74	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	3483		1795		1795		3483	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1791		5066		3139		4485

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1590		1594		453		633

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	70	970	137
Future Volume (veh/h)	70	970	137
Number	3	8	18
Initial Q, veh	0	0	0
Lane Width Adj.	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00
Work Zone On Approach		No	
Lanes Open During Work Zone			
Adj Sat Flow, veh/h/ln	1885	1856	1885
Adj Flow Rate, veh/h	79	1090	154
Peak Hour Factor	0.89	0.89	0.89
Percent Heavy Veh, %	1	3	1
Opposing Right Turn Influence	Yes		
Cap, veh/h	101	1727	244
HCM Platoon Ratio	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.39	0.39
Unsig. Movement Delay			
Ln Grp Delay, s/veh	56.1	29.8	32.0
Ln Grp LOS	E	C	C
Approach Vol, veh/h		1323	
Approach Delay, s/veh		32.1	
Approach LOS		C	
Timer:			

Lane Assignment	L (Prot)		L (Prot)		L (Prot)		L (Prot)	
Lanes in Grp	2	0	1	0	1	0	2	0
Grp Vol (v), veh/h	242	0	79	0	109	0	339	0
Grp Sat Flow (s), veh/h/ln	1742	0	1795	0	1795	0	1742	0
Q Serve Time (g_s), s	7.5	0.0	4.8	0.0	6.6	0.0	10.5	0.0
Cycle Q Clear Time (g_c), s	7.5	0.0	4.8	0.0	6.6	0.0	10.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	304	0	101	0	135	0	399	0
V/C Ratio (X)	0.80	0.00	0.78	0.00	0.81	0.00	0.85	0.00
Avail Cap (c_a), veh/h	412	0	180	0	163	0	443	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	49.2	0.0	51.2	0.0	50.1	0.0	47.8	0.0
Incr Delay (d2), s/veh	5.3	0.0	4.9	0.0	17.9	0.0	12.3	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	54.5	0.0	56.1	0.0	68.0	0.0	60.1	0.0
1st-Term Q (Q1), veh/ln	3.2	0.0	2.1	0.0	2.9	0.0	4.5	0.0
2nd-Term Q (Q2), veh/ln	0.2	0.0	0.1	0.0	0.7	0.0	0.7	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	3.4	0.0	2.2	0.0	3.6	0.0	5.1	0.0
%ile Storage Ratio (RQ%)	0.64	0.00	0.24	0.00	0.54	0.00	0.59	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	3	0	1	0	2
Grp Vol (v), veh/h	0	327	0	899	0	379	0	821
Grp Sat Flow (s), veh/h/ln	0	1791	0	1689	0	1791	0	1689
Q Serve Time (g_s), s	0.0	18.5	0.0	13.2	0.0	21.9	0.0	21.7
Cycle Q Clear Time (g_c), s	0.0	18.5	0.0	13.2	0.0	21.9	0.0	21.7
Lane Grp Cap (c), veh/h	0	439	0	2246	0	460	0	1301
V/C Ratio (X)	0.00	0.75	0.00	0.40	0.00	0.82	0.00	0.63
Avail Cap (c_a), veh/h	0	480	0	2246	0	529	0	1301
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	38.3	0.0	20.7	0.0	38.5	0.0	27.5
Incr Delay (d2), s/veh	0.0	6.3	0.0	0.5	0.0	9.8	0.0	2.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	44.7	0.0	21.3	0.0	48.3	0.0	29.8
1st-Term Q (Q1), veh/ln	0.0	7.9	0.0	5.0	0.0	9.3	0.0	8.4

2nd-Term Q (Q2), veh/ln	0.0	0.8	0.0	0.1	0.0	1.2	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	8.7	0.0	5.1	0.0	10.5	0.0	8.8
%ile Storage Ratio (RQ%)	0.00	0.47	0.00	0.11	0.00	0.19	0.00	0.26
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	334	0	101	0	381	0	423
Grp Sat Flow (s), veh/h/ln	0	1590	0	1594	0	1801	0	1740
Q Serve Time (g_s), s	0.0	22.1	0.0	4.1	0.0	22.0	0.0	21.7
Cycle Q Clear Time (g_c), s	0.0	22.1	0.0	4.1	0.0	22.0	0.0	21.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	0.25	0.00	0.36
Lane Grp Cap (c), veh/h	0	390	0	707	0	463	0	670
V/C Ratio (X)	0.00	0.86	0.00	0.14	0.00	0.82	0.00	0.63
Avail Cap (c_a), veh/h	0	426	0	707	0	532	0	670
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	39.7	0.0	18.2	0.0	38.5	0.0	27.5
Incr Delay (d2), s/veh	0.0	15.6	0.0	0.4	0.0	9.8	0.0	4.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	55.3	0.0	18.6	0.0	48.4	0.0	32.0
1st-Term Q (Q1), veh/ln	0.0	8.3	0.0	1.5	0.0	9.4	0.0	8.6
2nd-Term Q (Q2), veh/ln	0.0	1.7	0.0	0.1	0.0	1.3	0.0	0.8
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	10.0	0.0	1.6	0.0	10.6	0.0	9.5
%ile Storage Ratio (RQ%)	0.00	0.54	0.00	0.22	0.00	0.19	0.00	0.28
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	39.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	2.1

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	11	35	648	30	10	80	950	15	16	0	42	5	0	0
Future Vol, veh/h	11	35	648	30	10	80	950	15	16	0	42	5	0	0
Conflicting Peds, #/hr	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	12	39	728	34	11	90	1067	17	18	0	47	6	0	0

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	1084	1084	0	0	762	763	0	0	1585	2136	382	1746	2144	542
Stage 1	-	-	-	-	-	-	-	-	849	849	-	1278	1278	-
Stage 2	-	-	-	-	-	-	-	-	736	1287	-	467	866	-
Critical Hdwy	6.42	4.12	-	-	6.42	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.51	2.21	-	-	2.51	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	296	645	-	-	475	852	-	-	73	49	619	56	49	487
Stage 1	-	-	-	-	-	-	-	-	324	378	-	177	237	-
Stage 2	-	-	-	-	-	-	-	-	379	235	-	548	371	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	503	503	-	-	771	771	-	-	64	43	618	45	42	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	64	43	-	45	42	-
Stage 1	-	-	-	-	-	-	-	-	306	356	-	163	219	-
Stage 2	-	-	-	-	-	-	-	-	349	217	-	478	350	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.82	0.88	30.81	96.54
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	64	618	503	-	-	771	-	-	45
HCM Lane V/C Ratio	0.281	0.076	0.103	-	-	0.131	-	-	0.125
HCM Control Delay (s/veh)	82	11.3	13	-	-	10.4	-	-	96.5
HCM Lane LOS	F	B	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1	0.2	0.3	-	-	0.5	-	-	0.4

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	687	5	0	977	0	37
Future Vol, veh/h	687	5	0	977	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	772	6	0	1098	0	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	389
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	613
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	613
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	613	-	-	-
HCM Lane V/C Ratio	0.068	-	-	-
HCM Control Delay (s/veh)	11.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	0	0	0	0	10	0	30	0	45	10	55
Future Vol, veh/h	18	0	0	0	0	10	0	30	0	45	10	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	20	0	0	0	0	11	0	34	0	51	11	62

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	177	177	42	146	208	34	73	0	0	34	0	0
Stage 1	143	143	-	34	34	-	-	-	-	-	-	-
Stage 2	34	34	-	112	174	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	787	718	1031	825	691	1042	1533	-	-	1584	-	-
Stage 1	862	780	-	985	869	-	-	-	-	-	-	-
Stage 2	985	869	-	895	757	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	753	694	1031	797	668	1042	1533	-	-	1584	-	-
Mov Cap-2 Maneuver	753	694	-	797	668	-	-	-	-	-	-	-
Stage 1	833	754	-	985	869	-	-	-	-	-	-	-
Stage 2	974	869	-	865	731	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.91	8.49	0	3.01
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1533	-	-	753	1042	630	-	-
HCM Lane V/C Ratio	-	-	-	0.027	0.011	0.032	-	-
HCM Control Delay (s/veh)	0	-	-	9.9	8.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	171	1019	192	475	278	1278	227	81	1193
v/c Ratio	0.78	0.87	0.65	0.47	0.74	0.66	0.32	0.62	0.72
Control Delay (s/veh)	75.1	43.0	63.9	35.1	64.2	34.6	9.7	73.8	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.1	43.0	63.9	35.1	64.2	34.6	9.7	73.8	38.9
Queue Length 50th (ft)	130	340	75	147	108	319	29	62	305
Queue Length 95th (ft)	203	437	113	205	153	384	93	114	370
Internal Link Dist (ft)		499		1415		1110			839
Turn Bay Length (ft)	165		135		220		175	235	
Base Capacity (vph)	268	1193	346	1015	433	1913	701	163	1649
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.85	0.55	0.47	0.64	0.67	0.32	0.50	0.72

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	5	164	620	389	190	375	95	275	1265	225	80	1072
Future Volume (veh/h)	5	164	620	389	190	375	95	275	1265	225	80	1072
Number		5	2	12	1	6	16	7	4	14	3	8
Initial Q, veh		0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj (A_pbT)		1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Parking Bus Adj		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No			No			No			No
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln		1885	1885	1885	1885	1885	1885	1885	1856	1885	1885	1856
Adj Flow Rate, veh/h		166	626	393	192	379	96	278	1278	227	81	1083
Peak Hour Factor		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %		1	1	1	1	1	1	1	3	1	1	3
Opposing Right Turn Influence		Yes			Yes			Yes			Yes	
Cap, veh/h		193	678	425	249	808	202	335	2005	629	103	1667
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green		0.11	0.32	0.32	0.07	0.29	0.29	0.10	0.40	0.40	0.06	0.36
Unsig. Movement Delay												
Ln Grp Delay, s/veh		66.4	59.8	61.1	58.9	36.3	36.5	61.2	30.9	27.2	60.8	35.0
Ln Grp LOS		E	E	E	E	D	D	E	C	C	E	D
Approach Vol, veh/h			1185			667			1783			1274
Approach Delay, s/veh			61.2			42.9			35.1			37.4
Approach LOS			E			D			D			D

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	2.0	4.0	2.0	3.0	2.0	4.0	2.0	4.0
Phs Duration (G+Y+Rc), s	12.6	44.1	10.9	52.5	16.9	39.7	15.5	47.8
Change Period (Y+Rc), s	4.0	5.5	4.0	5.0	4.0	5.5	4.0	5.0
Max Green (Gmax), s	12.0	39.5	11.0	39.0	18.0	33.5	15.0	35.0
Max Allow Headway (MAH), s	2.2	6.1	2.2	3.9	2.2	6.1	2.2	4.0
Max Q Clear (g_c+I1), s	8.5	36.4	7.3	26.5	12.9	15.4	11.4	25.3
Green Ext Time (g_e), s	0.1	2.1	0.0	5.3	0.1	3.5	0.1	3.7
Prob of Phs Call (p_c)	1.00	1.00	0.93	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	0.10	1.00	0.06	0.00	0.01	0.08	0.12	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	3483		1795		1795		3483	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2109		5066		2835		4670

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1323		1589		710		474

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	109
Future Volume (veh/h)	109
Number	18
Initial Q, veh	0
Lane Width Adj.	1.00
Ped-Bike Adj (A_pbT)	0.99
Parking Bus Adj	1.00
Work Zone On Approach	
Lanes Open During Work Zone	
Adj Sat Flow, veh/h/ln	1885
Adj Flow Rate, veh/h	110
Peak Hour Factor	0.99
Percent Heavy Veh, %	1
Opposing Right Turn Influence	
Cap, veh/h	169
HCM Platoon Ratio	1.00
Prop Arrive On Green	0.36
Unsig. Movement Delay	
Ln Grp Delay, s/veh	37.5
Ln Grp LOS	D
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer:	

Lane Assignment	L (Prot)		L (Prot)		L (Prot)		L (Prot)	
Lanes in Grp	2	0	1	0	1	0	2	0
Grp Vol (v), veh/h	192	0	81	0	166	0	278	0
Grp Sat Flow (s), veh/h/ln	1742	0	1795	0	1795	0	1742	0
Q Serve Time (g_s), s	6.5	0.0	5.3	0.0	10.9	0.0	9.4	0.0
Cycle Q Clear Time (g_c), s	6.5	0.0	5.3	0.0	10.9	0.0	9.4	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	249	0	103	0	193	0	335	0
V/C Ratio (X)	0.77	0.00	0.79	0.00	0.86	0.00	0.83	0.00
Avail Cap (c_a), veh/h	348	0	165	0	269	0	435	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	54.8	0.0	55.9	0.0	52.6	0.0	53.3	0.0
Incr Delay (d2), s/veh	4.1	0.0	5.0	0.0	13.7	0.0	8.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	58.9	0.0	60.8	0.0	66.4	0.0	61.2	0.0
1st-Term Q (Q1), veh/ln	2.8	0.0	2.4	0.0	4.8	0.0	4.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.1	0.0	0.7	0.0	0.4	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	3.0	0.0	2.5	0.0	5.6	0.0	4.4	0.0
%ile Storage Ratio (RQ%)	0.55	0.00	0.27	0.00	0.85	0.00	0.51	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	3	0	1	0	2
Grp Vol (v), veh/h	0	532	0	1278	0	238	0	783
Grp Sat Flow (s), veh/h/ln	0	1791	0	1689	0	1791	0	1689
Q Serve Time (g_s), s	0.0	34.4	0.0	24.5	0.0	13.1	0.0	23.3
Cycle Q Clear Time (g_c), s	0.0	34.4	0.0	24.5	0.0	13.1	0.0	23.3
Lane Grp Cap (c), veh/h	0	576	0	2005	0	511	0	1205
V/C Ratio (X)	0.00	0.92	0.00	0.64	0.00	0.47	0.00	0.65
Avail Cap (c_a), veh/h	0	590	0	2005	0	511	0	1205
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	39.3	0.0	29.3	0.0	35.4	0.0	32.3
Incr Delay (d2), s/veh	0.0	20.5	0.0	1.6	0.0	0.9	0.0	2.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	59.8	0.0	30.9	0.0	36.3	0.0	35.0
1st-Term Q (Q1), veh/ln	0.0	14.6	0.0	9.6	0.0	5.6	0.0	9.2

2nd-Term Q (Q2), veh/ln	0.0	3.3	0.0	0.3	0.0	0.1	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	17.9	0.0	9.9	0.0	5.7	0.0	9.7
%ile Storage Ratio (RQ%)	0.00	0.96	0.00	0.22	0.00	0.10	0.00	0.29
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		T+R		T+R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	487	0	227	0	237	0	410
Grp Sat Flow (s), veh/h/ln	0	1641	0	1589	0	1754	0	1767
Q Serve Time (g_s), s	0.0	34.4	0.0	12.1	0.0	13.4	0.0	23.3
Cycle Q Clear Time (g_c), s	0.0	34.4	0.0	12.1	0.0	13.4	0.0	23.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.81	0.00	1.00	0.00	0.40	0.00	0.27
Lane Grp Cap (c), veh/h	0	528	0	629	0	500	0	631
V/C Ratio (X)	0.00	0.92	0.00	0.36	0.00	0.47	0.00	0.65
Avail Cap (c_a), veh/h	0	540	0	629	0	500	0	631
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	39.3	0.0	25.6	0.0	35.5	0.0	32.3
Incr Delay (d2), s/veh	0.0	21.8	0.0	1.6	0.0	1.0	0.0	5.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	61.1	0.0	27.2	0.0	36.5	0.0	37.5
1st-Term Q (Q1), veh/ln	0.0	13.4	0.0	4.4	0.0	5.6	0.0	9.7
2nd-Term Q (Q2), veh/ln	0.0	3.2	0.0	0.3	0.0	0.1	0.0	0.9
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	16.6	0.0	4.7	0.0	5.8	0.0	10.6
%ile Storage Ratio (RQ%)	0.00	0.89	0.00	0.68	0.00	0.10	0.00	0.31
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	43.1
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	2.4

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	8	90	1135	19	5	47	792	10	16	0	33	5	0	15
Future Vol, veh/h	8	90	1135	19	5	47	792	10	16	0	33	5	0	15
Conflicting Peds, #/hr	0	1	0	1	0	1	0	1	2	0	2	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	8	91	1146	19	5	47	800	10	16	0	33	5	0	15

Major/Minor	Major1				Major2				Minor1			Minor2		
Conflicting Flow All	810	811	0	0	1166	1167	0	0	1862	2271	586	1684	2276	408
Stage 1	-	-	-	-	-	-	-	-	1355	1355	-	911	911	-
Stage 2	-	-	-	-	-	-	-	-	507	916	-	773	1365	-
Critical Hdwy	6.42	4.12	-	-	6.42	4.12	-	-	7.52	6.52	6.92	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.52	5.52	-	6.52	5.52	-
Follow-up Hdwy	2.51	2.21	-	-	2.51	2.21	-	-	3.51	4.01	3.31	3.51	4.01	3.31
Pot Cap-1 Maneuver	443	817	-	-	262	600	-	-	45	40	456	62	40	595
Stage 1	-	-	-	-	-	-	-	-	159	218	-	297	353	-
Stage 2	-	-	-	-	-	-	-	-	519	352	-	360	216	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	761	761	-	-	526	526	-	-	38	35	455	49	35	594
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	38	35	-	49	35	-
Stage 1	-	-	-	-	-	-	-	-	146	200	-	278	331	-
Stage 2	-	-	-	-	-	-	-	-	473	329	-	307	198	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.82	0.77	60.1	31.06
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	38	455	761	-	-	526	-	-	158
HCM Lane V/C Ratio	0.423	0.073	0.13	-	-	0.1	-	-	0.128
HCM Control Delay (s/veh)	156.1	13.5	10.4	-	-	12.6	-	-	31.1
HCM Lane LOS	F	B	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	1.4	0.2	0.4	-	-	0.3	-	-	0.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1235	10	0	831	0	17
Future Vol, veh/h	1235	10	0	831	0	17
Conflicting Peds, #/hr	0	2	2	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1247	10	0	839	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	634
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	424
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	423
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	13.88
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	423	-	-	-
HCM Lane V/C Ratio	0.041	-	-	-
HCM Control Delay (s/veh)	13.9	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	0	5	5	5	25	5	15	0	20	20	26
Future Vol, veh/h	9	0	5	5	5	25	5	15	0	20	20	26
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	1	1	0	2
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	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	9	0	5	5	5	25	5	15	0	20	20	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	104	102	36	88	115	16	48	0	0	16	0	0
Stage 1	76	76	-	26	26	-	-	-	-	-	-	-
Stage 2	28	26	-	62	89	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	879	790	1039	900	777	1066	1565	-	-	1608	-	-
Stage 1	936	834	-	994	875	-	-	-	-	-	-	-
Stage 2	992	875	-	952	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	838	775	1036	880	762	1065	1562	-	-	1607	-	-
Mov Cap-2 Maneuver	838	775	-	880	762	-	-	-	-	-	-	-
Stage 1	922	822	-	990	872	-	-	-	-	-	-	-
Stage 2	960	872	-	934	811	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.07	8.81	1.83	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	450	-	-	899	980	490	-	-
HCM Lane V/C Ratio	0.003	-	-	0.016	0.036	0.013	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.1	8.8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

APPENDIX D

Scoping Letter

SCOPE OF TRAFFIC IMPACT STUDY (TIS)

TO: Ryan Hales, PE, PTOE, AICP
Hales Engineering
1220 North 500 West, Ste. 202
Lehi, UT 84043

MEETING DATE: March 7, 2024 (Virtual)

ATTENDEES: Sabrina Rushing; Brianna Uy; Jordi Berrett; Josh Gibbons; Ryan Hales; Matthew Grush

PROJECT: Dutch Bros 7330 San Antonio, Zone Atlas #E19

REQUESTED CITY ACTION: ___ Zone Change _x_ Site Development Plan

___ Subdivision ___ Building Permit ___ Sector Plan ___ Sector Plan Amendment

___ Curb Cut Permit ___ Conditional Use ___ Annexation ___ Site Plan Amendment

ASSOCIATED APPLICATION: The proposed Dutch Bros development is located at 7330 San Antonio Drive NE, in Albuquerque. The development will consist of a 950 square feet coffee shop with two drive-through lanes that merge at the pick-up window. It is anticipated that the project would be built and operational by year 2025.

SCOPE OF REPORT:
The Traffic Impact Study should follow the standard report format, which is outlined in the DPM. The following supplemental information is provided for the preparation of this specific study.

1. Trip Generation - Use Trip Generation Manual, 11th Edition.
   Consultant to provide.

2. Appropriate study area:
   Signalized Intersections;
   a. San Antonio Drive NE / Wyoming Boulevard NE

   Unsignalized Intersections:
   a. San Antonio Place NE / San Antonio Drive NE

   Driveway Intersections: all site drives.

3. Intersection turning movement counts
   Study Time – 7-9 a.m. peak hour, 4-6 p.m. peak hour
   Consultant to provide for all intersections listed above.

4. Type of intersection progression and factors to be used.
Type III arrival type (see “Highway Capacity Manual, current edition” or equivalent as approved by staff). Unless otherwise justified, peak hour factors and % heavy commercial

should be taken directly from the MRCOG turning movement data provided or as calculated from current count data by consultant.

5. Boundaries of area to be used for trip distribution.
   2 mile radius – commercial;

6. Basis for trip distribution.

Commercial - Use relationship based upon population. Use population data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Commercial -
Ts = (Tt) (Sp) / (Sp)
Ts = Development to Individual Subarea Trips
Tt = Total Trips
Sp = Subarea Population

7. Traffic Assignment. Logical routing on the major street system.

8. Proposed developments which have been approved but not constructed that are to be included in the analyses. Information to be provided by Matt Grush, if available.

9. Method of intersection capacity analysis - planning or operational (see "Highway Capacity Manual 7th edition" or equivalent [i.e. HCS, Synchro, Teapac, etc.] as approved by staff). Must use latest version of design software and/or current edition of design manual.
   Implementation Year: 2024

10. Traffic conditions for analysis:
    a. Existing analysis _x_ yes __ no - year (2024);
    b. Project completion year without proposed development – 2025
    c. Project completion year with proposed development – 2025

11. Background traffic growth.
    Method: use 10-year historical growth based on standard data from the MRCOG Traffic Flow Maps. Minimum growth rate to be used is 1/2%.

12. Planned (programmed) traffic improvements.
    List planned CIP improvements in study area and projected project implementation year:
    a. None

13. Items to be included in the study:
    a. Intersection analysis.
    b. Signal progression - An analysis is required if the driveway analysis indicates a traffic signal is possibly warranted. MUTCD signal warrants
    c. Recommended street, intersection and signal improvements.
    d. Site design features such as turning lanes, median cuts, queuing requirements and site circulation, including driveway signalization and visibility.
    e. Transportation system impacts.

f. Other mitigating measures.
g. Accident analyses _x_ yes __ no; Location(s): 5 years of data at study intersections (see above)
h. Weaving analyses __ yes _x_ no; Location(s):

14. Other:

SUBMITTAL REQUIREMENTS:

1. Number of copies of report required
   a. 1 digital copy
2. Submittal Fee – $1300 for up to 3 reviews plus technology fee
   a. Submit the TIS along with a DTIS to Planning Development Review Services email PLNDRS@cabq.gov and copy mgrush@cabq.gov.

The Traffic Impact Study for this development proposal, project name, shall be performed in accordance with the above criteria. If there are any questions regarding the above items, please contact me at 505-924-3362.

3/25/2024

Matt Grush, P.E.
Senior Engineer
City of Albuquerque, Planning
Transportation Development Section

Date

via: email
C: TIS Task Force Attendees, file